

COMPREHENSIVE TRANSPORTATION REVIEW

WISCONSIN AVENUE BAPTIST CHURCH

SUNRISE SENIOR LIVING

WASHINGTON, DC

August 16, 2018

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EXECUTIVE SUMMARY

The following report is a Comprehensive Transportation Review (CTR) for the Wisconsin Avenue Baptist Church and Sunrise Senior Living (WABC) Site. The report reviews the transportation aspects of the Site's Board of Zoning Adjustment (BZA) application (BZA Application No. 19823). The project falls within the R-1-B Zone and is subject to 2016 Zoning Regulations (ZR16).

The purpose of this study is to evaluate whether the project will generate a detrimental impact to the surrounding transportation network. This report concludes that **the proposal will not have a detrimental impact** to the surrounding transportation network once all proposed site design elements are implemented.

Proposed Project

The WABC Site currently serves as the location of the Wisconsin Avenue Baptist Church. The Site is located at 3920 Alton Place NW (Square 1799, Lot 14) in Northwest, DC. The Site is generally bounded by Alton Place NW to the north, the rear yards of detached residential dwelling units on 39th Street NW to the east, Yuma Street NW to the south, and open space owned and maintained by the National Park Service (NPS) to the west. The proposed development program will replace the existing 350-seat church and 56-student day care facility with an 85-unit assisted living facility and a replacement 250-seat sanctuary for the church. Both facilities will utilize the same building but will have separate entrances. The entrance to the assisted living community will be on the north side of the building, with ingress from Alton Place NW and egress to Yuma Street NW. The main entrance to the church will be on the south side of the building, along Yuma Street NW. The project will be supported by a below-grade parking facility with access from Alton Place NW. The proposal also includes landscape improvements to the adjacent NPS property.

Loading operations will be conducted in designated loading areas located along the north-south driveway on-site.

Multi-Modal Impacts and Recommendations

Transit

The Site is served by regional and local transit services via Metrobus and Metrorail. The Site is approximately 0.2 miles from Tenleytown-AU Station Metrorail station. Nineteen (19)

Metrobus stops and eleven (11) Metrobus routes are located within ¼-mile of the Site.

The proposed development will generate a low number of new transit trips, and existing transit facilities have enough capacity to handle the new trips.

Pedestrian

The Site is surrounded by a well-connected pedestrian network. The roadways within a ¼-mile radius provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes, all of which meet DDOT and ADA standards.

Bicycle

The Site is very well-served by existing bicycle infrastructure. There is a dedicated bicycle lane along 39th Street NW directly east to the Site that provides connection to a Capital Bikeshare to the south, shared lanes along River Road, 42nd Street, and Van Ness Street, and signed routes along 36th and 37th Street. These facilities provide access to the Rock Creek Trail, Capital Crescent Trail, C & O Canal Trail, and bicycle facilities on the Key Bridge. Residential low volume streets surrounding the Site also provide bicycle connectivity.

Vehicular

The Site is well-connected to regional roadways and principal arterials such as Wisconsin Avenue and Nebraska Avenue, minor arterials such as River Road, and an existing network of collector and local roadways. The proposed development will not generate a significant number of vehicular trips and does not meet the DDOT threshold for detailed capacity analysis; therefore, no vehicular capacity analysis is required or necessary.

However, this report explores several traffic concerns expressed by the community and requested improvements: (1) the implementation of an all-way-stop control at the intersection of 39th Street NW and Alton Place NW; (2) increasing pedestrian crossing time at Nebraska Avenue NW east of the Site; and (3) the addition of "Do Not Block Intersection" markings and signs at the intersection of Nebraska Avenue NW and Alton Place NW.

A review of the community concerns found that there are viable reasons for implementation for all of them. The final decision on implementation will be up to DDOT, and if DDOT agrees to implementation of any of them, the Applicant is



willing to fund their implementation as part of the approval of this project.

Summary and Recommendations

This report concludes that the proposed development will not have a detrimental impact on the surrounding transportation network assuming that the proposed site design elements are implemented.

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

- The Site's close proximity to Metrobus stops with connections to Metrorail.
- All vehicular parking demand is accommodated on-site.
- The inclusion of secure long-term bicycle parking spaces within the development that meet or exceed (ZR16) zoning requirements.
- The installation of short-term bicycle parking spaces on the north and south sides of the Site that meet current (ZR16) zoning requirements.
- A Transportation Demand Management (TDM) plan for assisted living facility employees that reduces the demand of single-occupancy vehicles during peak period travel times.

In addition to the quality transportation site elements, the Applicant is willing to fund the following improvements with the support of the community and DDOT: (1) the implementation of an all-way-stop control at the intersection of 39th Street NW and Alton Place NW; (2) increasing pedestrian crossing time (if needed) at Nebraska Avenue NW east of the Site; and (3) the addition of "Do Not Block Intersection" markings and signs at the intersection of Nebraska Avenue NW and Alton Place NW.



INTRODUCTION

PURPOSE OF STUDY

The following report is a Comprehensive Transportation Review (CTR) for the Wisconsin Avenue Baptist Church and Sunrise Senior Living (WABC) development.

The WABC site (the “Site”), shown in Figure 1 and Figure 2, is located at 3920 Alton Place NW (Square 1799, Lot 14) in Northwest DC. The Site is generally bounded by Alton Place NW to the north, the rear yards of detached residential dwelling units on 39th Street NW to the east, Yuma Street NW to the south, and open space owned and maintained by the National Park Service (NPS) to the west.

The purpose of this report is to:

1. Review the transportation elements of the Site plan and demonstrate that the Site conforms to DDOT’s general policies of promoting non-automobile modes of travel and sustainability.
2. Provide information to DDOT and other agencies on how the proposed development will impact the local transportation network. This report accomplishes this by identifying the potential trips generated by the proposed development, above the baseline existing condition, on all major modes of travel.
3. Conduct traffic calming analyses for streets adjacent to the development using DDOT’s Traffic Calming Criteria. The report discusses what improvements, if any, are warranted and recommended.

PROJECT SUMMARY

The proposed development program will replace the existing 350-seat church and 56-student day care facility with an 85-unit assisted living facility and a replacement 250-seat sanctuary for the Church. Both facilities will utilize the same building but will have separate entrances. The entrance to Sunrise will be on the north side of the building, along Alton Place NW. The main entrance to the Church will be on the south side of the building, along Yuma Street NW. The project will be supported by a 2-level below-grade parking facility with access from Alton Place NW.

