Multimodal Transportation Assessment

Arlington Career Center

Arlington, Virginia

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Executive Summary

The following report is a Multimodal Transportation Assessment (MMTA) for the Arlington Career Center (CC) campus, located in Arlington, Virginia.

The purpose of this report is to review existing and future transportation facilities in the area surrounding the project site, project transportation demand needs of the project based on the proposed design, determine if the new transportation demand generated by the project will have negative impacts on the surrounding transportation network, and present recommendations to minimize the negative impact from the proposed project.

Site Location and Study Area

The existing Career Center campus consists of several buildings and programs, including the Arlington Tech program, the Columbia Pike Branch Library, Montessori Public School of Arlington (MPSA), Arlington Community High School (ACHS), and other services and programs. The site is bounded by 7th Street S to the north, 9th Street S to the south, S Highland Street to the west and S Walter Reed Drive to the east as shown in Figure 2. The general extents of the study area are 2nd Street S to the north, Columbia Pike to the South, S Glebe Road to the west, and S Walter Reed Drive to the east.

The vehicular study area consists of 13 intersections along S Glebe Road, S Highland Street, and S Walter Reed Drive, as reviewed with and approved by Arlington County Department of Environmental Services staff.

The site is currently zoned as S-3A, Special District and is shown as a public land use in the General Land Use Plan (GLUP).

Proposed Project

The proposed redevelopment of the Career Center campus will include:

- The construction of a new CC building along S Walter Reed Drive between the Columbia Pike Branch Library and 7th Street S to accommodate an expanded Arlington Tech program as well as other programs currently housed in the existing CC building for a future full enrollment of up to approximately 1,619 CC students and 216 faculty/staff;
- The relocation of MPSA to the existing CC building which will be partially demolished and refurbished to accommodate a future full enrollment of up to approximately 775 MPSA students and 145 faculty/staff as well as a new parking garage for the CC campus;
- The demolition of the Fenwick building (currently ACHS), the existing surface parking lot, and the existing MPSA building to accommodate the new CC building, a new athletic field, and open space, respectively;

Parking and loading access to the site will be provided from driveways along S Walter Reed Drive and S Highland Street. Additionally, the Career Center redevelopment has been designed in conjunction with the South Walter Reed Drive Complete Streets Improvements project which will include protected bicycle lanes along S Walter Reed Drive and the signalization of the nearby intersection of S Walter Reed Drive and 9th Street S along the site's frontage. The placement of the new CC building's main entrance on S Walter Reed Drive near both a bus stop and protected bicycle lanes strengthens the multimodal design of the CC campus redevelopment.

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 *Columbia Pike Initiative – A Revitalization Plan Update*, adopted by the County Board in 2005, developed a series of goals and objectives ensuring that development included a mix of commercial, office and residential uses. The proposed development achieves several of the goals and policies of both the MTP, Revitalization Plan, and other guiding documents for the County.

Multi-Modal Overview

Transit

The site is well-served by transit with direct access to several local and regional bus lines. There are nine (9) bus stops within a quarter mile of the site. These stops are directly served by WMATA (Metrobus) and Arlington Transit (ART). The project is located approximately 1.7 miles and 2.3 miles from the Clarendon and Pentagon City Metrorail stations, respectively, which can be accessed via bus lines which travel directly to or near the project site. The County has also recently implemented several improvements to transit facilities and transit access near the proposed development.

Pedestrian

The existing pedestrian infrastructure surrounding the site provides an adequate walking environment. Sidewalks are

present along most primary routes to pedestrian destinations, though some deficiencies exist with curb ramps and sidewalk widths in the surrounding network. Planned improvements to the pedestrian infrastructure surrounding the site will improve pedestrian comfort and connectivity.

As a result of the proposed development, pedestrian facilities along the perimeter of the site will be improved by upgrading sidewalks adjacent to the site to meet or exceed Arlington County and ADA standards.

Bicycle

The site has access to several on-street bicycle facilities, including bicycle lanes on S Walter Reed Drive north of Columbia Pike and shared lanes on 9th Street S as well as 12th Street S and S Walter Reed Drive south of Columbia Pike. There are also on-street routes along S Monroe Street, S Highland Street, and 7th Street S.

The Arlington Master Transportation Plan has recommended several bicycle facility improvements to be upgraded in the future. These upgrades include protected bicycle lanes along S Walter Reed Drive (as part of the South Walter Reed Drive Complete Streets Improvements) as well as bicycle lanes along 2nd Streets S, S Glebe Road, and S Filmore Street.

Vehicular

The site is primarily accessible from two (2) principal arterials – S Glebe Road and Columbia Pike. The arterials create connections to I-395, I-66, VA-50 (Arlington Boulevard) and ultimately the Capital Beltway (I-495) surrounding Washington, DC, and its inner suburbs as well as regional access to I-95. There are also other minor arterials, collectors, and local roads which can be used to access the site directly. The proposed development will be accessed via S Walter Reed Drive, 9th Street S, and S Highland Street.

Existing Conditions

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

The existing conditions analysis shows that many intersections and movements operate at an acceptable level of service during the morning, afternoon, and afternoon school dismissal peak hours. However, of the 13 intersections in the study area, two (2) intersections have one or more movements that operate at levels beyond Level of Service (LOS) E or worse in one or more peak hour. LOS E is typically used as the acceptable LOS threshold in the County; although LOS F is generally accepted in urbanized areas if vehicular improvements would be a detriment to safety or to non-auto modes of transportation. The capacity analysis results also show that four (4) intersections have 95th percentile queues that exceed the available storage length in one or more peak hour in existing conditions.

Travel Demand Assumptions

Mode split (also called mode share) is the percentage of travelers using a particular type (or mode) of transportation when traveling. The main source of mode split information for this report was APS Go! survey and Safe Routes to Schools (SRTS) student count/tally data collected in 2016. The APS Go! surveys included all Arlington Public Schools (APS) schools and consisted of multiple surveys including student, parent, and staff surveys. Not only do these surveys include mode split questions, but they also asked many other relevant questions where the responses were used to help assemble assumptions for this report (e.g., arrival and departure times for staff). The SRTS tallies were performed in school per classroom and provide a good representation of how students traveled to school on a specific date.

The methodology used to develop the trip generation for this project is based primarily on APS Go! data, combined with population numbers of students and staff, and the mode split assumptions summarized above. The APS Go! survey results contain transportation profiles including arrival and departure times. The population for the students and staff were split into different modes using the mode split assumptions and then assigned arrival and departure times based on the survey information.

The existing Columbia Pike Library trips were calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 10th Edition, using ITE Land Uses 590 (Library), using a 30 percent non-auto reduction derived from American Community Survey (ACS) 5-year estimates of the site census tract. At the July 2022 County Board meeting, the 2023-2032 Capital Improvement Plan was adopted which included the approval of $31.65 million for the refresh/relocation of the Columbia Pike Library. This funding will allow the County to redevelop the recently purchased parcel at 3108 Columbia Pike as a potential mixed-use partnership to relocate the Columbia Pike Library in anticipation of APS growth

in the coming years. As a result, the library's existing trip generation has been removed from the future traffic analysis scenario for the project.

Parking

This MMTA reached the following findings on parking:

- Parking demand within and surrounding the Career Center campus peaks at 3:00 PM, with 51 percent of the available parking spaces within the study area occupied.
- The main parking lot on-campus peaks at 97 percent occupancy at 12:00 PM. It sustains a high level of occupancy between 10:00 AM and 3:00 PM.
- Time-restricted on-street parking along S Walter Reed Drive and 7th Street S adjacent to the CC campus peaks at 97 percent occupancy at 2:30 PM.
- Unrestricted on-street parking along the CC campus's S Walter Reed Drive frontage peaks at 100 percent occupancy at 9:00 PM, with demand lowering to 50 to 80 percent in the middle of the weekday.
- Unrestricted on-street parking along the CC campus's 7th Street S frontage peaks at 82 percent at 9:30 AM, with demand lowering to 40 to 70 percent before 3:00 PM and lowering further to less than 20 percent into the evening.
- Unrestricted and pick-up/drop-off on-street parking spaces along the CC campus's S Highland Street frontage peaks at 92 percent at 8:00 AM and 2:30 PM, coinciding with arrival and dismissal times.
- Residential permit on-street parking along the CC campus's S Highland Street frontage peaks at 100 percent at 3:00 PM, with demand lowering to 40 to 60 percent after the peak.
- Metered on-street parking along the CC campus's 9th Street S frontage peaks at 29 percent at 6:00-6:30 AM, 8:30-9:00 AM, and 2:30 PM, with demand never exceeding 30 percent.
- Typical minimum parking requirements for the proposed CC campus under S-3A, Public district requirements in the Arlington County Zoning Ordinance would be at least 666 off-street parking spaces – 544 spaces for the CC program including public assembly space and 122 spaces for the MPSA program including employee and visitor spaces.
- Model estimates for the future CC campus parking demands range from 336 to 391 spaces including all faculty/staff, visitors, and students. The lower end of this range assumes a successfully implemented, enhanced Transportation Demand Management (TDM) program that reduces future the site's future auto mode split, while the higher end of this range assumes the existing/base auto mode split based on APS Go! data.

This report recommends the following strategy for accommodating the increase in parking demand:

- Use the existing on-street parking within the vicinity of CC campus to accommodate student parking and do not provide on-site parking for students (approximately 53 to 70 spaces based on parking model estimates).
- Set the campus's minimum off-street parking requirement at 326 spaces to accommodate all future staff and visitor parking demand as well as the 24 spaces estimated to be needed for the CC auto program.
- Consider exempting CC students from metered parking fees along 9th Street S to limit the number of students parking on nearby residential streets to avoid parking fees.
- Continue the current APS Go! Transportation Demand Management (TDM) programs to encourage use of alternative travel modes, thus reducing parking demand.
- Should a future TDM program successfully reduce auto mode splits and thus increase parking availability in the new garage, consider converting vehicle parking spaces to long-term bicycle parking facilities or other non-auto amenities.
- Explore student parking policies systematically and consider additional demand management measures such as limiting availability of student parking passes and/or charging higher fees for student passes. These would be APS-wide policy changes that would impact all high schools in the County.
- Implement wayfinding and marketing of the future parking garage for after-school activities and events to lessen the impact on nearby on-street parking.

Bicycle Parking

The proposed Career Center campus will meet or exceed the bicycle parking requirements set forth in the Standard Site Plan Conditions by providing a minimum of the following across the site:

- 37 Class I (Long-Term, Secure Storage) spaces, or at least 19 Class I spaces and 18 Class II (Short-Term, Outdoors) spaces for the 361 faculty/staff across the campus
    - 22 spaces for 216 CC staff

  - 15 spaces for 145 MPSA staff
- 201 Class II/III spaces, or 101 short-term bicycle racks for the 2,394 students across the campus
  - 162 spaces (81 racks) for 1,619 CC students
  - 39 spaces (20 racks) for 775 MPSA students
- At least 37 lockers and four (4) showers for faculty/staff who walk or bicycle to the campus
  - 22 CC lockers and 15 MPSA lockers
  - Two (2) CC showers and two (2) MPSA showers

Additionally, this MMTA recommends the following for the locations of bicycle parking and their respective facilities:

- Provide each program's required long-term bicycle parking on the ground floor of their respective buildings or consolidate all campus-wide long-term bicycle parking on the first level of the garage;
- Provide each program's required short-term bicycle parking as close as possible to their respective building's main entrances, primarily along S Walter Reed Drive and the internal southern driveway; and
- Locate the required showers and lockers as close as possible to the location of each program's long-term bicycle parking.

Arrival/Dismissal – Student Pick-Up/Drop-Off

Under existing conditions, student pick-up/drop-off (PUDO) occurs via 15 curbside spaces along S Highland Street for both the MPSA and CC buildings.

To address significant vehicle queuing observed along S Highland Street under existing conditions, this MMTA recommends providing additional PUDO spaces to accommodate the increase in student enrollment. Based on APS feedback and Gorove Slade observations, the anticipated number of vehicles anticipated to load/unload simultaneously during morning arrival and afternoon under future conditions is as follows:

- 20 to 25 CC vehicles and 15 to 20 MPSA vehicles during morning arrival; and
- 25 to 35 CC vehicles and 20 to 30 MPSA vehicles during afternoon dismissal.

As part of the proposed curbside management plan included in this MMTA, 22 spaces along S Highland Street would be used for elementary (MPSA) student PUDO, 19 spaces along S Walter Reed Drive would be used for high school (CC) student PUDO, and eight (8) spaces along 9th Street S would be used for additional student/staff pick-up/drop-off. Final PUDO locations will be coordinated with APS and the County; however, the anticipated ranges of simultaneous loading/unloading vehicles should be accommodated for each program.

Arrival/Dismissal – School Buses

An estimated 15 buses and six (6) buses are anticipated to accommodate the future CC and MPSA programs, respectively. Additionally, up to three (3) buses must be accommodated during midday off-peak hours for CTE shifts. As such, the project includes an internal driveway loop, shared between both high school and elementary school buses. This area will be accessible mainly via a driveway on S Highland Street and also via S Walter Reed Drive.

Geometric analyses of the driveway loop found that the maximum number of buses that should queue on-site simultaneously (15 buses) can be accommodated in several ways. One version, included in the Technical Attachments, shows how 15 buses can queue while still providing gaps between them for maneuverability (the buses can enter/leave their own space if needed). This version also leaves room for a bypass lane, so buses are not required to wait for other buses to leave. Other configurations will be possible, and APS will be able to vary their approach as needed based on what they find works best in the future.

Future Improvements

A number of planned transportation improvements in the vicinity of the proposed Arlington Career Center redevelopment are expected to be complete by 2028. The full list of improvements is detailed in the report, but projects include:

- S Walter Reed Drive Complete Street
- Columbia Pike Bike Boulevards
- Columbia Pike Multimodal Street Improvements
- Columbia Pike Premium Transit Network

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 10 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

Traffic projections for 2028 are based on existing volumes, plus traffic generated by approved nearby background developments to account for local growth, regional growth, and traffic generated by the proposed development. The methodology of using background development trips to account for local growth is consistent with other MMTAs in Arlington County and has been vetted and approved by the County.

Mitigations

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

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

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

- Adjustments to signal timings at two (2) intersections:
  - S Glebe Road & 7th Street S
  - S Glebe Road & Columbia Pike

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

Transportation Management Plan

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

Summary and Recommendations

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

The proposed design has many positive elements that minimize potential transportation impacts, including:

- The proposed development's close proximity to the multiple local and regional bus lines;
- Improvements to pedestrian facilities to include a minimum 6-foot sidewalk and 4-foot buffer along the site's frontage on 9th Street S, S Highland Street, and 7th Street S and to meet or exceed Arlington County and ADA requirements;
- The removal of a curb cut along S Walter Reed Drive along the new CC building;
- The placement of the new CC building's main entrance on S Walter Reed Drive near major walking routes as well as both a bus stop and protected bicycle lanes to be installed as part of the South Walter Reed Drive Complete Streets Improvements project;
- Proposed changes to curbside management adjacent to the CC campus that will facilitate additional space for pick-up/drop-off activity compared to existing conditions; and
- A Transportation Management Plan (TMP) that aims to reduce the demand of single-occupancy, private vehicles to/from the proposed development during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.

Introduction

This report presents the findings of a Multimodal Transportation Assessment (MMTA) conducted for the proposed redevelopment of the Arlington Career Center (CC) campus, located in Arlington, VA. The existing CC campus consists of several buildings and programs, including the Arlington Tech program, the Columbia Pike Branch Library, Montessori Public School of Arlington (MPSA), Arlington Community High School (ACHS), and other services and programs.

The proposed redevelopment of the Career Center campus will include:

- The construction of a new CC building along S Walter Reed Drive between the Columbia Pike Branch Library and 7th Street S to accommodate an expanded Arlington Tech program as well as other programs currently housed in the existing CC building for a future full enrollment of up to approximately 1,619 CC students and 216 faculty/staff;
- The relocation of MPSA to the existing CC building which will be partially demolished and refurbished to accommodate a future full enrollment of up to approximately 775 MPSA students and 145 faculty/staff as well as a new parking garage for the CC campus;
- The demolition of the Fenwick building (currently ACHS), the existing surface parking lot, and the existing MPSA building to accommodate the new CC building, a new athletic field, and open space, respectively;

Parking and loading access to the site will be provided from driveways along S Walter Reed Drive and S Highland Street. Additionally, the Career Center redevelopment has been designed in conjunction with the South Walter Reed Drive Complete Streets Improvements project which will include protected bicycle lanes along S Walter Reed Drive and the signalization of the nearby intersection of S Walter Reed Drive and 9th Street S along the site's frontage. The placement of the new CC building's main entrance on S Walter Reed Drive near both a bus stop and protected bicycle lanes strengthens the multimodal design of the CC campus redevelopment.

The site is currently zoned as S-3A, Special District and is shown as a public land use in the General Land Use Plan (GLUP).

Purpose of Study

The purpose of this study is to evaluate the transportation network in the vicinity of the site and to 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 March 4, 2022, was submitted by Gorove Slade to Arlington County and accepted on March 4, 2022. This scope includes discussions about the parameters of the study and relevant background information. A copy of the signed scoping document is included in the Technical Appendix.
- Field reconnaissance in the vicinity of the site was performed to review lane configurations and traffic controls, make general parking observations, and view arrival and dismissal procedures at the schools.
- Traffic volume and turning movement data collection was conducted on Wednesday, November 17, 2021, and Thursday, November 18, 2021, respectively.
- APS Go! Data of 2016 for Arlington Public Schools (APS) facilities were reviewed to help establish mode split assumptions.
- Parking counts (inventory and occupancy) were conducted in the areas surrounding the CC campus on Thursday, November 18, 2021.
- Multimodal analyses were performed reviewing pedestrian and bicycle travel to and from the project.
- 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 (2028) and Future (2028) Conditions.
- Proposed site traffic volumes were developed using estimated student and staff numbers provided by APS, bell times, and mode split information based on APS Go! 2016 data.
- Intersection capacity analyses were performed using the software package Synchro, Version 10 based on the Highway Capacity Manual (HCM) methodology. Traffic analyses were performed for Existing Conditions (2022) and Future Conditions (2028) with and without development.
- A Transportation Management Plan (TMP) framework was developed, as a TMP will be necessary to meet County requirements.

Project Summary

Site Location

The project site is in Arlington, Virginia. Figure 1 shows the regional location of the project. The site is bounded by 7th Street S to the north, 9th Street S to the south, S Highland Street to the west, and S Walter Reed Drive to the east. The site location is shown in Figure 2.

Parcel Information

The existing site is currently occupied by the Arlington Career Center campus which consists of several buildings and programs, including the Arlington Tech program, the Columbia Pike Branch Library, MPSA, ACHS), and other services and programs. A parcel map showing the location of the property is presented in Figure 3.

General Land Use Plan Recommendations

According to Arlington County's General Land Use Plan (GLUP), this site is listed as Public for parks, schools, parkways, major unpaved rights-of-way, libraries, and cultural facilities. The GLUP map for the site is shown in Figure 4. The site is currently zoned S-3A, Public District. The zoning map is shown in Figure 5.

Proposed Site Plan

The proposed redevelopment of the Career Center campus will include:

- The construction of a new CC building along S Walter Reed Drive between the Columbia Pike Branch Library and 7th Street S to accommodate an expanded Arlington Tech program as well as other programs currently housed in the existing CC building for a future full enrollment of up to approximately 1,619 CC students and 216 faculty/staff;
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Parking and loading access to the site will be provided from driveways along S Walter Reed Drive and S Highland Street. Additionally, the Career Center redevelopment has been designed in conjunction with the South Walter Reed Drive Complete Streets Improvements project which will include protected bicycle lanes along S Walter Reed Drive and the signalization of the nearby intersection of S Walter Reed Drive and 9th Street S along the site's frontage. The placement of the new CC building's main entrance on S Walter Reed Drive near both a bus stop and protected bicycle lanes strengthens the multimodal design of the CC campus redevelopment.

The proposed site plan is shown in Figure 6.

Scope and Limits of the Study Area

The general extents of the study area are 2nd Street S to the north, Columbia Pike to the South, S Glebe Road to the west, and S Walter Reed Drive to the east. The following intersections were identified for inclusion in the vehicular study area, as shown in Figure 7.

1. S Walter Reed Drive & 7th Street S
2. S Walter Reed Drive & 8th Street S
3. S Walter Reed Drive & Driveway
4. S Walter Reed Drive & 9th Street S
5. S Walter Reed Drive & Columbia Pike
6. S Highland Street & Columbia Pike
7. S Highland Street & 9th Street S
8. S Highland Street & Driveway
9. S Highland Street & 8th Street S
10. S Highland Street & 7th Street S
11. S Glebe Road & 7th Street S
12. S Glebe Road & Columbia Pike
13. S Filmore Street & 2nd Street S

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, 10th Edition, Census Transportation Planning Products (CTPP), and the office files and field reconnaissance efforts of Gorove Slade.

Contents of Study

This report contains ten chapters as follows:

- Study Area Overview
  This chapter reviews the area near and adjacent to the project and includes an overview of the site location.
- Transit
  This chapter summarizes the existing and future transit service adjacent to the site, reviews how the project's transit demand will be accommodated, outlines impacts, and presents recommendations as needed.

- Pedestrian Facilities
  This chapter summarizes existing and future pedestrian access to the site, reviews walking routes to and from the project site, outlines impacts, and presents recommendations as needed.
- Bicycle Facilities
  This chapter summarizes existing and future bicycle access to the site, reviews the quality of cycling routes to and from the project site, outlines impacts, and presents recommendations as needed.
- Project Design
  This chapter provides a summary of the existing uses on the CC campus and reviews the transportation components of the CC project. This includes an overview of how the campus will be accessed by various users and how each mode is accommodated.
- Travel Demand Assumptions
  This chapter outlines the transportation demand of the proposed CC campus. This includes a review of APS Go! survey information, expected mode splits for staff and students, and vehicular trip generation.
- 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.
- Parking
  This chapter reviews the available parking within and surrounding the CC campus.
- 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 existing conditions of the campus and presents overall findings and conclusions.

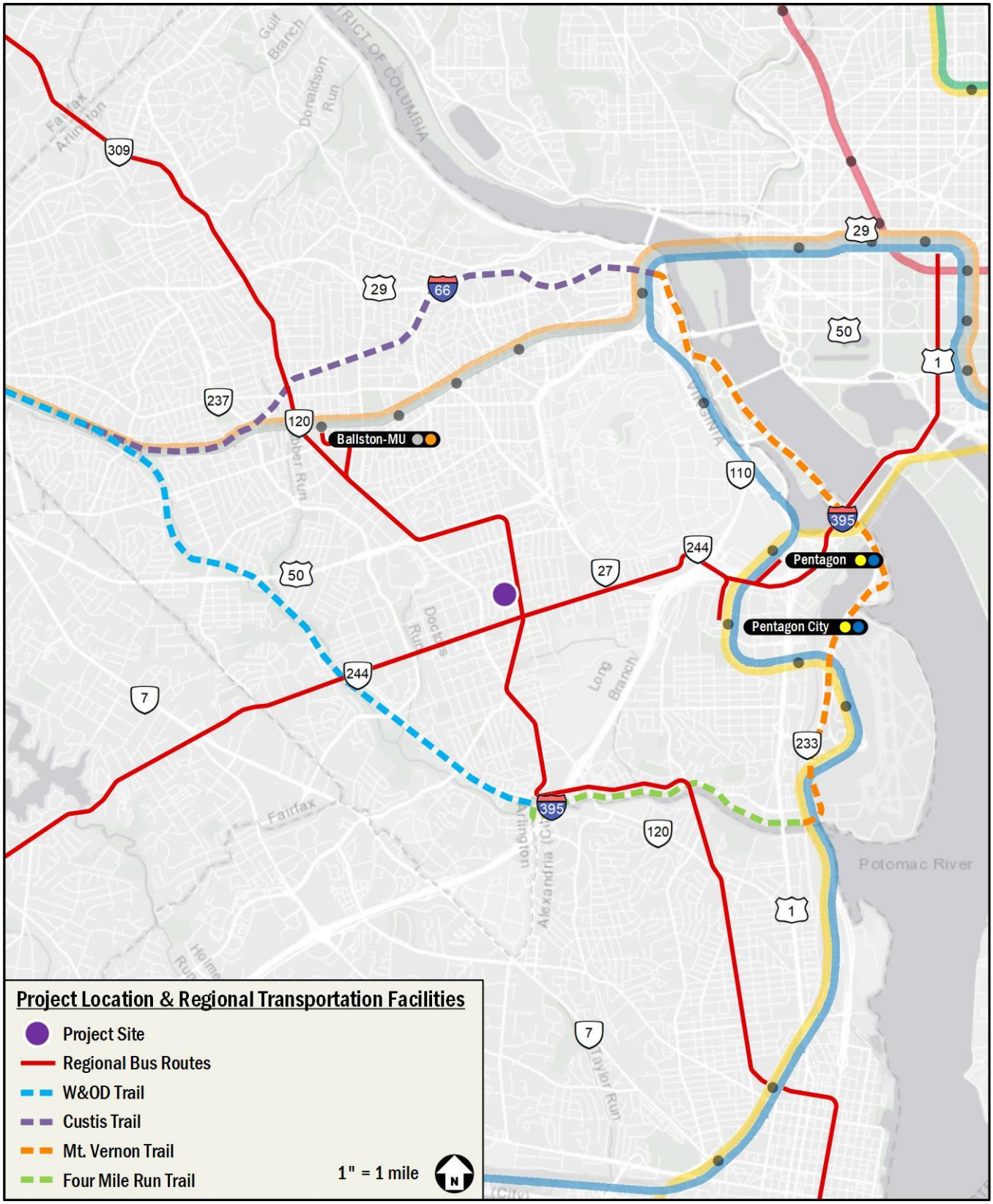

Figure 1: Major Regional Transportation Facilities

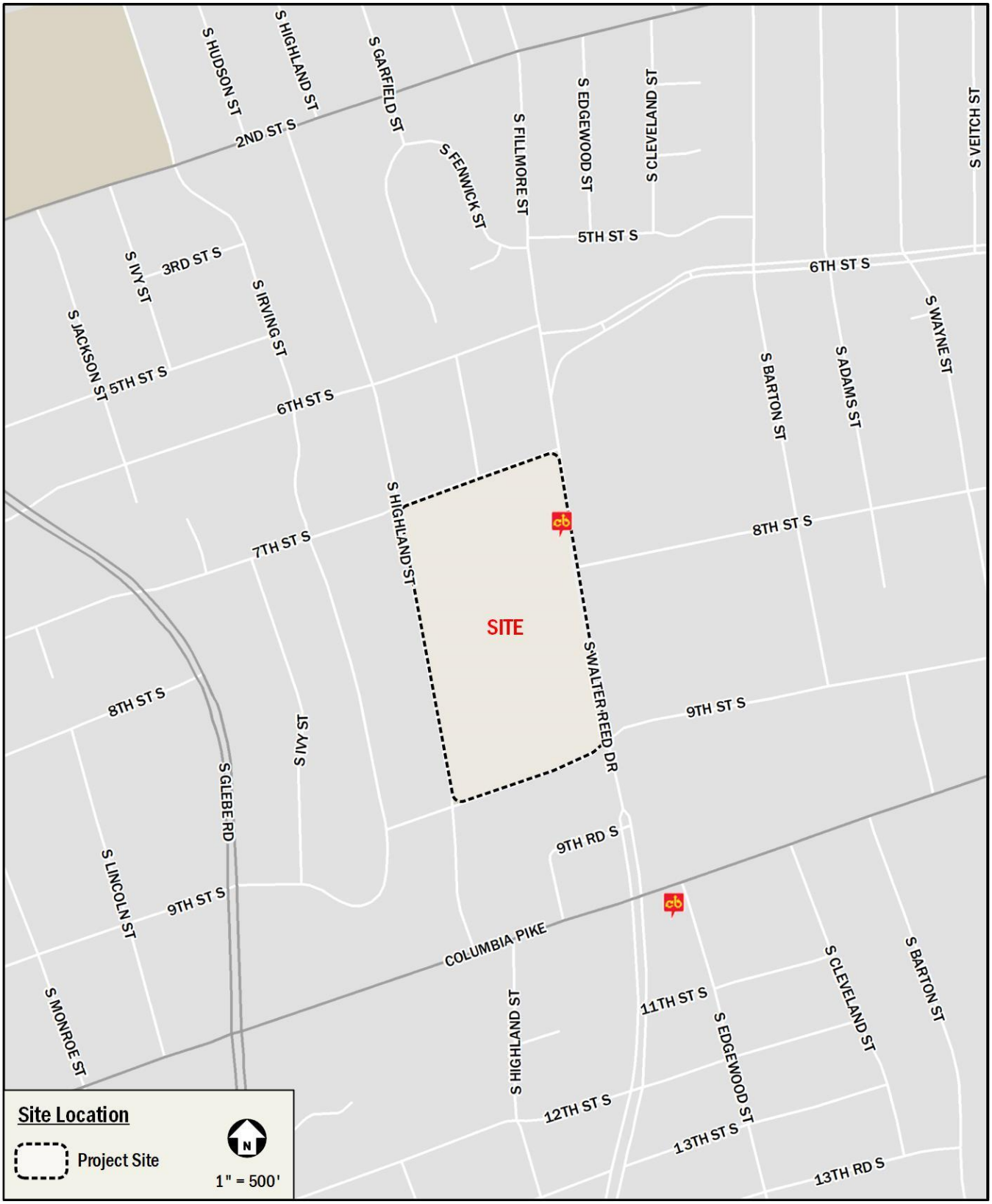

Figure 2: Site Location

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

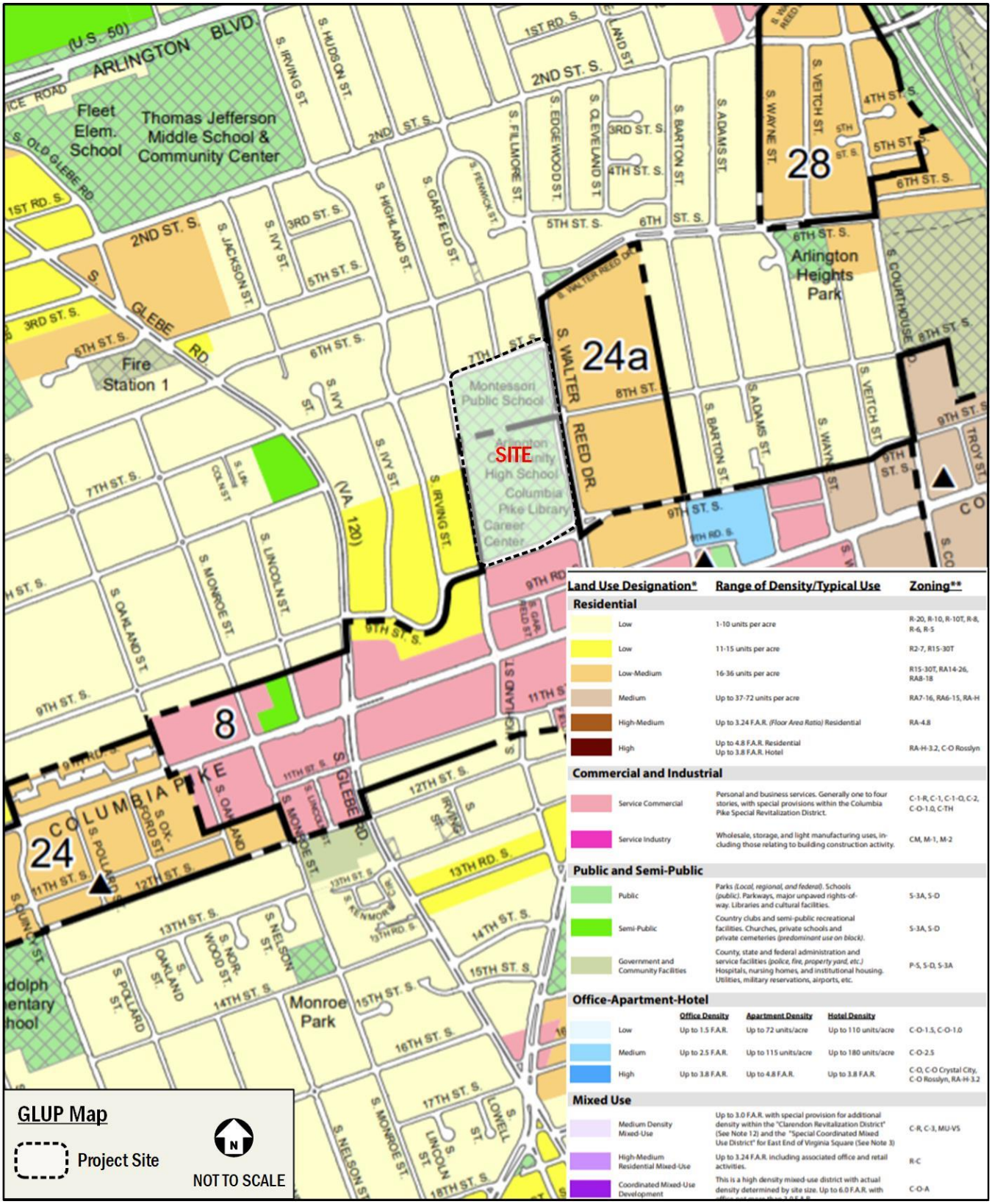

Figure 4: Planned Land Uses (Source: Arlington General Land Use Plan (GLUP), April 2021)

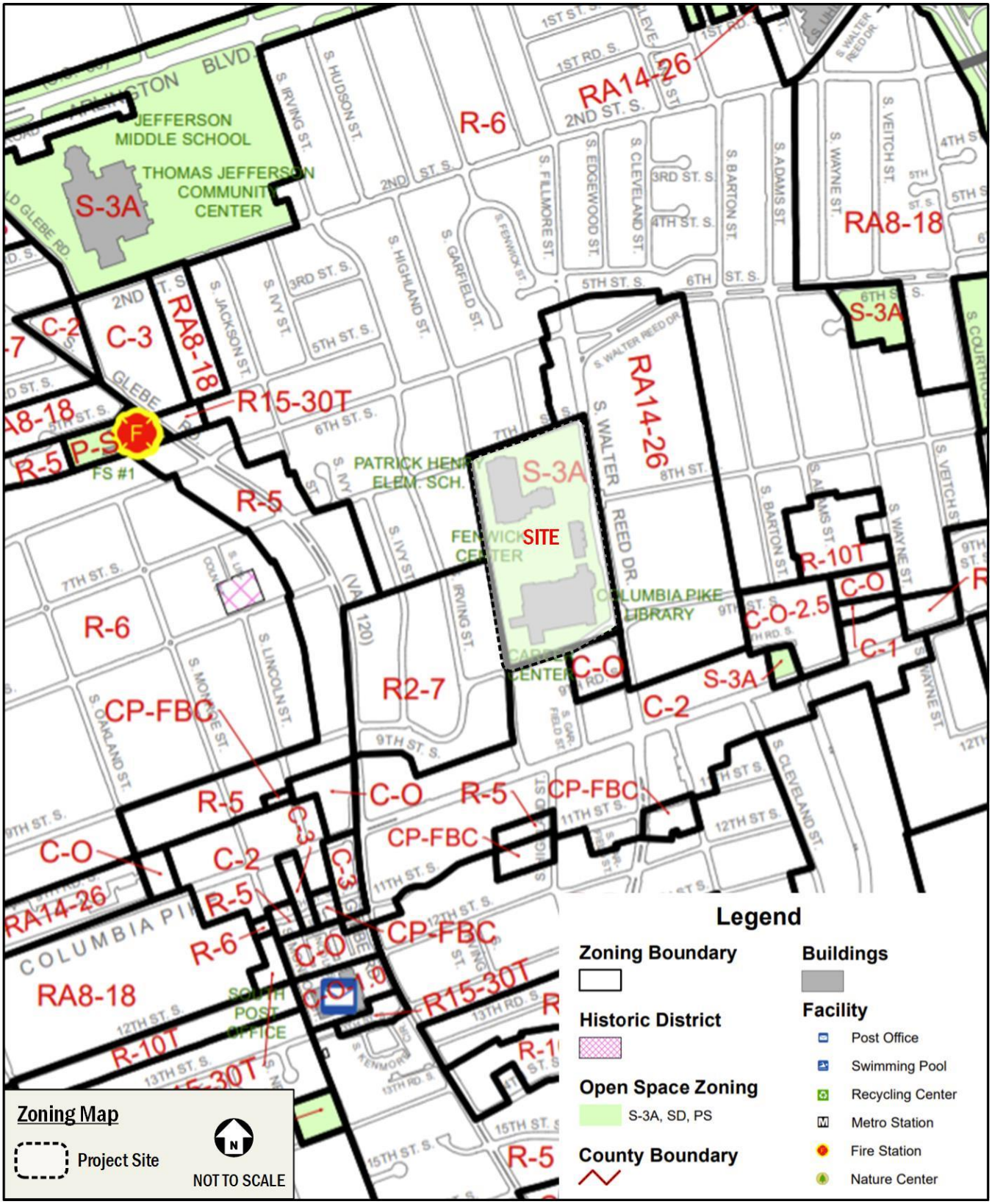

Figure 5: Zoning Map (Source: Arlington County)

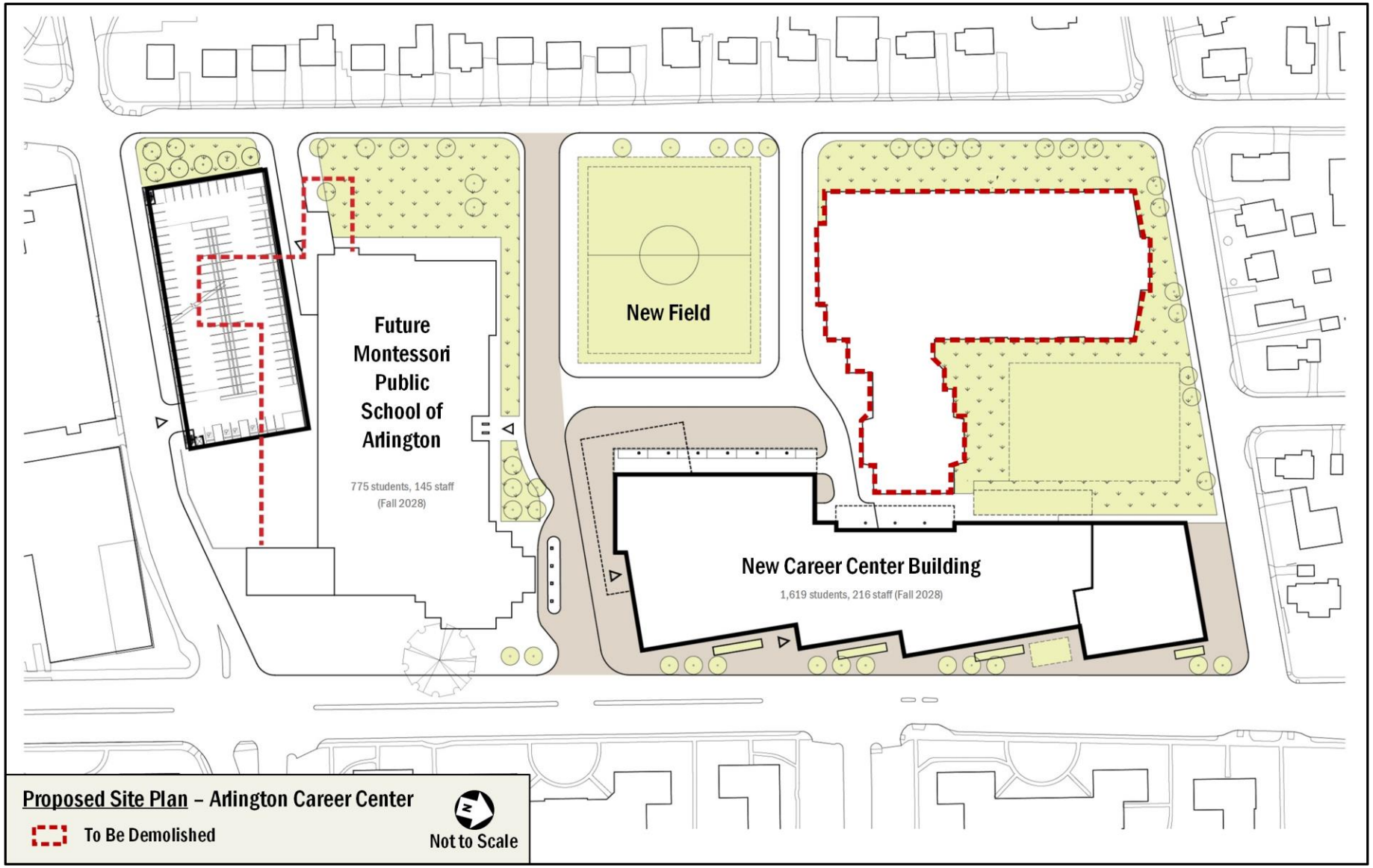

Figure 6: Proposed Site Plan (Fall 2028)