CONTENTS OF STUDY

This report contains nine (9) sections as follows:

- *Study Area Overview*
This section reviews the area near and adjacent to the proposed project and includes an overview of the Site location.
- *Project Design*
This section reviews the transportation components of the project, including the Site plan and access. This chapter also contains the proposed Transportation Demand Management (TDM) plan for the development.
- *Trip Generation*
This section outlines the travel demand of the proposed project. It summarizes the proposed trip generation of the project.
- *Transit*
This section 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 section 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 section 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.
- *Crash Data Analysis*
This section reviews the potential safety impacts of the project. This includes a review of crash data at intersections in the study area and a qualitative discussion on how the development will influence safety.
- *Community Concerns*
This section provides an overview of traffic speed and crash data collected along roadways around the site and assesses the appropriateness of traffic calming measures based on DDOT criteria, based on concerns expressed by the community.
- *Summary and Conclusions*
This section presents a summary of the recommended mitigation measures by mode and presents overall report findings and conclusions.

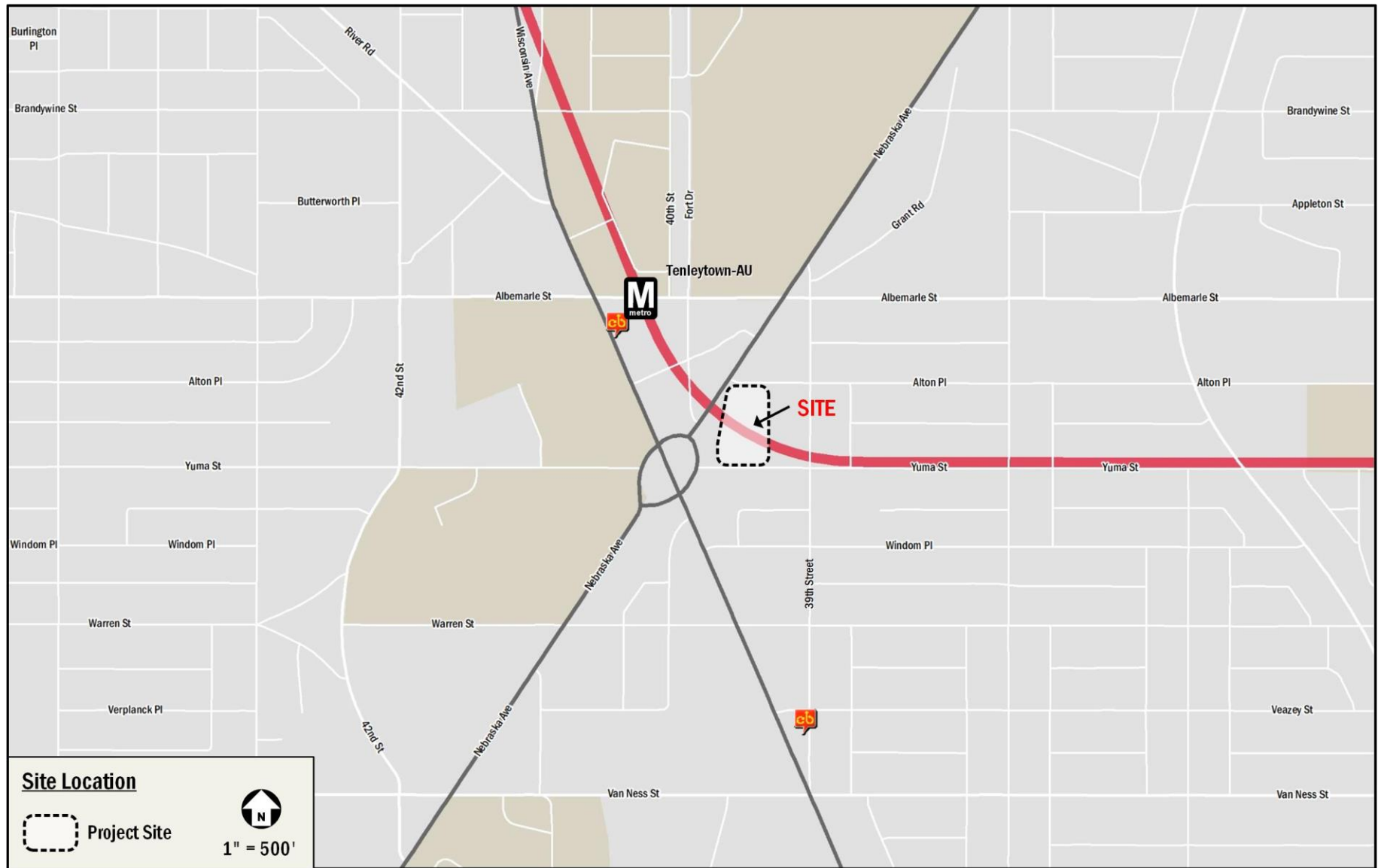


Figure 1: Site Location

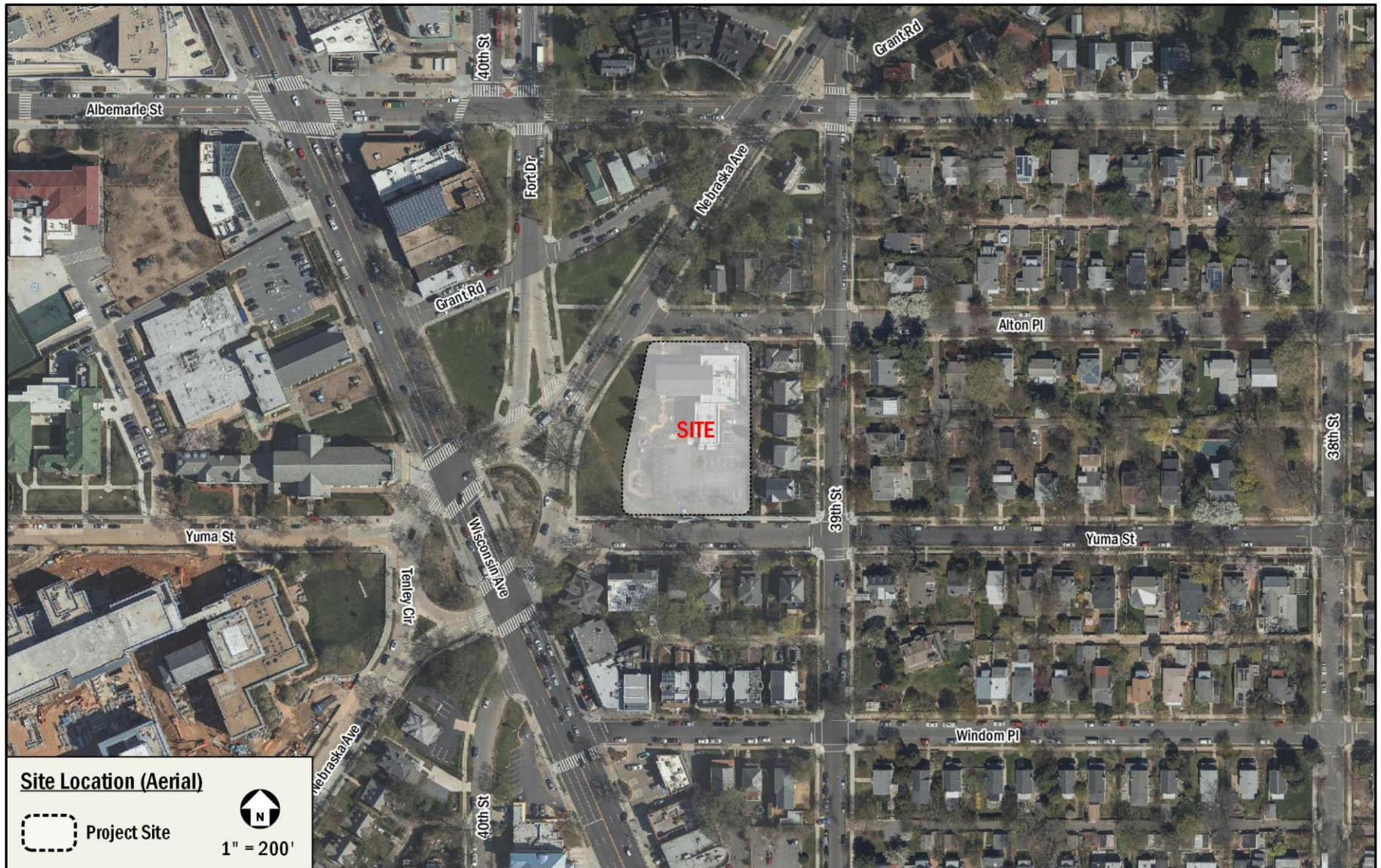


Figure 2: Site Location (Aerial)



STUDY AREA OVERVIEW

This section reviews the study area and includes an overview of the Wisconsin Avenue Baptist Church and Sunrise Senior Living (WABC) Site location, including a summary of the major transportation characteristics of the area and of future regional projects.

The following conclusions are reached within this chapter:

- The Site is surrounded by an extensive regional and local transportation system that will connect the employees, residents, and visitors of the proposed development to the rest of the District and surrounding areas.
- The Site is served by public transportation with access to Metrorail and 11 Metrobus lines.
- There is bicycle infrastructure in the vicinity of the Site, including dedicated bicycle lanes on 39th Street NW, 40th Street NW, Van Ness Street NW, and 41st Street NW.
- Pedestrian conditions are generally good, particularly along anticipated major walking routes; however, there are some sidewalks and curb ramps that do not meet DDOT standards.

MAJOR TRANSPORTATION FEATURES

Overview of Regional Access

As shown in Figure 4, the proposed development has ample access to regional vehicular- and transit-based transportation options that connect the Site to destinations within the District, Virginia, and Maryland.

The Site is accessible from Wisconsin Avenue and Nebraska which connect to several principal and minor arterials such as Massachusetts Avenue and Connecticut Avenue. The roadways provide connections to the Capital Beltway (I-495), which surrounds Washington, DC and its inner suburbs, as well as connections to the District's core.

As shown in Figure 5, there are several local bus stops in the vicinity of the Site that connect the city limits with the innermost roads of Washington, DC. The multiple bus route options allow for more frequent bus pickups and likely travel destination options.

The Site is located 0.2 miles from the Tenleytown-AU Station Metrorail station. The Red Line connects Montgomery County, MD to the District core. In addition, the Red Line provides connections to all additional Metrorail lines allowing for access to much of the DC Metropolitan area.

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

Overview of Local Access

The Site is served by a local vehicular network that includes several primary and minor arterials such as Yuma Street NW, 39th Street NW, and Alton Place NW. In addition, there is an existing network of connector and local roadways that provide access to the Site.

The Metrobus system provides local transit service in the vicinity of the Site, including connections to several neighborhoods within the District and additional Metrorail stations. As shown in Figure 5, there are eleven (11) bus routes that service the Site. These bus routes connect the Site to many areas of the District. A detailed review of transit routes within a ¼-mile walk of the Site is provided in a later section of this report.

There are several bicycle facilities in the vicinity of the Site. There is a dedicated bicycle lane along 39th Street NW directly east to the Site as well as on 40th Street NW, Van Ness Street NW, and 41st Street NW, shared lanes along River Road NW, 42nd Street NW, and Van Ness Street NW, and signed routes along 36th and 37th Street NW. Residential low volume streets surrounding the Site provide connectivity to the bicycle facilities near the Site. These bicycle facilities connect the Site to the Capital Crescent Trail, C & O Canal Trail and bicycle facilities on the Key Bridge, providing connectivity to areas within the District, Maryland and Virginia. A detailed review of existing bicycle facilities and connectivity is provided in a later section of the report.

Anticipated pedestrian routes, such as those to public transportation facilities, retail zones, and community amenities, provide well-connected pedestrian facilities. Overall, existing pedestrian facilities are adequate; however, there are some sidewalks and curb ramps that do not meet DDOT standards. A detailed review of existing pedestrian facilities and connectivity is provided in a later section of the report.



Overall, the WABC Site is surrounded by a good local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

Walkscore

Walkscore.com is a website that provides scores and rankings for the walking, biking, and transit conditions within neighborhoods of the District. Based on this website the planned development is located in the AU Park – Friendship Heights – Tenley neighborhood. This project location itself has a walk score of 78 (or “Very Walkable”), transit score of 62 (or “Good Transit”), and a bike score of 65 (or “Bikeable”). Figure 3 shows the neighborhood borders in relation to the Site location and displays a heat map for walkability and bikeability.