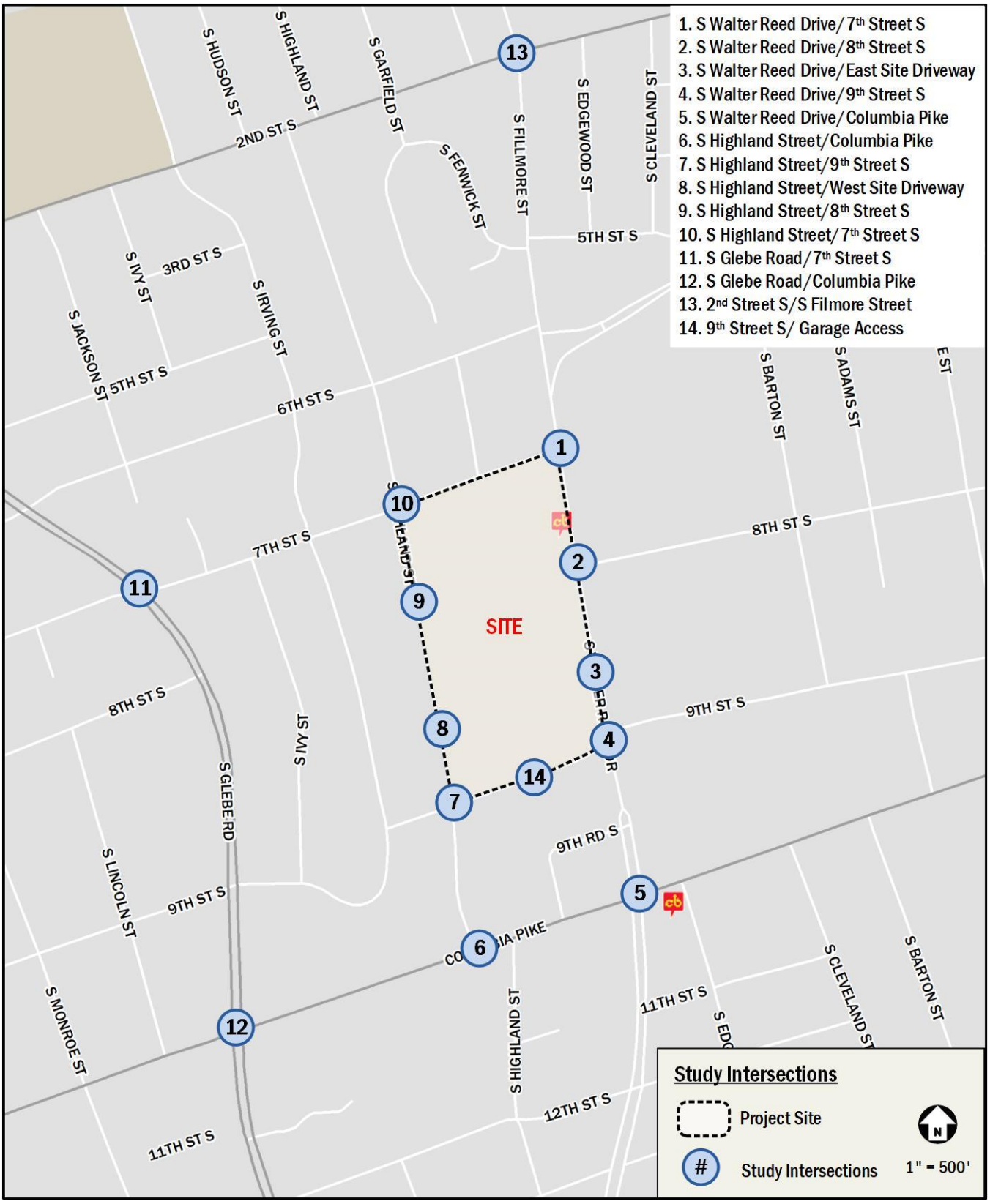

Figure 7: Study Intersections

Study Area Overview

This chapter reviews the existing conditions of the surrounding transportation network and includes an overview of the campus location, including a summary of the major transportation characteristics of the area. 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 campus is surrounded by an extensive regional and local transportation system that that connects students, staff, and visitors of the campus to the rest of Arlington County and surrounding areas.
- The campus is served by public transportation with access to several local and regional bus routes and four Metrorail lines via those bus routes.
- 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-street bicycle facilities, including a bicycle boulevard along 9th Street S, bicycle lanes on S Walter Reed Drive, and sharrows on 12th Street S and S Walter Reed Drive. There are also on-street routes along S Highland Street and 7th Street S.

Major Transportation Features

Overview of Regional Access

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

The campus is accessible from interstate I-395, US Highways such as US-50 (Arlington Boulevard), as well as State Routes such as SR-244 (Columbia Pike), and SR-120 (N Glebe Road). All of these roadways bring vehicular traffic within a half mile of the campus, at which point arterials and local roads can be used to access the campus directly. The main arterials in the vicinity of the campus are Columbia Pike and N Glebe Road.

The campus is located approximately 1.7 miles from the Clarendon Metrorail station, which serves the Orange and Silver Lines, and approximately 2.3 miles from the Pentagon City Metrorail Station which serves the Blue and Yellow Lines. These provide connections to areas in Virginia, Maryland, and the District, including Union Station via a transfer to the Red Line for additional connections to commuter rail such as Amtrak, MARC, and VRE. These rail connections allow for access to much of the DC Metropolitan area and the Mid-Atlantic region. Overall, the campus has access to several regional roadways and transit options, making it convenient to travel between the campus and destinations in Virginia, Maryland, and the District.

The campus is located within two (2) miles of the W&OD Trail and approximately 3.5 miles from the Custis Trail. The W&OD Trail is a 45-mile asphalt-surface paved rail trail, while the Custis Trail is a hilly 4.5-mile-long shared use path which travels along Custis Memorial Parkway and provides connections to the District to the east and to the W&OD Trail and City of Falls Church to the west. These trails make up part of the “Arlington Loop,” which provides local and regional off-street connectivity for bicycles to and from the campus. A detailed review of existing bicycle infrastructure is provided in a later chapter of this report.

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

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.The campus is served by a local vehicular network of low volume neighborhood streets that provide connections from regional roads to the campus.

In addition to two (2) principal arterials – S Glebe Road and Columbia Pike – the site is served by an existing network of local roadways that provide access to the site, including 9th Street S, S Walter Reed Drive, and S Highland Street. The existing site has access points along S Walter Reed and S Highland Street. The proposed development will have an additional access via 9th Street S.

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

There are existing bicycle facilities that connect the site to areas within Arlington, Virginia, and the District. These include a bicycle boulevard along 9th Street S, which includes shared lane markings (“sharrows”), and an on-street bicycle lane between S Glebe Road and S Irving Street. In the vicinity of the site, bicycle lanes are provided on S Walter Reed Drive north of Columbia Pike and on 6th Street east of Walter Reed Drive. There are also signed on-street bicycle routes on S Highland Street and 7th Street S.

In the vicinity of the site, most sidewalks meet Americans with Disabilities Act (ADA) standards as well as 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.

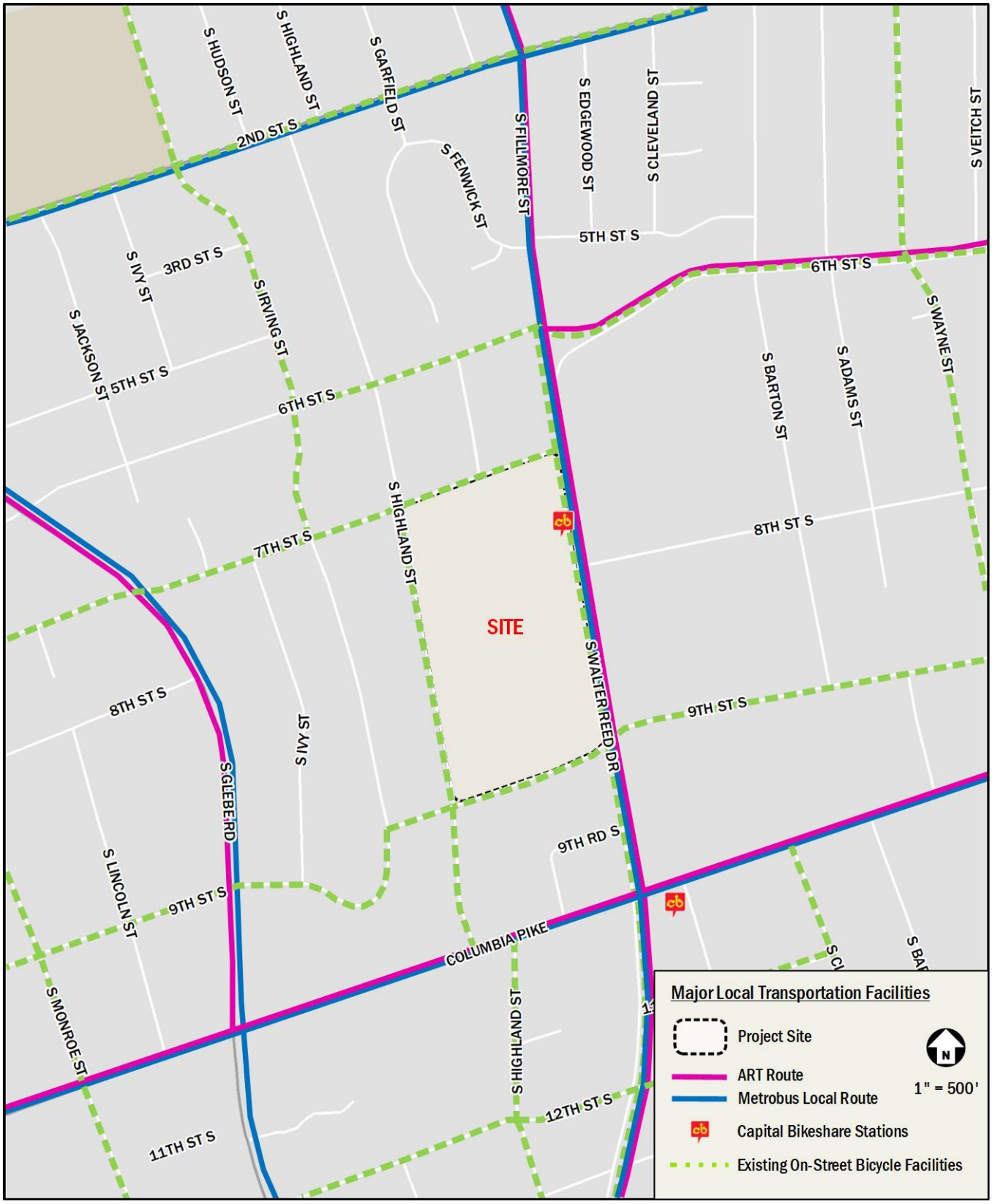

Figure 8: Major Local Transportation Facilities

Car-sharing

Zipcar is currently the only car-sharing company that provides services in Arlington. Zipcar is a private company that provides registered users access to a variety of automobiles. Zipcar has designated spaces for their vehicles, and one Zipcar location is located 0.6 miles from the site. This location and the number of available vehicles is listed in Table 1.

Table 1: Carshare Locations

Zipcar Carshare Location	Number of Vehicles
Columbia Pike & S Wayne Street	2 vehicles

Shared Mobility

As of February 2023, five (5) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies provide Shared Mobility Device (SMD) service in Arlington County: Bird, Veo Access, Lime, Link/Superpedestrian, and Spin. These SMDs are provided by private companies that give registered users access to a variety of e-scooter and e-bike options. These devices are used through each company-specific mobile phone application. Many SMDs do not have designated stations where pick-up/drop-off activities occur like with Capital Bikeshare; instead, many SMDs are parked in public space, most commonly in the “furniture zone” (the portion of sidewalk between where people walk and the curb, often where you’ll find other street signs, street furniture, trees, parking meters, etc.). At this time, SMD programs are underway in Arlington County, the District, Fairfax County, the City of Alexandria, and Montgomery County.

Walk Score and Bike Score

Walkscore.com is a website that provides scores and rankings for the walking, biking, and transit conditions for an area. This project location has a walk score of 74 (or “Very Walkable”), a bike score of 87 (or “Very Bikeable”), and a transit score of 43 (or “Some Transit”). Figure 9 shows how the neighborhood borders in relation to the campus location and displays a heat map for walkability and bikeability.

Walk Score’s methodology analyzes hundreds of walking routes to nearby amenities. Points are awarded based on the distance to amenities in each category. Amenities within a five-minute walk (a quarter mile) are given maximum points. Walk Score also measures pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density. It does not incorporate details such as crosswalk or sidewalk quality. The campus is situated in an area with a “Very Walkable” walk score because of the abundance of neighborhood serving retail locations that are in close proximity, where most errands can be completed by walking.

Bike Score’s methodology measures whether an area is particularly good for biking. For a given location, a bike score is calculated by measuring bicycle infrastructure (lanes, trails, etc.), hills, destinations and road connectivity, and the number of bicycle commuters. The campus is situated in an area with a “Very Bikeable” bike score due to its proximity to low volume residential roadways, number of bicycle lanes and trails, and flat topography.

Transit Score’s methodology measures how well a location is served by public transit. Transit Score assigns a "usefulness" value to nearby transit routes based on the frequency, type of route (rail, bus, etc.), and distance to the nearest stop on the route. The "usefulness" of all nearby routes is summed and normalized to a score between 0 - 100. The campus is situated in an area with “Some Transit” transit score based on the neighborhood’s proximity to multiple bus lines and distance to the nearest Metrorail station (Clarendon) which is located approximately 1.7 miles from the campus.

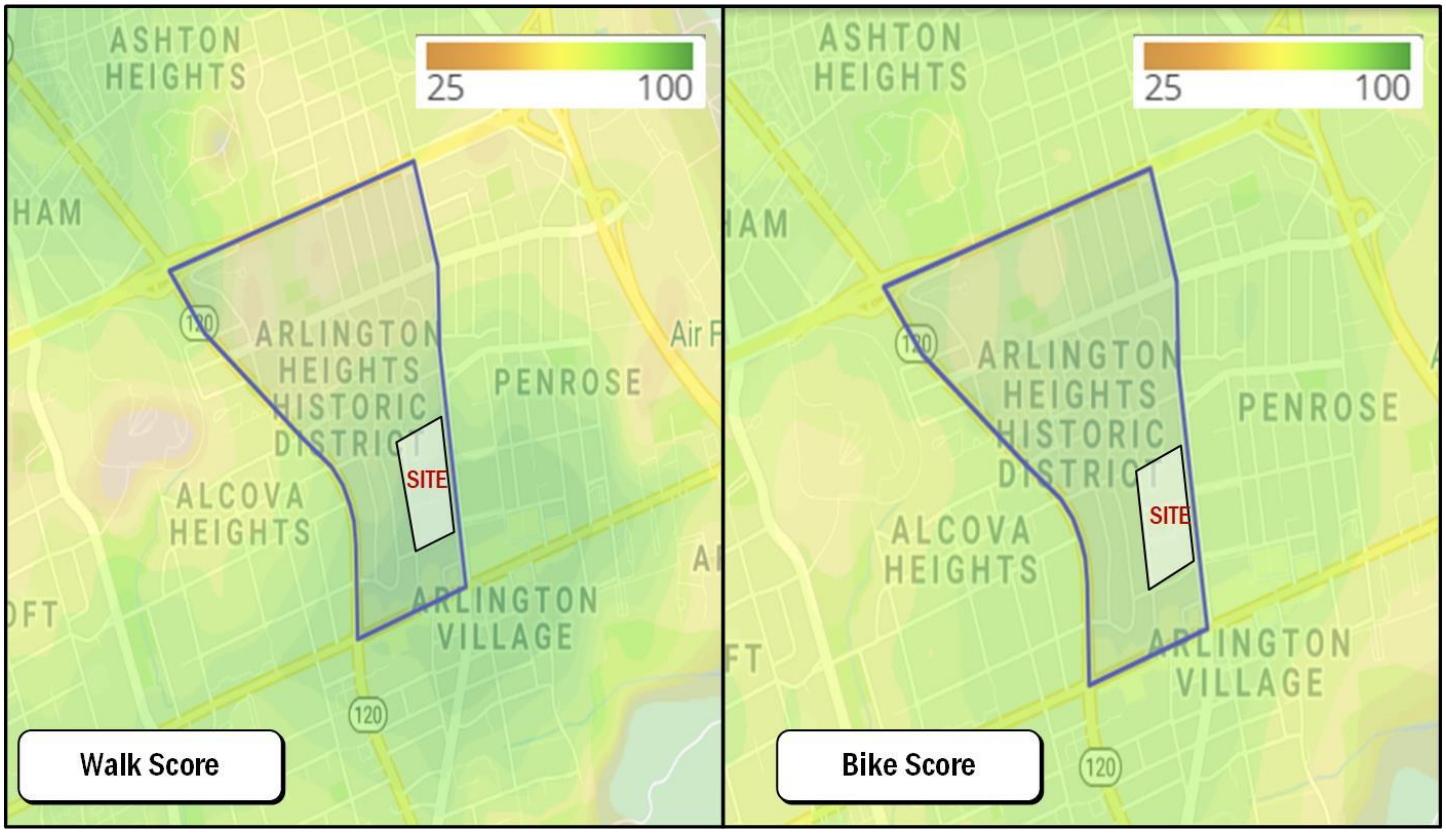

Figure 9: Summary of Walkscore and Bikescore

Future Projects

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

County-wide Initiatives

Arlington Master Transportation Plan (2019)

The Arlington County Master Transportation Plan (MTP), adopted in 2011 and updated in 2019, outlines goals to improve various modes of transportation throughout the County. The MTP identifies goals and objectives for each mode to improve safety and access for all users, particularly for pedestrians, bicyclists, and transit users. The Arlington Master Transportation Plan's recommended policies for transportation in the County that apply to the Arlington Career Center campus 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 vicinity of the Arlington Career Center campus are consistent with these policies:

- Transit:
  - Develop a Premium Transit Network of high-frequency service connecting major destinations
  - Consolidate bus stops and construct new, high-quality, unique transit stations along Columbia Pike
- Bicycle:
  - Implement wide multi-use trails, or wide sidewalks, along at least one side of Columbia Pike east of S Wayne Street and west of Four Mile Run.
  - Extend the existing bike boulevards on 9th Street S and 12th Street S westward to connect with the

W&OD Trail and eastward to connect with eh Washington Boulevard Trail or Arlington View neighborhood.
    - Develop an enhanced bicycle facility on S Walter Reed Drive and Fillmore Street between N Pershing Drive and S Monroe Street
- Transportation Demand Management:
    - A TMP will be implemented for the development to discourage auto travel and encourage the travel by other modes.

In direct relation to the Arlington Career Center, these recommendations would create additional multi-modal capacity and connectivity to/from the site.

Local Initiatives

South Walter Reed Drive Complete Streets Improvements

This project's goal is to create permanent multimodal improvements to the painted road diet and address speeding issues along S Walter Reed Drive. Specific project elements include:

- Redesigning the intersection geometry at 5th Street S and 9th Street S with Walter Reed Drive to increase safety for all users
- Signalization of 9th Street S
- Redesign driveway and access at 8th Street S
- New striping and signage
- Replaces existing curb ramps with ADA compliant ramps and adds new crosswalks
- Improve bus stop locations and infrastructure
- Improve pedestrian and bicycle facilities along S Walter Reed Drive

Columbia Pike Bike Boulevards

This project's goal is to implement a bike boulevard parallel to Columbia Pike along 9th Street S and 12th Street S. Key elements of bike boulevards include:

- Located on low-volume and low-speed streets
- Logical, direct, and continuous routes
- Marked with clear signage and street markings
- Provide convenient access to desired destinations
- Provide comfortable and safe crossings for bicycles and pedestrians

Due to limited space, traffic volume, and transit operations, Columbia Pike cannot accommodate extensive biking facilities. This project will significantly improve pedestrian safety at challenging intersections for people walking to and from the Arlington Career Center campus.

Columbia Pike Multimodal Street Improvements

This project's goal is to make Columbia Pike a safer, more accessible route for all users. Columbia Pike, between S Joyce Street and the Arlington-Fairfax County Line, will become a "Complete Street" that balances all modes and supports high-quality, high-frequency transit service. Specific project elements include:

- Modified 56-foot street cross-sections with reconfigured travel and transit lanes, medians, and left-turn lanes
- Signalized and un-signalized intersections
- On-street parking
- Enhanced pedestrian sidewalks and crossings
- Parallel bike boulevards
- Installation of a "Super Stop" transit stop between S Walter Reed Drive and S Edgewood Street, as well as additional "Super Stops" near the intersections with S Glebe Road and S Highland Street

Columbia Pike Premium Transit Network

As part of the County's 10-year plan for transit improvements, the Columbia Pike Premium Transit Network will offer bus service that is fast, frequent, reliable, and easy to use. Key features include simplified routes, increased weekday and weekend service, and new one-seat bus ride from Skyline to Pentagon City-Crystal City. The Premium Transit Network will provide three types of service to meet the needs of different riders: (1) Local connector service, (2) Limited-stop service, and (3) neighborhood connections. This project intends to move more people, enhance connectivity, and provide new travel choices between Columbia Pike, Pentagon City, and Crystal City. Additional amenities include:

- Enhanced transit stations
- Off-vehicle fare collection to speed service by reducing dwell times at bus stops
- Transit signal priority to reduce delays for buses at signalized intersections
- Branded vehicles and information to make it easier to identify and understand

Planned Improvements

There are several potential development projects in the vicinity of the Site. Of the background developments considered, three (3) were ultimately included and are described below. For capacity analysis and consistency with Arlington County and industry

standards, only approved developments expected to be completed prior to the planned development with an origin/destination within the study area were included.

Gilliam Place

This project consisted of a redevelopment of the existing site at the northwest corner of the Columbia Pike and S Lincoln Street intersection into a new mixed-used building containing 8,000 SF of ground-floor retail, 173 residential units, 205 underground parking spaces, and approximately 6,400 SF of private open space. This development was determined to be completed prior to data collection in November 2021. As such, the trips generated by this development were assumed to be captured during data collection and are not included for the traffic analysis.

Westmont Shopping Center

This project consists of a redevelopment of the existing site at the northwest corner of the Columbia Pike and S Glebe Road intersection into a new mixed-used building containing approximately 250 dwelling units, 23,000 SF of ground-floor retail, and 345 underground parking spaces. The Westmont Shopping Center development is expected to generate 99 weekday AM peak hour vehicle trips and 152 weekday PM peak hour vehicle trips based on the Multimodal Transportation Study prepared by Wells + Associates dated December 14, 2018.

2400 Columbia Pike

This project consists of a redevelopment of the existing 11,398 SF of retail into a new multi-use building containing 105 residential units, 12,997 SF of ground floor retail, and two levels of below-grade parking. The expected build out year was initially projected to occur in 2017; however, construction has not yet begun. The 2400 Columbia Pike development is expected to generate 194 weekday AM peak hour vehicle trips and 299 weekday PM peak hour vehicle trips based on the Traffic Impact Study prepared by Wells + Associates dated October 20, 2014.

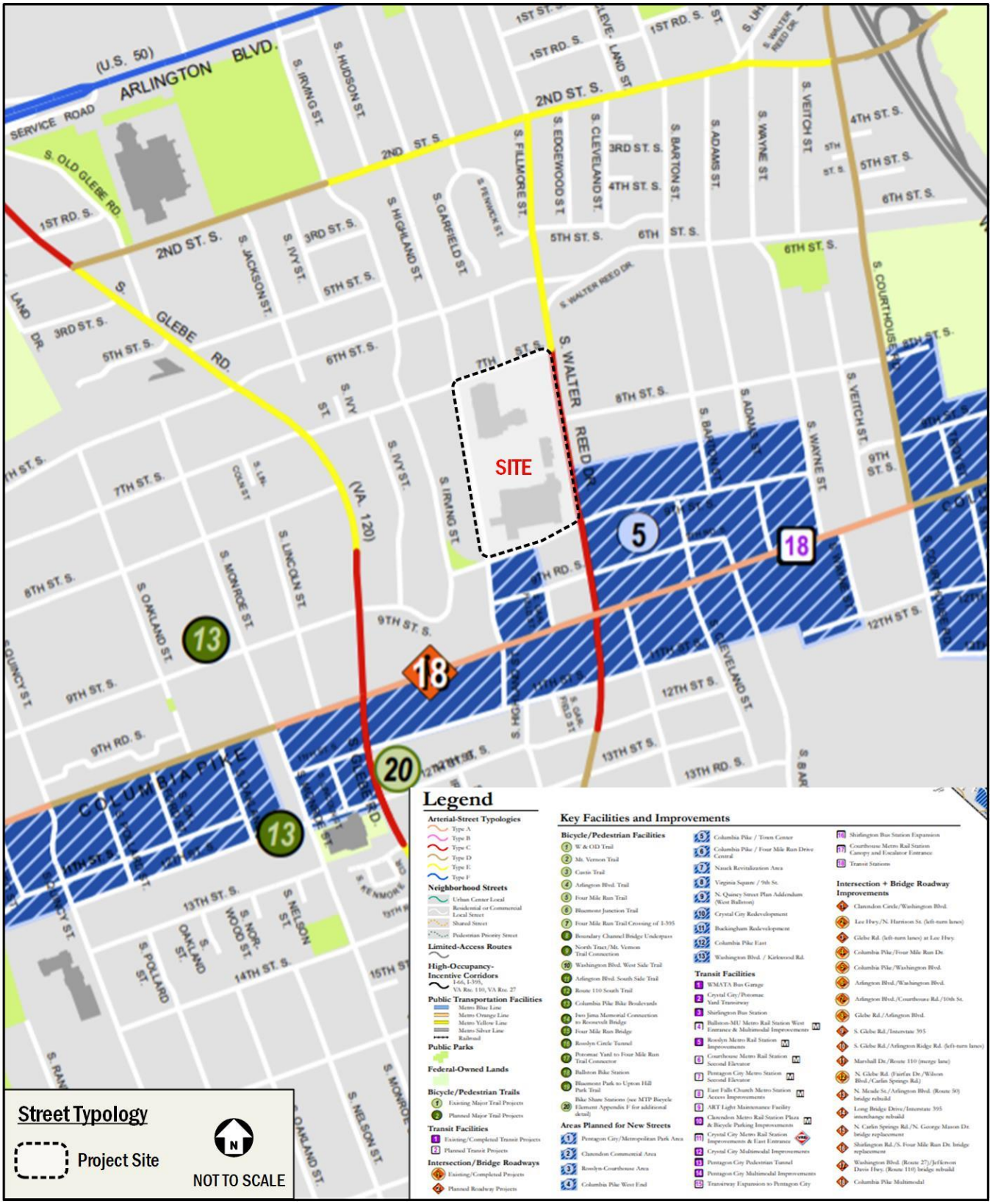

Figure 10: Street Typology (Source: Arlington Master Transportation Plan, 2011)

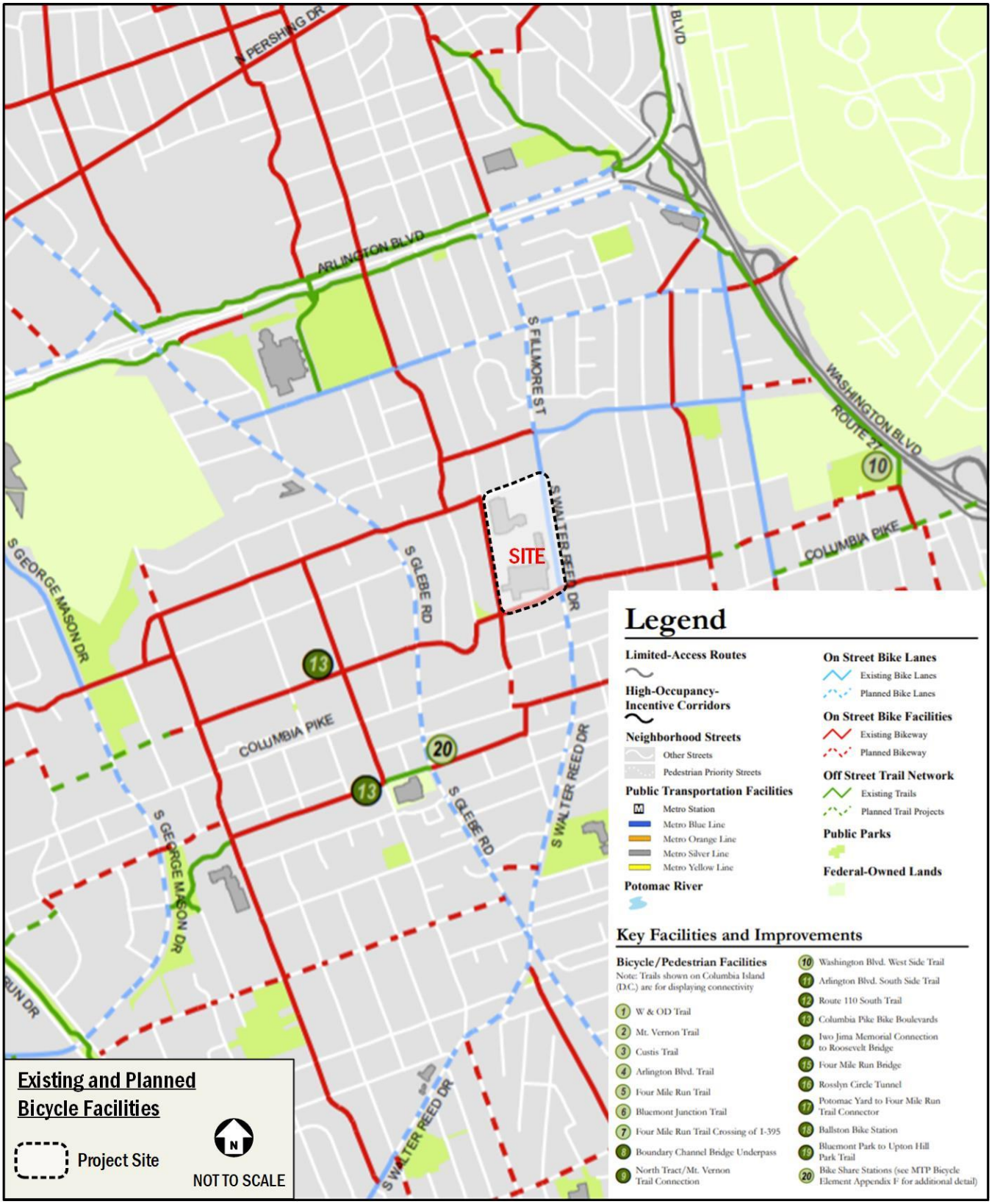

Figure 11: Existing and Planned Bike Facilities (Source: Arlington Master Transportation Plan, 2019)

Project Design

This chapter reviews the transportation components of the Arlington Career Center (CC) campus including the proposed site plan and access points. It includes descriptions of the site's vehicular access, bus loading and unloading, parking, student pick-up/drop-off as well as bicycle and pedestrian facilities.

Existing Site Design

The campus is home to several buildings and programs as shown in Figure 12. The CC program itself, located in the southernmost building on the campus, houses a Continuing Education Program (CTE), the Arlington Tech high school program, and several additional programs and services. An overview of the high school programs available in the CC building is shown in Table 2. Attached to the CC building is the Columbia Pike Branch Library, a public library. On the northern end of the campus is the Montessori Public School of Arlington (MPSA), and between the CC building and MPSA along Walter Reed Drive is the Fenwick building, which houses Arlington Community High School (ACHS). Between ACHS, MPSA, and the CC building is a surface parking lot and internal road network that accommodates school bus loading/unloading areas as well as two (2) temporary classroom buildings currently occupying part of the surface parking lot. Existing uses on the campus are served by 151 on-site parking spaces in the main lot in addition to 100 leased parking spaces in the nearby Ethiopian Community Development Council (ECDC) parking garage. Table 2 provides an overview of the existing student and staff populations across all programs on the CC campus.

Table 2: Overview of Career Center Programs

Arlington Tech *Bell Times: 8 AM to 3:10 PM*	A rigorous, project-based learning, high school program that prepares students to succeed in college and in the workplace through collaborative problem solving. (Grade 9-12) Regular school bus transportation is available for students that live more than 1.5 miles for the CC. After school bus transportation is also available to each comprehensive high school for extracurricular activities.
Academic Academy *Bell Times: 8 AM to 3:10 PM*	Program designed for students as an alternative to the comprehensive high school; designed with small class settings, low teacher/student ratio, individualized teacher mentoring, and structured academics Students may attend the Academy for five periods and return to the comprehensive high school for an additional two classes, or students may choose to spend the entire academic day at the CC.
English Learner (EL) Institute *Bell Times: 8 AM to 3:10 PM*	For students (under age 21) who are interested in completing a high school diploma while learning valuable career and technical skills. (Grades 9-12)
Program for Employment Preparedness (PEP)	For special needs students who have completed 4 years of high school but have not yet received a diploma. Students learn independent living and work readiness skills within community settings, tailored to the student's needs. Students attend the CC full-time, two days a week.
Career and Technical Education (CTE) Program	The CC offers the opportunity to become certified or licensed in a chosen field. Most of these certifications, occupational competency assessments and licensures, when passed, qualify students for high school selected verified credits and seals of achievement on their diplomas, as shown. Students attend part-time from their comprehensive high school (2 periods/day, in 3 blocks). Transportation is provided to/from the CC by bus (in three shifts throughout the school day).

Existing Observations

Gorove Slade staff conducted field observations of the campus on November 17, 2021. These observations showed that outside of school arrival and dismissal times, the campus does not generate a significant amount of traffic. During arrival and dismissal times though, an increased number of vehicles both enter and exit the campus and drive on surrounding roads. Parents and guardians dropping off students in the morning and picking them up in the afternoon unload students in several locations around the site, spreading out this activity and thus the traffic load. Designated curbside space exists for this activity along S Highland Street, and Gorove Slade staff observed significant vehicle queuing that spilled back as far as the bus-only entrance at the existing CC building during peak arrival/dismissal as shown in Figure 13. Although this activity happens in several locations and not all in the designated area along S Highland Street, Gorove Slade staff observed significant issues only along northbound S Highland Street. CC staff did note challenges with drivers picking up students in bus-only areas particularly during afternoon dismissal as shown in Figure 13; however, Gorove Slade staff did not observe this having a

significant impact on pick-up/drop-off activities. In general, parents using alternative pick-up/drop-off locations were not observed creating congestion issues elsewhere and spreading out traffic demand over several locations may decrease negative impacts along S Highland Street.

Project Summary

The proposed redevelopment of the Career Center campus will include:

- The construction of a new CC building along S Walter Reed Drive between the Columbia Pike Branch Library and 7th Street S to accommodate an expanded Arlington Tech program as well as other programs currently housed in the existing CC building for a future full enrollment of up to approximately 1,619 CC students and 216 faculty/staff;
- The relocation of MPSA to the existing CC building which will be partially demolished and refurbished to accommodate a future full enrollment of up to approximately 775 MPSA students and 145 faculty/staff as well as a new parking garage for the CC campus;
- The demolition of the Fenwick building (currently ACHS), the existing surface parking lot, and the existing MPSA building to accommodate the new CC building, a new athletic field, and open space, respectively;

Parking and loading access to the site will be provided from driveways along S Walter Reed Drive and S Highland Street. Additionally, the Career Center redevelopment has been designed in conjunction with the South Walter Reed Drive Complete Streets Improvements project which will include protected bicycle lanes along S Walter Reed Drive and the signalization of the nearby intersection of S Walter Reed Drive and 9th Street S along the site's frontage. The placement of the new CC building's main entrance on S Walter Reed Drive near both a bus stop and protected bicycle lanes strengthens the multimodal design of the CC campus redevelopment.

As shown in Figure 6, the proposed development will eliminate the existing curb cut and site driveway at 8th Street S and S Walter Reed Drive, providing through two-way access along the site's southern driveway from S Highland Street to S Walter Reed Drive in front of the existing CC (future MPSA) building, and will create an internal one-way, northbound driveway loop from the southern driveway to where the existing 8th Street S driveway meets S Highland Street. The proposed parking garage will be accessed from 9th Street S. As part of the proposed curbside management plan for the project, the primary pick-up/drop-off locations for elementary (MPSA) and high school (CC) students are proposed along S Highland Street and S Walter Reed Drive respectively. Additional student/staff pick-up/drop-off spaces are proposed along 9th Street S as well as time-restricted on-street parking along 7th Street S as detailed later in this chapter. Full build-out of the project is expected by Fall 2028.

Table 3 provides an overview of the existing and proposed student and staff populations for the Career Center campus.

Table 3: Existing and Future CC Campus Populations

Location	Existing (Fall 2021)		Future (Fall 2028)	
	Students	Staff	Students	Staff
Career Center	**519**	**179**	**1,619**	**216**
Arlington Tech	*376*		*1,050*	
Academic Academy	*47*		*60*	
EL Institute	*32*		*70*	
PEP	*54*		*70*	
CTE (per period)			*300*	
Uncategorized	*10*		*69*	
MPSA	**488**	**91**	**775**	**145**
ACHS	**178**	**35**		
Library	**14,559 sf**		***relocated***	
Site Total	**1,185**	**305**	**2,394**	**361**

Overall Transportation Strategy

The redevelopment of the Career Center campus presents an opportunity to optimize transportation operations to support a more integrated, shared campus between the CC and MPSA programs. Specific to transportation, this MMTA makes recommendations based on its three (3) main goals:

1. Safety of students
2. Right-sizing Career Center transportation infrastructure
3. Minimizing impacts

The recommendations contained within this MMTA and detailed in the following sections are all based around these specific transportation goals, anchored in the overall goal of providing flexibility in transportation operations.