The Site itself is situated in an area that encompasses a good walk score because of the abundance of neighborhood serving retail locations that are in close proximity, where most errands can be completed by walking.

The good transit score was based on the proximity to multiple bus lines, and the distance to the nearest Metrorail stop which is located approximately 0.2 miles from the Site.

The Site is situated in an area with good bike scores due to its proximity to low volume residential roadways, number of bike lanes, and flat topography. There is a Capital Bikeshare located just north of the Site on Wisconsin Avenue.

Overall, the AU Park – Friendship Heights – Tenley neighborhood has a high walk, good transit, and good bike scores.

Carsharing

Two carsharing companies provide service in the District: Zipcar and Car2Go. Both services are private companies that provide registered users access to a variety of automobiles. Of these, Zipcar has designated spaces for their vehicles. There are two (2) Zipcar locations with a total of four (4) vehicles within ¼-mile of the Site, as shown in Table 1.

Car2Go provides point-to-point carsharing. Car2Go currently has a fleet of vehicles located throughout the District and Arlington. Car2Go vehicles may park in any non-restricted metered curbside parking space or Residential Parking Permit (RPP) location in any zone throughout the defined “Home Area”. Members do not have to pay the meters or pay stations. Car2Go does not have permanent designated spaces for their vehicles; however, availability is tracked through their website and mobile phone application, which provides an additional option for car-sharing patrons. There are six (6) Car2Go locations with a total of six (6) vehicles within ¼-mile of the Site, as shown in Table 1.

FUTURE PROJECTS

There are a few District initiatives located in the vicinity of the Site. These initiatives are summarized below.

Local Initiatives

2016 Zoning Regulations (ZR16) (Subtitle C Chapters 7, 8 and 9)
 Building permit applications must be accompanied by vehicular parking, bicycle parking, and loading plans demonstrating full compliance with the Zoning Regulations. No certificate of occupancy can be issued until the Site has been constructed in

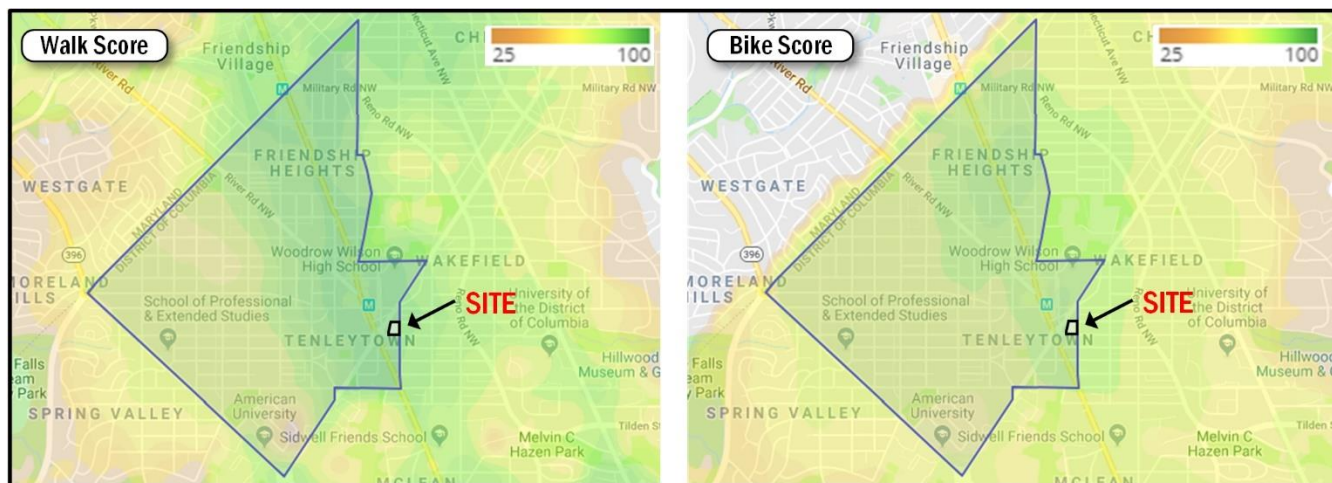


Figure 3: Walkscore and Bikescore



Table 1: Summary of Carshare Locations

Carshare Location	Number of Vehicles
Zipcar	
40 th & Albemarle St NW	2 vehicles
Brandywine & Wisconsin Ave NW	2 vehicles
Car2Go	
4600 41st St NW	1 vehicle
4601 40th St NW	1 vehicle
3711 Appleton St NW	1 vehicle
4515 40th St NW	1 vehicle
4118 Yuma St NW	1 vehicle
4200 Wisconsin Ave	1 vehicle
Total	10 vehicles

accordance to these plans. Any exceptions to these requirements are also discussed.

Vehicle parking regulations are in place to ensure that parking is located, accessed, and designed to minimize negative impacts on the surrounding community. Minimum parking space requirements are determined by building use on the Site. If there is more than one use on the Site, the parking spaces must equal the total number required for all uses. Regulations also address location restrictions, access requirements, size and layout requirements, car-sharing spaces, and surface parking lot landscaping requirements.

Bicycle parking regulations outline the required short- and long-term parking space requirements by building use on the Site. Regulations also address parking signage requirements, location requirements, and requirements for showers and changing facilities for non-residential uses.

Loading activity regulations outline the required loading berths and service/delivery spaces by building use on the Site. Regulations also address location requirements, access requirements, and trash room and receptacle requirements.

A discussion of the compliance with these regulations in the site design is provided later in the report.

DC Comprehensive Plan

The DC Comprehensive Plan is a 20-year framework that guides future growth and development. Topics addressed include land use, economic development, housing, environmental protection, historic preservation, transportation, and more.

Policies are in place along the Wisconsin Avenue corridor to ensure the protection and improvement of the quality of life and the residential character of the area. This policy ensures that:

- New developments do not unreasonably impact traffic conditions and that traffic calming measures are implemented to mitigate any impacts
- Land use decisions do not increase congestion and parking problems in already congested areas, such as near Tenleytown-AU Station Metrorail
- Urban design improvements to the Tenleytown-AU Station Metrorail area makes for a more attractive community hub in the future

DDOT Comprehensive Transportation Review Guidelines

DDOT often requires a Comprehensive Transportation Review (CTR) to evaluate the effect of proposed developments on the District’s comprehensive transportation network. This effort is done to ensure that changes to the network are in line with DDOT policies and practices. The CTR is ideally completed in the early stages of development so that site design elements affecting the community can be identified and mitigated.