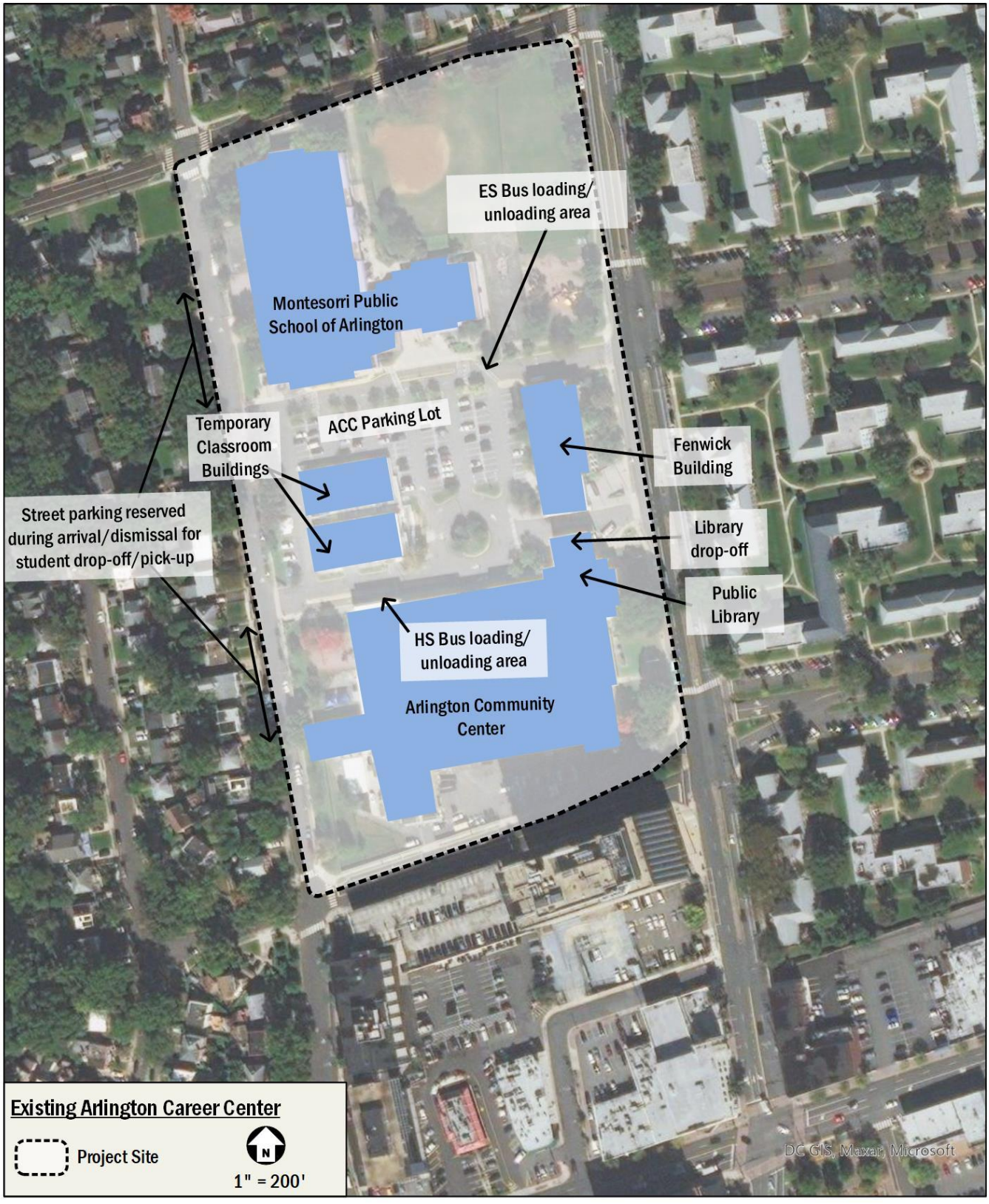

Figure 12: Existing Arlington Career Center Campus

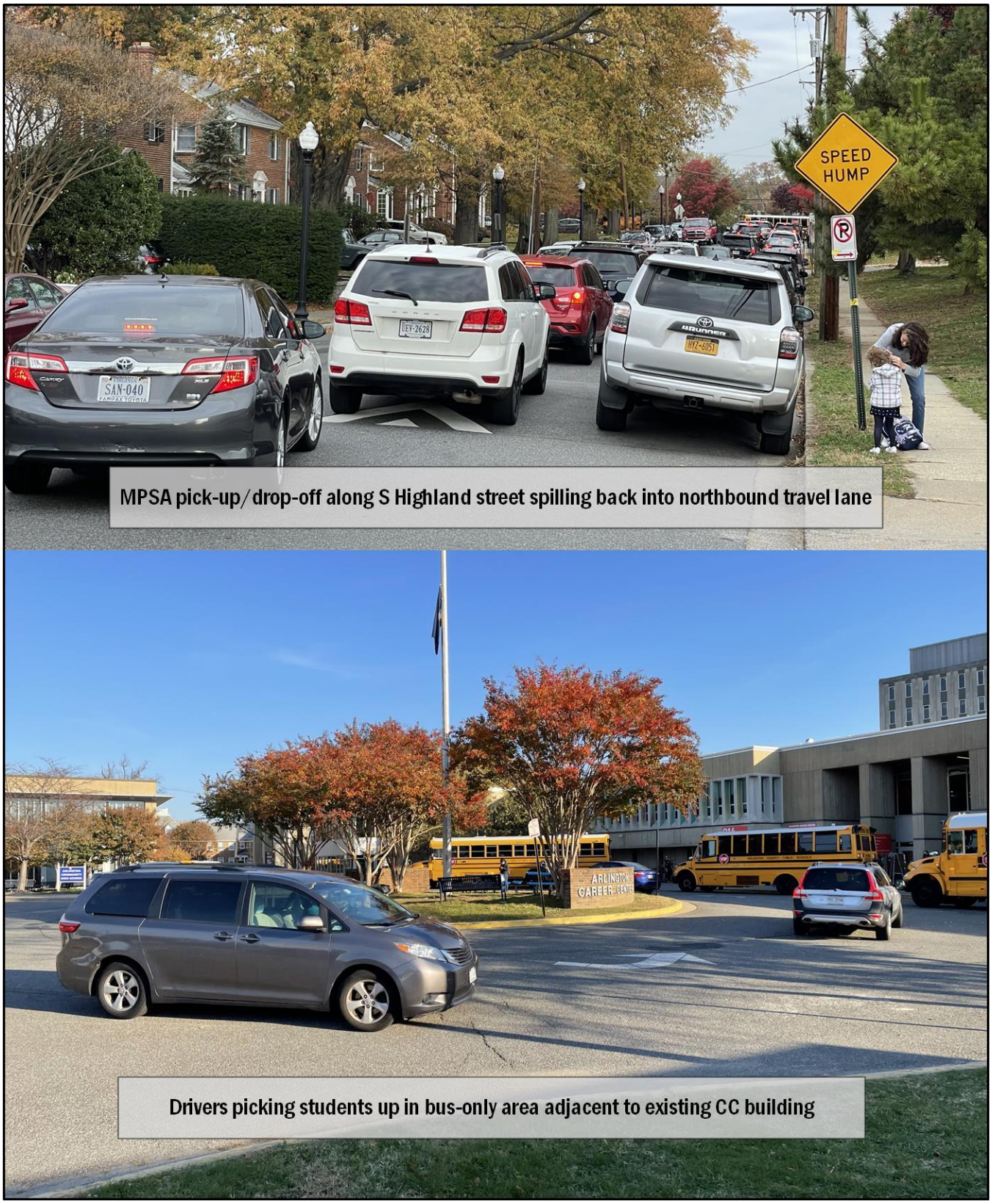

Figure 13: Photos of Arrival/Dismissal

Site Access and Circulation

Pedestrian Access

Under existing conditions, primary pedestrian access to the Career Center campus occurs along S Walter Reed Drive and S Highland Street. ACHS and the public library are accessed directly from S Walter Reed Drive, and MPSA is accessed directly from S Highland Street with alternative access along the northern campus driveway between S Walter Reed Drive and S Highland Street. The existing CC building is primarily accessed via the southern driveway between S Highland Street and Walter Reed Drive.

Expected site access and circulation for the CC campus are shown in Figure 14. Access to the existing CC (future MPSA) building will remain largely unchanged with primary pedestrian access from both S Highland Street and S Walter Reed Drive facilitated along the existing southern driveway. primary pedestrian access to the new CC building will occur primarily along S Walter Reed Drive with secondary access from 7th Street S as well as from S Highland Street via internal pedestrian connections. The walking distance from the new garage to the new main CC building entrance is approximately 700 feet and will have appropriate lighting.

Bicycle Access

Under existing conditions, short-term bicycle racks are available near building entrances, and bicycle access largely mirrors primary pedestrian access.

Bicycle access to the site is primarily expected to occur via S Walter Reed Drive for all uses with secondary access along the southern driveway between S Highland Street and S Walter Reed Drive. Expected site access and circulation for the CC Campus are shown in Figure 14.

This MMTA recommends that APS provide each program's secure long-term bicycle parking on the ground floor of their respective buildings or consolidate all campus-wide long-term bicycle parking on the first level of the garage. Short-term bicycle parking spaces should be in highly visible locations near building entrances.

Vehicular Access

Under existing conditions, the CC campus is primarily accessible from four (4) driveways – two (2) along the western side on S Walter Reed Drive and two (2) along the eastern side on S Highland Street. The segment of 8th Street S between S Highland Street and S Walter Reed Drive is an internal, one-way westbound roadway through the campus providing access to the on-site surface parking lot from S Walter Reed Drive. During arrival and dismissal times it also serves as the designated school bus loading/unloading zone for MPSA. Additional access to the campus is provided south of this internal segment of 8th Street S via two (2) internal roadway segments that connect S Highland Street and S Walter Reed Drive via an internal traffic circle. The southern driveway on S Highland Street is signed as an eastbound-only, bus-only entrance at all times with the segment between this driveway and the traffic circle serving as the designated school bus loading/unloading zone for the existing building. Additionally, the southern driveway on S Walter Reed is signed as exit-only between 7:30 AM and 8:30 AM. In practice, many vehicles use these driveways to access the on-site surface parking lot and conduct ad hoc pick-up/drop-off along the internal road network, particularly during afternoon dismissal. Additionally, the CC campus has a driveway on 9th Street S to a small surface parking lot on the south side of the building largely used for storage rather than internal connectivity.

As shown in Figure 14, the proposed redevelopment plan eliminates the existing site driveway at 8th Street S and S Walter Reed Drive. The plan provides two-way access along the site's southern driveway from S Highland Street to S Walter Reed Drive in front of the existing CC (future MPSA) building and creates an internal one-way, northbound driveway loop from the southern driveway to where the existing 8th Street S driveway meets S Highland Street. At the existing southern driveway on S Walter Reed Drive, westbound school bus traffic will be permitted to enter toward the internal driveway loop to load/unload students. All internal campus traffic will be restricted to school buses and authorized vehicles only. The proposed parking garage will be accessed from 9th Street S, approximately at the location of the existing driveway.

Loading

Under existing conditions, access to loading and trash removal is largely facilitated via the internal campus road network for ACHS and MPSA with the existing storage lot accessed from 9th Street S serving the existing CC building.

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

- School
  Schools with more than 6,000 square feet are required to provide one (1) loading space.

Loading access for the proposed concept design is shown in Figure 14 and is as follows:

- Provide loading access behind the new CC building along the internal driveway loop; and
- Provide loading access between the parking garage and the existing CC building from S Highland Street.

Truck Routes and Access

Truck routing to and from the campus will primarily be via S Highland Street and S Walter Reed Drive with internal loading access occurring from the driveway loop via S Highland Drive and S Walter Reed Drive.

Parking

Under existing conditions, the Career Center campus is served by 151 on-site parking spaces in the main lot (a decreased number due to the presence of the temporary classroom buildings) as well as 100 leased parking spaces in the nearby ECDC parking garage. Additional on-street parking is available nearby along adjacent streets as detailed later in this report in the ***Parking*** chapter.

Per the Arlington County Zoning Ordinance, the following outlines the vehicular parking requirements for the proposed CC campus under S-3A, Public District requirements:

- High School
  One (1) space per 10 students of design capacity; plus, one (1) space per 10 fixed seats, or other vantage accommodations for spectators, for public assembly; plus, one space (1) per 50 square feet (sf) of floor area for auditoriums, multipurpose rooms, gymnasium, or other facilities used for public assembly but having no fixed seating arrangement specified
- Elementary School
  One (1) space per 7.5 students of design capacity for employee parking; plus, one (1) space per 40 students of design capacity for visitor parking

Based on the student and staff population as outlined in Table 3, the minimum zoning requirement for the Career Center campus is as follows:

- High School. With up to 1,619 high school students and approximately 11,000 square feet of public assembly space anticipated for the new CC building, a minimum of 544 parking spaces would be required.
- Elementary School. With up 775 elementary school students anticipated for the new MPSA building, a minimum of 103 employee spaces and 19 visitor spaces or 122 total spaces would be required.

The anticipated minimum parking requirement for the proposed Career Center campus would be at least 666 off-street parking spaces based on S-3A, Public District requirements.

Based on the parking model estimates developed by Gorove Slade staff for the future CC campus, future peak parking demand ranges from 336 to 391 spaces including all faculty, staff, visitors, and students – significantly lower than what would typically be required under S-3A, Public District requirements. The lower end of this range assumes a successfully implemented, enhanced Transportation Demand Management (TDM) program that reduces the site's future auto mode split, while the higher end of this range assumes the existing/base auto mode split based on APS Go! Data.

This report recommends setting the campus's minimum off-street parking requirement at 326 spaces to accommodate all future staff and visitor parking demand as well as the estimated storage needs of the CC auto program. Existing on-street parking within the vicinity of the CC campus will accommodate student parking. The existing and future parking demand is explored in more detail in the ***Parking*** chapter of this report.

Staff Parking

Under existing conditions, 127 staff parking spaces are provided on the main surface lot on the CC campus with an additional 100 spaces available in the nearby ECDC parking garage for a total of 227 parking spaces available to CC, MPSA, and ACHS staff. Based on data collection from November 2021 and the parking model developed by Gorove Slade staff, staff parking demand was estimated to be 223 spaces under existing conditions. It should be noted that existing demand by ACHS staff was evaluated while developing the parking models but is excluded for direct comparison of existing and future CC campus conditions, as ACHS will no longer exist in the future.

As a result of this project, staff parking demand is projected to increase to between 260 and 298 parking spaces, a net increase of 37 to 75 parking spaces under Enhanced and Base TDM conditions, respectively.

See the ***Parking*** chapter of this report for more details on these projections.

Student Parking

Under existing conditions, there are no spaces reserved for student parking for the CC campus, on- or off-site. Based on data collection from November 2021 and the parking model developed by Gorove Slade staff, student parking demand was estimated to be 42 spaces for CC students under existing conditions. It should be noted that existing demand by ACHS students was evaluated while developing the parking models but is excluded for direct comparison of existing and future CC campus conditions, as ACHS will no longer exist in the future .

As a result of this project, student parking demand is projected to increase to between 53 and 70 parking spaces, a net increase of 11 to 28 parking spaces under Enhanced and Base TDM conditions, respectively.

See the ***Parking*** chapter of this report for more details on these projections.

Only vehicles with county stickers, staff parking passes, or guests with parking passes will be permitted to park on-campus. If students drive to the CC campus, they will be required to find parking along the nearby streets or rely on other modes.

Visitor Parking

Under existing conditions, 24 parking spaces are provided for library and visitor parking on the main surface lot on the CC campus. Based on data collection from November 2021 and the parking models developed by Gorove Slade staff, library and visitor parking was estimated to be 14 and 23 spaces, respectively, under existing conditions. It should be noted that existing demand by the library was evaluated while developing the parking model but is excluded for direct comparison of existing and future CC campus conditions, as the library will be relocated elsewhere in the future.

See the ***Parking*** chapter of this report for more details on these projections.

A summary of the existing parking supply as well as existing and projected parking demand is shown in Table 4.

Table 4: Proposed Parking Allocation

Use	Existing Supply	Demand	
		Existing	Future
Staff[1]	227	223	260-298
Student	0	42	53-70
Visitor	24	23	23
Total	**251 spaces**	**288 spaces**	**336-391 spaces**

[1] Includes 100 spaces off-site in the ECDC garage

Curbside Management

A review of the existing curbside management was conducted along the blocks directly adjacent to the CC campus as shown in Figure 15. Currently, approximately 178 on-street parking spaces are provided along the campus frontages on 9th Street S, S Walter Reed Drive, S Highland Street, and 7th Street S, distributed as follows:

- 84 unrestricted parking spaces;
- 30 time-restricted parking spaces;
- 35 metered parking spaces;
- 13 residential permit parking spaces;
- One (1) ADA restricted parking space; and
- 15 pick-up/drop-off only spaces during arrival/dismissal.

Preliminary proposed curbside management is shown in Figure 16 and is distributed as follows:

- 73 unrestricted parking spaces;
- 12 time-restricted parking spaces;
- 25 metered parking spaces;
- 13 residential permit parking spaces;
- Seven (7) ADA restricted parking spaces; and
- 49 pick-up/drop-off only spaces during arrival/dismissal.

Student Pick-up/Drop-Off

Under existing conditions, the only area designated for pick-up/drop-off (PUDO) activity is along S Highland Street. During November 2021 observations, Gorove Slade staff observed significant vehicle queuing that spilled back as far as the bus-only entrance at the existing CC building during peak arrival/dismissal. Additionally, activity takes place in several locations around the site, outside of this designated area.

As shown in Figure 16, parents (or guardians) are expected to use the designated PUDO areas located along southbound S Walter Reed Drive, westbound 9th Street S, and northbound S Highland Street during arrival/dismissal. It is anticipated that elementary (MPSA) PUDO will primarily take place on S Highland Street, while primary CC PUDO will take place along S Walter Reed Drive. The PUDO area along 9th Street S will serve

as secondary space for CC students, primarily when the S Walter Reed Drive area is at capacity or for those approaching the CC campus from different directions.

To address significant vehicle queuing observed along S Highland Street under existing conditions, the proposed curbside management plan as shown in Figure 16 recommends additional curbside PUDO spaces to accommodate the increase in student enrollment. Based on APS feedback and Gorove Slade observations, the anticipated number of vehicles anticipated to load/unload simultaneously during morning arrival and afternoon under future conditions is as follows:

- 20 to 25 CC vehicles and 15 to 20 MPSA vehicles during morning arrival; and
- 25 to 35 CC vehicles and 20 to 30 MPSA vehicles during afternoon dismissal.

As part of the proposed curbside management plan included in this MMTA, 22 spaces along S Highland Street will be used for elementary (MPSA) student PUDO, 19 spaces along S Walter Reed Drive will be used for high school (CC) student PUDO, and eight (8) spaces along 9th Street S will be used for additional student/staff pick-up/drop-off. Final PUDO locations will be coordinated with APS and the County; however, the anticipated ranges of simultaneous loading/unloading vehicles should be accommodated for each program.

Bus Loading/Unloading

Under existing conditions, MPSA school bus loading/unloading takes place along the northern driveway between S Walter Reed Drive and S Highland Street. CC school bus loading/unloading takes place along the southern driveway between S Highland Street and S Walter Reed Drive. During arrival, not all buses are on-site at the same time, as they leave as soon as they unload.

As shown in the expected site access and circulation for the proposed concept design in Figure 14, school bus loading/unloading will be accommodated by creating an internal driveway loop between the existing CC building and MPSA to be shared across the educational programs. This loop will be restricted to bus and authorized vehicles only. This area will be accessible mainly via a driveway on S Highland Street and also via S Walter Reed Drive. Because the schools have offset bell times, the shared facility can be used by both without significant conflicts. This facility may additionally be used throughout the day for CTE shifts.

In order to accommodate projected student growth, an estimated 15 buses and six (6) buses are anticipated to need to be accommodated for the future CC and MPSA programs, respectively. Additionally, up to three (3) buses must be accommodated during midday off-peak hours for CTE shifts.

Geometric analyses of the driveway loop found that the maximum number of buses that should queue on-site simultaneously (15 buses) can be accommodated in several ways. One version, included in the Technical Attachments, shows how 15 buses can queue while still providing gaps between them for maneuverability (the buses can enter/leave their own space if needed). This version also leaves room for a bypass lane, so buses are not required to wait for other buses to leave. Other configurations will be possible, and APS will be able to vary their approach as needed based on what they find works best in the future.

Bicycle and Pedestrian Facilities

Bicycle Facilities

Bicycle Parking

Per the Standard Site Plan Conditions, the following outlines the bicycle parking requirements for the proposed Career Center campus:

Class I (Long-Term, Secure Storage) Bicycle Parking

- Provide a minimum of one (1) bicycle space per 10 staff, at least half of which must be Class I and the balance Class II.
    - At least 30 percent of these spaces must be horizontal and at ground level.

Based on these requirements and the 305 staff across the CC campus as of Fall 2021 as shown in Table 3, at least 31 Class I spaces or at least 16 Class I spaces and 15 Class II spaces would be required for staff across the campus under existing conditions. Based on the 216 CC staff and 145 MPSA staff for the future conditions as shown in Table 3 , these campus-wide requirements would increase to a minimum of:

- **37 Class I spaces; or**
    - 22 CC spaces and 15 MPSA spaces
- **19 Class I spaces and 18 Class II spaces**
    - Class I – 11 CC spaces and 8 MPSA spaces
    - Class II – 11 CC spaces and 7 MPSA spaces

The proposed Career Center campus will meet or exceed the above requirements by providing secure long-term bicycle parking in locations convenient to those who cycle. This MMTA recommends that APS provide each program's required long-term bicycle parking on the ground floor of their respective buildings or consolidate all campus-wide long-term bicycle parking on the first level of the garage.

Class II/III (Short-Term, Outdoors) Bicycle Parking

- Provide a minimum of one (1) bicycle space per 20 students in second through fifth grade for elementary schools, and a minimum of one (1) bicycle space per 10 students for middle schools, high schools, and adult learning centers.
    - These should conform to Class II or Class III Arlington County bicycle parking standards in effect on the date of use permit approval and be in highly visible locations within 50 feet of primary building entrances if possible.
    - These are considered Class II if covered by a roof or overhang and Class III otherwise.

Based on these requirements and the 488 elementary and 697 secondary students as of Fall 2021 as shown in Table 3, at least 94 Class II/III spaces or 47 short-term bicycle racks would be required across campus under existing conditions. Based on the 1,619 CC students and 775 MPSA students under the future conditions shown in Table 3, these campus-wide requirements would increase to a minimum of:

- **201 Class II/III spaces (101 short-term bicycle racks)**
    - 162 CC spaces (81 short-term bicycle racks)
    - 39 MPSA spaces (20 short-term bicycle racks)

The proposed Career Center campus will meet or exceed the above requirements by providing bicycle racks in highly visible locations near building entrances. This MMTA recommends that APS provide each program's required short-term bicycle parking as close as possible to their respective building's main entrances, primarily along S Walter Reed Drive and the internal southern driveway.

Showers and Lockers

- Provide a minimum of one (1) clothes storage locker for each required staff bicycle parking space, and a minimum of two (2) showers at the school to serve bicycle or walking commuters.
    - Lockers should be located adjacent to showers in a safe and secured area.
    - Lockers should measure at least 12 inches in width by 18 inches in depth by 36 inches in height and be available to bicycle commuters during normal building operating hours. They should, however, be available for storage 24/7.
    - Showers and lockers may be provided with gymnasium facilities and should be available to all school staff.

Based on these requirements and the 31 required staff bicycle parking spaces under existing conditions, 31 lockers and two (2) showers would be required across campus. For the future conditions, these campus-wide requirements would increase to a minimum of:

- **37 lockers and four (4) showers**
    - 22 CC lockers and 15 MPSA lockers
    - Two (2) CC showers and two (2) MPSA showers

The proposed Career Center campus will meet or exceed the above requirements by providing the above number of showers and lockers across the new CC and existing, refurbished (future MPSA) buildings. This MMTA recommends locating these facilities as close as possible to the location of each program's long-term bicycle parking.

Pedestrian Facilities

The existing pedestrian facilities around the site provide a quality walking environment with minimal sidewalk width deficiencies as shown. Pedestrian facilities directly surrounding the site will be improved along 9th Street S, S Highland Street, and 7th Street S to include a minimum 6-foot sidewalk and 4-foot buffer along the site's frontage by Fall 2028. 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.

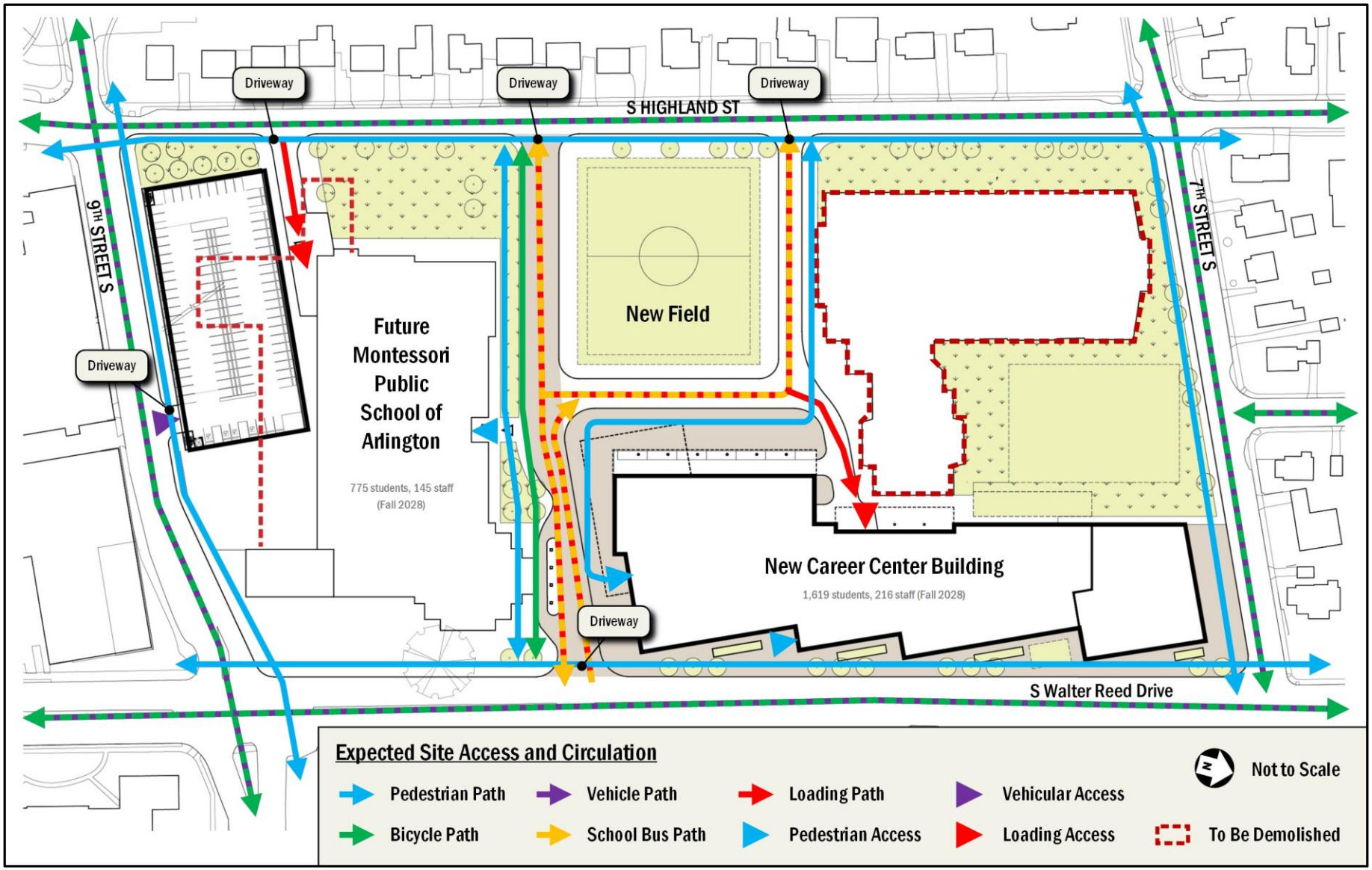

Figure 14: Expected Site Access and Circulation

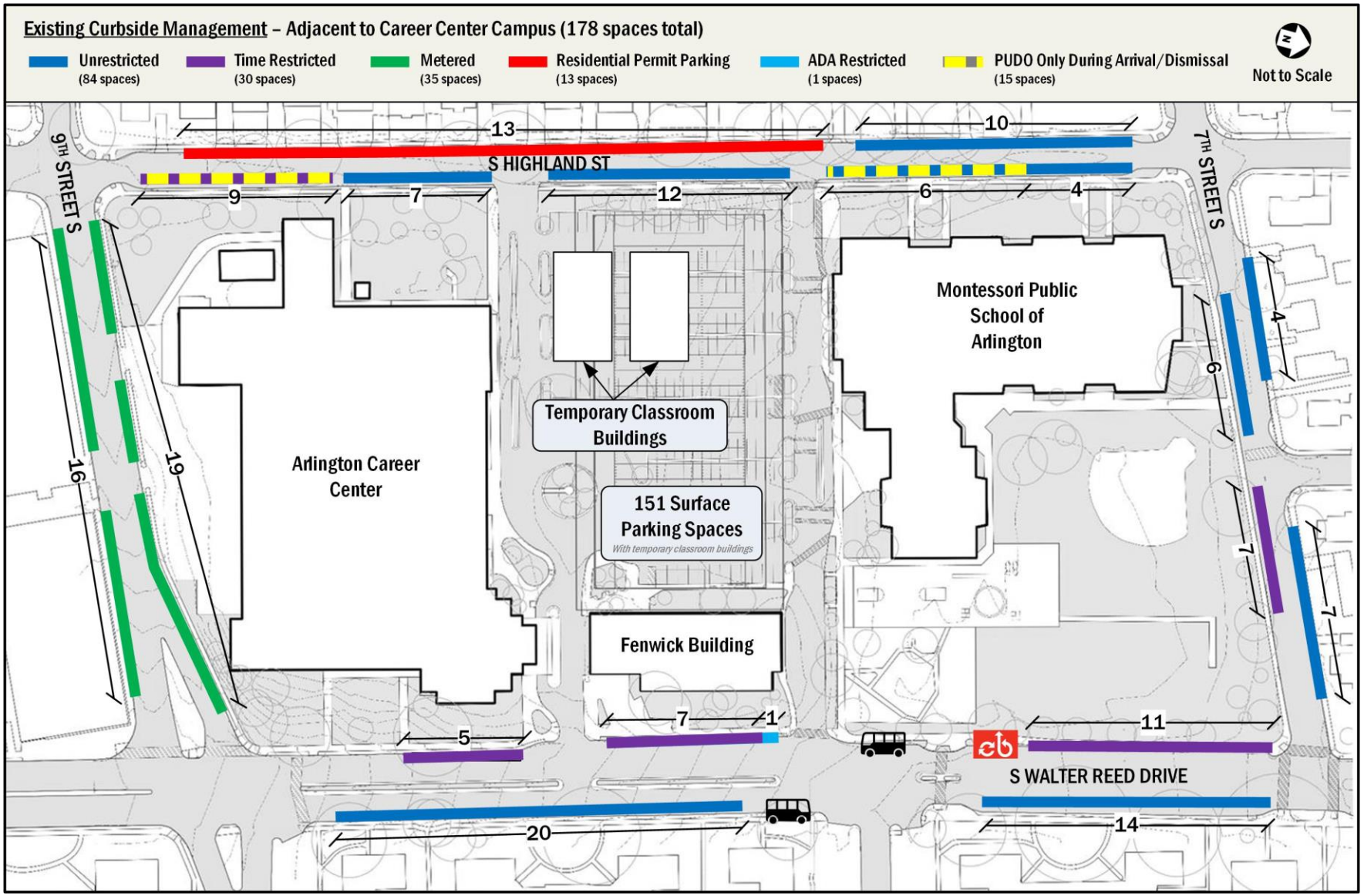

Figure 15: Existing Curbside Management

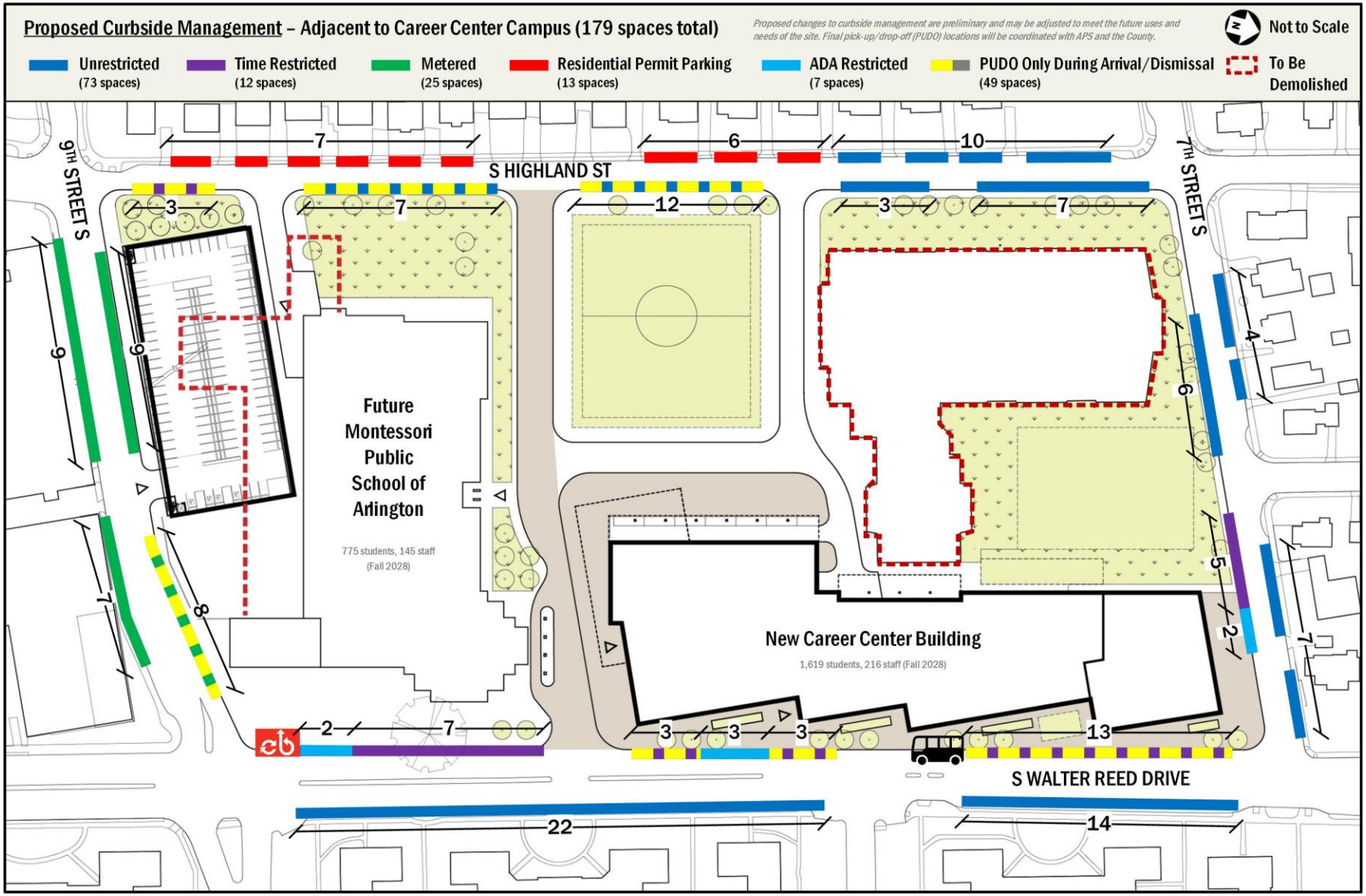

Figure 16: Proposed Curbside Management

Transit

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

The following conclusions are reached within this chapter:

- The site is surrounded by an extensive regional and local transportation system that will accommodate the staff, students, and patrons of the proposed development.
- The site is well-served by public transportation with direct access to several local and regional bus lines.
- The project is located approximately 1.7 miles and 2.3 miles from the Clarendon and Pentagon City Metrorail stations, respectively; these stations can be accessed via bus lines which travel directly to or near the project site.
- There are eight (8) bus stops within a quarter mile of the site. These stops are directly served by WMATA (Metrobus) and Arlington Transit (ART).

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

Metrorail Service

The site is located approximately 1.7 miles and 2.3 miles from the Clarendon and Pentagon City Metrorail stations, respectively. The Clarendon Metrorail station is located north of the development site in Clarendon Central Park on Wilson Boulevard. It can be reached by taking the ART Route 77 from stops adjacent site. The Pentagon City Station can be reached via S Hayes Street. It can also be reached by taking Metrobus Routes 16G or 16H directly from the stops adjacent to the site.

The Clarendon Metro station serves the Orange and Silver lines. The average daily ridership at the station in 2022 was approximately 1,724 boardings on weekdays, according to the WMATA Ridership Data Portal. The Orange Line travels from Fairfax, VA to the District core and continues east to New Carrolton, MD. As of February 2023, trains run approximately every 15 minutes during all service hours, weekdays and weekends. The Silver Line travels east from Reston, VA to the District core and continues east to Largo, MD. As of February 2023, trains run approximately every 15 minutes during all service hours, weekdays and weekends. Both lines provide connections to the Red Line, which provides a direct connection to Union Station, a hub for commuter rail – such as Amtrak, MARC, and VRE – in addition to all additional Metrorail lines, allowing for access to much of the DC Metropolitan area.

The Pentagon City station serves the Blue and Yellow lines. The average daily ridership at the station in 2022 was approximately 4,310 boardings on weekdays, according to the WMATA Ridership Data Portal. The Blue Line connects Springfield, VA with Largo, MD. As of February 2023, trains run approximately every 15 minutes during all service hours, weekdays and weekends. The Yellow Line connects Huntington, VA with Greenbelt, MD. As of February 2023, the Yellow Line is closed due to tunnel and bridge rehabilitation work and is expected to resume service in June 2023. Both lines provide access to the District core.

Figure 18 and Figure 19 show the average annual weekday passenger boardings for the Clarendon and Pentagon City Stations, respectively. Prior to the COVID-19 pandemic, Metrorail ridership at both stations had started to trend in the positive direction after being down from previous peaks in 2011 and 2012. Ridership throughout the entire Metrorail system plummeted in 2020 and 2021 as a result of ongoing travel pattern changes from the pandemic as well as the suspension of the Metrorail's 7000-series trains (nearly 60 percent of its fleet) in late 2021. As of the most recent 2022 data, ridership has begun to recover alongside the gradual return of Metrorail's 7000-series trains; however, ridership remains low compared to pre-pandemic levels.

The decline in boardings at the stations near the development site indicates there is available capacity at these stations.

Bus Service

A review of the existing Metrobus stops within a quarter-mile radius of the site, detailing individual bus stop amenities and conditions, is shown in Table 5. There are eight (8) bus stops within a quarter mile of the site: five (5) on S Walter Reed Drive and three (3) on Columbia Pike. These stops are served by seven (7) WMATA Metrobus routes and two (2) Arlington Transit (ART) routes.

The site is served by several bus lines and routes along multiple primary corridors. These bus lines connect the site to many

areas of Virginia and the District, including several Metrorail stations serving all of the six (6) Metrorail lines.

Table 6 shows a summary of the bus route information for the routes that serve the site, including service hours, headway, and distance to the nearest bus stop.

Planned Transit Facilities

Arlington Master Transportation Plan (2019)

The Arlington County Master Transportation Plan (MTP), adopted in 2011 and updated in 2019, outlines goals to improve various modes of transportation throughout the County. The MTP Transit Element identifies policies, implementation actions, and performance measures to:

- increase transit service options;
- improve access to transit services for all;
- improving transit facilities;
- creating multi-modal centers for convenient transfers;
- expanding transit information distribution and marketing outreach; and
- employing environmentally sensitive technologies.

The MTP envisions public transit as a central feature of the County's transportation system as the resident and employment populations grow in the future. A key aspect of the plan is the implementation of a Premium Transit Network (PrTN) and Primary Transit Network (PTN). Historically, the County has organized development around the Metrorail corridors; the MTP extends this policy to the Premium and Primary Transit Networks.

The PrTN includes the Columbia Pike and Pentagon City/Crystal City corridors and features high frequency, branded, and easy to understand bus routes with passenger amenities such as real-time transit information and high-quality transit stations. The PTN is a network of east-west and north-south routes that can be easily accessed by the majority of Arlington residents. The planned PrTN and PTN are shown in Figure 20. As it relates to the Arlington Career Center project, the Columbia Pike corridor is a part of the PrTN, and S Glebe Road is part of the PTN.

The MTP identifies the following recommendations in the vicinity of the project:

- Consolidate bus stops and construct new, high-quality, unique transit stations along Columbia Pike.
- Upgrade service frequency, span of service, reliability, and quality along PTN corridors.
- Implement transit signal priority along the [PrTN] corridor to speed travel times for buses.
- Expand pedestrian access to transit facilities through measures such as improved sidewalks, new station entrances, upgraded street crossings, and new elevators and escalators.

The County is in progress on implementing the above recommendations in the vicinity of the project site. The Columbia Pike Multimodal Street Improvements project has completed the implementation of multimodal improvements to Columbia Pike between S Oakland Street and S Garfield Street. The Columbia Pike Transit Stations project has recently installed new transit shelters and amenities at two stations in the study area:

- Columbia Pike & S Glebe Road (WB)
- Columbia Pike & S Oakland Street (WB)

The County is also planning to implement Transit Signal Priority on the corridor as part of the Columbia Pike Premium Transit Network project.

As it relates to the proposed development, these improvements will enhance multi-modal connectivity to the project site with enhanced transit amenities and changes to service. The proposed development will provide improvements to pedestrian facilities along the perimeter of the project site; these improvements will improve access to transit service and will thus contribute to the County's policy and plan.

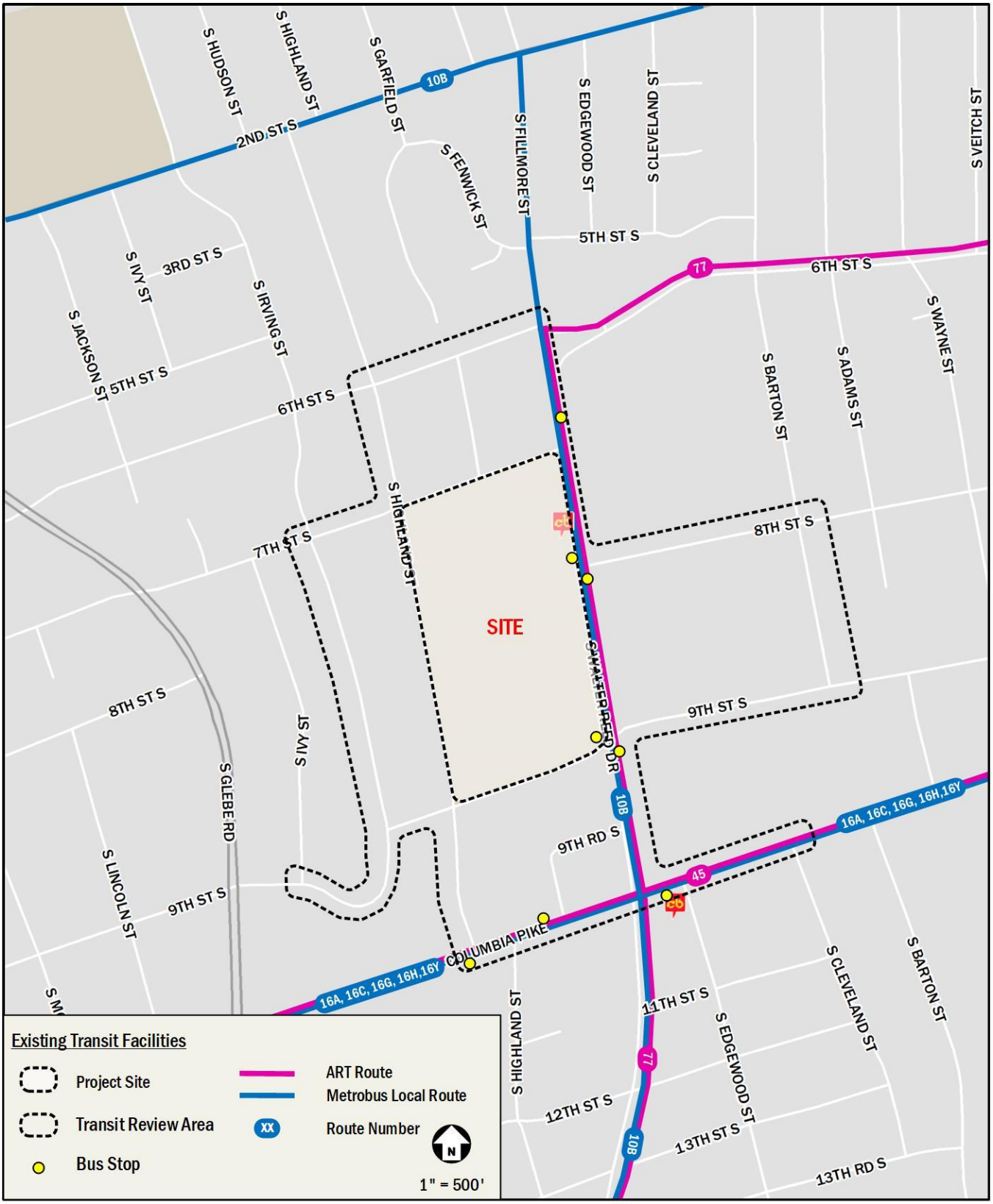

Figure 17: Existing Transit Service

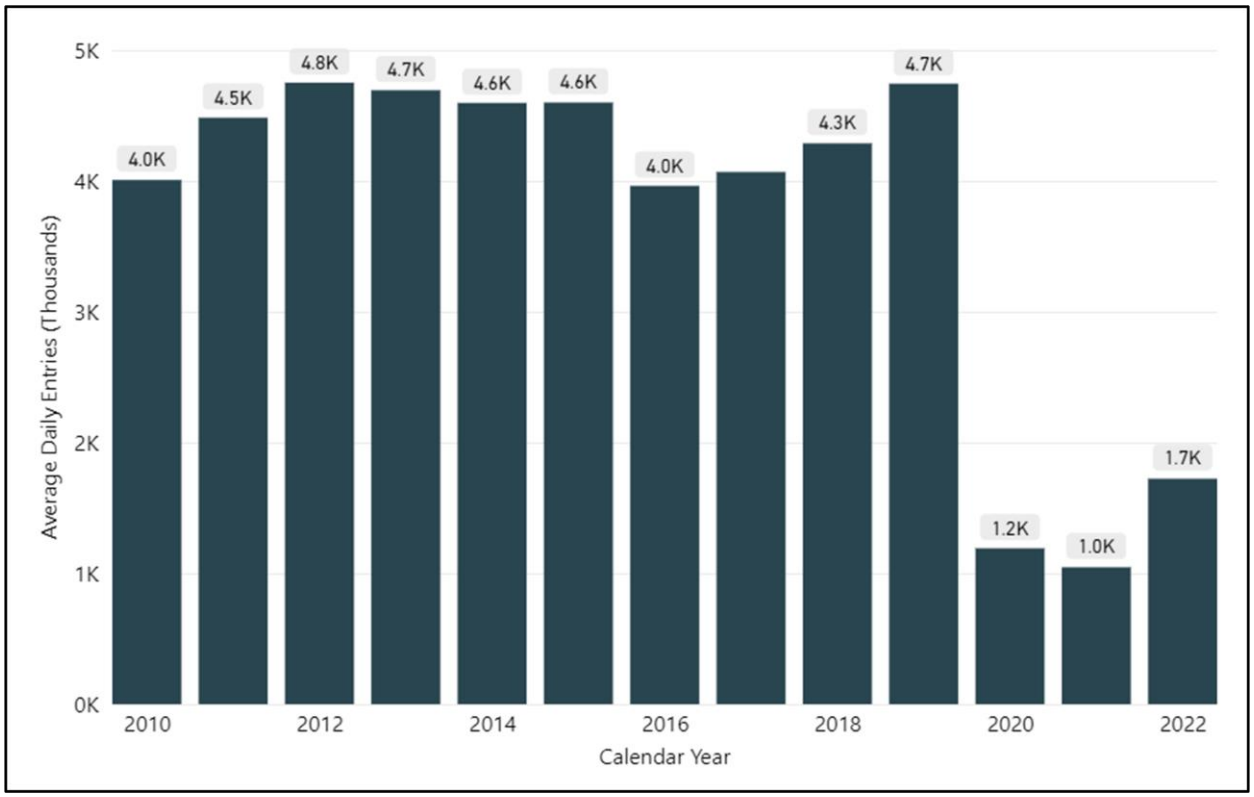

Figure 18: Average Daily Metro Ridership by Year at Clarendon Metro Station (Source: WMATA)

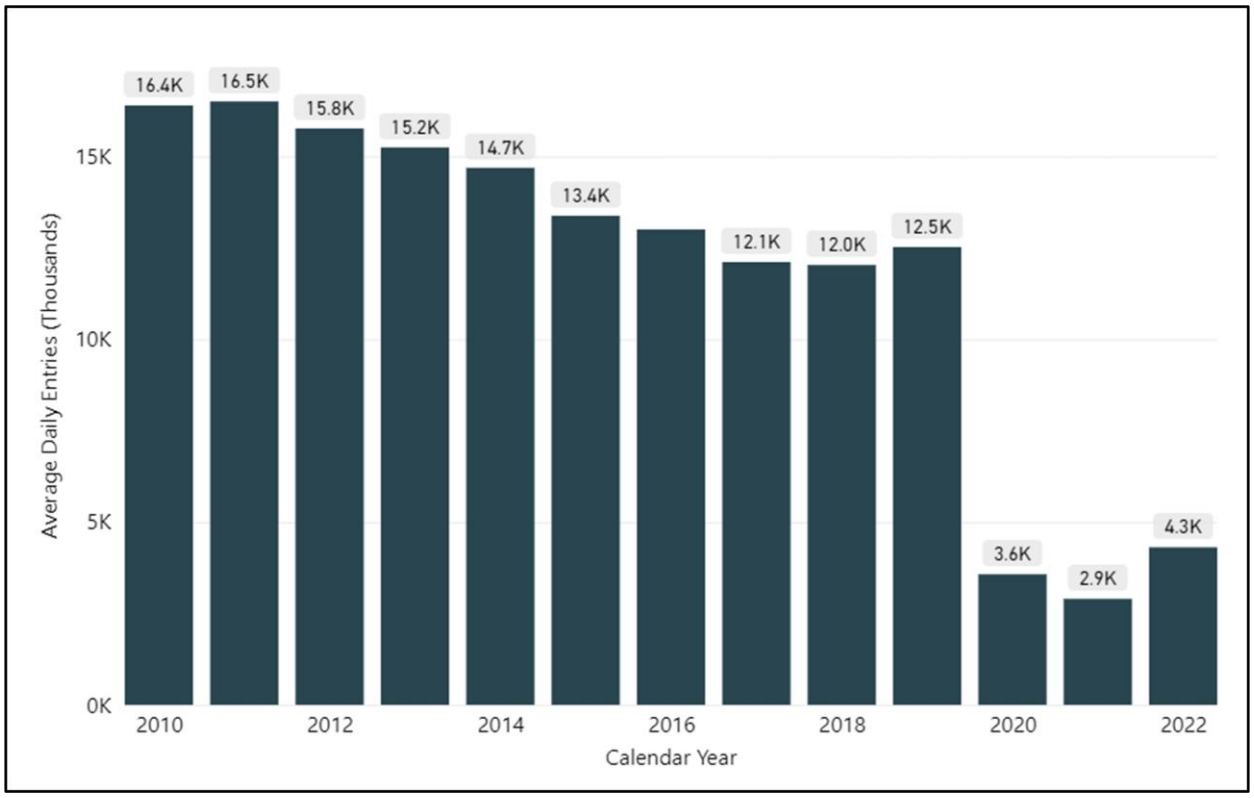

Figure 19: Average Daily Metro Ridership by Year at Pentagon City Metro Station (Source: WMATA)

Table 5: Bus Stop Inventory

Location	Stop ID	Buses Served	Stop Condition
S Walter Reed Dr & 6th Street	6000306	Metrobus 10B; ART 77	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, no seating, no shelter, no trash receptacle
S Walter Reed Dr & 8th Street (SB)	6000284	Metrobus 10B; ART 77	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, no seating, no shelter
S Walter Reed Dr & 8th Street (NB)	6000280	Metrobus 10B; ART 77	Sign, no ADA clearance, acceptable sidewalk clearance, no street lighting, information case, no seating, no shelter
S Walter Reed Dr & 9th Street (SB)	6000261	Metrobus 10B; ART 77	Sign, no ADA clearance, acceptable sidewalk clearance, no street lighting, no information case, no seating, no shelter, trash receptacle
S Walter Reed Dr & 9th Street (NB)	6000253	Metrobus 10B; ART 77	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, no information case, no seating, no shelter
Columbia Pike, EB@ Walter Reed Drive, FS	6000247	Metrobus 10B, 16A, 16C, 16E, 16G, 16H, 16Y; ART 45,77	Sign, ADA clearance, acceptable sidewalk clearance, street lighting, information case, seating, shelter, trash receptacle
Columbia Pike & S Highland St (WB)	6000240	Metrobus 16E, 16G, 16H	Sign, ADA clearance, acceptable sidewalk clearance, streetlighting, information case, seating, no shelter, trash receptacle
Columbia Pike & S Highland St (EB)	6000237	Metrobus 16E, 16G, 16H	Sign, ADA clearance, acceptable sidewalk clearance, streetlighting, information case, seating, no shelter, trash receptacle

Table 6: Bus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
10B	Hunting Point-Ballston	Weekdays: 5:30AM-12:30AM Weekend: 6:00AM-10:38PM	30-60 min	<0.1 miles, 2 minutes
16A, 16C, 16E	Columbia Pike Line	Weekdays: 4:33AM-2:46AM Weekend: 5:06AM-2:45AM	15-30 min	0.2 miles, 4 minutes
16G, 16H	Columbia Pike – Pentagon City Line	Weekdays: 5:34AM-11:20PM Weekend: 5:41AM-11:22PM	12-15 min	0.2 miles, 4 minutes
16Y	Columbia Pike – Farragut Square Line	Weekdays: 6:00AM-9:33AM; 4:00PM-7:45PM	20-24 min	<0.1 miles, 1 minute
ART 45	Columbia Pike – DHS/Sequoia – Rosslyn	Weekdays: 5:45AM-11:40PM Weekend: 7:30AM-12:21AM	20-30 min	<0.1 miles, 1 minute
ART 77	Shirlington-Lyon Park-Courthouse	Weekdays: 6:37AM-10:25PM Weekend: 7:30AM-11:57PM	25-40 min	<0.1 miles, 2 minutes

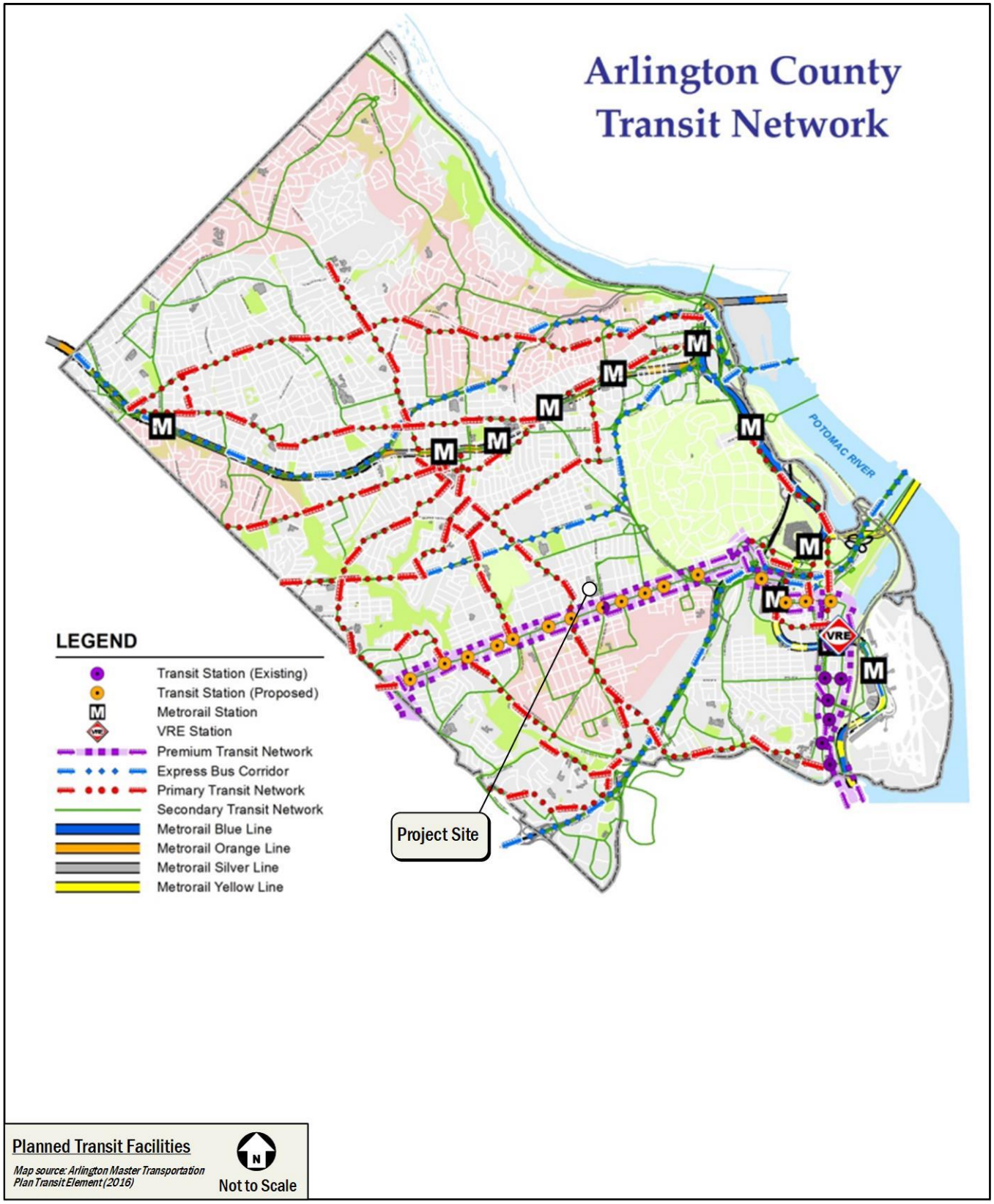

Figure 20: Planned Transit Facilities

Pedestrian Facilities

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

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the site provides a quality walking environment. There are sidewalks along most primary routes to pedestrian destinations with several curb ramps and sidewalk width deficiencies in the system.
- Walking routes adjacent to the campus generally meet Arlington County standards, with some exceptions to the east of the campus in residential neighborhoods, and along sections of S Walter Reed Drive and Columbia Pike, and a portion of 9th Street S.

Pedestrian Study Area

Pedestrian facilities within a quarter mile of the site were evaluated as well as routes to nearby transit facilities. The site is accessible to transit options such as the bus stop adjacent to the site on S Walter Reed Drive. In general, existing pedestrian facilities surrounding the site provide comfortable walking routes to and from nearby transit options. However, there are some areas of concern within the study area that negatively impact the quality and attractiveness of the walking environment. This includes curb ramp and sidewalk width deficiencies.

Figure 21 shows the 10-minute, 20-minute, and 30-minute walk travel shed for the proposed development. Within a 10-minute walk, the proposed development has access to several destinations including public transportation stops, grocery stores, retail zones, and nearby residential neighborhoods. Within a 20-minute walk, the proposed development has access to destinations such as residential neighborhoods, parks, retail zones, the W&OD Trail, and the Arlington Boulevard Trail. Within a 30-minute walk, the proposed development has access to destinations including Fort Myer, Ballston, and other residential neighborhoods.

Existing Pedestrian Facilities

A review of pedestrian facilities surrounding the proposed development shows that many facilities provide a quality walking environment. Figure 22 shows a detailed inventory of the existing pedestrian infrastructure surrounding the site. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by the Arlington County, and ADA standards. Sidewalk and buffer widths and recommendations are shown in Table 7. It should be noted that the sidewalk widths shown in Figure 22 reflect the total sidewalk widths based on observations in the field taken from curb to building, with pinch points and locations with a clear width of less than four (4) feet noted.

ADA standards require that curb ramps be provided wherever an accessible route crosses a curb and must have a detectable warning. Additionally, curb ramps shared between two crosswalks is not desired. As shown in Figure 22, under existing conditions the majority of curb ramps meet ADA standards.

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

Overall, the site is situated within an urban transportation network, with quality pedestrian access.

Planned Pedestrian Facilities

As part of the proposed development, the existing sidewalks along the site's frontage will be upgraded. These sidewalks will meet both the Arlington Master Transportation Plan requirements and ADA standards and will encourage pedestrian safety in the area.

Other planned projects in the area will improve pedestrian facilities in the area:

- The Columbia Pike Multimodal Street Improvements project has completed streets improvements to the segment of Columbia Pike between S Oakland Street and S Garfield Street; these were mainly comprised of improvements to transit stops along that segment. Future phases of the project will construct improvements along segments of Columbia Pike in the study area, which include segments west of S Oakland Street and east of S Garfield Street. Improvements along these segments will include widened sidewalks, raised medians, and additional pedestrian crossings.
- The 13th Street S from S Walter Reed Drive to S Glebe Road Improvements project will reconstruct and widen the sidewalk on the north side of 13th Street between S Highland Street and S Walter Reed Drive and add and upgrade

pedestrian ramps to ADA standards along that same segment.

- The South Irving Street Neighborhood Complete Street Project will construct a sidewalk on the west side of S Irving Street between 6th Street S and 7th Street S and will provide upgraded curb ramps and pedestrian crossings at the S Irving Street/6th Street S intersection.
- Phase 2 of the South Walter Reed Drive Complete Streets Improvements project is planning improvements to S Walter Reed Drive between 5th Street S and Columbia Pike. The objective of the project is to provide improved pedestrian and bicycle connectivity with tactical improvements, and to reduce complexity and improve access at 9th Street S by realigning and signalizing the intersection. The most recently released concept plans for the project show the provision of protected bicycle lanes, upgraded sidewalks and pedestrian crossings, and a realignment and downsizing of the 9th Street S intersection with the provision of additional pedestrian crossings.

Planned and proposed pedestrian improvements are shown in Figure 23.

Table 7: Sidewalk Recommendations per Arlington County Master Transportation Plan

Street Name	Section	Minimum Sidewalk Width	Minimum Sidewalk Width Met	Sidewalk Width*	Minimum Buffer Width	Minimum Buffer Width Met	Buffer Width*
S Irving Street	7th Street S to 9th Street S	4-6 ft	N	None	2-4 feet	N	None
S Highland Street	6th Street S to Columbia Pike	4-6 ft	Y	5 ft	2-4 feet	Y	4 ft
S Walter Reed Drive	6th Street S to 7th Street S	5-6 ft	Y	5 ft	4-6 feet	Y	4 ft
S Water Reed Drive	7th Street S to Columbia Pike	6-8 ft	N	5 ft	6 feet	N	None
S Cleveland Street	8th Street S to 9th Street S	5 ft	N	None	None	Y	None
S Barton Street	8th Street S to 9th Street S	4-6 ft	Y	6 ft	2-4 feet	N	None
6th Street S	S Highland Street to S Walter Reed Drive	4-6 ft	Y	5 ft	2-4 feet	N	None
7th Street S	S Irving Street to S Walter Reed Drive	4-6 ft	Y	4 ft	2-4 feet	N	None
8th Street S	S Walter Reed Drive to S Barton Street	4-6 ft	Y	4 ft	2-4 feet	N	None
9th Street S	S Ivy Street to S Barton Street	4-6 ft	Y	4 ft	2-4 feet	N	None
Columbia Pike	S Highland Street to S Barton Street	10-16 ft	N	6 ft	6 feet	N	4ft

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

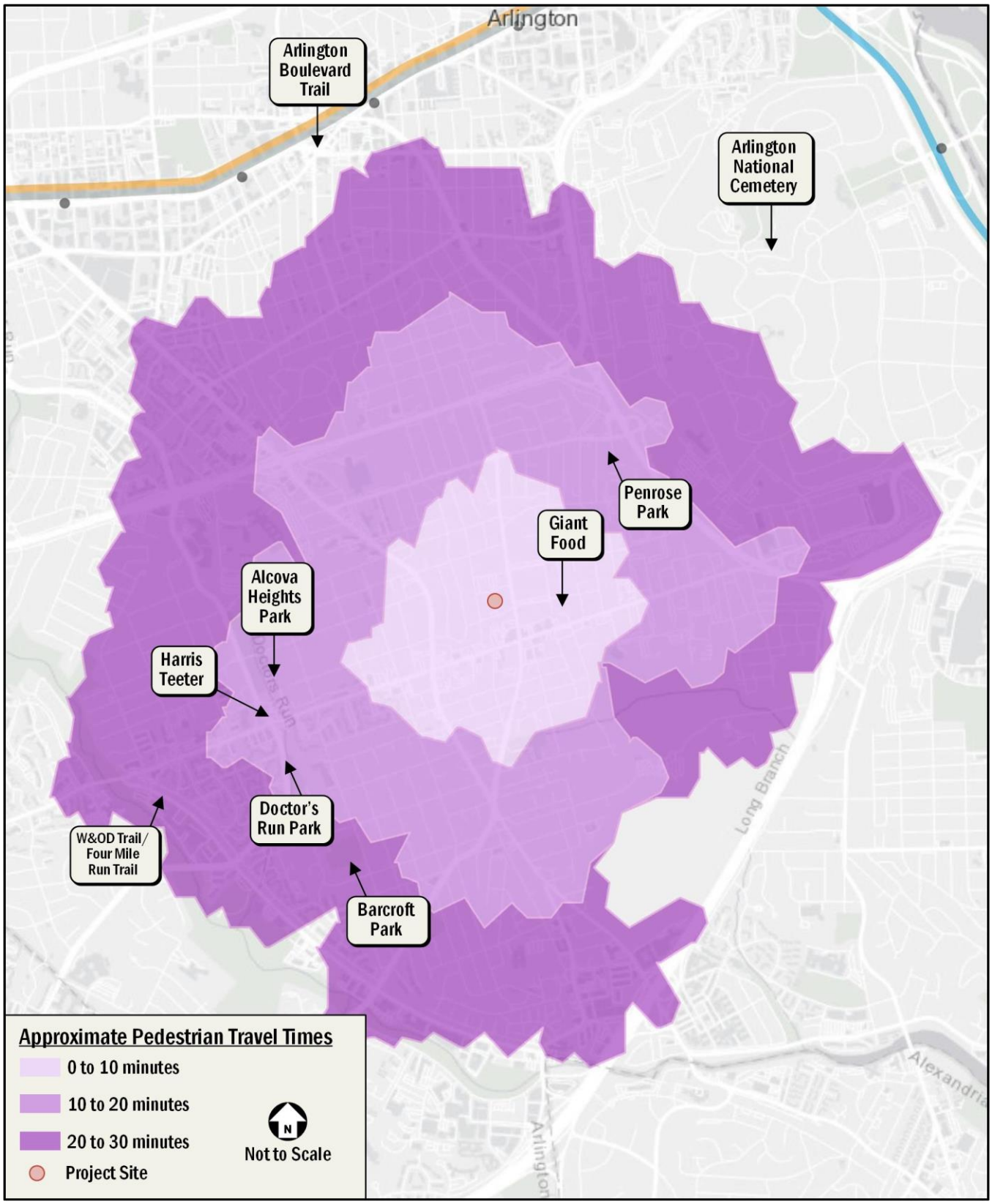

Figure 21: Approximate Pedestrian Travel Times

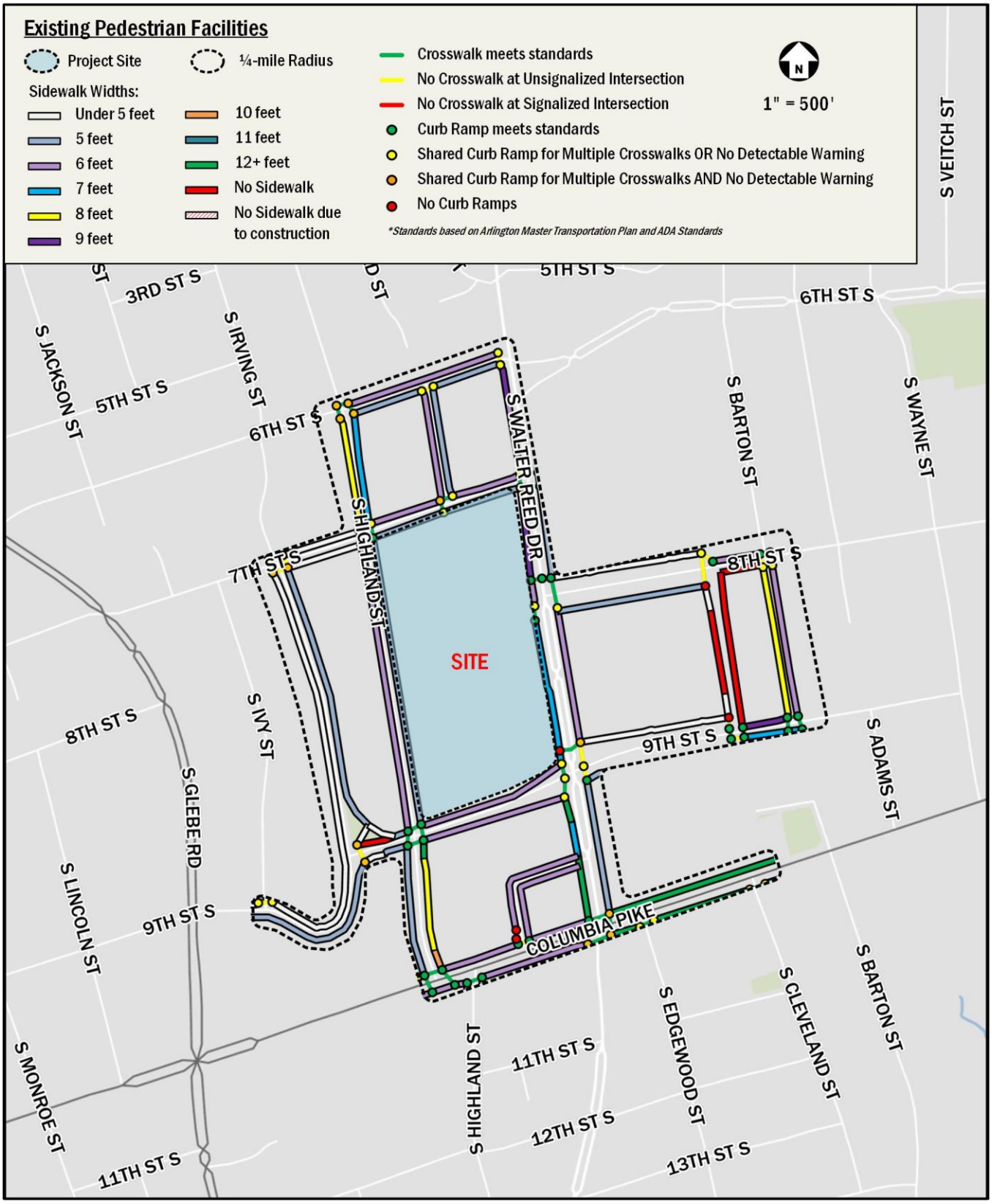

Figure 22: Existing Pedestrian Facilities

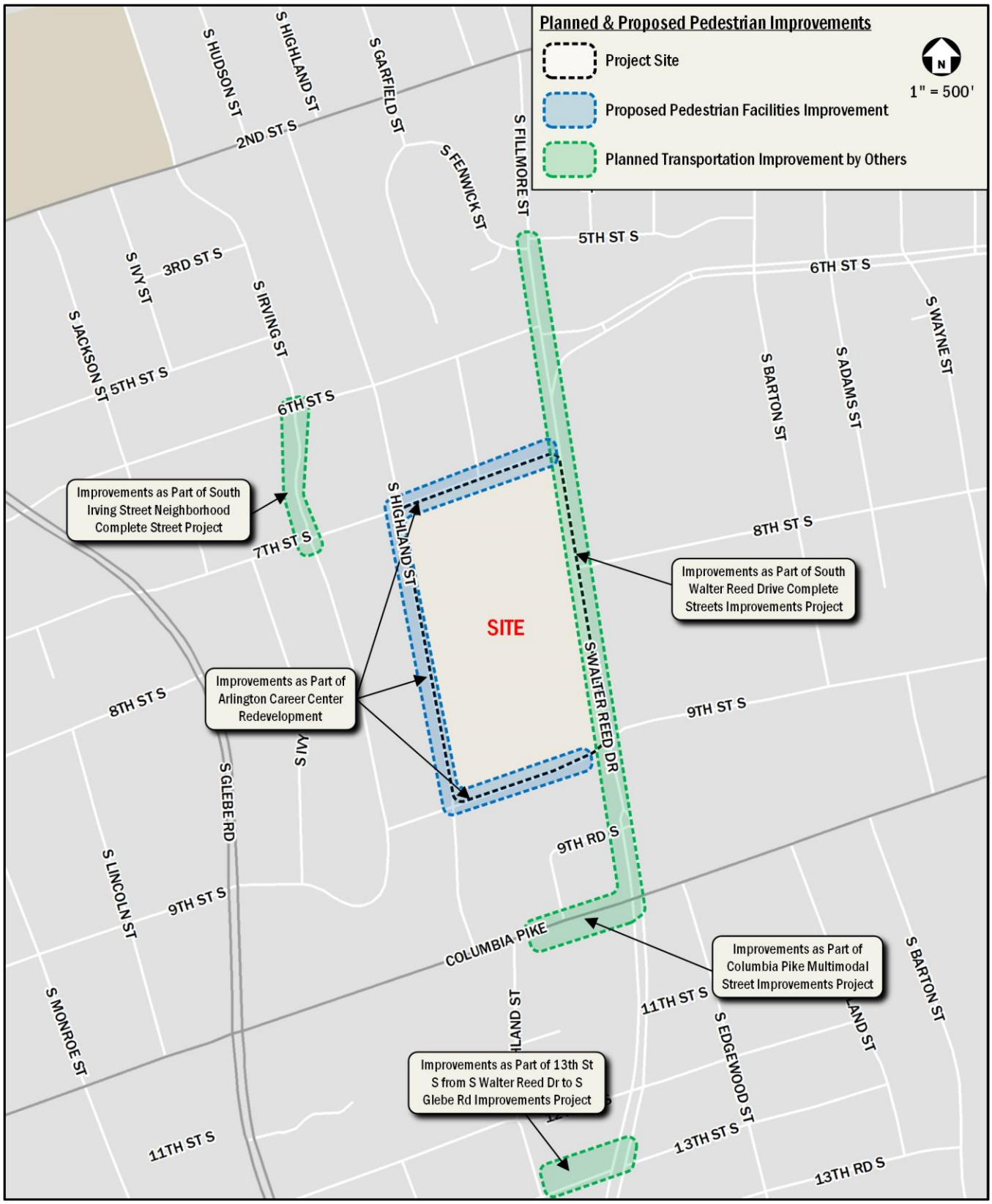

Figure 23: Planned and Proposed Pedestrian Improvements

Bicycle Facilities

This chapter summarizes existing and future bicycle access and reviews the quality of cycling routes to and from the campus. The following conclusions are reached within this chapter:

- The campus has good connectivity to existing on- and off-street bicycle facilities. The campus is surrounded by local neighborhood streets, bicycle lanes on S Walter Reed Drive and 2nd Street S, and the Custis and W&OD Trails.
- There is one (1) Capital Bikeshare station adjacent to the campus and an additional station within one-quarter mile of the campus.
- Future planned projects in the vicinity of the site include adding bicycle lanes along S Walter Reed Drive, S Glebe Road and S Filmore Street as well as a bike share station near the S Glebe Road and 12th Street S intersection.

Existing Bicycle Facilities

The campus has good connectivity to existing on- and off-street bicycle facilities, and the campus is surrounded by neighborhood streets that are relatively low in vehicular traffic and speed. North-south connectivity is provided via bicycle lanes on S Walter Reed Drive and signed routes on S Highland Street and S Irving Street. East-west connectivity is provided via bicycle lanes on 2nd Street S and signed routes on 7th Street S and 9th Street S, which is designated as a bike boulevard. These bicycle facilities connect to the Custis Trail to the north and the W&OD Trail to the west. These trails provide regional connectivity for bicycles to and from the campus. Figure 24 shows the existing facilities within the study area. Protected bicycle lanes provide physical separation such as an on-street parking lane between bicycles and motor vehicles (also known as a cycle track) and buffered bicycle lanes have the same function as standard bicycle lanes with a marked buffer on one side of the lane.

Arlington County publishes an annual Bicycle Comfort Level Map highlighting 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,’ ‘Use Caution,’ or ‘Prohibited.’ The most recent publication of the map (2022) shows most bicycle routes near the site rated as ‘Easy’ and ‘Medium. Multiple low-speed and low-traffic Roads located in the vicinity of the campus can provide appropriate level of access to bikers.

There is some short-term bicycle parking on-campus, more specifically near the entrance to the Montessori Elementary School on S Highland Street and on 8th Street S.

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 600 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 5,000 bicycles provided. There is a Capital Bikeshare station on the east side of the campus, on the northwest corner of the S Walter Reed Drive and 8th Street S intersection. This Capital Bikeshare station houses a total of four (4) docks. There is also a station about one-quarter mile south on S Walter Reed Drive at the S Walter Reed Drive and Columbia Pike intersection, which houses a total of ten (10) docks.