The CTR Guidelines outline the contents of the review. Generally, the CTR will identify additional trips that a proposed development would generate, determine how these trips will affect the transportation network, propose mitigations, and show how those mitigations will impact other modes.

DDOT Design and Engineering Manual

The primary purpose of the DDOT Design and Engineering Manual is to guide engineers, consultants, and private developers to effective project development that meets the District’s policies and standards while still providing flexibility for creativity and engineering judgement. The manual defines policies, procedures, and requirements. The objectives of the manual are to:

- Improve the safety of pedestrians, cyclists, and drivers
- Increase non-vehicular transportation modes to meet the mobility and economic needs of the District
- Maintain and enhance the District’s transportation infrastructure and streetscapes, while balancing the needs of all users



Best practices and policies for multi-modal infrastructure outlined in the manual are applied to the WABC development and used throughout the report.

DC's Transit Future System Plan

A well-balanced multi-modal transportation system is essential to efforts to sustain and enhance the District's quality of life and economic growth. DC's Transit Future System Plan establishes the plan for an efficient and high-quality transit network that accomplishes this. The transit network serves to connect residents to employment centers, commercial and recreational areas, and multi-modal transportation hubs.

The plan recommends a network of eight (8) new interconnected streetcar lines and 13 new Metro Express bus lines. This will enhance mobility, support the increasing demand, and provide Metrorail coverage and core capacity relief. In direct relation to the proposed development, the plan outlines expansions to Metro Express and streetcars along Wisconsin Avenue.

DC Bicycle Master Plan

As part of the District's initiative to create a sustainable, multi-modal transportation system, the Bicycle Master Plan is a guide to establishing high-quality, safe, and convenient bicycle facilities and programs. Space limitations in the District make it difficult to add more vehicular infrastructure to accommodate future growth. The District must accommodate this growth by improving facilities for other modes. Three goal areas of the plan include:

- More and better bicycle facilities
- More bicycle-friendly policies
- More bicycle-related education, promotion, and enforcement

MoveDC: Multi-modal Long-Range Transportation Plan

MoveDC is a long-range plan that provides a vision for the future of DC's transportation system. As the District grows, so must the transportation system, specifically in a way that expands transportation choices while improving the reliability of all transportation modes. The *MoveDC* report outlines recommendations by mode with the goal of having them completed by 2040. The plan hopes to achieve a transportation system for the District that includes:

- 70 miles of high-capacity transit (streetcar or bus)

- 200 miles of on-street bicycle facilities or trails
- Sidewalks on at least one side of every street
- New street connections
- Road management/pricing in key corridors and the Central Employment Area
- A new downtown Metrorail loop
- Expanded commuter rail
- Water taxis

Related to the WABC development, *MoveDC* outlines recommended transit and bicycle improvements such as new high-capacity transit (HCT) on Wisconsin Avenue and new bicycle trails and bicycle lanes on Nebraska Avenue NW. These recommendations would create additional multi-modal capacity and connectivity to the Site.

SustainableDC: Sustainable DC Plan

SustainableDC is a planning effort initiated by the Department of Energy & Environment and the Office of Planning that provides the District with a framework of leading Washington DC to become the most sustainable city in the nation. The 2012 report proposes a 20-year timeframe to answer challenges in areas of: (1) Jobs & Economy; (2) Health & Wellness; (3) Equity & Diversity; (4) Climate & Environment; (5) Built Environment; (5) Energy; (6) Food; (7) Nature; (8) Transportation; (9) Waste; and (10) Water. With respect to transportation, the sustainability goals targeted in 20 years include:

- Improving connectivity and accessibility through efficient, integrated, and affordable transit systems
- Expanding provision of safe, secure infrastructure for cyclists and pedestrians
- Reducing traffic congestion to improve mobility
- Improving air quality along major transportation routes

SustainableDC recommends a combination of increasing public transit and decreasing vehicular mode shares to meet these transportation targets.

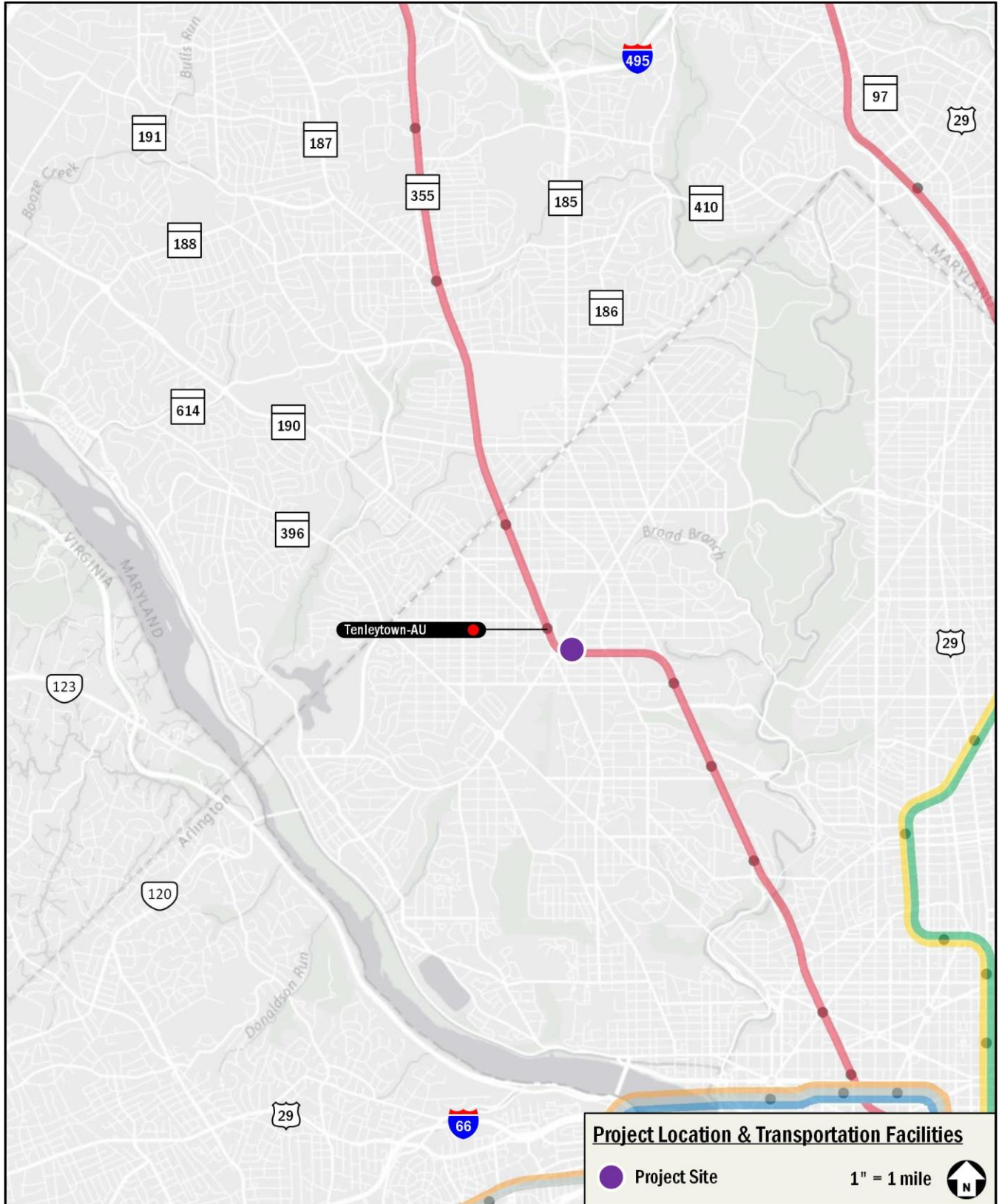


Figure 4: Major Regional Transportation Facilities



Figure 5: Major Local Transportation Facilities

PROJECT DESIGN

This section reviews the transportation components of the Wisconsin Avenue Baptist Church (WABC) Site, including the Site plan of the shared Wisconsin Avenue Baptist Church (the “Church”) and Sunrise Senior Living (“Sunrise”) building, as shown on Figure 6. It includes the proposed site plan, access points, descriptions of the vehicular, bicycle, and pedestrian access, loading and trash, parking, and Transportation Demand Management (TDM).

The entire WABC site is located east of Wisconsin Avenue in the Tenleytown neighborhood of Northwest, DC. The Site is bordered by Alton Place NW to the north, Yuma Street NW to the south, 39th Street NW and residential buildings to the east, and open space owned and maintained by the National Park Service (NPS) to the west.

The proposed development program will replace the existing 350-seat church and 56-student day care facility with an 85-unit assisted living facility and a replacement 250-seat sanctuary for the Church. Both facilities will utilize the same building but will have separate entrances. The entrance to Sunrise will be on the north side of the building, on Alton Place NW. The entrance to the Church will be on the south side of the building, on Yuma Street NW. The project will be supported by a 2-level, below-grade parking facility with access from Alton Place NW. The proposal also includes landscape improvements to the adjacent National Park Service (NPS) property.

The Applicant is seeking zoning relief from the lot occupancy, number of stories, side yard, and retaining wall requirements.

- The maximum permitted lot occupancy for church buildings is 60% and 40% for all other uses. The proposed building will occupy 57% of the lot.
- Building height is restricted to 3 stories and 60 feet for churches and 40 feet for all other uses. The proposed building will be four stories within the 40 feet limit.
- The minimum allowable side yard width is 8 feet. The proposed development will greatly exceed that requirement with a 36-foot east side yard, but the proposed building will abut the west lot line and not meet the side yard requirement.

- The maximum allowable retaining wall height is 4 feet. The proposed development will have a 14-foot wall at its highest point adjacent to the parking garage ramp. Without the retaining wall, the building would need to be constructed significantly closer to the adjacent residential lots to the east.

SITE ACCESS AND CIRCULATION

Pedestrian Access

Primary pedestrian access will be from entry points along Alton Place NW and Yuma Street NW. There are additional access points along to the west of the Site along Nebraska Avenue NW and Tenley Circle NW using the sidewalks within the NPS open space.

Bicycle Access

Bicycle access will be along Alton Place NW and Yuma Street NW. Racks will be available on-site near each building entrance. Long-term storage will be provided on the first level of the parking garage and will be accessed via the garage entrance along the north-south driveway on-site.

Residential roadways can be used to reach the Site from official bicycle facilities on 39th Street NW, Van Ness Street, and 37th Street. Bicycle access is also available via the pedestrian access points previously described. No additional bicycle access to the Site is proposed as part of the development.

Vehicular Access

The Site is currently accessed via the private driveway on Alton Place NW. Vehicle access will continue to be from Alton Place NW in the new development, as shown in Figure 7. Ingress to the site will be from Alton Place NW and egress will now be onto Yuma Street NW. Access to the below-grade parking facility will be via a private north-south driveway with operations only in the southbound direction. Access to the garage will be right-in/right-out only.

Semi-Circular Driveway

The Site will include a semi-circular driveway accessed via Alton Place NW, as shown in Figure 6. There will be a dedicated Sunrise shuttle picking-up and dropping-off residents utilizing this driveway, making up a large portion of the vehicular trips to Sunrise. While the additional curb cut is not ideal, the semi-circular driveway is better suited than comparable alternatives for the pick-up/drop-off activities required and unique needs of the residents at Sunrise. By moving these activities to the

driveway, the Site can better accommodate the ADA needs of Sunrise (e.g., wheelchair loading and unloading) than it could on a curbside. The use of the shuttle could also lead to blockages of the sidewalk along Alton Place NW if done curbside.

The proposed development meets the curb cut and circular drive standards outlined in the DDOT Design and Engineering Manual, as shown in Figure 8.

LOADING AND TRASH

The proposed development is anticipated to have sixteen (16) to nineteen (19) deliveries and trash removals per week. This includes two (2) Sysco food deliveries, ten (10) to twelve (12) FedEx and UPS deliveries, one (1) to two (2) deliveries from other supplies, and three (3) trash removals. Truck routing to and from the proposed development will be mainly on designated truck routes, such as Wisconsin Avenue and Nebraska Avenue, limiting the time spent on Alton Place NW and Yuma Street NW.

Loading

Per ZR16, the buildings are required to have one (1) 12 by 30-foot loading berth with a loading platform (100 SF and 8 feet wide) and one (1) 10 by 20-foot service/delivery space. This loading area must be accessible at all times from a driveway and accessed from a public alley. The loading facilities provided can accommodate the expected demand listed above.