Shared Mobility

As of February 2023, five (5) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies provide Shared Mobility Device (SMD) service in Arlington County: Bird, Veo Access, Lime, Link/Superpedestrian, and Spin. These SMDs are provided by private companies that give registered users access to a variety of e-scooter and e-bike options. These devices are used through each company-specific mobile phone application. Many SMDs do not have designated stations where pick-up/drop-off activities occur like with Capital Bikeshare; instead, many SMDs are parked in public space, most commonly in the “furniture zone” (the portion of sidewalk between where people walk and the curb, often where you’ll find other street signs, street furniture, trees, parking meters, etc.). At this time, SMD pilot/demonstration programs are underway in Arlington County, the District, Fairfax County, the City of Alexandria, and Montgomery County.

Planned Bicycle Facilities

The Arlington Master Transportation Plan has recommended existing bike facilities to be upgraded in the future, as shown on Figure 11. As shown in Figure 25, these upgrades include protected bicycle lanes along S Walter Reed Drive (as part of the South Walter Reed Drive Complete Streets Improvements) as well as bicycle lanes along 2nd Streets S, S Glebe Road, and S Filmore Street. An additional bike share station is to be constructed near the S Glebe Road and 12th Street S intersection.

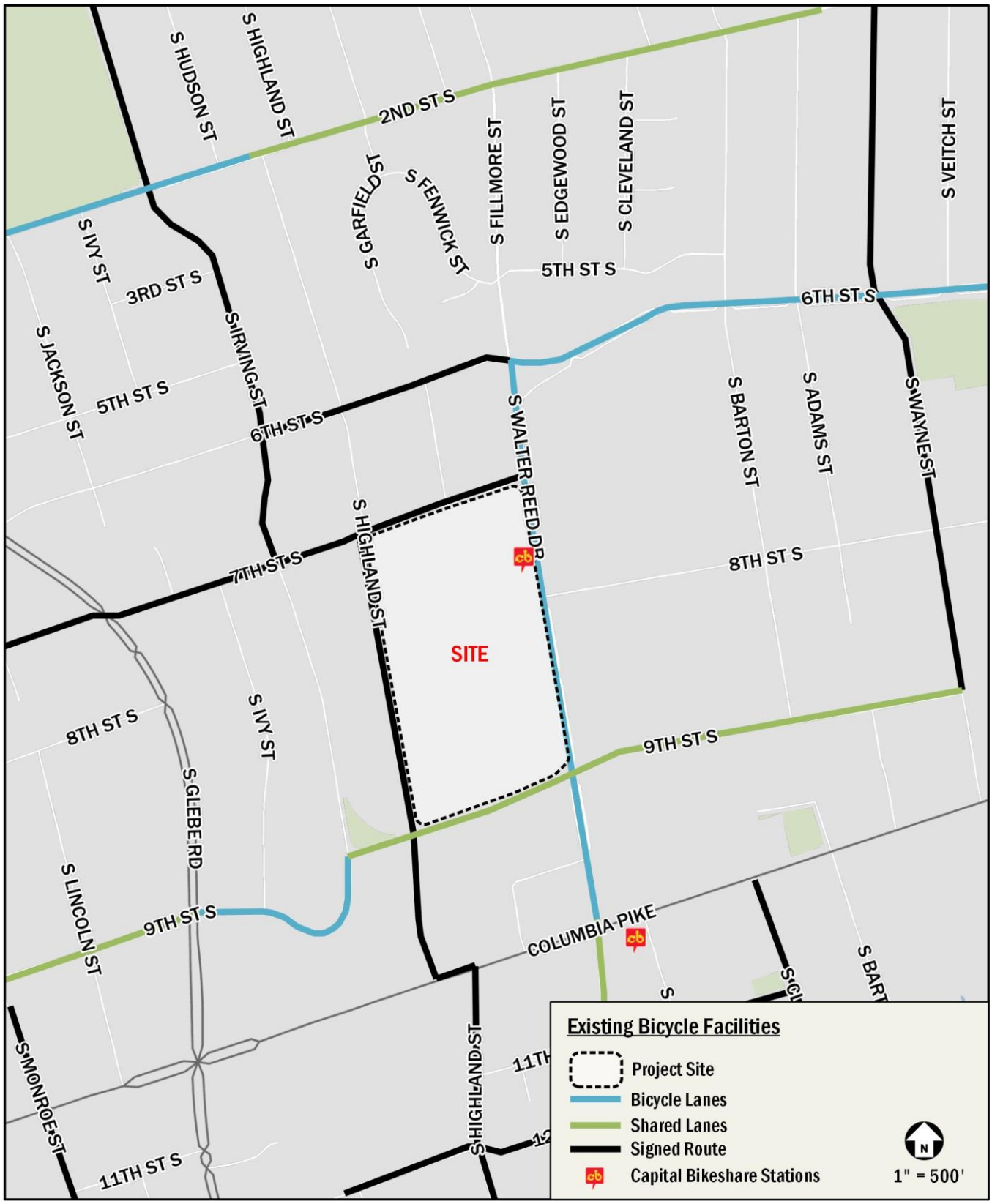

Figure 24: Existing Bicycle Facilities

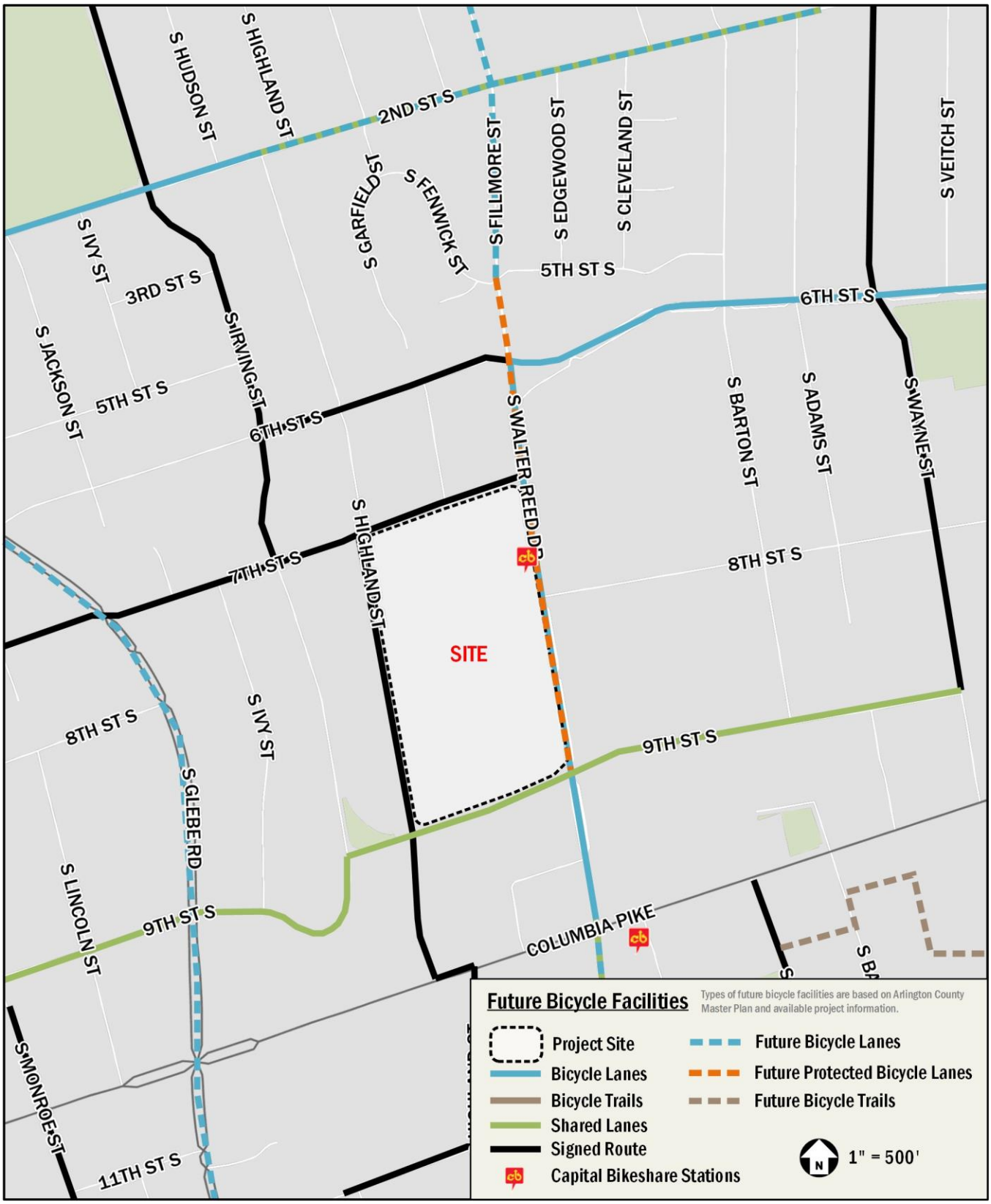

Figure 25: Future Bicycle Facilities

Travel Demand Assumptions

This chapter outlines the transportation demand of the proposed Arlington Career Center development. It reviews APS Go! Survey information, the expected mode splits, vehicular 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 APS Go! survey and Safe Routes to Schools (SRTS) student count/tally data collected in 2016. The APS Go! surveys included all Arlington Public Schools (APS) schools and consisted of multiple surveys including student, parent, and staff surveys. Not only do these surveys include mode split questions, but they also asked many other relevant questions where the responses were used to help assemble assumptions for this report (e.g., arrival and departure times for staff). The SRTS tallies were performed in school per classroom and provide a good representation of how students traveled to school on a specific date.

After comparing the summaries of survey information, this report decided to base assumptions on the student tallies over the parent surveys, as it appeared they were a more accurate reflection of mode splits. Based on the parent responses, they were overestimating the number of times they would walk their children to school compared to how much they actually drive their children to school.

This report compares the overall mode split and specific Arlington Career Center campus mode split for high school students and staff. The purpose of these comparisons is to review differences between them to help identify what makes the Arlington Career Center campus different than the average APS facility. Additionally, assumed mode splits for future students are identified.

High School Student Mode Splits

The APS Go! data for high school students is split between grades 9 and 10, and grades 11 and 12. SRTS tallies were used for grades 9 and 10, while student surveys were used for grades 11 and 12 because of the possibility they may drive to school themselves. Mode split comparisons for the grade 9 and 10 students are shown in Table 8 and Table 9. Uncategorized secondary seats assume mode splits consistent with that of the existing CC students.

These survey results show that students in grades 9 and 10 at the CC campus have several differences in travel mode compared to average grade 9 and 10 students. First, their use of transit is significantly higher, likely due to the quality options near the CC and the large area that students are drawn from. Second, they have a slightly higher bicycle percentage, possibly due to the quality bicycle routes to and from the CC campus. The one mode that is slightly lower for grades 9 and 10 is the percentage that are dropped-off and picked-up by automobile.

Table 8: Grades 9 & 10 Survey Results (Morning)

Population	Morning Mode Split					
	Auto	Carpool	School Bus	Walk	Bike	Transit
All APS Grades 9 & 10 (Student Tally)	28%	4%	42%	20%	4%	2%
Career Center and Community HS Grades 9 & 10 (Student Tally)	16%	4%	43%	11%	7%	19%

Table 9: Grades 9 & 10 Survey Results (Afternoon)

Population	Afternoon Mode Split					
	Auto	Carpool	School Bus	Walk	Bike	Transit
All APS Grades 9 & 10 (Student Tally)	22%	3%	43%	26%	4%	2%
Career Center and Community HS Grades 9 & 10 (Student Tally)	15%	3%	47%	10%	7%	18%

Mode split comparisons for the grade 11 and 12 students are shown in Table 10 and Table 11. At the time of the 2016 survey, Arlington Tech did not have grades 11 and 12. With this, the mode splits are more representative of other programs. The mode splits for grades 11 and 12 show some significant differences from the average grade 11 and 12 student. Mainly, the percentage that take a school bus is lower than average in the morning, while the number of students getting dropped-off is much higher.

Additionally, the morning and afternoon mode splits vary greatly. Reviewing the survey results shows that this is because many students that are dropped-off or carpool in the morning use the

school bus in the afternoon. This seems to be due to afterschool programs, or the schedules for pick-up/carpool not matching as they do in the morning.

Table 10: Grades 11 & 12 Survey Results (Morning)

Population	Morning Mode Split						
	Drove	Dropped-Off	Carpool	Walk	School Bus	Bike	Transit
All APS Grades 11 & 12 (Student Survey)	17%	21%	11%	15%	33%	2%	1%
Career Center Grades 11 & 12 (Student Survey)	13%	39%	17%	17%	9%	0%	4%

Table 11: Grades 11 & 12 Survey Results (Afternoon)

Population	Afternoon Mode Split						
	Drove	Picked-Up	Carpool	Walk	School Bus	Bike	Transit
All APS Grades 11 & 12 (Student Survey)	19%	14%	9%	20%	35%	2%	1%
Career Center Grades 11 & 12 (Student Survey)	22%	26%	0%	13%	39%	0%	0%

APS Staff Mode Splits

A mode split comparison for APS staff is shown in Table 12. The mode splits for APS staff at the Arlington Career Center campus are similar to staff mode splits throughout APS.

Table 12: Staff Mode Split Survey Results

Population	Mode				
	Auto	Carpool	Walk	Bike	Transit
All APS Staff	85%	3%	4%	3%	5%
Career Center and Community HS Staff	85%	4%	4%	4%	3%

Parking Demand

Existing and future parking demand for CC campus staff and students was based on November 2021 data collection and parking models developed to project demand for a variety of population scenarios detailed in the ***Parking*** chapter of this report. While existing demand data showed demand and supply across specific blocks in the study area, user-specific demand was estimated with the parking models by using the Fall 2021 population shown in Table 3 since data collection did not include user-specific demand data. A summary of the existing and projected parking demand is shown in Table 13.

Table 13: Existing and Projected Parking Demand

Use	Demand	
	Existing	Future
Staff	223 spaces	260-298 spaces
Student	42 spaces	53-70 spaces
Visitor	23 spaces	23 spaces
Library	14 spaces	-
Total	**302 spaces**	**336-391 spaces**

School Bus Demand

An estimated 15 buses and six (6) buses are anticipated to accommodate the future CC building and MPSA, respectively. These numbers were based on existing observations and APS student enrollment projections. Additionally, up to three (3) buses must be accommodated during midday off-peak hours for CTE shifts.

Geometric analyses found that the maximum number of buses that should queue on-site simultaneously (15 buses) can be accommodated in several ways. One version, included in the Technical Attachments, shows how 15 buses can queue while still providing gaps between them for maneuverability (the buses can enter/leave their own space if needed). This version also leaves room for a bypass lane, so buses are not required to wait for other buses to leave. Other configurations will be possible, and APS will be able to vary their approach as needed based on what they find works best in the future.

Curbside Demand

Based on APS feedback and Gorove Slade observations, the anticipated number of vehicles anticipated to load/unload simultaneously during morning arrival and afternoon under future conditions is as follows:

- 20 to 25 CC vehicles and 15 to 20 MPSA vehicles during morning arrival; and
- 25 to 35 CC vehicles and 20 to 30 MPSA vehicles during afternoon dismissal.

Additionally, in order to meet the APS goal of equity in mobility, ADA restricted parking was considered to be crucial near buildings across the campus. In order to accommodate this, APS estimated five (5) ADA spaces were needed on-street adjacent to the new CC building, and two (2) ADA spaces were needed on-street adjacent to the existing CC (future MPSA) building. Additional ADA-compliant access for the campus will be provided in the future parking garage.

Trip Generation Methodology

The vehicular trip generation for this project considers the changes to the existing uses based on the breakdown of changes to the student and staff populations at the Arlington Career Center from existing populations (as of Fall 2021) and the future populations (in Fall 2028) as shown in Table 3. As the future scenario includes 300 CTE students that will travel to/from the site via bus outside of peak hours, those students are removed for the purposes of future traffic analysis. The population scenarios used for existing and future traffic analysis are shown below in Table 14.

Table 14: Existing and Future Populations for Analysis

Location	Existing (2021)		Future (2028)	
	Students	Staff	Students	Staff
Career Center	519	179	1,319*	216
MPSA	488	91	775	145
ACHS	178	35	-	-
Site Total	**1,185**	**305**	**2,094**	**361**

*300 CTE students not included for future traffic analysis

The methodology used to develop the trip generation for the Arlington Career Center project is based primarily on APS Go! data, combined with population numbers of students and staff, and the mode split assumptions summarized above. The APS Go! survey results contain transportation profiles including arrival and departure times. The population for the students and staff were split into different modes using the mode split assumptions, and then assigned arrival and departure times based on the survey information. The existing bell times for the schools on the Arlington Career Center were assumed unchanged. The bell times for the yet-to-be-determined educational program is assumed to be 9:00 AM to 3:45 PM for the purposed of this analysis.

Using this methodology, vehicular trip generation was determined for each user group, shown in Figure 26. This methodology allows for a finer breakdown of how trip generation fluctuates within the peak hours and outside the singular peak hour of analysis.

The existing Columbia Pike Library trips were calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 10th Edition, using ITE Land Uses 590 (Library), using a 30 percent non-auto reduction derived from American Community Survey (ACS) 5-year estimates of the site census tract. At the July 2022 County Board meeting, the 2023-2032 Capital Improvement Plan was adopted which included the approval of $31.65 million for the refresh/relocation of the Columbia Pike Library. This funding will allow the County to redevelop the recently purchased parcel at 3108 Columbia Pike as a potential mixed-use partnership to relocate the Columbia Pike Library in anticipation of APS growth in the coming years. As a result, the library's existing trip generation has been removed from the future traffic analysis scenario for the project.

Once these daily profiles were assembled, the morning peak hour, school dismissal peak hour, and evening commuter peak hour trip generations were assembled. Table 15 contains a summary of the project's trip generation. Note that the library's trip generation is shown as negative in the future scenario to reflect its anticipated refresh/relocation as described above.

Table 15: Trip Generation Summary

User Group	Size	Vehicular Trip Generation								
		AM Peak Hour			*PM School Peak Hour*			*PM Commuter Peak Hour*		
		In	Out	Total	In	Out	Total	In	Out	Total
Existing Arlington Career Center Campus										
Students	1,185 students									
	Drive & Park	26 v/hr	0 v/hr	26 v/hr	3 v/hr	29 v/hr	32 v/hr	5 v/hr	15 v/hr	20 v/hr
	Pick-up/Drop-off	130 v/hr	130 v/hr	260 v/hr	144 v/hr	145 v/hr	289 v/hr	48 v/hr	74 v/hr	122 v/hr
	Total Student Trips	**156 v/hr**	**130 v/hr**	**286 v/hr**	**147 v/hr**	**174 v/hr**	**321 v/hr**	**53 v/hr**	**89 v/hr**	**142 v/hr**
Staff	305 staff	119 v/hr	2 v/hr	121 v/hr	2 v/hr	82 v/hr	84 v/hr	11 v/hr	68 v/hr	79 v/hr
Visitors	44 visitors	2 v/hr	0 v/hr	2 v/hr	3 v/hr	6 v/hr	9 v/hr	0 v/hr	7 v/hr	7 v/hr

Library	14,559 sf	8 v/hr	3 v/hr	11 v/hr	57 v/hr	62 v/hr	119 v/hr	57 v/hr	62 v/hr	119 v/hr
Subtotal (Existing CC Trips)		**285 v/hr**	**135 v/hr**	**420 v/hr**	**209 v/hr**	**324 v/hr**	**533 v/hr**	**121 v/hr**	**226 v/hr**	**347 v/hr**
Proposed Arlington Career Center Campus										
Students	2,094 students*									
	Drive & Park	73 v/hr	0 v/hr	73 v/hr	3 v/hr	76 v/hr	79 v/hr	5 v/hr	39 v/hr	44 v/hr
	Pick-up/Drop-off	314 v/hr	314 v/hr	628 v/hr	270 v/hr	287 v/hr	557 v/hr	94 v/hr	136 v/hr	230 v/hr
	Total Student Trips	**387 v/hr**	**314 v/hr**	**701 v/hr**	**273 v/hr**	**363 v/hr**	**636 v/hr**	**99 v/hr**	**175 v/hr**	**274 v/hr**
Staff	361 staff	154 v/hr	2 v/hr	156 v/hr	2 v/hr	105 v/hr	107 v/hr	11 v/hr	92 v/hr	103 v/hr
Visitors	53 visitors	2 v/hr	0 v/hr	2 v/hr	4 v/hr	9 v/hr	13 v/hr	0 v/hr	11 v/hr	11 v/hr
Library**	-	-8 v/hr	-3 v/hr	-11 v/hr	-57 v/hr	-62 v/hr	-119 v/hr	-57 v/hr	-62 v/hr	-119 v/hr
Subtotal (Proposed CC Trips)		**535 v/hr**	**313 v/hr**	**848 v/hr**	**222 v/hr**	**415 v/hr**	**637 v/hr**	**53 v/hr**	**216 v/hr**	**269 v/hr**
Net New Trips (Proposed CC Trips minus Existing CC Trips)		***250 v/hr***	***178 v/hr***	***428 v/hr***	***13 v/hr***	***91 v/hr***	***104 v/hr***	***-68 v/hr***	***-10 v/hr***	***-78 v/hr***

* 300 CTE students not included for analysis
** Library removed from the future traffic analysis scenario

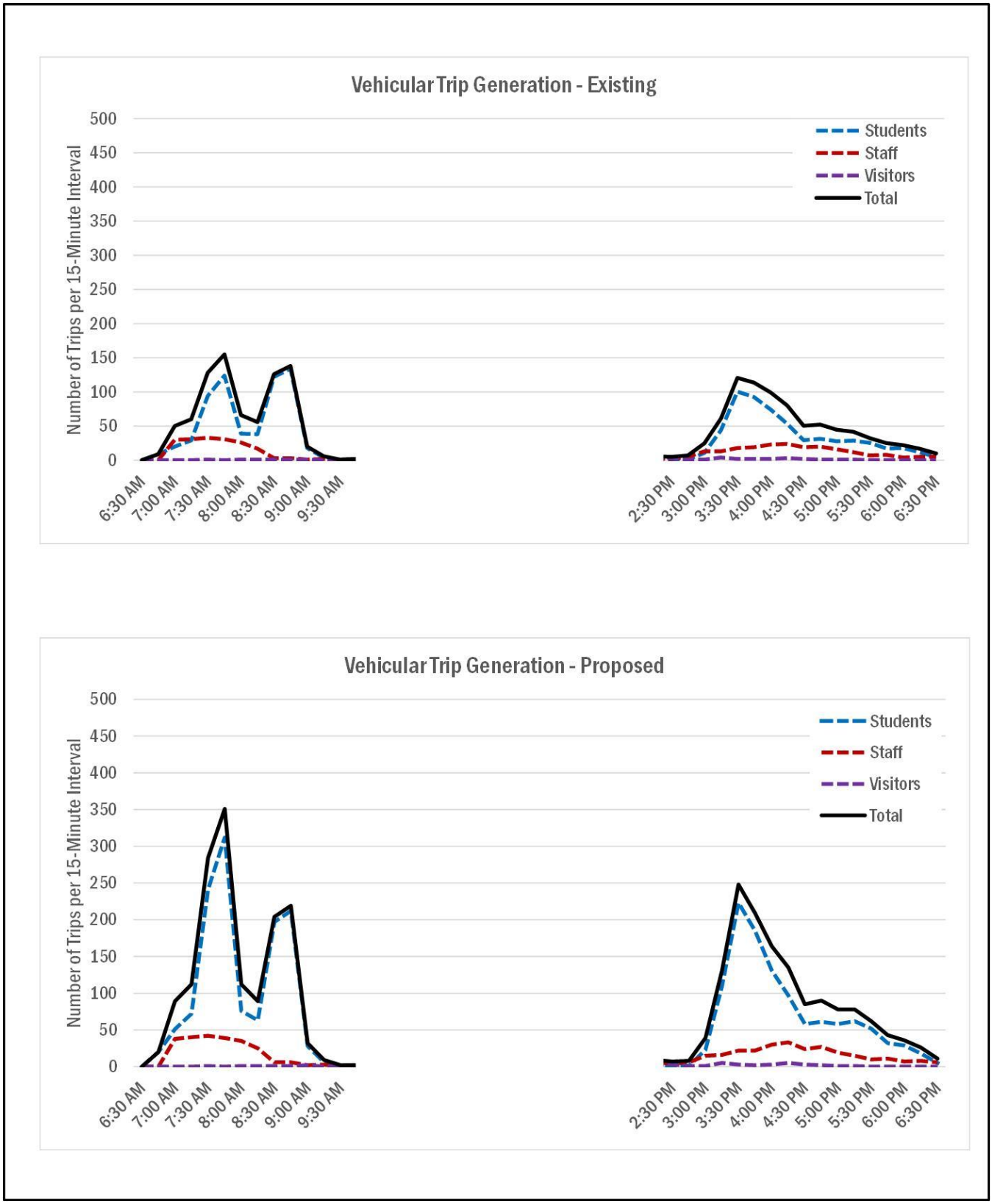

Figure 26: Vehicular Trip Generation Summary

Traffic Operations

This chapter provides a summary of an analysis of the existing and future roadway capacity in the study area for the 2028 analysis year. Included is an analysis of potential vehicular impacts of the Arlington Career Center development and a discussion of potential improvements.

The purpose of the capacity analysis is to:

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

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

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

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

The following conclusions are reached within this chapter:

- There are impacts to two (2) study intersections as a result of the proposed development.
- Mitigation measures were analyzed and discussed at these intersections, of which feasible solutions were recommended for implementation given Arlington County approval.
- Overall, this report concludes that the project will not have a detrimental impact to the surrounding transportation network.

Study Area, Scope, & Methodology

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

Capacity Analysis Scenarios

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

Specifically, the roadway capacity analysis examined the following scenarios:

1. 2022 Existing Conditions
2. 2028 Future Conditions without the development (2028 Background)
3. 2028 Future Conditions with the development (2028 Future)

Study Area

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

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

1. S Walter Reed Drive & 7th Street S
2. S Walter Reed Drive & 8th Street S
3. S Walter Reed Drive & Driveway
4. S Walter Reed Drive & 9th Street S
5. S Walter Reed Drive & Columbia Pike
6. S Highland Street & Columbia Pike

7. S Highland Street & 9th Street S
8. S Highland Street & Driveway
9. S Highland Street & 8th Street S
10. S Highland Street & 7th Street S
11. S Glebe Road & 7th Street S
12. S Glebe Road & Columbia Pike
13. S Fillmore Street & 2nd Street S
14. 9th Street S & Garage Access (Future intersection)

Figure 7 shows the vehicular study area intersections. Roadway characteristics, including classification, number of lanes, speed limit, the presence of on-street parking and average daily traffic volumes (AADT) are outlined in Table 16.

Table 16: Existing Roadway Network

Roadway	Classification*	Lanes	Speed	On-Street Parking	ADT**
S Walter Reed Drive	Minor Arterial (VDOT) Arterial Type C (Arlington)	2	25 mph	Yes	13,000
S Highland Street	Local Road (VDOT) Non-Arterial (Arlington)	2	25 mph	Yes	NA
Columbia Pike	Principal Arterial (VDOT) Arterial Type A (Arlington)	4	30 mph	Yes	24,000
S Glebe Road	Principal Arterial (VDOT) Arterial Type E (Arlington)	4	30 mph	No	31,000
2nd Street S	Major Collector (VDOT) Arterial Type E (Arlington)	2	25 mph	Yes	7,100

* From VDOT and Arlington GIS
** VDOT AADT Data from 2019
NA – Data unavailable

Traffic Volume Assumptions

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

Existing Traffic Volumes

The existing traffic volumes are comprised of turning movement count data, which were collected on Thursday, November 18, 2021, from 6:30AM to 9:30AM and 2:00PM to 7:00PM. The existing turning movement counts are included in the Technical Appendix.

For the AM, PM School Dismissal, and PM Commuter peak hours, the system peak of the study area intersections was used. This was 7:30 AM to 8:30 AM for the AM Peak, 3:00 PM to 4:00 PM in the PM School Dismissal Peak, and 4:45 PM to 5:45 PM in the PM Commuter Peak. The existing peak hour traffic volumes for intersections within the vehicular study area are shown in Figure 27.

2028 Traffic Volumes

2028 Background Traffic Volumes (without the proposed development)

Traffic projections for the 2028 Background Conditions consist of the existing volumes with the two additions:

- Inherent growth on the roadway (representing regional traffic growth); and
- Traffic generated by developments expected to be completed prior to 2028 (representing local traffic growth, known as background developments).

Inherent Growth

While the background developments represent local traffic changes, regional traffic is typically accounted for using growth rates. The growth rates used in this analysis were derived using VDOT's Annual Average Daily Traffic (AADT) data. Table 17 shows a summary of the growth in traffic volumes on roadways adjacent to the study area. Based on the historical data, an annual growth rate of 0.8 percent was assumed for 2028 scenarios.

Table 17: AADT Volume Trends

Roadway	AADT				Annual % Change (2016 - 2019)
	2016	*2017*	*2018*	*2019*	
Walter Reed Dr from Columbia Pike to 6th St S	13,000	13,000	13,000	13,000	0.0%
Columbia Pike from SR 120 Glebe Rd to SR 27 W, Washington Blvd	25,000	25,000	24,000	24,000	2.7%
Glebe Rd from US 50 to SR 244 Columbia Pike	31,000	30,000	30,000	31,000	1.1%
2nd St from Irving St to SR 27 Washington Blvd	7,200	7,300	7,200	7,100	-0.5%
Average					**0.8%**

Source: VDOT Traffic Data 2016 to 2019 (http://www.virginiadot.org/info/ct-trafficcounts.asp)
** To avoid discrepancies in traffic caused by COVID-19 pandemic, 2020 data was not included in the analysis*

Background Developments (2028)

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, three (3) developments were included in the 2028 Background Conditions scenario. These developments are:

1. Gilliam Place
2. Westmont Shopping Center
3. 2400 Columbia Pike

Trip generation was determined using ITE's Trip Generation, 10th Edition if a transportation study was not available for the background developments included in the 2028 Background Conditions. Details on each of the background developments included in the 2028 Background Conditions are presented below:

1. **Gilliam Place:** This project consisted of a redevelopment of the existing site at the northwest corner of the Columbia Pike and S Lincoln Street intersection into a new mixed-used building containing 8,000 SF of ground-floor retail, 173 residential units, 205 underground parking spaces, and approximately

6,400 SF of private open space. This development was determined to be completed prior to data collection in November 2021. As such, the trips generated by this development were assumed to be captured during data collection and are not included for the traffic analysis.

2. **Westmont Shopping Center:** This project consists of a redevelopment of the existing site at the northwest corner of the Columbia Pike and S Glebe Road intersection into a new mixed-used building containing approximately 250 dwelling units, 23,000 SF of ground-floor retail, and 345 underground parking spaces. The Westmont Shopping Center development is expected to generate 99 weekday AM peak hour vehicle trips and 152 weekday PM peak hour vehicle trips based on the Multimodal Transportation Study prepared by Wells + Associates dated December 14, 2018.

3. **2400 Columbia Pike**: This project consists of a redevelopment of the existing 11,398 SF of retail into a new multi-use building containing 105 residential units, 13,037 SF of retail, and below-grade parking. The expected build out year was initially projected to occur in 2017; however, construction has not yet begun. The 2400 Columbia Pike development is expected to generate 194 weekday AM peak hour vehicle trips and 299 weekday PM peak hour vehicle trips based on the Traffic Impact Study prepared by Wells + Associates dated October 20, 2014.

Trips generated by the approved background developments are included in the Technical Appendix. The traffic volumes generated by inherent growth and background developments were added to the existing traffic volumes in order to establish the 2028 Background traffic volumes. The traffic volumes for the 2028 Background conditions are shown on Figure 28.

Table 18: Traffic Generated by 2028 Background Developments

Background Development	Quantity	AM Peak Hour			PM School Dismissal Peak Hour			PM Commuter Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Westmont Shopping Center	250 Dwelling Units	25	101	126	101	54	155	101	54	155
	Minus Reductions	*-8*	*-30*	*-38*	*-30*	*-16*	*-46*	-30	-16	-46
	Residential Total	17	71	88	71	38	109	71	38	109
	22,342 SF Retail	13	8	21	40	43	83	40	43	83
	Minus Reductions	-6	-4	-10	-19	-21	-40	-19	-21	-40
	Retail Total	7	4	11	21	22	43	21	22	43
	Total Trips	**24**	**75**	**99**	**92**	**60**	**152**	**92**	**60**	**152**
2400 Columbia Pike	105 Dwelling Units	11	44	55	49	26	75	49	26	75
	13,000 SF Retail	43	5	48	24	29	53	24	29	53
	Minus Reductions	-4	-13	-17	*-15*	*-8*	*-23*	-15	-8	-23
	Removal of existing trips	-29	-11	-40	*-13*	*-19*	*-32*	-13	-19	-32
	Total Trips	**21**	**25**	**46**	**45**	**28**	**73**	**45**	**28**	**73**
	Net Background Site Trips	**45**	**100**	**145**	**137**	**88**	**225**	**137**	**88**	**225**

(1) Trips generated using ITE Trip Generation, 10th Edition. Non-auto mode split reductions based on other studies.
(2) Extracted from Westmont Shopping Center MMTA (12.14.2018) prepared by Wells + Associates.
(3) Extracted from 2400 Columbia Pike TIS (10.20.2014) prepared by Wells + Associates.

2028 Future Traffic Volumes

The 2028 Future Conditions traffic volumes consist of the 2028 Background volumes with the addition of the traffic volumes generated by the proposed development (site-generated trips). Thus, the 2028 Future Conditions traffic volumes include traffic generated by the existing volumes, background developments, removed existing site trips, and the proposed development.

Vehicular trips associated with the existing Arlington Career Center site were removed from the network based on existing driveway volumes prior to the addition of the proposed trips in the 2028 Future Conditions.

Trip distribution and assignments for site-generated traffic were primarily determined using existing volumes and anticipated traffic patterns. The origins of outbound and destinations of inbound staff and visitor vehicular trips were the new garage entry along the north side of 9th Street S. Inbound and outbound vehicular trips generated by students driving and parking were routed to available parking spaces along the site boundaries and around residential areas nearby. The AM inbound and PM/School Peak outbound student trip distributions are shown in Figure 30 and Figure 31, respectively. No outbound trips were generated during AM Peak hours and the inbound trips generated during PM and School Peak hours were routed to the south side of 9th Street S. The origin and destinations of vehicle trips generated by parents picking up/dropping off the kids were the east side of S Highland Street for elementary students and west side of S Walter Reed Drive for high school students. A summary of the inbound and outbound trip distribution assumptions is shown on Figure 29.

Based on the trip distribution and assignment assumptions, site-generated trips were distributed though the study area intersections. The site-generated traffic volumes are shown on Figure 32 for the 2028 full build-out year. The 2028 Future Conditions traffic volumes, which are comprised of existing volumes, background developments, removed existing site trips, and the proposed development are shown on Figure 33.