Loading operations will be conducted in these designated loading areas located along the north-south driveway on-site.

Trash

Per ZR16, buildings requiring loading activity must have a designated trash area on-site. Trash operations for the Site will be accommodated within the loading berth. Trash receptacles will be screened and covered.

PARKING

Per ZR16, the proposed development is required to provide the following vehicular parking:

- Institutional, Religious: one (1) parking space for each ten (10) seats of occupancy capacity in the main sanctuary
- CCRC Multi-Unit: one (1) parking space for each two (2) units after 4 units

The proposed development is required to provide a total of 66 spaces. These parking spaces must be located within or below the building.

On-Site Parking

The existing Site has approximately 27 existing surface parking spaces. The proposed WABC development will include a below-grade, two-level, parking garage with 66 parking spaces, meeting ZR16 requirements. The garage will be shared by both the Church and Sunrise. Parking will be primarily for employees and visitors, as most residents are not expected to own a vehicle.

On-Street Parking

An inventory of existing curbside management was performed around the site, which can be found in Figure 9. With the exception of the Time-Restricted (2-hour) parking zone along Alton Place NW and the lack of parking along Nebraska Avenue NW, parking immediately around the Site is restricted to Residential Permit Parking (2-hour limit, Zone 3 permit holders exempt). This Residential Permit Parking continues east from the Site. There are metered parking areas west of Nebraska Avenue NW, but spaces are limited.

Supply and Demand

In addition to meeting ZR16 requirement, the Site also provides more parking supply than demand, based on a shared parking analysis. Table 2 shows the results of this analysis.

Sunrise parking demands are based on parking data collected at comparable Sunrise locations, adjusted for the number of units. The Church parking demands are based on ITE *Parking Generation* 4th Edition, as well as information provided by the Church, including the percentage of congregants that drive to church on Sundays.

Peak parking demand will occur on Sundays, when the Church has services. During the week, the combined Church and Sunrise parking can easily fit in the proposed parking garage. On Sundays, the projected parking demand gets close to the proposed supply but does not exceed it. At its peak on Sunday, 10:30 AM to 12:30 AM, the proposed development is expected to generate a parking demand of 48 vehicles (combined for both the Church and Sunrise)



Given the proposed development will provide a total of 66 parking spaces, peak parking demand on Sundays can be accommodated on-site.

Table 2: Shared Parking Demand

Parking Demand/Supply	Parking Demand	
	Weekday (mid-day)	Sunday (late morning)
Sunrise Community	43 spaces	25 spaces
Church	3 spaces	23 spaces
Total Demand	46 spaces	48 spaces
Total Supply	66 spaces	66 spaces
Surplus	+10 spaces	+8 spaces

On-Site Bicycle Parking

Per ZR16, the proposed development is required to provide the following bicycle parking:

- Institutional, Religious: one (1) long-term space per 7,500 SF and one (1) short-term space per 2,500 SF
- CCRC Multi-Unit: one (1) long-term space for each three (3) units and 1 short-term space for each twenty (20) units or a minimum of eight (8) short-term spaces

The proposed development is required to provide a total of thirty (30) long-term parking spaces and twelve (12) short-term parking spaces.

The first level of the below-grade parking facility will have a bike storage room with thirty (30) long-term parking spaces. Additionally, bicycle racks will be located on the north and south side of the Site, along Alton Place NW and Yuma Street NW. Racks on the north side will provide parking for Sunrise and racks on the south side will provide parking for the Church. These racks will provide a combined twelve (12) short-term parking spaces.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation Demand Management (TDM) is the application of policies and strategies used to reduce travel demand or to redistribute demand to other times or spaces. TDM typically focuses on reducing the demand of single-occupancy, private vehicles during peak period travel times, or on shifting single-occupancy vehicular demand to off-peak periods.

The TDM plan for the WABC development is based on DDOT expectations for TDM programs for developments of this type

and size. The focus of the TDM measures will be on employees, as residents of Sunrise and visitors of Sunrise and/or the Church are not expected to travel to and from the Site frequently, especially during peak hours. As such, The Applicant proposes the following TDM measures:

- The Applicant will identify TDM Leaders (for planning, construction, and operations). The TDM Leaders will work with employees in the development to distribute and market various transportation alternatives and options.
- The Applicant will work with DDOT and goDCgo (DDOT’s TDM program) to implement TDM measures at the proposed development.
- The Applicant will share the full contact information of the TDM coordinator for the proposed development with DDOT and goDCgo.
- The Applicant will meet ZR16 Zoning requirements to provide bicycle parking facilities at the proposed development. This includes a minimum of 30 secure long-term parking spaces located within the buildings of the proposed development and a minimum of 12 short-term bicycle parking spaces around the perimeter of the buildings (in the form of bicycle racks).
- The Applicant will install a Transportation Information Center Display (kiosk) containing materials related to local transportation alternatives and maintain a stock of materials at all times.