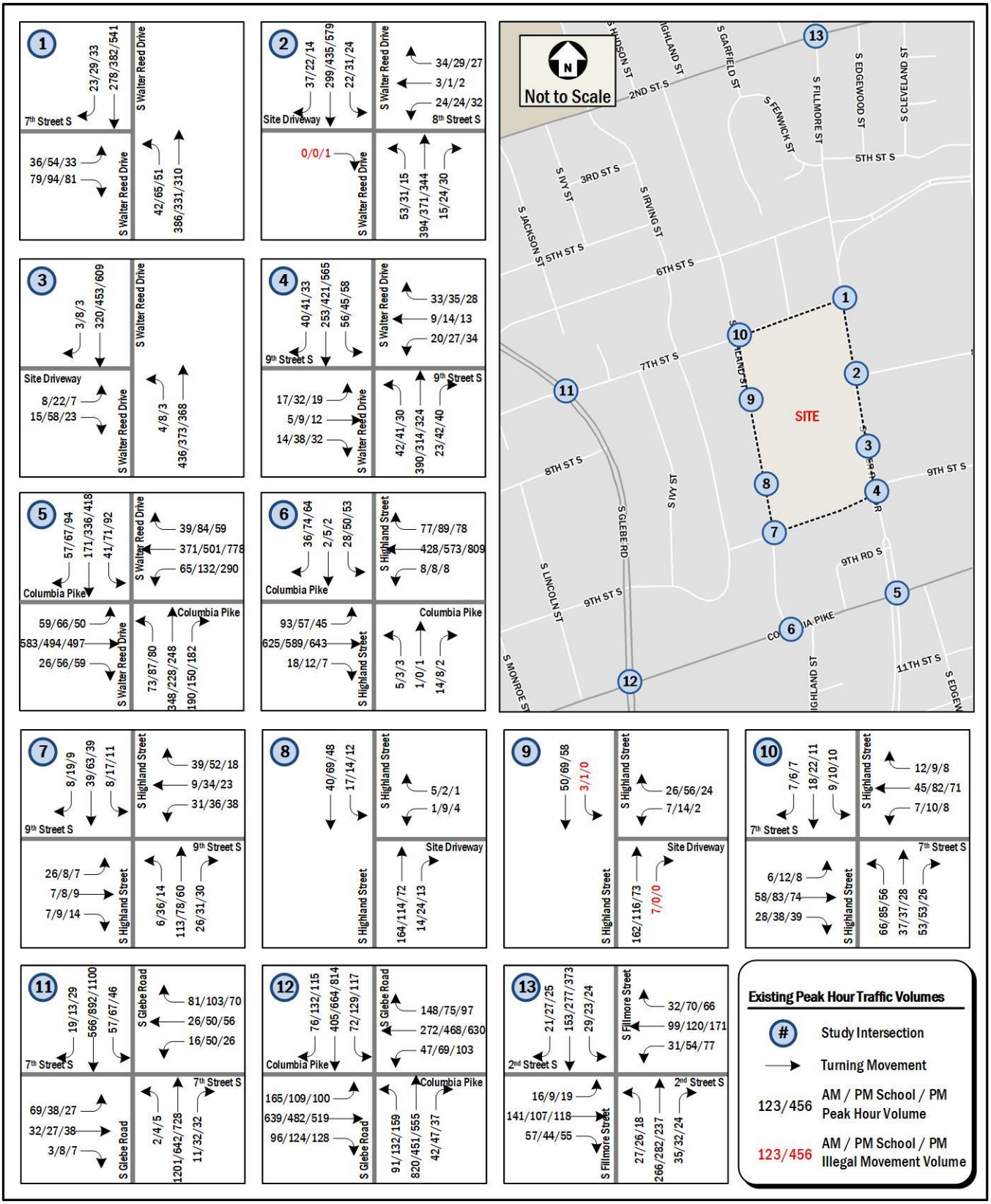

Figure 27: 2022 Existing Peak Hour Traffic Volumes

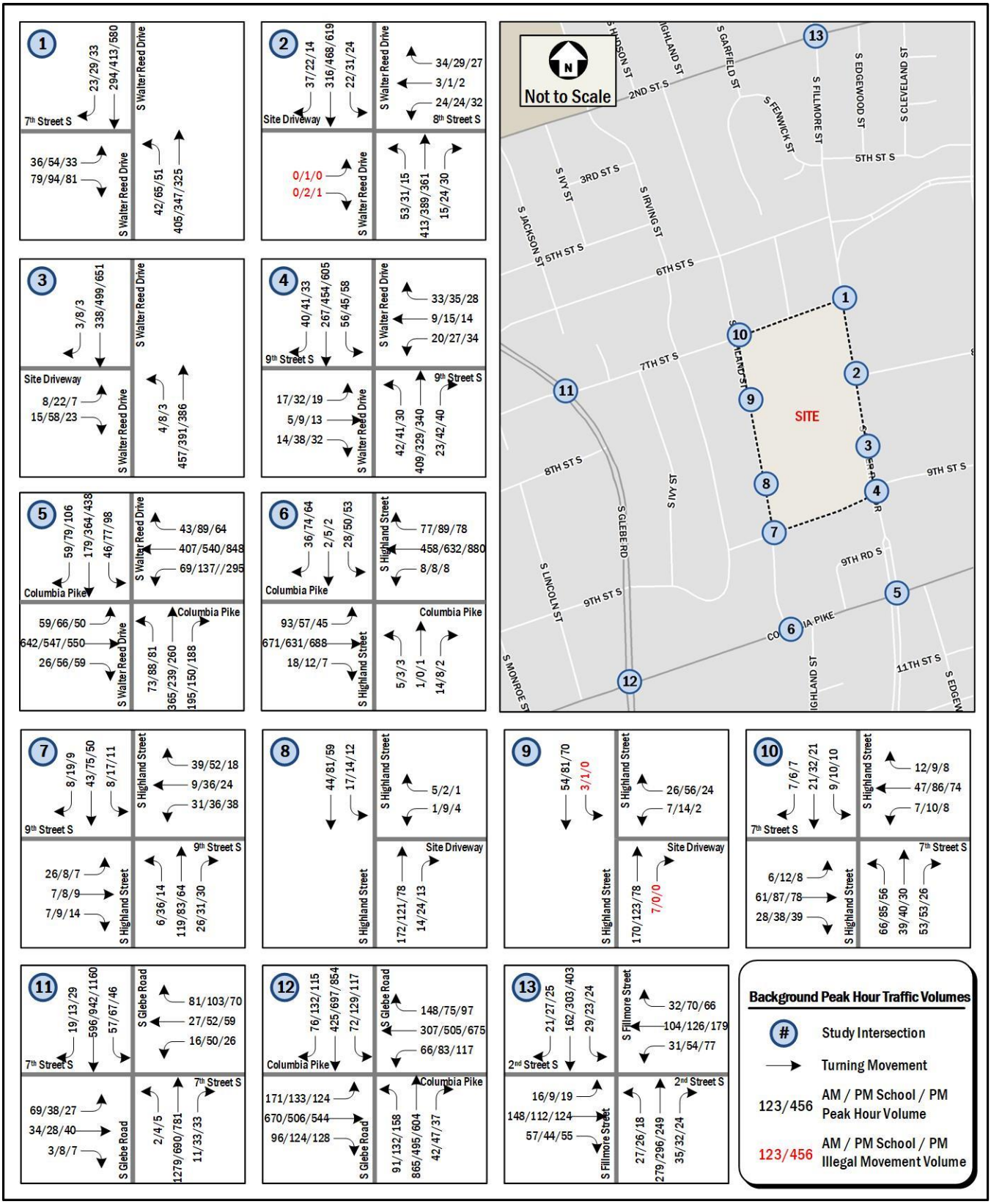

Figure 28: 2028 Background Peak Hour Traffic Volumes (without the proposed development)

Figure 29: Inbound and Outbound Trip Distribution/Assignment

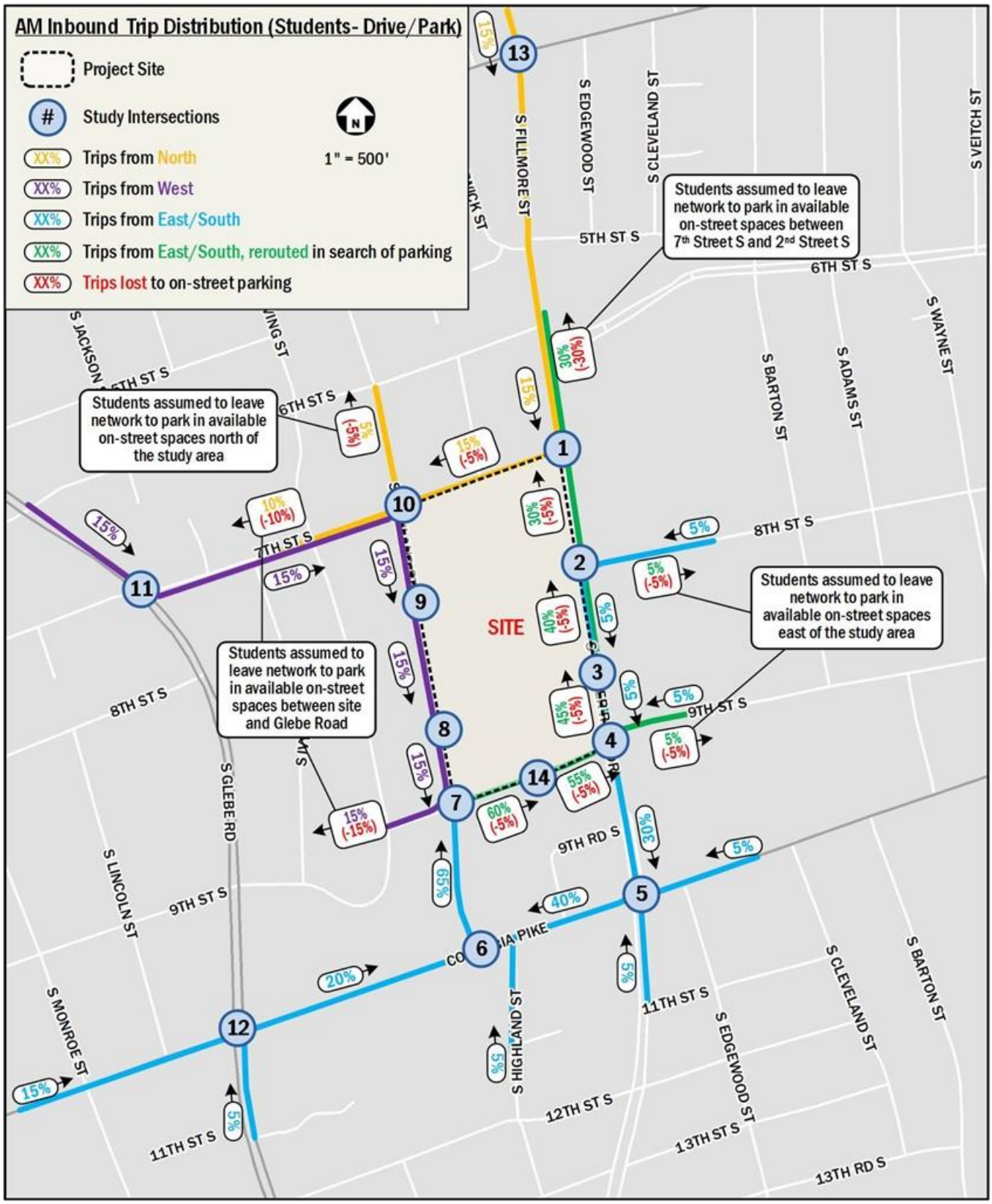

Figure 30: AM Inbound Trip Distribution (Students – Drive/Park)

Figure 31: PM/School Peak Outbound Trip Distribution (Students – Drive/Park)

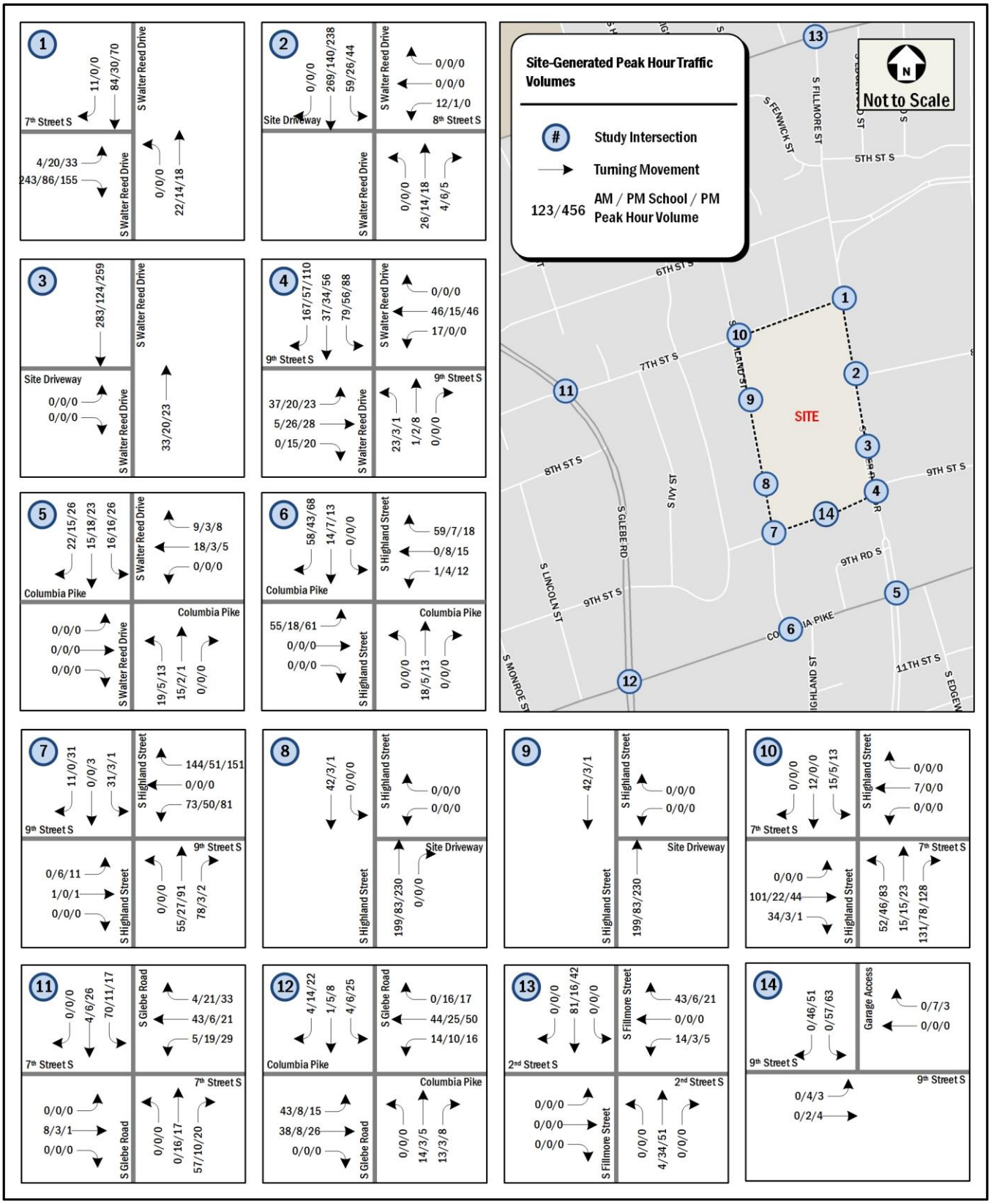

Figure 32: Site-Generated Peak Hour Traffic Volumes

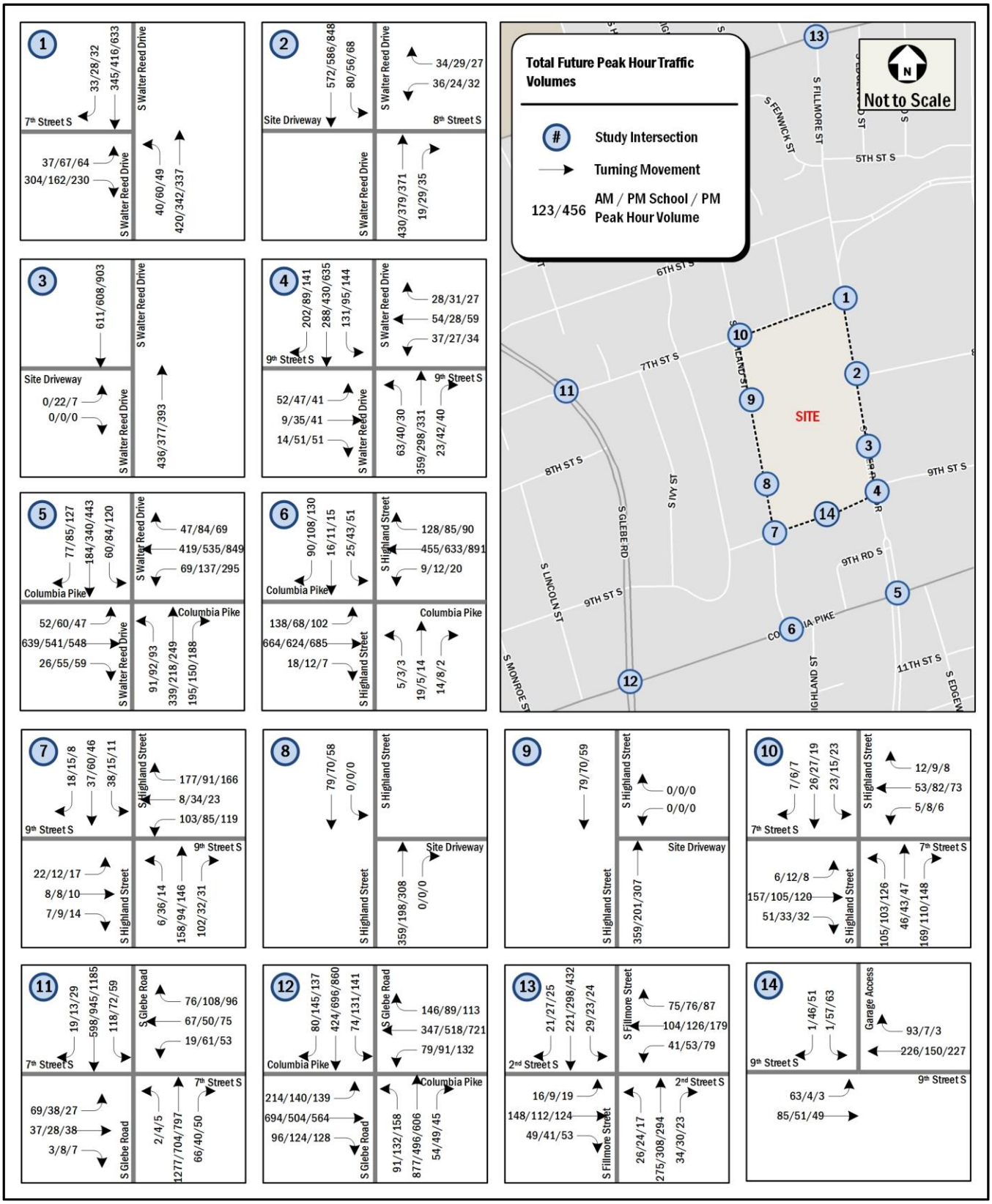

Figure 33: 2028 Future Peak Hour Traffic Volumes (with the proposed development)

Geometry and Operations Assumptions

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

2022 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.

Some intersections within the study area have atypical geometry. For these intersections, Gorove Slade assumed the closest lane configuration that could be represented in the analysis software. For example, the westbound approach of 8th Street S to S Walter Reed Drive has adjacent parking lanes that complicate the intersection. For purposes of the analysis, this was simplified to a single lane approach.

A description of the roadways within the study area is presented below in Table 16. The existing local roadway network including lane configurations and intersection control is detailed in and illustrated in Figure 34.

2028 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, the following geometry improvements were included in the 2028 Background scenario as part of the S Walter Reed Drive Complete Street project:

(1) The reconfiguration of the 8th Street S and S Walter Reed Drive intersection to convert the southbound approach from one left/thru lane and one right-turn lane to one left-thru lane.

(2) The signalization and reconfiguration of the 9th Street S and S Walter Reed Drive intersection to simplify geometry and convert:

- The eastbound from one left/thru/right lane to one left-turn lane and one thru/right lane.
- The northbound approach from one left/thru/right lane to one left-turn lane and one thru/right lane.
- The southbound approach from one left/thru/right lane to one left-turn lane and one thru/right lane.

Signal timings and phasing assumptions were based on nearby signalized intersections. No signal timing changes were made to other existing signals. Lane configurations and traffic controls for the 2028 Background Conditions are shown in Figure 35.

2028 Future Geometry and Operations Assumptions (with the proposed development)

The configurations and traffic controls assumed in the 2028 Future Conditions are based on the 2028 Background Conditions with the addition of the proposed development. One (1) intersection/access point was modified to accommodate the new circulation pattern for the proposed Arlington Career Center development.

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

(3) S Walter Reed Drive & 8th Street S (Int. 2) will be reconfigured to remove the west leg which provides access to the site under existing conditions. Each intersection approach is configured with the following:

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

(4) S Walter Reed Drive & Driveway (Int. 3) will be reconfigured to remove inbound access into the site. Each intersection approach is configured with the following:

- The eastbound approach will include one left/right-turn lane.
- The northbound approach will include one thru lane.
- The southbound approach will include one thru lane.

(5) S Highland Street & Driveway (Int. 8) will be reconfigured to remove outbound access from the site. Each intersection approach is configured with the following:

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

No signal timing changes were made to other existing signals. Lane configurations and traffic controls for the 2028 Future Conditions are shown in Figure 36.

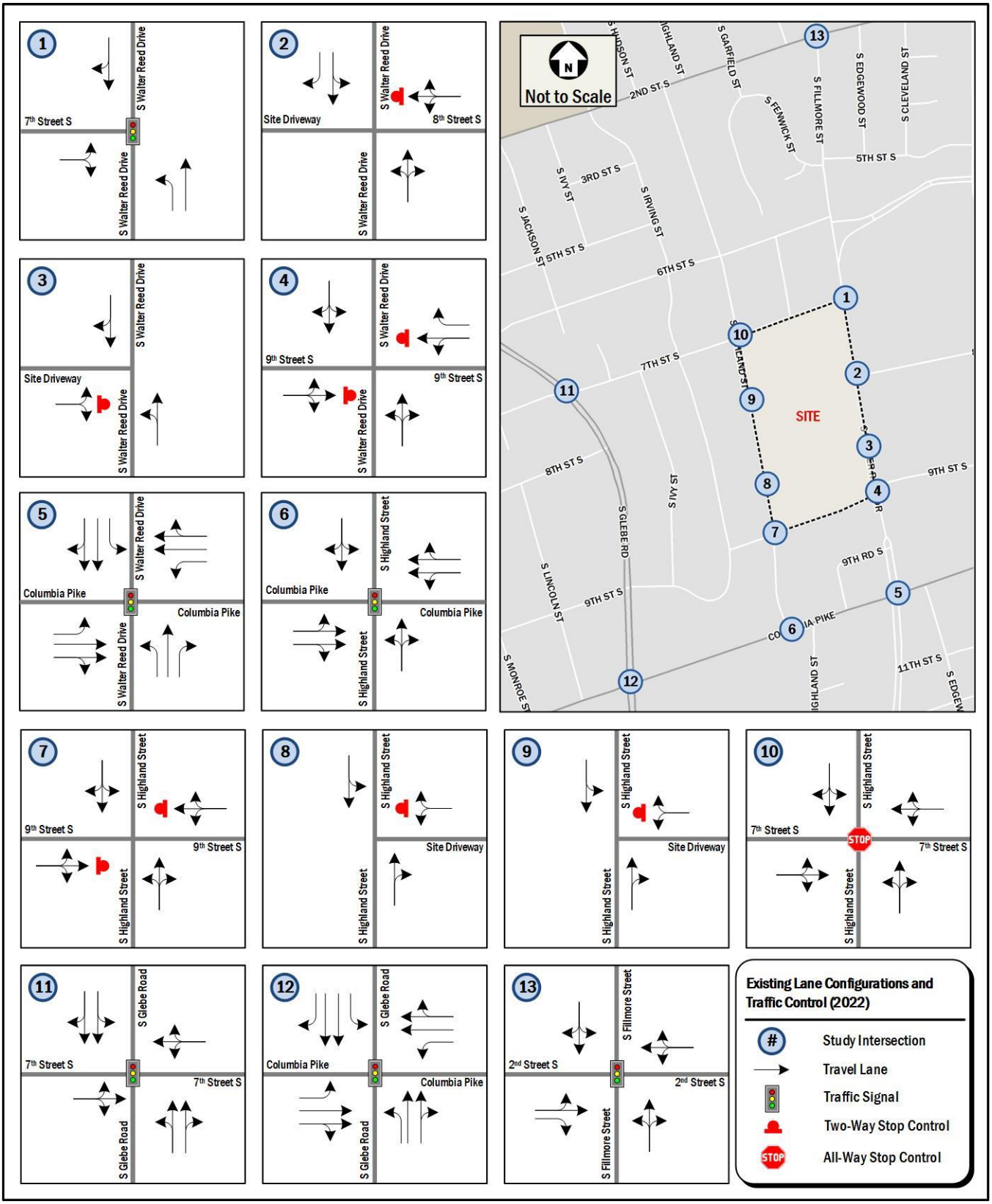

Figure 34: 2022 Existing Lane Configurations and Traffic Controls

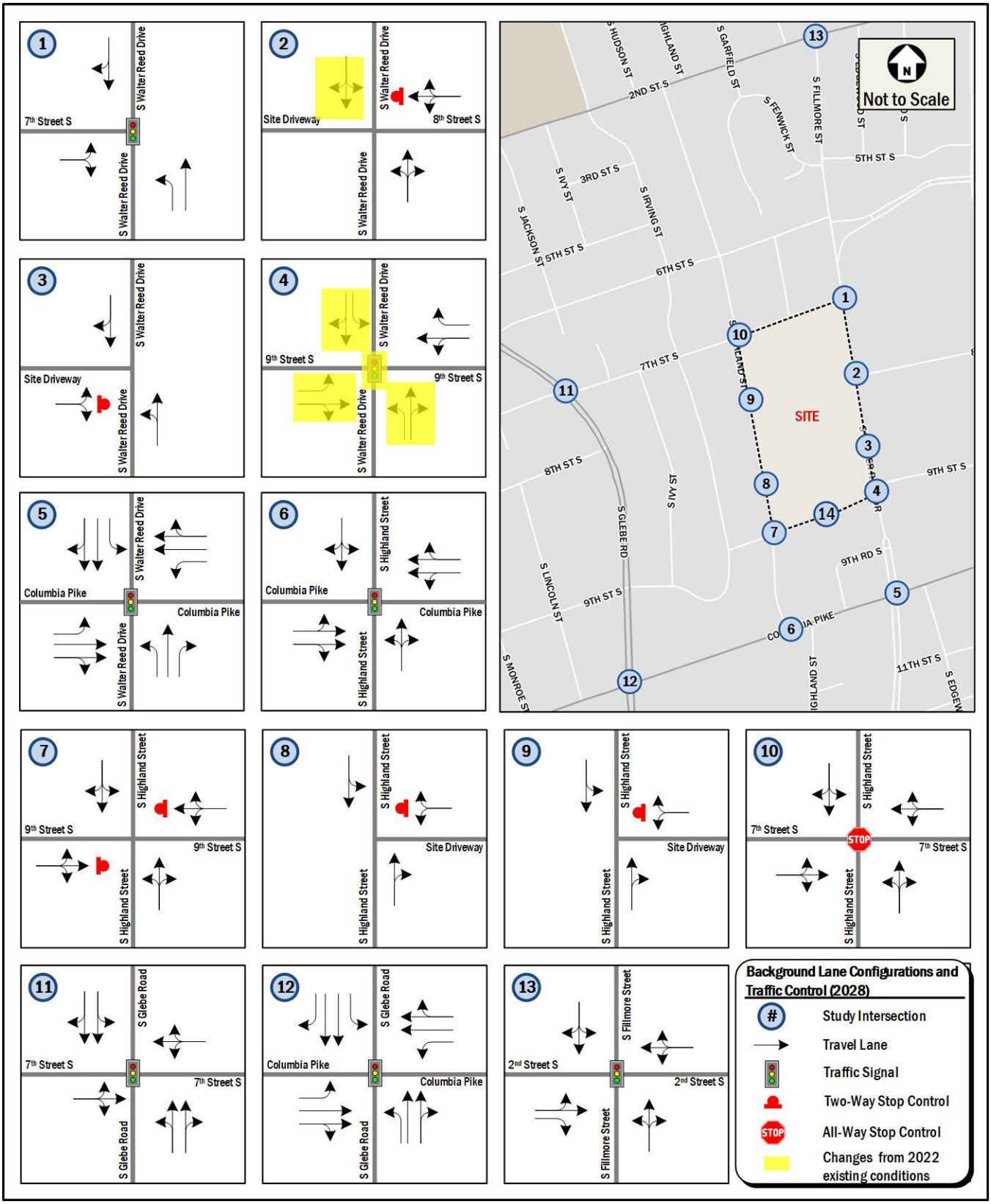

Figure 35: 2028 Background Lane Configurations and Traffic Controls (without the proposed development)

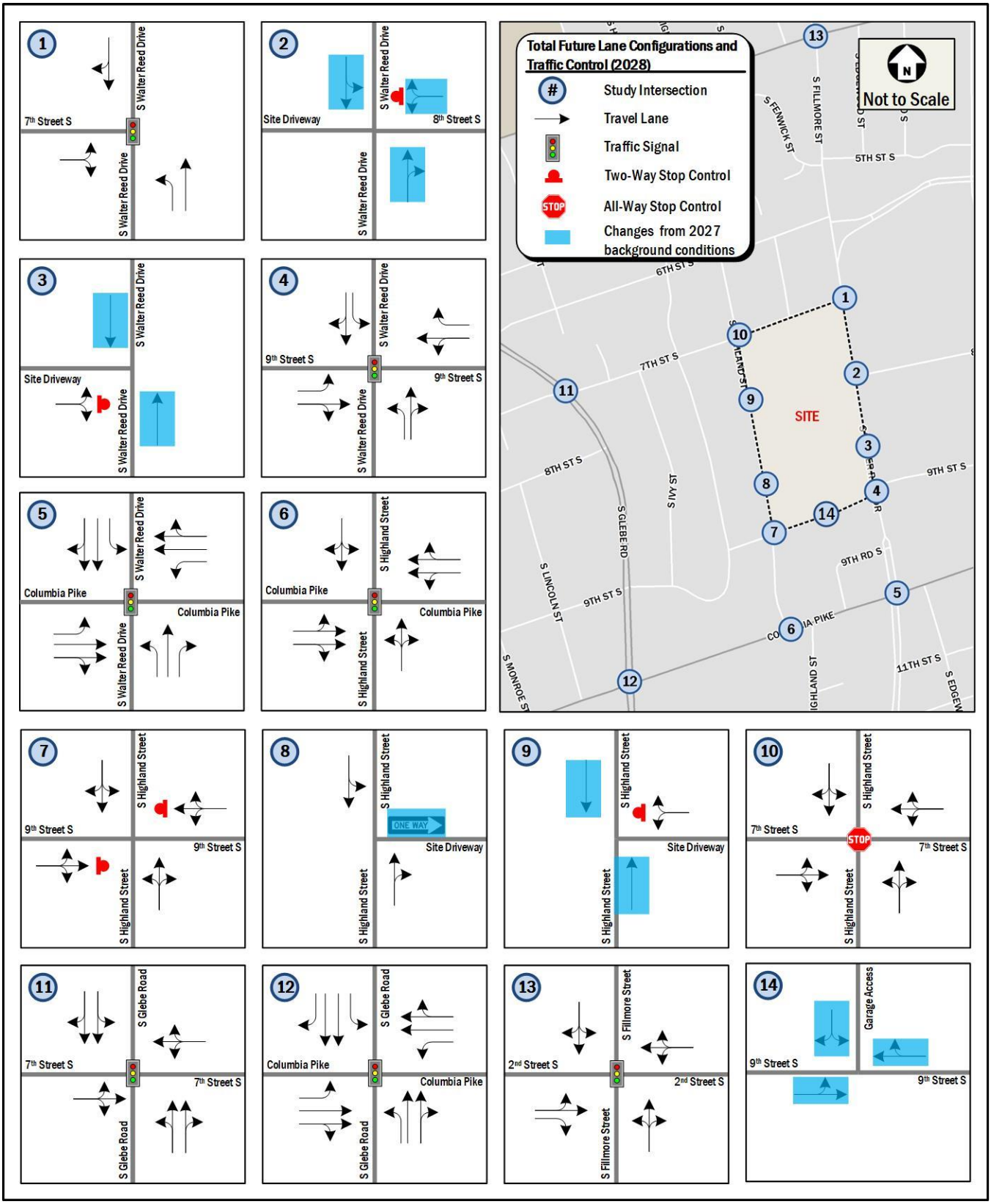

Figure 36: 2028 Future Lane Configuration and Traffic Controls (with the proposed development)

Vehicular Analysis Results

Intersection Capacity Analysis

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

Peak Hour Factors

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

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

Heavy Vehicle Percentages

A heavy vehicle percentage of two (2) percent 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 two (2) percent 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 50th percentile and 95th percentile queue lengths are shown for each lane group at the study area signalized intersections. The 50th percentile queue is the maximum back of queue on a median cycle. The 95th percentile queue is the maximum back of queue that is exceeded 5 percent of the time. For unsignalized intersections, only the 95th 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.

2022 Analysis Results

The Existing (2022) results of the intersection capacity analyses for the AM, PM, and afternoon school dismissal peak hours are expressed in level of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 19. The capacity analysis results indicate that most intersections operate at acceptable LOS under the Existing (2022) Conditions; however, two (2) intersections have one or more movements that operate at levels beyond acceptable thresholds in one or more peak hour:

- S Walter Reed Dr & 9th St S
  - Westbound Left/Thru/Right (Dismissal)
- S Glebe Rd & Columbia Pike
  - Southbound Right (PM)

The Existing (2022) queuing results for the AM, PM, and afternoon school dismissal peak hours are expressed by movement and presented in Table 20. The 95th percentile queues at most lane groups at study area intersections do not exceed their available storage length in Existing Conditions; however, four (4) intersections do have at least one movement with 95th percentile queues that exceed the available storage length in the morning, afternoon, and/or afternoon school dismissal peak hour:

- S Walter Reed Dr & 7th St S
  - Southbound Thru/Right (Dismissal/PM)
- S Walter Reed Dr & Columbia Pike
  - Northbound Thru (AM)
  - Southbound Left (PM)
  - Southbound Thru/Right (PM)
- S Glebe Rd & 7th St S
  - Northbound Left/Thru/Right (AM)
- S Fillmore St & 2nd St S
  - Westbound Left/Thru/Right (PM)

2028 Analysis Results

2028 Background Analysis Results (without the proposed development)

The Background (2028) results of the intersection capacity analyses for the AM, PM, and afternoon school dismissal peak hours are expressed in level of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 21. The capacity analysis results indicate that most intersections operate at acceptable LOS under the Background (2028) Conditions; however, one (1) intersection have one or more movements that operate at levels beyond acceptable thresholds in one or more peak hour:

- S Glebe Rd & Columbia Pike
  - Southbound Right (Dismissal/PM)

The Background (2028) queuing results for the AM, PM, and afternoon school dismissal peak hours are expressed by movement and presented in Table 22. The 95th percentile queues at most lane groups at study area intersections do not exceed their available storage length in the Background (2028) Conditions; however, five (5) intersections have at least one movement with 95th percentile queues that exceed the available storage length in the morning, afternoon, and/or Saturday peak hour:

- S Walter Reed Dr & 7th St S
  - Southbound Thru/Right (Dismissal/PM)
- S Walter Reed Dr & 9th St S
  - Northbound Thru/Right (AM/PM)
- S Walter Reed Dr & Columbia Pike
  - Northbound Thru (AM)
  - Southbound Left (AM/Dismissal/PM)
  - Southbound Thru/Right (Dismissal/PM)
- S Glebe Rd & 7th St S
  - Northbound Left/Thru/Right (AM)
- S Fillmore St & 2nd St S
  - Westbound Left/Thru/Right (PM)

2028 Future Analysis Results (with the proposed development)

The Future (2028) results of the intersection capacity analyses for the AM, PM, and afternoon school dismissal peak hours are expressed in level of service (LOS) and delay (seconds per vehicle) per movement and presented in Table 21. The capacity analysis results indicate that most intersections operate at acceptable LOS under the Future (2028) Conditions; however, one (1) intersection have one or more movements that operate at levels beyond acceptable thresholds in one or more peak hour:

- S Glebe Rd & Columbia Pike
  - Southbound Right (PM)

The Future (2028) queuing results for the AM, PM, and afternoon school dismissal peak hours are expressed by movement are presented in Table 22. The 95th percentile queues at most lane groups at study area intersections do not exceed their available storage length in the Future (2028) Conditions; however, six (6)

intersections have at least one movement with 95th percentile queues that exceed the available storage length in the morning, afternoon, and/or afternoon school dismissal peak hour:

- S Walter Reed Dr & 7th St S
  - Southbound Thru/Right (Dismissal/PM)
- S Walter Reed Dr & 9th St S
  - Northbound Thru/Right (AM/PM)
- S Walter Reed Dr & Columbia Pike
  - Northbound Thru (AM)
  - Southbound Left (Dismissal/PM)
  - Southbound Thru/Right (Dismissal/PM)
- S Glebe Rd & 7th St S
  - Northbound Left/Thru/Right (AM)
  - Southbound Left/Thru/Right (PM)
- S Glebe Road & Columbia Pike
  - Southbound Left (PM)
- S Fillmore St & 2nd St S
  - Westbound Left/Thru/Right (PM)

2028 Future Mitigations

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

- The overall intersection or any movement operates at LOS F in the future conditions with the proposed development where it operates at LOS E or better in the background conditions without the proposed development;
- The overall intersection or any movement operates at LOS F during the background condition and the delay increases by more than 10 percent in the future conditions with the proposed development; or
- For local street, if any 95th percentile queue length in the future condition exceeds the available capacity and increases by more than 150 feet compared to background conditions.

Following these guidelines there are impacts to two (2) intersection under Future (2028) Conditions. Mitigation measures were tested at this intersection, with results shown in Table 23 and Table 24, with detailed Synchro reports included in the Technical Appendix. The following conclusions were made:

- S Glebe Road & 7th Street S (Int. 11)
  Under Future (2028) Conditions, during the afternoon peak hour, the 95th percentile queue length for the southbound left/thru/right movement exceeds the storage length where it does not in Background Conditions.

  The increase in delay at this intersection is attributable to the proposed development can be mitigated through signal timing adjustments.
- S Glebe Road & Columbia Pike (Int. 12)
  Under Future (2028) Conditions, during the afternoon peak hour, the 95th percentile queue length for the southbound left movement exceeds the storage length where it does not in Background Conditions.

  The increase in delay at this intersection is attributable to the proposed development can be mitigated through signal timing adjustments.

Table 19: Existing Capacity Analysis Results

	Intersection and Movement	Existing (2022)					
		AM Peak		*Dismissal Peak*		*PM Peak*	
		Delay	LOS	Delay	LOS	Delay	LOS
1.	**S Walter Reed Drive & 7th Street S**						
	Overall	**11.5**	**B**	**13.3**	**B**	**15.9**	**B**
	Eastbound LR	19.4	B	17.4	B	19.3	B
	Northbound Left	4.7	A	9.3	A	12.9	B
	Northbound Thru	10.8	B	11.3	B	14.6	B
	Southbound TR	10.2	B	13.8	B	16.3	B
2.	**S Walter Reed Drive & 8th Street S**						
	Westbound LTR	18.8	C	24.9	C	24.2	C
	Northbound LTR	1.5	A	1.1	A	0.6	A
	Southbound LT	0.9	A	1.0	A	0.7	A
	Southbound Right	0.0	A	0.0	A	0.0	A
3.	**S Walter Reed Drive & East Site Driveway**						
	Eastbound LR	15.0	B	17.1	C	15.9	C
	Northbound LT	0.1	A	0.3	A	0.2	A
	Southbound TR	0.0	A	0.0	A	0.0	A
4.	**S Walter Reed Drive & 9th Street S**						
	Overall	**--**	**--**	**--**	**--**	**--**	**--**
	Eastbound LTR	29.2	D	50.0	E	26.8	D
	Eastbound Left	--	--	--	--	--	--
	Eastbound TR	--	--	--	--	--	--
	Westbound LTR	34.9	D	52.4	F	37.8	E
	Westbound Right	12.0	B	11.4	B	10.8	B
	Northbound LTR	1.2	A	1.5	A	1.3	A
	Northbound Left	--	--	--	--	--	--
	Northbound TR	--	--	--	--	--	--
	Southbound LTR	2.0	A	1.3	A	1.5	A
	Southbound Left	--	--	--	--	--	--
	Southbound TR	--	--	--	--	--	--
5.	**S Walter Reed Drive & Columbia Pike**						
	Overall	**23.7**	**C**	**23.7**	**C**	**27.7**	**C**
	Eastbound Left	7.2	A	27.7	C	19.1	B
	Eastbound TR	9.7	A	27.5	C	18.0	B
	Westbound Left	12.8	B	16.7	B	19.6	B
	Westbound TR	13.2	B	18.1	B	17.7	B
	Northbound Left	33.2	C	20.9	C	32.8	C
	Northbound Thru	41.7	D	22.0	C	34.3	C
	Northbound Right	31.1	C	16.6	B	21.8	C
	Southbound Left	45.9	D	29.8	C	47.5	D
	Southbound TR	45.6	D	31.7	C	52.8	D
6.	**Columbia Pike & S Highland Street**						
	Overall	**6.6**	**A**	**9.9**	**A**	**6.8**	**A**
	Eastbound LTR	3.4	A	4.5	A	2.4	A
	Westbound LTR	4.2	A	10.0	A	3.8	A
	Northbound LTR	46.0	D	31.3	C	45.8	D
	Southbound LTR	47.5	D	34.3	C	50.4	D
7.	**S Highland Street & 9th Street S**						
	Eastbound LTR	11.6	B	12.4	B	10.0	B
	Westbound LTR	11.1	B	13.6	B	10.9	B

	Intersection and Movement	Existing (2022)					
		AM Peak		*Dismissal Peak*		*PM Peak*	
		Delay	LOS	Delay	LOS	Delay	LOS
	Northbound LTR	0.3	A	2.1	A	1.0	A
	Southbound LTR	1.2	A	1.4	A	1.5	A
8.	**S Highland Street & West Site Driveway**						
	Westbound LR	9.8	A	10.8	B	9.6	A
	Northbound TR	0.0	A	0.0	A	0.0	A
	Southbound LT	2.6	A	1.4	A	1.6	A
9.	**S Highland Street & 8th Street S**						
	Westbound LR	10.3	B	11.1	B	9.1	A
	Northbound Thru	0.0	A	0.0	A	0.0	A
	Southbound Thru	0.5	A	0.1	A	0.0	A
10.	**S Highland Street & 7th Street S**						
	Eastbound LR	8.1	A	8.8	A	8.0	A
	Westbound LTR	8.0	A	8.5	A	8.0	A
	Northbound LTR	8.5	A	9.4	A	8.2	A
	Southbound TR	7.9	A	8.1	A	7.7	A
11.	**S Glebe Road & 7th Street S**						
	Overall	**15.3**	**B**	**14.7**	**B**	**11.9**	**B**
	Eastbound LTR	71.8	E	32.4	C	47.7	D
	Westbound LTR	58.5	E	44.3	D	55.0	E
	Northbound LTR	9.7	A	6.9	A	3.9	A
	Southbound LTR	8.4	A	11.9	B	9.6	A
12.	**S Glebe Road & Columbia Pike**						
	Overall	**36.8**	**D**	**30.1**	**C**	**48.5**	**D**
	Eastbound Left	19.5	B	23.6	C	27.7	C
	Eastbound TR	32.0	C	33.5	C	38.0	D
	Westbound Left	30.7	C	12.5	B	31.9	C
	Westbound TR	38.2	D	20.0	C	33.2	C
	Northbound Left	25.2	C	28.7	C	66.1	E
	Northbound TR	46.4	D	32.1	C	41.6	D
	Southbound Left	30.1	C	17.3	B	38.6	D
	Southbound Thru	36.7	D	33.2	C	52.4	D
	Southbound Right	32.2	C	62.8	E	242.6	F
13.	**S Fillmore Street & 2nd Street S**						
	Overall	**14.0**	**B**	**14.1**	**B**	**18.4**	**B**
	Eastbound LT	23.7	C	11.7	B	22.0	C
	Eastbound Right	20.4	C	10.2	B	19.5	B
	Westbound LTR	23.8	C	14.7	B	37.3	D
	Northbound LTR	7.3	A	14.5	B	8.8	A
	Southbound LTR	6.5	A	14.7	B	10.6	B

Table 20: Existing Queuing Results

	Intersection and Lane Group	Storage Length (ft)	Existing (2022)					
			AM Peak		*Dismissal Peak*		*PM Peak*	
			50th	95th	50th	95th	50th	95th
1.	**S Walter Reed Drive & 7th Street S**							
	Eastbound LR	240	10	37	14	42	9	39
	Northbound Left	90	9	m16	18	46	30	56
	Northbound Thru	300	256	270	104	183	197	248
	Southbound TR	270	101	161	155	#282	240	#443
2.	**S Walter Reed Drive & 8th Street S**							
	Westbound LTR	520	--	20	--	24	--	28
	Northbound LTR	250	--	4	--	3	--	2
	Southbound LT	350	--	2	--	3	--	2
	Southbound Right	75	--	--	--	--	--	--
3.	**S Walter Reed Drive & East Site Driveway**							
	Eastbound LR	540	--	6	--	23	--	8
	Northbound LT	250	--	0	--	1	--	0
	Southbound TR	330	--	0	--	0	--	0
4.	**S Walter Reed Drive & 9th Street S**							
	Eastbound LTR	530	--	20	--	72	--	32
	Eastbound Left	75	--	--	--	--	--	--
	Eastbound TR	530	--	--	--	--	--	--
	Westbound LT	85	--	21	--	41	--	32
	Westbound Right	530	--	6	--	5	--	4
	Northbound LTR	315	--	3	--	4	--	3
	Northbound Left	315	--	--	--	--	--	--
	Northbound TR	315	--	--	--	--	--	--
	Southbound LTR	650	--	5	--	4	--	5
	Southbound Left	250	--	0	--	0	--	0
	Southbound TR	650	--	0	--	0	--	0
5.	**S Walter Reed Drive & Columbia Pike**							
	Eastbound Left	320	14	28	38	81	13	m42
	Eastbound TR	385	146	145	171	230	100	154
	Westbound Left	460	27	49	57	91	134	207
	Westbound TR	500	97	127	151	185	225	296
	Northbound Left	160	47	87	39	72	53	89
	Northbound Thru	335	271	382	112	174	186	252
	Northbound Right	340	114	177	53	89	94	122
	Southbound Left	80	32	70	43	80	86	m133
	Southbound TR	175	96	137	135	174	262	320
6.	**Columbia Pike & S Highland Street**							
	Eastbound LTR	785	28	34	55	54	35	39
	Westbound LTR	500	57	33	158	210	53	65
	Northbound LTR	60	5	29	0	2	4	17
	Southbound LTR	435	27	70	50	103	78	139
7.	**S Highland Street & 9th Street S**							
	Eastbound LTR	180	--	6	--	4	--	4
	Westbound LTR	530	--	12	--	25	--	10
	Northbound LTR	440	--	0	--	2	--	1
	Southbound LTR	360	--	1	--	1	--	1
8.	**S Highland Street & West Site Driveway**							
	Westbound LR	540	--	1	--	2	--	1

	Intersection and Lane Group	Storage Length (ft)	Existing (2022)					
			AM Peak		*Dismissal Peak*		*PM Peak*	
			50th	95th	50th	95th	50th	95th
	Northbound TR	365	--	0	--	0	--	0
	Southbound LT	240	--	1	--	1	--	1
9.	**S Highland Street & 8th Street S**							
	Westbound LR	515	--	4	--	10	--	3
	Northbound Thru	240	--	0	--	0	--	0
	Southbound Thru	330	--	0	--	0	--	0
10.	**S Highland Street & 7th Street S**							
	Eastbound LTR	270	--	--	--	--	--	--
	Westbound LTR	250	--	--	--	--	--	--
	Northbound LTR	330	--	--	--	--	--	--
	Southbound TR	380	--	--	--	--	--	--
11.	**S Glebe Road & 7th Street S**							
	Eastbound LTR	690	103	160	43	79	53	99
	Westbound LTR	560	119	172	129	196	120	191
	Northbound LTR	300	321	386	174	228	71	89
	Southbound LTR	400	145	192	199	265	258	333
12.	**S Glebe Road & Columbia Pike**							
	Eastbound Left	300	81	131	45	81	56	96
	Eastbound TR	460	270	344	186	249	270	337
	Westbound Left	125	27	54	17	27	39	88
	Westbound TR	775	109	154	72	107	166	258
	Northbound Left	275	47	81	57	99	93	#221
	Northbound TR	545	360	436	152	208	251	312
	Southbound Left	145	42	70	27	43	75	124
	Southbound Thru	420	167	204	248	#330	285	343
	Southbound Right	125	0	0	10	17	5	35
13.	**S Fillmore Street & 2nd Street S**							
	Eastbound LT	390	61	105	28	56	57	96
	Eastbound Right	55	0	22	0	15	0	22
	Westbound LTR	180	55	101	55	103	133	#244
	Northbound LTR	625	76	127	82	148	73	120
	Southbound LTR	245	46	81	87	142	128	198

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

Table 21: 2028 Capacity Analysis Results

	Intersection and Movement	Background (2028)						Future (2028)					
		AM Peak		*Dismissal Peak*		*PM Peak*		*AM Peak*		*Dismissal Peak*		*PM Peak*	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	**S Walter Reed Drive & 7th Street S**												
	Overall	**14.3**	**B**	**13.4**	**B**	**14.5**	**B**	**16.1**	**B**	**14.4**	**B**	**21.4**	**C**
	Eastbound LR	19.4	B	17.3	B	19.3	B	20.1	C	17.1	B	21.7	C
	Northbound Left	11.5	B	9.1	A	7.1	A	11.7	B	9.6	A	11.1	B
	Northbound Thru	16.4	B	12.0	B	8.9	A	17.0	B	12.7	B	11.6	B
	Southbound TR	10.1	B	13.7	B	17.1	B	11.9	B	14.9	B	26.9	C
2.	**S Walter Reed Drive & 8th Street S**												
	Westbound LTR	19.1	C	20.1	C	21.9	C	25.0	C	0.0	--	0.0	--
	Northbound LTR	1.5	A	1.0	A	0.6	A	0.0	A	1.5	A	1.8	A
	Southbound LT	0.8	A	0.9	A	0.6	A	2.4	A	0.0	--	0.0	--
	Southbound Right	0.0	A	0.0	A	0.0	A	--	--	--	--	--	--
3.	**S Walter Reed Drive & East Site Driveway**												
	Eastbound LR	15.6	C	15.2	C	15.0	B	0.0	A	19.3	C	26.8	D
	Northbound LT	0.1	A	0.3	A	0.1	A	0.0	A	0.0	A	0.0	A
	Southbound TR	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
4.	**S Walter Reed Drive & 9th Street S**												
	Overall	**20.6**	**C**	**15.8**	**B**	**16.3**	**B**	**19.5**	**B**	**16.4**	**B**	**27.3**	**C**
	Eastbound LTR	--	--	--	--	--	--	--	--	--	--	--	--
	Eastbound Left	18.7	B	18.1	B	20.7	C	19.3	B	18.3	B	19.5	B
	Eastbound TR	18.1	B	17.7	B	24.6	C	18.5	B	18.1	B	19.5	B
	Westbound LTR	18.9	B	18.1	B	19.1	B	19.5	B	18.2	B	19.5	B
	Westbound Right	18.6	B	17.6	B	18.5	B	18.3	B	17.5	B	18.3	B
	Northbound LTR	--	--	--	--	--	--	--	--	--	--	--	--
	Northbound Left	13.0	B	8.2	A	9.0	A	15.5	B	8.3	A	14.8	B
	Northbound TR	26.1	C	10.9	B	13.8	B	23.2	C	10.4	B	13.3	B
	Southbound LTR	--	--	--	--	--	--	--	--	--	--	--	--
	Southbound Left	13.4	B	13.3	B	9.5	A	13.7	B	14.1	B	10.9	B
	Southbound TR	15.9	B	19.8	B	17.6	B	19.0	B	20.6	C	40.1	D
5.	**S Walter Reed Drive & Columbia Pike**												
	Overall	**23.3**	**C**	**24.1**	**C**	**29.7**	**C**	**22.5**	**C**	**22.5**	**C**	**0.0**	**0**
	Eastbound Left	7.3	A	27.3	C	19.8	B	7.1	A	7.1	A	28.4	C
	Eastbound TR	10.1	B	28.2	C	18.7	B	9.5	A	9.5	A	26.6	C
	Westbound Left	13.1	B	17.0	B	22.2	C	13.8	B	13.8	B	22.8	C
	Westbound TR	13.4	B	18.1	B	18.6	B	14.2	B	14.2	B	19.3	B
	Northbound Left	33.1	C	20.9	C	32.6	C	32.7	C	32.7	C	33.5	C
	Northbound Thru	43.0	D	22.1	C	34.0	C	39.4	D	39.4	D	33.1	C
	Northbound Right	31.2	C	16.5	B	21.3	C	30.2	C	30.2	C	20.8	C
	Southbound Left	42.5	D	29.8	C	56.2	E	39.9	D	39.9	D	56.0	E
	Southbound TR	42.5	D	31.9	C	60.0	E	40.4	D	40.4	D	59.4	E
6.	**Columbia Pike & S Highland Street**												
	Overall	**6.4**	**A**	**9.7**	**A**	**6.5**	**A**	**9.3**	**A**	**9.3**	**A**	**10.8**	**B**
	Eastbound LTR	3.4	A	4.2	A	2.5	A	5.1	A	5.1	A	5.7	A
	Westbound LTR	4.2	A	10.4	B	3.7	A	3.9	A	3.9	A	4.3	A
	Northbound LTR	46.0	D	31.3	C	45.8	D	46.5	D	46.5	D	46.0	D
	Southbound LTR	47.3	D	33.8	C	49.9	D	49.0	D	49.0	D	60.4	E
7.	**S Highland Street & 9th Street S**												
	Eastbound LTR	11.7	B	12.4	B	10.1	B	18.6	C	18.6	C	12.9	B
	Westbound LTR	11.2	B	13.4	B	11.0	B	19.8	C	19.8	C	15.3	C

	Intersection and Movement	Background (2028)						Future (2028)					
		AM Peak		*Dismissal Peak*		*PM Peak*		*AM Peak*		*Dismissal Peak*		*PM Peak*	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
	Northbound LTR	0.3	A	2.0	A	1.0	A	0.2	A	0.2	A	0.6	A
	Southbound LTR	1.1	A	1.2	A	1.2	A	3.6	A	3.6	A	1.4	A
8.	**S Highland Street & West Site Driveway**												
	Westbound LR	9.8	A	10.8	B	9.5	A	--	--	--	--	--	--
	Northbound TR	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Southbound LT	2.5	A	1.3	A	1.3	A	0.0	A	0.0	A	0.0	A
9.	**S Highland Street & 8th Street S**												
	Westbound LR	10.3	B	11.0	B	9.1	A	0.0	A	0.0	A	0.0	A
	Northbound Thru	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Southbound Thru	0.5	A	0.1	A	0.0		0.0	A	0.0	A	0.0	A
10.	**S Highland Street & 7th Street S**												
	Eastbound LR	8.2	A	8.7	A	8.1	A	10.9	A	10.9	A	9.5	A
	Westbound LTR	8.1	A	8.5	A	8.1	A	9.2	A	9.2	A	8.9	A
	Northbound LTR	8.6	A	9.2	A	8.3	A	12.2	B	12.2	B	11.0	B
	Southbound TR	8.0	A	8.1	A	7.8	A	9.1	A	9.1	A	8.5	A
11.	**S Glebe Road & 7th Street S**												
	Overall	**14.2**	**B**	**14.2**	**B**	**12.1**	**B**	**17.3**	**B**	**17.3**	**B**	**16.0**	**B**
	Eastbound LTR	67.9	E	32.2	C	47.7	D	73.6	E	73.6	E	43.7	D
	Westbound LTR	58.3	E	42.8	D	55.4	E	61.5	E	61.5	E	62.5	E
	Northbound LTR	9.1	A	6.7	A	4.0	A	10.5	B	10.5	B	5.2	A
	Southbound LTR	7.6	A	12.3	B	10.2	B	11.8	B	11.8	B	13.7	B
12.	**S Glebe Road & Columbia Pike**												
	Overall	**37.0**	**D**	**38.6**	**D**	**50.4**	**D**	**38.2**	**D**	**38.2**	**D**	**50.9**	**D**
	Eastbound Left	20.6	C	25.1	C	33.1	C	23.0	C	23.0	C	46.0	D
	Eastbound TR	33.4	C	34.2	C	38.6	D	34.9	C	34.9	C	39.3	D
	Westbound Left	31.9	C	12.9	B	36.0	D	29.0	C	29.0	C	38.7	D
	Westbound TR	39.3	D	19.4	B	38.0	D	37.4	D	37.4	D	39.5	D
	Northbound Left	24.0	C	28.6	C	67.4	E	24.6	C	24.6	C	67.6	E
	Northbound TR	45.2	D	33.0	C	41.4	D	49.5	D	49.5	D	42.5	D
	Southbound Left	30.2	C	17.4	B	38.9	D	30.1	C	30.1	C	44.0	D
	Southbound Thru	35.8	D	31.4	C	53.6	D	35.8	D	35.8	D	58.0	E
	Southbound Right	31.5	C	264.8	F	257.7	F	31.6	C	31.6	C	183.1	F
13.	**S Fillmore Street & 2nd Street S**												
	Overall	**13.7**	**B**	**14.1**	**B**	**18.7**	**B**	**14.3**	**B**	**14.3**	**B**	**19.3**	**B**
	Eastbound LT	23.6	C	11.6	B	21.7	C	22.8	C	22.8	C	20.9	C
	Eastbound Right	20.4	C	10.2	B	19.4	B	19.8	B	19.8	B	18.7	B
	Westbound LTR	23.7	C	14.3	B	37.9	D	25.0	C	25.0	C	38.7	D
	Northbound LTR	7.3	A	14.8	B	8.8	A	7.7	A	7.7	A	9.8	A
	Southbound LTR	6.5	A	14.6	B	10.6	B	7.3	A	7.3	A	11.8	B
14.	**9th Street S & New Garage Access**												
	Eastbound LT	--	--	--	--	--	--	3.7	A	--	--	0.4	A
	Westbound TR	--	--	--	--	--	--	0.0	--	--	--	0.0	--
	Southbound LR	--	--	--	--	--	--	11.2	B	--	--	11.0	B

Table 22: 2028 Queuing Results

	Intersection and Lane Group	Storage Length (ft)	Background (2028)						Future (2028)					
			AM Peak		*Dismissal Peak*		*PM Peak*		*AM Peak*		*Dismissal Peak*		*PM Peak*	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
1.	**S Walter Reed Drive & 7th Street S**													
	Eastbound LR	240	9	40	12	44	9	38	19	76	16	56	62	132
	Northbound Left	90	23	m36	23	m56	19	35	23	35	21	53	22	43
	Northbound Thru	300	242	243	137	222	200	204	280	268	130	213	196	208
	Southbound TR	270	98	170	154	#310	253	#472	123	211	155	#312	~330	#527
2.	**S Walter Reed Drive & 8th Street S**													
	Westbound LTR	520	--	21	--	18	--	22	--	32	--	--	--	0
	Northbound LTR	250	--	4	--	3	--	1	--	0	--	0	--	5
	Southbound LT	350	--	2	--	3	--	2	--	8	--	5	--	0
	Southbound Right	75	--	0	--	0	--	0	--	--	--	--	--	--
3.	**S Walter Reed Drive & East Site Driveway**													
	Eastbound LR	540	--	6	--	18	--	7	--	0	--	7	--	4
	Northbound LT	250	--	0	--	1	--	0	--	0	--	0	--	0
	Southbound TR	330	--	0	--	0	--	0	--	0	--	0	--	0
4.	**S Walter Reed Drive & 9th Street S**													
	Eastbound LTR	530	--	--	--	--	--	--	--	--	--	--	--	--
	Eastbound Left	75	5	m13	8	24	8	m19	16	32	12	32	13	m27
	Eastbound TR	530	2	m10	2	21	9	28	3	m12	9	34	15	35
	Westbound LT	85	8	23	10	28	13	32	25	54	14	35	25	54
	Westbound Right	530	0	7	0	7	0	5	0	5	0	5	0	5
	Northbound LTR	315	--	--	--	--	--	--	--	--	--	--	--	--
	Northbound Left	315	29	m54	10	30	17	m42	43	83	10	30	18	m45
	Northbound TR	315	344	456	109	194	247	338	279	394	97	173	230	318
	Southbound LTR	650	--	--	--	--	--	--	--	--	--	--	--	--
	Southbound Left	250	22	56	17	m36	14	m24	52	106	36	m66	41	m58
	Southbound TR	650	130	207	201	#344	~186	#478	199	#362	209	#369	~425	m#563
5.	**S Walter Reed Drive & Columbia Pike**													
	Eastbound Left	320	12	28	38	81	14	m42	10	23	35	76	18	m47
	Eastbound TR	385	147	170	187	249	114	166	122	143	187	248	142	219
	Westbound Left	460	27	51	54	94	140	210	27	51	54	94	143	210
	Westbound TR	500	104	137	150	198	259	332	108	142	146	194	267	334
	Northbound Left	160	47	87	38	72	51	88	60	105	39	74	58	99
	Northbound Thru	335	289	405	114	179	184	260	262	372	102	163	172	249
	Northbound Right	340	118	181	51	87	90	123	118	181	51	87	87	123
	Southbound Left	80	43	87	43	86	96	m133	46	m79	46	92	115	m132
	Southbound TR	175	116	155	137	189	278	341	110	153	131	181	291	m321
6.	**Columbia Pike & S Highland Street**													
	Eastbound LTR	785	26	30	49	50	37	43	61	56	51	53	61	63
	Westbound LTR	500	58	35	172	228	57	68	26	34	171	225	69	85
	Northbound LTR	60	4	29	0	2	3	16	19	53	4	22	13	37
	Southbound LTR	435	24	71	42	100	71	140	51	122	46	114	121	#240
7.	**S Highland Street & 9th Street S**													

	Intersection and Lane Group	Storage Length (ft)	Background (2028)						Future (2028)					
			AM Peak		*Dismissal Peak*		*PM Peak*		*AM Peak*		*Dismissal Peak*		*PM Peak*	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
	Eastbound LTR	180	--	7	--	4	--	3	--	12	--	5	--	7
	Westbound LTR	530	--	12	--	23	--	11	--	95	--	47	--	67
	Northbound LTR	440	--	0	--	2	--	1	--	0	--	2	--	1
	Southbound LTR	360	--	1	--	1	--	1	--	3	--	1	--	1
8.	**S Highland Street & West Site Driveway**													
	Westbound LR	540	--	1	--	1	--	0	--	--	--	--	--	--
	Northbound TR	365	--	0	--	0	--	0	--	0	--	0	--	0
	Southbound LT	240	--	1	--	1	--	1	--	0	--	0	--	0
9.	**S Highland Street & 8th Street S**													
	Westbound LR	515	--	4	--	9	--	2	--	0	--	0	--	0
	Northbound Thru	240	--	0	--	0	--	0	--	0	--	0	--	0
	Southbound Thru	330	--	0	--	0	--	0	--	0	--	0	--	0
10.	**S Highland Street & 7th Street S**													
	Eastbound LTR	270	--	--	--	--	--	--	--	--	--	--	--	--
	Westbound LTR	250	--	--	--	--	--	--	--	--	--	--	--	--
	Northbound LTR	330	--	--	--	--	--	--	--	--	--	--	--	--
	Southbound TR	380	--	--	--	--	--	--	--	--	--	--	--	--
11.	**S Glebe Road & 7th Street S**													
	Eastbound LTR	690	95	162	39	79	55	101	100	167	39	79	53	95
	Westbound LTR	560	109	175	123	202	122	195	148	220	133	217	188	273
	Northbound LTR	300	311	394	191	246	80	90	335	461	192	252	92	117
	Southbound LTR	400	135	185	216	288	282	367	186	292	222	295	315	444
12.	**S Glebe Road & Columbia Pike**													
	Eastbound Left	300	86	135	56	97	68	#119	111	169	59	#102	77	#169
	Eastbound TR	460	290	362	196	262	268	346	303	376	195	261	280	358
	Westbound Left	125	39	71	18	32	52	101	42	72	22	37	59	m102
	Westbound TR	775	133	174	69	110	198	321	151	194	91	147	234	#433
	Northbound Left	275	46	81	57	99	91	#226	46	81	57	99	92	#226
	Northbound TR	545	380	466	169	228	265	334	394	482	170	229	273	340
	Southbound Left	145	37	69	24	40	74	128	38	70	25	m41	91	m152
	Southbound Thru	420	158	212	246	#343	295	367	158	212	246	#337	313	405
	Southbound Right	125	0	0	8	16	5	39	0	0	10	m18	11	m60
13.	**S Fillmore Street & 2nd Street S**													
	Eastbound LT	390	59	109	27	58	55	99	59	103	27	58	53	99
	Eastbound Right	55	0	24	0	16	0	24	0	21	0	15	0	24
	Westbound LTR	180	53	104	51	106	136	#252	65	123	52	107	143	#279
	Northbound LTR	625	80	134	87	156	72	126	78	144	89	160	90	146
	Southbound LTR	245	46	83	86	154	128	213	63	118	85	152	147	232
14.	**9th Street S & New Garage Access**													
	Eastbound LT	250	--	--	--	--	--	--	--	4	--	--	--	0
	Westbound TR	240	--	--	--	--	--	--	--	0	--	--	--	0
	Southbound LR	60	--	--	--	--	--	--	--	0	--	--	--	15

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

Table 23: 2028 Mitigated Capacity Analysis Results

	Intersection and Movement	Background (2028)						Future (2028)						Future (2028) with Mitigations					
		AM Peak		*Dismissal Peak*		*PM Peak*		*AM Peak*		*Dismissal Peak*		*PM Peak*		*AM Peak*		*Dismissal Peak*		*PM Peak*	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11.	**S Glebe Road & 7th Street S**																		
	Overall	**14.2**	**B**	**14.2**	**B**	**12.1**	**B**	**17.3**	**B**	**17.3**	**B**	**16.0**	**B**					**18.9**	**B**
	Eastbound LTR	67.9	E	32.2	C	47.7	D	73.6	E	73.6	E	43.7	D					43.7	D
	Westbound LTR	58.3	E	42.8	D	55.4	E	61.5	E	61.5	E	62.5	E	**NO MITIGATIONS**				74.5	E
	Northbound LTR	9.1	A	6.7	A	4.0	A	10.5	B	10.5	B	5.2	A					8.0	A
	Southbound LTR	7.6	A	12.3	B	10.2	B	11.8	B	11.8	B	13.7	B					13.9	B
12.	**S Glebe Road & Columbia Pike**																		
	Overall	**37.0**	**D**	**38.6**	**D**	**50.4**	**D**	**38.2**	**D**	**38.2**	**D**	**50.9**	**D**					**42.2**	**D**
	Eastbound Left	20.6	C	25.1	C	33.1	C	23.0	C	23.0	C	46.0	D					46.0	D
	Eastbound TR	33.4	C	34.2	C	38.6	D	34.9	C	34.9	C	39.3	D					39.3	D
	Westbound Left	31.9	C	12.9	B	36.0	D	29.0	C	29.0	C	38.7	D					28.1	C
	Westbound TR	39.3	D	19.4	B	38.0	D	37.4	D	37.4	D	39.5	D	**NO MITIGATIONS**				30.7	C
	Northbound Left	24.0	C	28.6	C	67.4	E	24.6	C	24.6	C	67.6	E					67.6	E
	Northbound TR	45.2	D	33.0	C	41.4	D	49.5	D	49.5	D	42.5	D					42.5	D
	Southbound Left	30.2	C	17.4	B	38.9	D	30.1	C	30.1	C	44.0	D					35.1	D
	Southbound Thru	35.8	D	31.4	C	53.6	D	35.8	D	35.8	D	58.0	E					47.2	D
	Southbound Right	31.5	C	264.8	F	257.7	F	31.6	C	31.6	C	183.1	F					82.0	F

Table 24: 2028 Mitigated Queuing Analysis Results

	Intersection and Lane Group	Storage Length (ft)	Background (2028)						Future (2028)						Future (2028) with Mitigations					
			AM Peak		*Dismissal Peak*		*PM Peak*		*AM Peak*		*Dismissal Peak*		*PM Peak*		*AM Peak*		*Dismissal Peak*		*PM Peak*	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
11.	**S Glebe Road & 7th Street S**																			
	Eastbound LTR	690	95	162	39	79	55	101	100	167	39	79	53	95					52	98
	Westbound LTR	560	109	175	123	202	122	195	148	220	133	217	188	273	**NO MITIGATIONS**				216	#364
	Northbound LTR	300	311	394	191	246	80	90	335	461	192	252	92	117					94	167
	Southbound LTR	400	135	185	216	288	282	367	186	292	222	295	315	444					323	400
12.	**S Glebe Road & Columbia Pike**																			
	Eastbound Left	300	86	135	56	97	68	#119	111	169	59	#102	77	#169					77	#169
	Eastbound TR	460	290	362	196	262	268	346	303	376	195	261	280	358					280	358
	Westbound Left	125	39	71	18	32	52	101	42	72	22	37	59	m102					42	m69
	Westbound TR	775	133	174	69	110	198	321	151	194	91	147	234	#433	**NO MITIGATIONS**				295	#435
	Northbound Left	275	46	81	57	99	91	#226	46	81	57	99	92	#226					92	#226
	Northbound TR	545	380	466	169	228	265	334	394	482	170	229	273	340					273	340
	Southbound Left	145	37	69	24	40	74	128	38	70	25	m41	91	m152					69	m111
	Southbound Thru	420	158	212	246	#343	295	367	158	212	246	#337	313	405					251	381
	Southbound Right	125	0	0	8	16	5	39	0	0	10	m18	11	m60					2	m33

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.

Parking

This chapter reviews the available parking within and surrounding the Arlington Career Center (CC) campus, including:

- A summary of the parking data collected in the area surrounding the campus on a typical weekday; and
- A review of existing peak parking demand for the existing uses on the on the CC campus and the surrounding residential streets.

The following conclusions are reached within this chapter:

- Parking demand within and surrounding the Career Center campus peaks at 3:00 PM, with 51 percent of the available parking spaces within the study area occupied.
- The main parking lot on-campus peaks at 97 percent occupancy at 12:00 PM. It sustains a high level of occupancy between 10:00 AM and 3:00 PM.
- Time-restricted on-street parking along S Walter Reed Drive and 7th Street S adjacent to the CC campus peaks at 97 percent occupancy at 2:30 PM.
- Unrestricted on-street parking along the CC campus's S Walter Reed Drive frontage peaks at 100 percent occupancy at 9:00 PM, with demand lowering to 50 to 80 percent in the middle of the weekday.
- Unrestricted on-street parking along the CC campus's 7th Street S frontage peaks at 82 percent at 9:30 AM, with demand lowering to 40 to 70 percent before 3:00 PM and lowering further to less than 20 percent into the evening.
- Unrestricted and pick-up/drop-off on-street parking spaces along the CC campus's S Highland Street frontage peaks at 92 percent at 8:00 AM and 2:30 PM, coinciding with arrival and dismissal times.
- Residential permit on-street parking along the CC campus's S Highland Street frontage peaks at 100 percent at 3:00 PM, with demand lowering to 40 to 60 percent after the peak.
- Metered on-street parking along the CC campus's 9th Street S frontage peaks at 29 percent at 6:00-6:30 AM, 8:30-9:00 AM, and 2:30 PM, with demand never exceeding 30 percent.
- Model estimates for the future CC campus parking demands range from 336 to 391 spaces including all faculty/staff, visitors, and students. The lower end of this range assumes a successfully implemented, enhanced Transportation Demand Management (TDM) program that reduces future the site's future auto mode split, while the higher end of this range assumes the existing/base auto mode split based on APS Go! data.

This report recommends the following strategy for accommodating the increase in parking demand:

- Use the existing on-street parking within the vicinity of CC campus to accommodate student parking and do not provide on-site parking for students (approximately 53 to 70 spaces based on parking model estimates).
- Set the campus's minimum off-street parking requirement at 326 spaces to accommodate all future staff and visitor parking demand as well as the 24 spaces estimated to be needed for the CC auto program.
- Consider exempting CC students from metered parking fees along 9th Street S to limit the number of students parking on nearby residential streets to avoid parking fees.
- Continue the current APS Go! Transportation Demand Management (TDM) programs to encourage use of alternative travel modes, thus reducing parking demand.
- Should a future TDM program successfully reduce auto mode splits and thus increase parking availability in the new garage, consider converting vehicle parking spaces to long-term bicycle parking facilities or other non-auto amenities.
- Explore student parking policies systematically and consider additional demand management measures such as limiting availability of student parking passes and/or charging higher fees for student passes. These would be APS-wide policy changes that would impact all high schools in the County.
- Implement wayfinding and marketing of the future parking garage for after-school activities and events to lessen the impact on nearby on-street parking.

Existing Parking Demand

As part of this transportation report, detailed counts of parking supply and demand were conducted surrounding the CC campus. The purpose of these counts was to determine the amount of parking supply and demand on streets within walking distance of the site and to identify trends or patterns associated with parking demand.

The area surveyed during this study is shown in Figure 37. The time and date of the parking data collection were selected based on the purpose of the counts. Since the information will be used to help determine parking supply needs for the proposed CC campus, the date of the count was selected to represent a "typical weekday," as school parking demand is highest during a school day when staff is parked on site. As such, parking data were collected in the study area on Thursday, November 18, 2021, from 6:00 AM to 10:00 PM. The parking demand sweeps were conducted every 30 minutes.

Each block face in the study area was surveyed to determine whether parking is allowed and the approximate number of spaces on the block face. Block faces that are designated as loading zones or private property were considered "No Parking" areas.

The two (2) on-campus parking lots were included in the study area, largely focusing on the main on-site surface parking lot for more detailed analysis since the on-campus lot south the existing CC building is mainly used for vehicle storage. No off-campus parking lots were surveyed during data collection[1].

The parking data found a total of 1,078 parking spaces in the study area, the majority of which are located on unrestricted residential streets. All metered parking is located south of the campus. Residential permit parking (RPP) is generally located west of the CC campus. Parking along Walter Reed Drive, directly east of the campus, is largely restricted to four-hour parking from 8:00 AM to 6:00 PM, Monday through Saturday on the west side and is unrestricted on the east side. Within a short walk of the site, there are approximately 512 unrestricted spaces. The main off-street surface parking lot was signed for specific CC campus uses, including CC, MPSA, and ACHS staff as well as library and general visitors.

The parking data found that the peak parking occupancy for the entire area occurred at 3:00 PM with an overall parking utilization of 51 percent (550 occupied of 1,078 available). The largest single contributor to the peak is the on-campus parking within the CC campus; however, increased pick-up/drop-off activity taking place along the blocks nearest the CC campus may additionally contribute to the perceived parking demand rather than parking alone. Most streets observed had an occupancy lower than 50 percent, as shown in the peak occupancy map in Figure 38. Additionally, the peak on-street occupancy of the unrestricted spaces within walking distance of the campus was 221 vehicles out of 512 available spaces (with 291 spaces still available).

[1] The 100 spaces leased in the nearby ECDC garage were considered for later parking demand modeling but were not surveyed during data collection due to access restrictions.

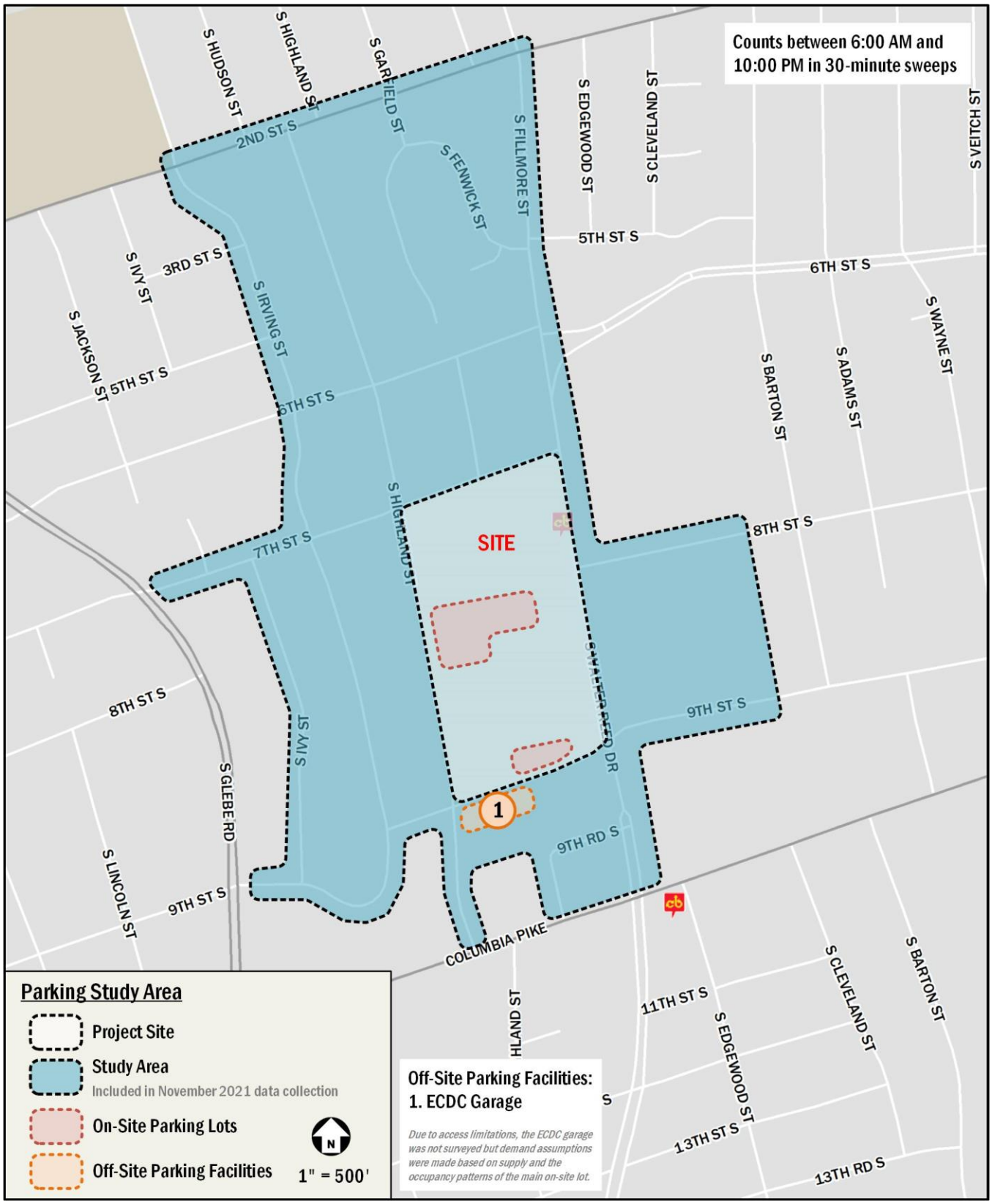

Figure 37: Parking Count Study Area

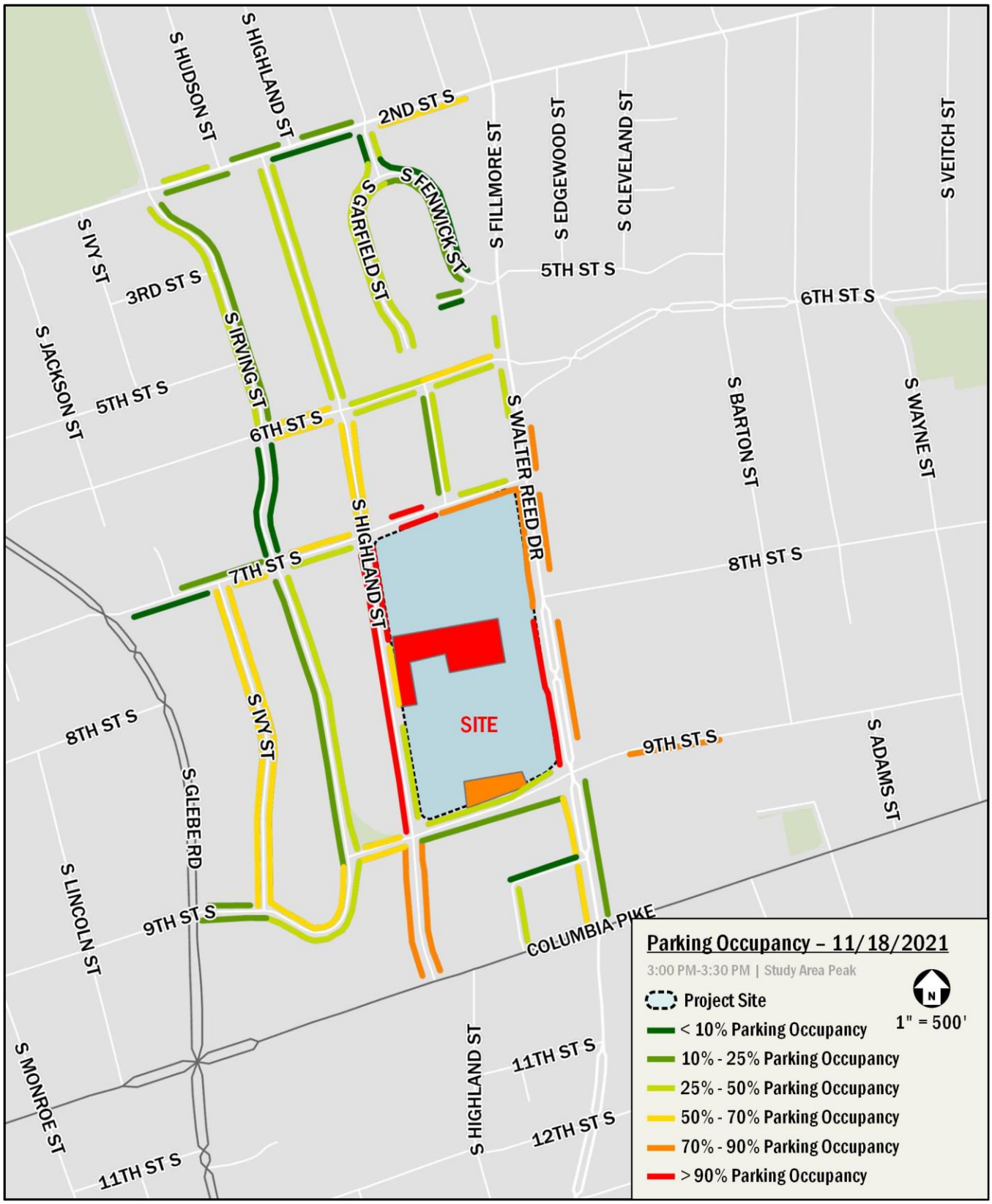

Figure 38: Peak Parking Occupancy

For the purposes of reviewing the parking demand and the perceived contribution of increased PUDO activity to parking demand in more detail, the parking supply within the main on-site surface parking lot and within the blocks directly adjacent to the CC campus was broken down by area and restriction:

- Site Parking, which includes the main surface parking lot on the CC campus;
- Time Restricted, which includes time-restricted on-street parking along S Walter Reed Drive and 7th Street S adjacent to the CC campus;
- Unrestricted (East), which includes unrestricted on-street parking directly east of the CC campus along Walter Reed Drive;
- Unrestricted (North), which includes unrestricted on-street parking directly north of the CC campus along 7th Street S;
- Unrestricted/PUDO (West), which includes unrestricted and pick-up/drop-off on-street parking spaces directly west of the CC campus along S Highland Street;
- RPP, which includes residential (permit) on-street parking directly west of the CC campus along S Highland Street; and
- Metered, which includes metered on-street parking directly south of the CC campus along 9th Street S.

Figure 37 shows the locations of these parking areas, while Table 25 provides a review of each location's peak parking demands. Figure 39 through Figure 46 show the parking demand over the course of the counts for each of these parking areas on-site or directly adjacent to the CC campus.

Table 25: Summary of Parking Demand On/Near Campus

Parking Location	Spaces	Peak Demand
Site	**151**	**97% at 12:00 PM**
Time Restricted	31	97% at 2:30 PM
Unrestricted (East)	34	100% at 9:00 PM
Unrestricted (North)	17	82% at 9:30 AM
Unrestricted/PUDO (West)	38	92% at 8:00 AM / 2:30 PM
RPP	22	100% at 3:00 PM
Metered	35	29% at 6:00-6:30 AM / 8:30-9:00 AM / 2:30 PM
Total (without Site)	**177**	**71% at 8:30 AM**
Total (w/o Site/Metered)	**142**	**81% at 8:30 AM**

Site parking peaks at 12:00 PM, with 97 percent of the 151 off-street spaces on the main surface parking lot occupied. This is logical considering spaces are reserved for on-campus staff, and staff largely park and remain on-campus during school hours.

Time-restricted parking along S Walter Reed Drive and 7th Street S, unrestricted/PUDO and RPP parking along S Highland Street, and unrestricted parking along 7th Street S all peak within 30 minutes of an arrival or dismissal bell time at either the existing CC building or MPSA, suggesting pick-up/drop-off (PUDO) may indeed be driving perceived parking demand rather than parking itself.

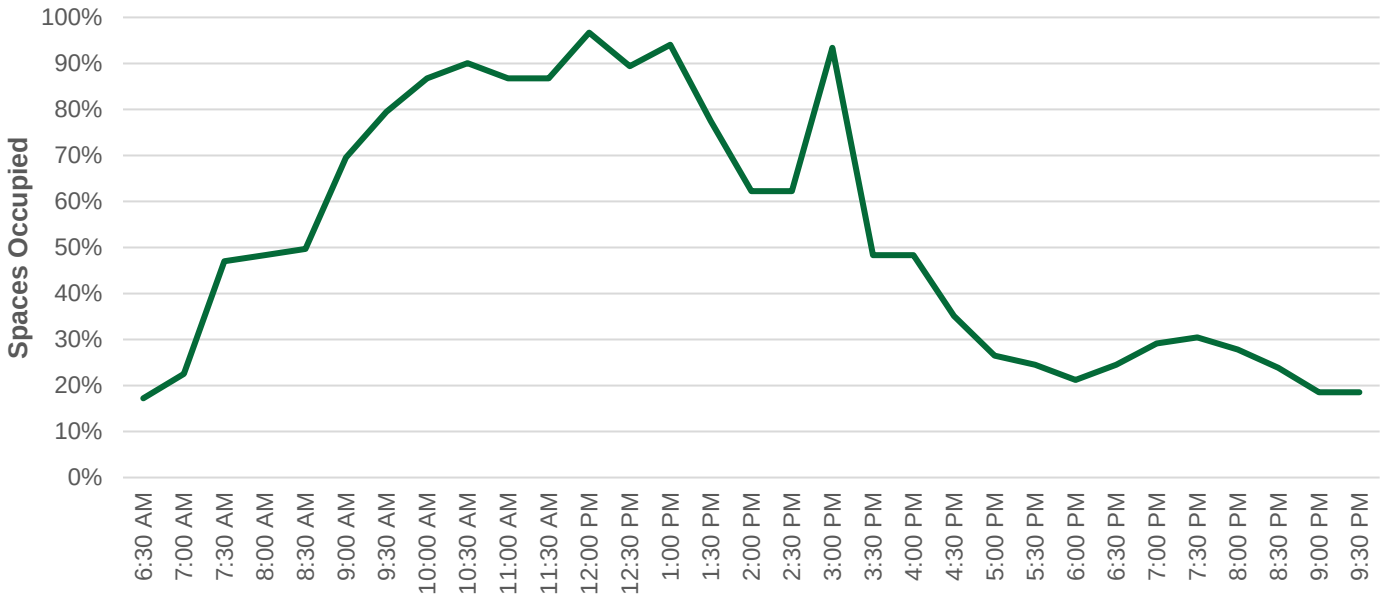

Figure 39: Parking Occupancy – Career Center Parking Lot

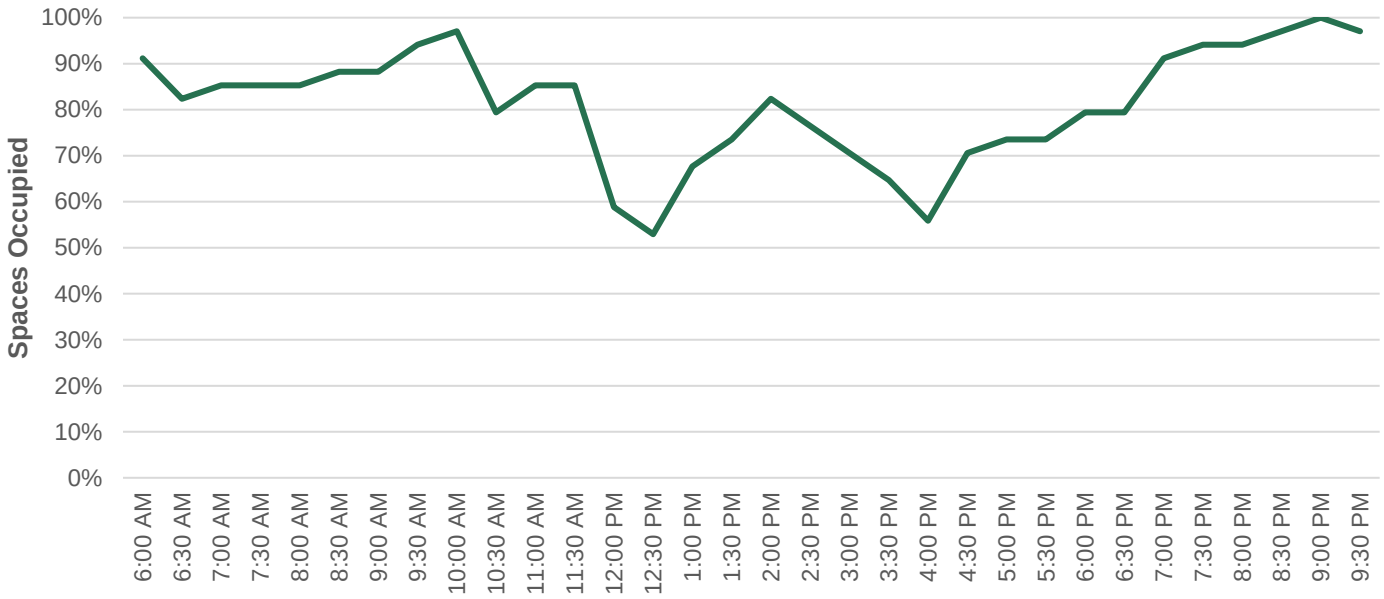

Figure 40: Parking Occupancy – Unrestricted (Along Walter Reed Drive Frontage)

Figure 41: Parking Occupancy – Unrestricted (Along 7th Street S Frontage)

Figure 42: Parking Occupancy – Unrestricted & PUDO (Along Highland Frontage)

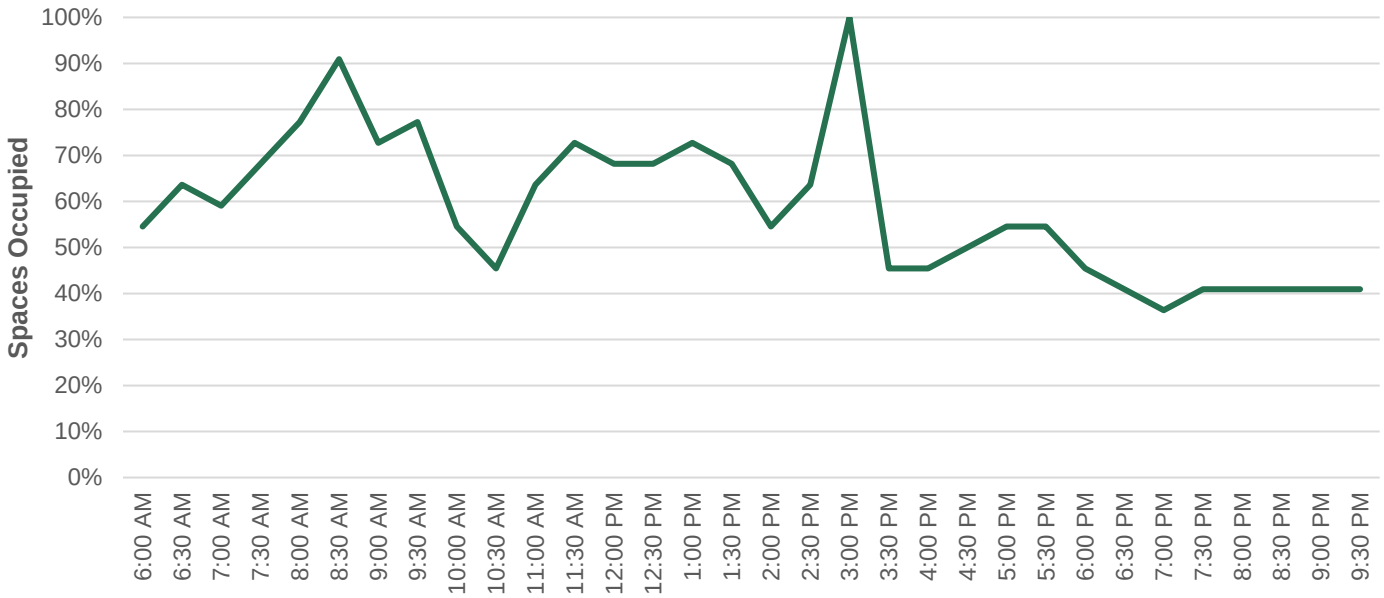

Figure 43: Parking Occupancy – Residential Permit Parking (Along Highland Frontage)

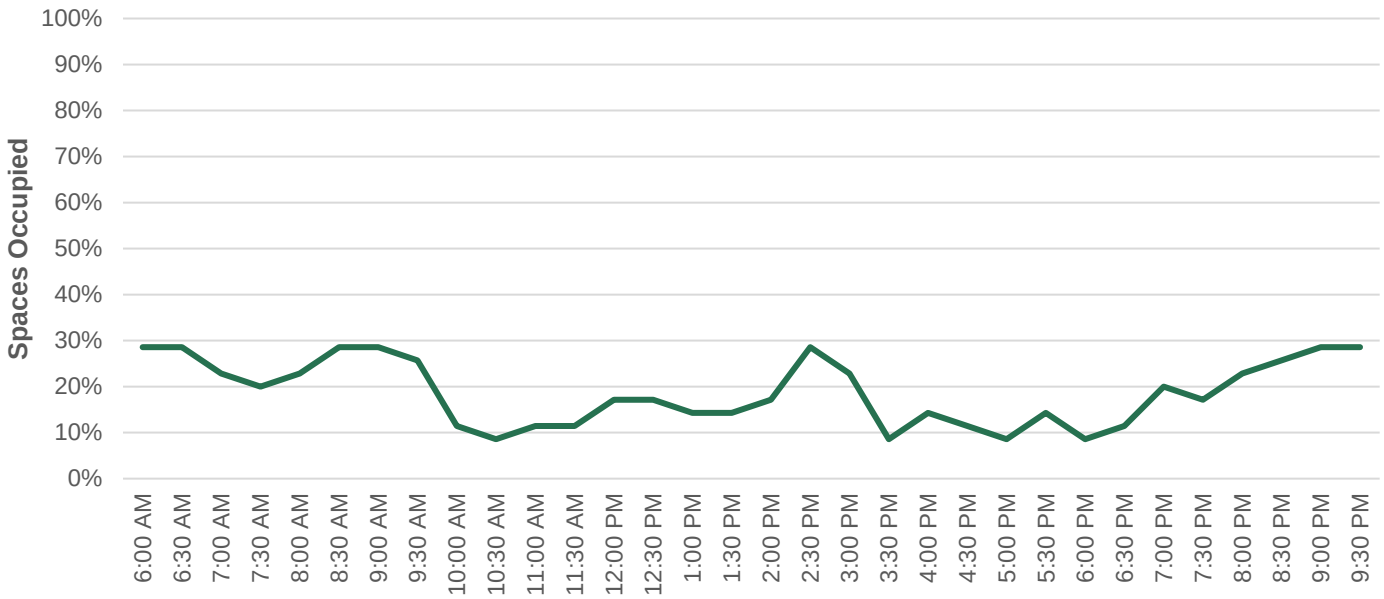

Figure 44: Parking Occupancy – Metered (Along 9th Street S Frontage)

Figure 45: Parking Occupancy – Total On-Street Along Campus Frontage

Figure 46: Parking Occupancy – Total On-Street Along Campus Frontage (without Metered Parking along 9th Street S)

Future Parking Demand

To ensure campus's minimum off-street parking requirements are right-sized for its anticipated demands, Gorove Slade developed a parking demand model based on the future Career Center campus population shown in Table 3. The model was used to project the future parking demand for "Base" and "Enhanced" Transportation Demand Management (TDM) conditions. Under Base TDM conditions, the model assumes the percentage of students and staff driving to campus will not significantly change in the future. These more conservative conditions assume 16 percent, 82 percent, and 88 percent of driving-age students, elementary staff, and secondary staff, respectively, driving to campus based on the most recent APS surveys. Under Enhanced TDM conditions, the model assumes the potential strategies that APS might implement in the future as detailed in the *Transportation Management Plan* chapter result in a decrease of the percentage of students and staff driving to campus. These more optimistic conditions assume 12 percent and 75 percent of driving-age students and staff, respectively, driving to campus in the future.

Table 26 shows the results of the parking model under Base and Enhanced TDM conditions with a comparison to existing demand. Existing demand was estimated with the parking models by using the Fall 2021 population shown in Table 3 since data collection did not include user-specific demand data.

Table 26: Future Parking Demand from Model

	Future Peak Parking Demand* (at 12:00 PM)		
	Existing	Future (Fall 2028)	
	(Fall 2021)	Base TDM	Enhanced TDM
HS Students	42	70	53
CC Staff	150	182	155
MPSA Staff	73	116	105
Visitors	23	23	23
Total	**288**	**391**	**336**
Non-Student	***246***	***321***	***283***
Auto Storage*	***-***	***24***	***24***
Needed Supply	***-***	***345***	***307***

* Measured in *spaces*

*** Approximately 24 spaces are needed for the CC auto program*

The model estimates the future peak demand to range from 336 to 391 spaces under Enhanced and Base TDM conditions, respectively. This constitutes an increased parking demand of 48 to 103 spaces compared to the existing Career Center campus population. It should be noted that the existing parking conditions exclude ACHS and library parking demand for a direct comparison since they will be relocated under future conditions. The increased demand comes mainly from the increase in high school students and required staff under the various scenarios. The major demand component remains staff parking.

Summary

Based on the parking model results for the future Career Center population shown in Table 3 as well as the storage needs for the CC auto program, this study recommends setting the campus's minimum off-street parking requirement at 326 spaces. This represents the midpoint of the future peak parking demand shown in Table 26 without student parking demand and additionally accommodates the estimated 24 spaces for the CC auto program.

Given the availability of unrestricted parking and low utilization of metered parking within the area surrounding the CC campus, this study assumes students will not be parking on-campus; therefore, student parking demand does not dictate the recommended off-street parking requirement. Driving-age students will be expected to park off-site in the unrestricted or metered parking spaces. This report includes a proposed curbside pick-up/drop-off zone within the metered parking along 9th Street S during morning arrival and afternoon dismissal; however, no changes to the metered parking rates along 9th Street S are proposed. The low utilization of metered parking suggests students may be avoiding 9th Street S due to the cost of parking. APS and the County may want to consider a policy of exempting CC students from metered parking fees along 9th Street S to limit the number of students parking on nearby residential streets to avoid parking fees.

Safety Review

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

VDOT Crash Data

Based on guidelines contained in the Safety Analysis Guidance (May 2021) provided by Arlington County DES, crash data from 2017 to 2021 was obtained from the VDOT Crash Analysis Tool for crashes occurring in the vicinity of the site. This data was used to conduct a review of safety at study intersections and frontage of the development site.

Based on the historical crash data, a total of 27 crashes occurred at study area intersections adjacent to the site and along site frontages 2017 and 2021. The year with the highest number of crashes was 2019 with 10 crashes per year, while the year with the lowest number of crashes was 2020 with 2 crashes. Figure 47 shows the number of crashes per year in in the study area over the last five years. The VDOT crash data shows a general downward trend in crashes.

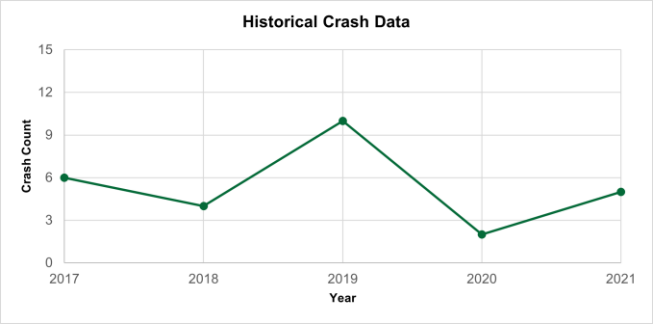

Figure 47: Historical Crash Data

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 2017 to 2021, 67 percent were classified as O (Property Damage Only) and 30 percent were classified as B (Suspected Minor Injury). One (1) crash involved a suspected serious injury; however, no crashes involved a fatal injury. Table 27 shows the number of crashes according to its severity.

Table 27: Crash Count by Severity (2016-2020)

Crash Severity	Count	%
K	0	0%
A	1	3%
B	8	30%
C	0	0%
O	18	67%
Total	**27**	**100%**

Collision Type

The most common type of collision found in the study area is Angle with 22 percent of crashes occurring in this manner, followed by Sideswipe – Same Direction and Rear End with 15 percent of crashes, respectively. Table 28 summarizes the collision type for all analyzed crashes.

Table 28: Crash County by Collision Type

Collision Type	Count	%
Rear End	4	15%
Angle	6	22%
Pedestrian	3	11%
Sideswipe - Same Direction	4	15%
Other	3	11%
Head On	2	7%
Sideswipe - Opposite Direction	1	4%
Backed Into	1	4%
Non-Collision	1	4%
Fixed Object - Off Road	2	7%
Total	**27**	**100%**

Crash Factors

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

Environmental Factors

Light conditions at the moment of the crash can contribute to the quantity and severity of crashes. For the data analyzed, more than 80 percent of the crashes occurred during daylight (67 percent) or during darkness in a lighted road (26 percent). This information suggests that, in the majority of crashes, light condition might not have been the primary cause for the crash. Table 29 summarizes the light conditions for crashes in the vicinity of the Arlington Career Center site.

Table 29: Crash Count by Light Condition

Light Condition	Count	%
Dawn	0	0%
Daylight	16	60%
Dusk	2	7%
Darkness - road lighted	7	26%
Darkness - unknown road lighting	2	7%
Total	**27**	**100%**

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 30, a distracted driver was reported in 19 percent of the analyzed crashes, while speeding was involved in 19 percent of the crashes and alcohol was involved in 15 percent 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 30: Crash Count by Driver Behavior Factors

Driver Behavior Factors	Count	%
Distracted Driver?		
Yes	5	19%
No	22	81%
Speeding?		
Yes	5	19%
No	22	81%
Alcohol Involved?		
Yes	4	15%
No	23	85%
Total	**27**	**100%**

Vehicle Characteristics

Vehicle characteristics including type of vehicle and vehicle size were analyzed to determine their contribution to crashes in the vicinity of the Arlington Career Center site. As shown in Table 31, one (1) crash involving motorcyclists has been reported in the past five (5) years while two (2) crashes have been reported to involve a bicyclist. In addition, 11 percent of the crashes reported a large truck being involved in the crash. In terms of transportation modes other than automobiles, pedestrians were the more likely to be involved in a crash according to the data analyzed compared to bicyclists (11 percent of crashes involved pedestrians).

Table 31: Crash Count by Vehicle Characteristics

Vehicle Characteristics Factors	Count	%
Large Truck Involved		
Yes	3	11%
No	24	89%
Motorcycle Involved		
Yes	1	4%
No	26	96%
Bike Involved		
Yes	2	7%
No	25	93%
Pedestrian Involved		
Yes	3	11%
No	24	89%
Total	**27**	**100%**

Findings

According to the VDOT historical crash data for the study area, the majority of reported crashes were reported along S Walter Reed Drive. Of the total three (3) crashes that included a pedestrian, two (2) of the crashes were reported along S Walter Reed Drive, as shown in Figure 48. No crashes were classified as K (fatal injury) along S Walter Reed Drive or the rest of the study area.

The majority of safety concerns in the study area are primarily due to existing conditions along S Walter Reed Drive and are not expected to be exacerbated by the proposed development.

As part of the S Walter Reed Complete Street project, there are a number of elements contained within its design that minimize potential safety concerns along S Walter Reed Drive, including:

- Redesigning the intersection geometry at and 9th Street S with Walter Reed Drive to increase safety for all users;
- Redesign driveway and access at 8th Street S;
- New striping and signage;
- Replaces existing curb ramps with ADA compliant ramps and adds new crosswalks;
- Improve bus stop locations and infrastructure; and

- Improve pedestrian and bicycle facilities along S Walter Reed Drive.

Figure 48: Historical Crash Data (2017-2021)

Transportation Management Plan

A Transportation Management Plan (TMP) has many components that are tailored to accommodate a given facility with the goal of reducing of automobile trips by encouraging alternative forms of transportation.

A few typical TMP components for high schools are the establishment of a Transportation Demand Management (TDM) plan, the establishment of a Parking Management Plan, the establishment of Arrival and Dismissal Plans, and the establishment of a Performance and Monitoring Plan.

The TMP will include a schedule and details of implementation and continued operation of the elements in the plan. The TMP for the Arlington Career Center may include, but not be limited to, the following:

Transportation Demand Management

The TDM Plan addresses the use permit conditions and includes additional strategies for reducing single-occupancy vehicle (SOV) and single-family travel to the APS Arlington Career Center consistent with the Arlington County TDM program and the APS Go! Master Plan.

The goals of the TDM plan are to:

1. Reduce staff drive rates from the existing rate in support of APS's division-wide goal of 75 percent by 2021 (as an average of all sites).
2. Increase the student walk/bike rate from the existing rate in support of APS's division-wide goal of 30 percent by 2021 (as an average of all schools).
3. Increase the number of school bus eligible students who ride the school bus.
4. Mitigate potential adverse impacts of parking on APS sites and in surrounding communities.
5. Support and grow a culture around walking, biking, carpooling, and public transit use among students and staff.

A number of TDM strategies are outlined in the APS Go! Master Plan, which can be used to increase school bus utilization, public transit utilization, vanpool and carpool utilization, and active transportation modes – e.g., walking and biking, strategies for managing motor vehicle parking and student drop-off/pickup, and evaluation. This report recommends focusing on the following TDM strategies:

General TDM Strategies

1. Appoint a School Transportation Coordinator (STC);
2. Promote the APS pre-tax transportation benefit;
3. Invite Arlington Transportation Partners (ATP) and Safe Routes to School staff to Open House nights;

Strategies to Increase School Bus Utilization

1. Establish frequent bus rider incentive program;
2. Establish "walking school bus" program to bus stops;
3. Promote school bus use in communications with parents;

Strategies to Increase Public Transit Use

1. Offer transit benefit subsidy for those who commute by public transportation;
2. Offer transit training for students;
3. Promote student iRide card, which provides rides on ART buses for half price to students;

Strategies to Increase Vanpool and Carpool Utilization

1. Inform staff members about the "Guaranteed Ride Home" program;
2. Offer TDM benefit to staff who participate in carpool or vanpools for travel to and from work;

Strategies to Increase Active Transportation Mode Utilization

1. Continue partnering with the County to make physical improvements to the pedestrian and bicycle environment near the school, as necessary
2. Provide secure bicycle parking/storage facilities for students and staff;
3. Provide shower/changing facilities on site for staff who bike or walk to work;
4. Maintain trained crossing guards at appropriate intersections near school;
5. Establish a walking club;
6. Establish and provide parents with information on walking school buses and bike trains;

Additional TDM strategies will be included in the final use permit. These TDM strategies will target specific community concerns regarding traffic, while complementing the site's location and proximity to transit and bicycle facilities.

Safe Routes to School

Safe Routes to School (SRTS) is a national program that works to make it safer and easier for students to walk or bike to school. SRTS programs examine conditions around schools and conduct projects and activities that work to improve safety and accessibility and reduce traffic and air pollution in the vicinity of schools. The core elements of SRTS include:

- Enabling and encouraging children, including those with disabilities, to walk and bicycle to school
- Making bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age.
- Facilitating the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution near schools.

APS has a SRTS Coordinator on staff whose position is funded through VDOT's SRTS Program whose work focuses on these core elements. The following additional strategies can be used to complement the TDM plan, and encourage and enable students to walk and bicycle to the Career Center while fulfilling SRTS objectives:

1. Participate in Walk to School Day and Bike to School Day;
2. Consider establishing a regular (i.e., weekly or monthly) walk and bike to school day;
3. Hold pedestrian safety classes or assemblies;
4. Partner with the County's Active Transportation team to offer safe cycling classes/training; and
5. Create a frequent walker, biker, and bus rider program with associated travel training opportunities.

Parking Management Plan

A Parking Management Plan (PMP) will address the use permit conditions and be consistent with Arlington Public Schools Policy 50-1.1.

The PMP will show how curbside space adjacent to the site will be designated for parking by the various users of the project. In addition, the PMP will provide effective directional signage to direct staff and visitors to appropriate location on the property.

Arrival and Dismissal Plans

Arrival and dismissal plans will be reviewed and updated for the Arlington Career Center campus. The purpose of these plans is to ensure that school arrival and dismissal occurs safely and efficiently for users of all modes.

These plans will include details on parent drop-off and pick-up procedures, including how the queuing space will be managed, where school staff will be placed and their roles, and the marketing/messaging for parents and students.

Performance and Monitoring

APS will continue to maintain records of Career Center staff participation in APS TDM benefit programs and conduct triennial surveys of students, visitors, staff, and parents, regarding their travel to and from the school. APS will provide a triennial update to the School Board and APS leadership and the County Manager describing the results of the survey and TDM related activities. These items should be monitored at a time around six (6) months to one (1) year after the Arlington Career Center has opened.

Summary and Recommendations

This report concludes that the proposed design for the Career Center campus will not have a detrimental impact to the surrounding transportation and roadway network assuming that all planned site design elements and recommended mitigation measures are implemented. Major findings and recommendations are as follows:

Project Summary

The existing Career Center campus consists of several buildings and programs, including the Arlington Tech program, the Columbia Pike Branch Library, Montessori Public School of Arlington (MPSA), Arlington Community High School (ACHS), and other services and programs. The site is bounded by 7th Street S to the north, 9th Street S to the south, S Highland Street to the west and S Walter Reed Drive to the east.

The proposed redevelopment of the Career Center campus will include:

- The construction of a new CC building along S Walter Reed Drive between the Columbia Pike Branch Library and 7th Street S to accommodate an expanded Arlington Tech program as well as other programs currently housed in the existing CC building for a future full enrollment of up to approximately 1,619 CC students and 216 faculty/staff;
- The relocation of MPSA to the existing CC building which will be partially demolished and refurbished to accommodate a future full enrollment of up to approximately 775 MPSA students and 145 faculty/staff as well as a new parking garage for the CC campus;
- The demolition of the Fenwick building (currently ACHS), the existing surface parking lot, and the existing MPSA building to accommodate the new CC building, a new athletic field, and open space, respectively;

Parking and loading access to the site will be provided from driveways along S Walter Reed Drive and S Highland Street. Additionally, the Career Center redevelopment has been designed in conjunction with the South Walter Reed Drive Complete Streets Improvements project which will include protected bicycle lanes along S Walter Reed Drive and the signalization of the nearby intersection of S Walter Reed Drive and 9th Street S along the site's frontage. The placement of the new CC building's main entrance on S Walter Reed Drive near both a bus stop and protected bicycle lanes strengthens the multimodal design of the CC campus redevelopment.

Overall Transportation Strategy

The redevelopment of the Career Center campus presents an opportunity to optimize transportation operations to support a more integrated, shared campus between the CC and MPSA programs. Specific to transportation, this MMTA makes recommendations based on its three (3) main goals:

1. Safety of students
2. Right-sizing Career Center transportation infrastructure
3. Minimizing impacts

The recommendations contained within this MMTA and detailed in the following sections are all based around these specific transportation goals, anchored in the overall goal of providing flexibility in transportation operations.

Parking

This MMTA reached the following findings on parking:

- Parking demand within and surrounding the Career Center campus peaks at 3:00 PM, with 51 percent of the available parking spaces within the study area occupied.
- The main parking lot on-campus peaks at 97 percent occupancy at 12:00 PM. It sustains a high level of occupancy between 10:00 AM and 3:00 PM.
- Time-restricted on-street parking along S Walter Reed Drive and 7th Street S adjacent to the CC campus peaks at 97 percent occupancy at 2:30 PM.
- Unrestricted on-street parking along the CC campus's S Walter Reed Drive frontage peaks at 100 percent occupancy at 9:00 PM, with demand lowering to 50 to 80 percent in the middle of the weekday.
- Unrestricted on-street parking along the CC campus's 7th Street S frontage peaks at 82 percent at 9:30 AM, with demand lowering to 40 to 70 percent before 3:00 PM and lowering further to less than 20 percent into the evening.
- Unrestricted and pick-up/drop-off on-street parking spaces along the CC campus's S Highland Street frontage peaks at 92 percent at 8:00 AM and 2:30 PM, coinciding with arrival and dismissal times.
- Residential permit on-street parking along the CC campus's S Highland Street frontage peaks at 100 percent at 3:00 PM, with demand lowering to 40 to 60 percent after the peak.
- Metered on-street parking along the CC campus's 9th Street S frontage peaks at 29 percent at 6:00-6:30 AM,

8:30-9:00 AM, and 2:30 PM, with demand never exceeding 30 percent.

- Typical minimum parking requirements for the proposed CC campus under S-3A, Public district requirements in the Arlington County Zoning Ordinance would be at least 666 off-street parking spaces – 544 spaces for the CC program including public assembly space and 122 spaces for the MPSA program including employee and visitor spaces.
- Model estimates for the future CC campus parking demands range from 336 to 391 spaces including all faculty/staff, visitors, and students. The lower end of this range assumes a successfully implemented, enhanced Transportation Demand Management (TDM) program that reduces future the site's future auto mode split, while the higher end of this range assumes the existing/base auto mode split based on APS Go! data.

This report recommends the following strategy for accommodating the increase in parking demand:

- Use the existing on-street parking within the vicinity of CC campus to accommodate student parking and do not provide on-site parking for students (approximately 53 to 70 spaces based on parking model estimates).
- Set the campus's minimum off-street parking requirement at 326 spaces to accommodate all future staff and visitor parking demand as well as the 24 spaces estimated to be needed for the CC auto program.
- Consider exempting CC students from metered parking fees along 9th Street S to limit the number of students parking on nearby residential streets to avoid parking fees.
- Continue the current APS Go! Transportation Demand Management (TDM) programs to encourage use of alternative travel modes, thus reducing parking demand.
- Should a future TDM program successfully reduce auto mode splits and thus increase parking availability in the new garage, consider converting vehicle parking spaces to long-term bicycle parking facilities or other non-auto amenities.
- Explore student parking policies systematically and consider additional demand management measures such as limiting availability of student parking passes and/or charging higher fees for student passes. These would be APS-wide policy changes that would impact all high schools in the County.
- Implement wayfinding and marketing of the future parking garage for after-school activities and events to lessen the impact on nearby on-street parking.

Bicycle Parking

The proposed Career Center campus will meet or exceed the bicycle parking requirements set forth in the Standard Site Plan Conditions by providing a minimum of the following across the site:

- 37 Class I (Long-Term, Secure Storage) spaces, or at least 19 Class I spaces and 18 Class II (Short-Term, Outdoors) spaces for the 361 faculty/staff across the campus
  - 22 spaces for 216 CC staff
  - 15 spaces for 145 MPSA staff
- 201 Class II/III spaces, or 101 short-term bicycle racks for the 2,394 students across the campus
  - 162 spaces (81 racks) for 1,619 CC students
  - 39 spaces (20 racks) for 775 MPSA students
- At least 37 lockers and four (4) showers for faculty/staff who walk or bicycle to the campus
  - 22 CC lockers and 15 MPSA lockers
  - Two (2) CC showers and two (2) MPSA showers

Additionally, this MMTA recommends the following for the locations of bicycle parking and their respective facilities:

- Provide each program's required long-term bicycle parking on the ground floor of their respective buildings or consolidate all campus-wide long-term bicycle parking on the first level of the garage;
- Provide each program's required short-term bicycle parking as close as possible to their respective building's main entrances, primarily along S Walter Reed Drive and the internal southern driveway; and
- Locate the required showers and lockers as close as possible to the location of each program's long-term bicycle parking.

Arrival/Dismissal – Student Pick-Up/Drop-Off

Under existing conditions, student pick-up/drop-off (PUDO) occurs via 15 curbside spaces along S Highland Street for both the MPSA and CC buildings.

To address significant vehicle queuing observed along S Highland Street under existing conditions, this MMTA recommends providing additional PUDO spaces to accommodate the increase in student enrollment. Based on APS feedback and Gorove Slade observations, the anticipated number of vehicles anticipated to load/unload simultaneously during morning arrival and afternoon under future conditions is as follows:

- 20 to 25 CC vehicles and 15 to 20 MPSA vehicles during morning arrival; and
- 25 to 35 CC vehicles and 20 to 30 MPSA vehicles during afternoon dismissal.

As part of the proposed curbside management plan included in this MMTA, 22 spaces along S Highland Street would be used for elementary (MPSA) student PUDO, 19 spaces along S Walter Reed Drive would be used for high school (CC) student PUDO, and eight (8) spaces along 9th Street S would be used for additional student/staff pick-up/drop-off. Final PUDO locations will be coordinated with APS and the County; however, the anticipated ranges of simultaneous loading/unloading vehicles should be accommodated for each program.

Arrival/Dismissal – School Buses

An estimated 15 buses and six (6) buses are anticipated to accommodate the future CC and MPSA programs, respectively. Additionally, up to three (3) buses must be accommodated during midday off-peak hours for CTE shifts. As such, the project includes an internal driveway loop, shared between both high school and elementary school buses. This area will be accessible mainly via a driveway on S Highland Street and also via S Walter Reed Drive.

Geometric analyses of the driveway loop found that the maximum number of buses that should queue on-site simultaneously (15 buses) can be accommodated in several ways. One version, included in the Technical Attachments, shows how 15 buses can queue while still providing gaps between them for maneuverability (the buses can enter/leave their own space if needed). This version also leaves room for a bypass lane, so buses are not required to wait for other buses to leave. Other configurations will be possible, and APS will be able to vary their approach as needed based on what they find works best in the future.

Traffic Operations

A detailed traffic capacity analysis performed for this MMTA led to the following findings:

- The existing study area intersections mostly operate at acceptable delay and LOS levels with only two (2) intersections having one or more movements that operate at levels beyond acceptable thresholds in one or more peak hour. This is typical for commuting corridors and their side streets.
- Most intersections have acceptable queuing results, with all queues shorter than the available storage lengths, with four (4) exceptions. These exceptions occur primarily during the AM and PM commuter peak hours.
- There are impacts to two (2) study intersections (S Glebe Road & 7th Street S and S Glebe Road & Columbia Pike) as a result of the proposed development under future conditions.
- The increase in delay at these intersections is attributable to the proposed development and can be mitigated through signal timing adjustments given Arlington County approval.
- Overall, this report concludes that the project will not have a detrimental impact to the surrounding transportation network.

Transportation Management Plan

This MMTA recommends the establishment of the standard management plans for County schools, including:

- A use permit required Transportation Demand Management (TDM) plan, with the standard elements for APS high school facilities, based on the APS Go! Program.
- A Parking Management Plan (PMP), including wayfinding and marketing for after-school activities and events held on campus to increase the amount of parking demand using the parking garage in lieu of on-street parking.
- Arrival and dismissal plans updated for the new CC campus. In addition to standard elements, this report is recommending the arrival and dismissal plans include specific instructions on how to use pick-up/drop-off areas safely, incorporate those plans into the parent/student handbooks, and use APS staff on the sidewalk outside the school to help enforce the plans (similar to how they are used today).

- APS will continue to maintain records of staff participation in APS TDM benefit programs and conduct triennial surveys of students, visitors, staff, and parents, regarding their travel to and from the school. APS will provide a triennial update to the School Board and APS leadership and the County Manager describing the results of the survey and TDM related activities. These items should be monitored at a time around 6 months to one year after the CC project is completed.