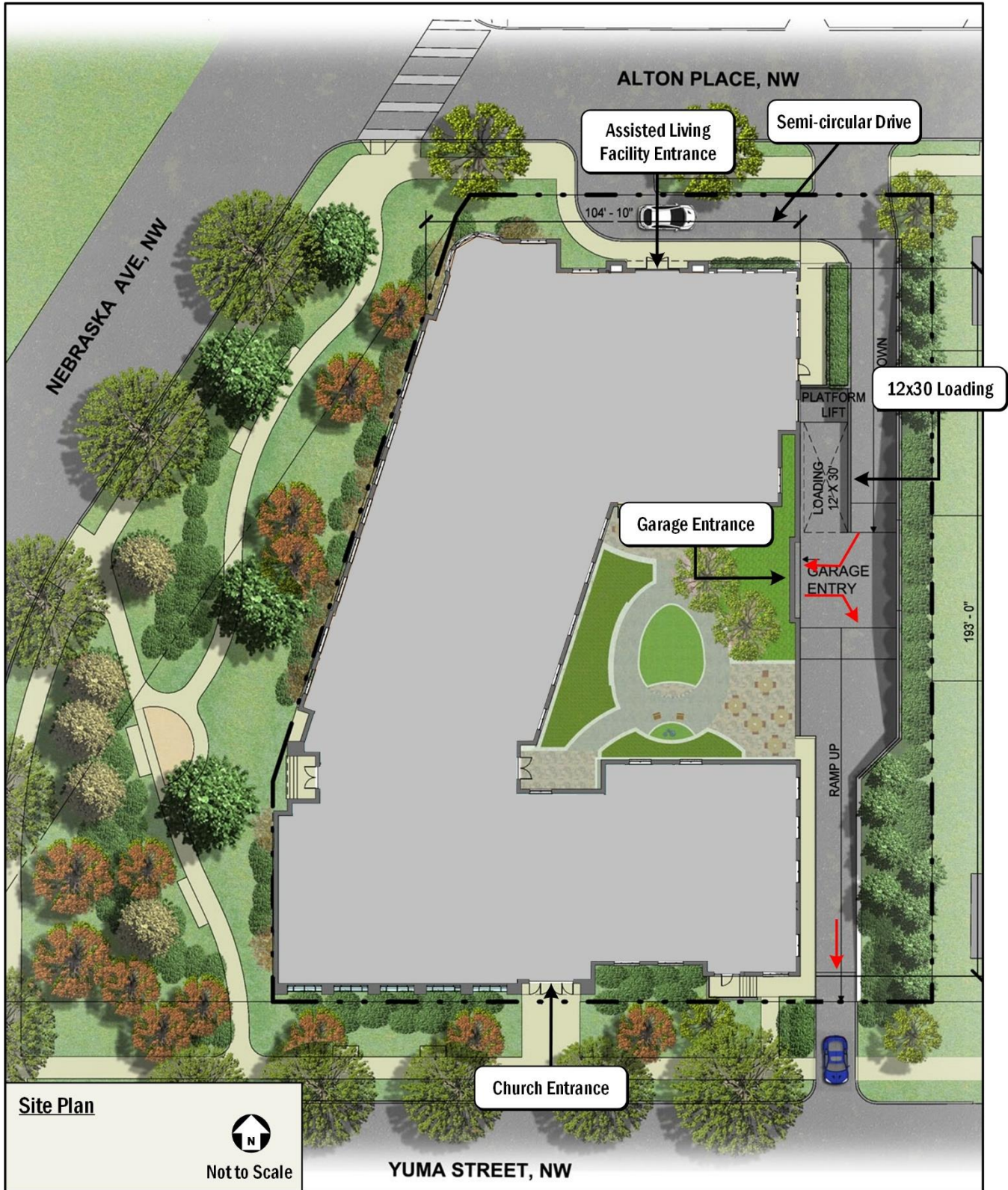


Figure 6: Site Plan

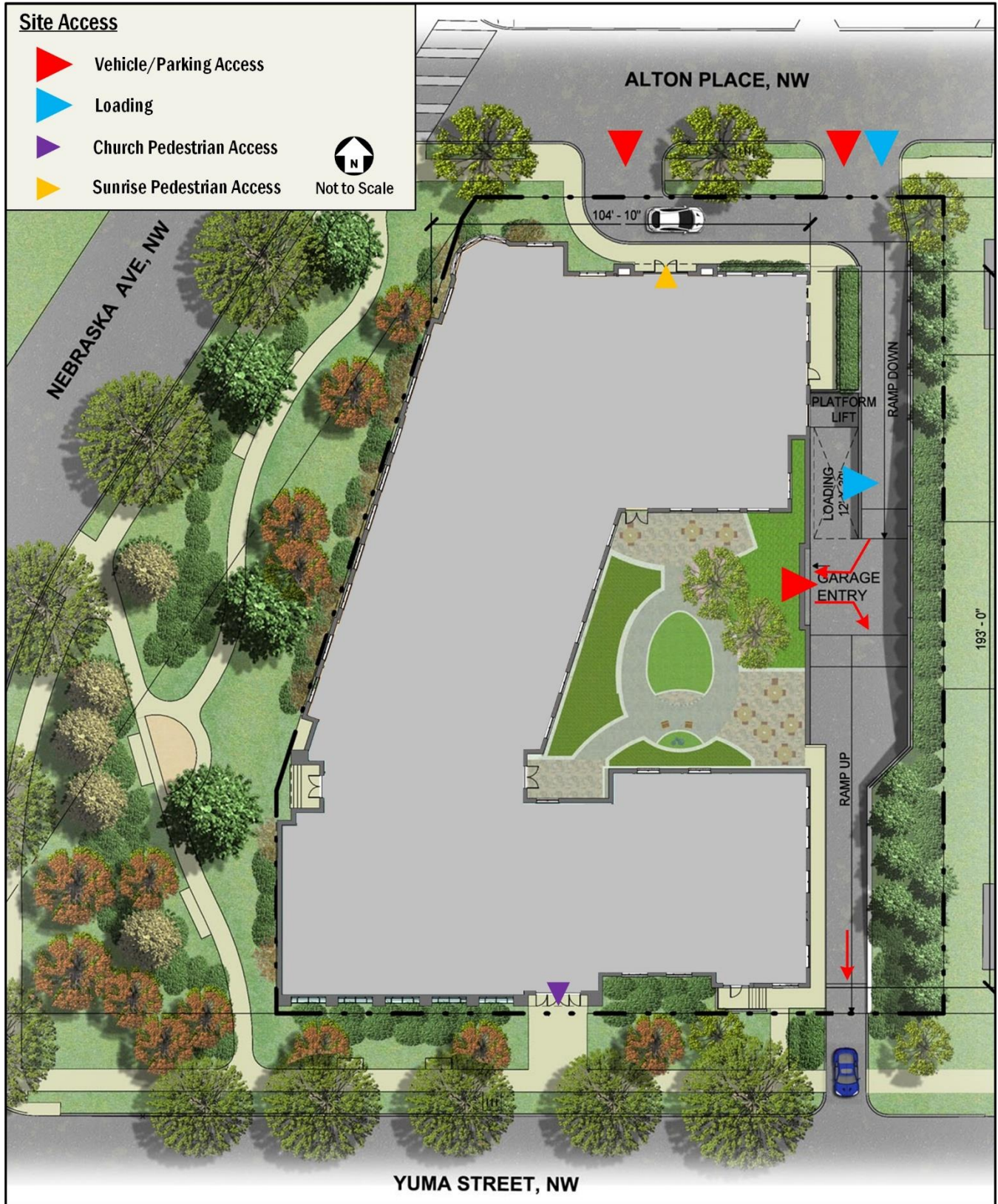


Figure 7: Vehicular Site Access

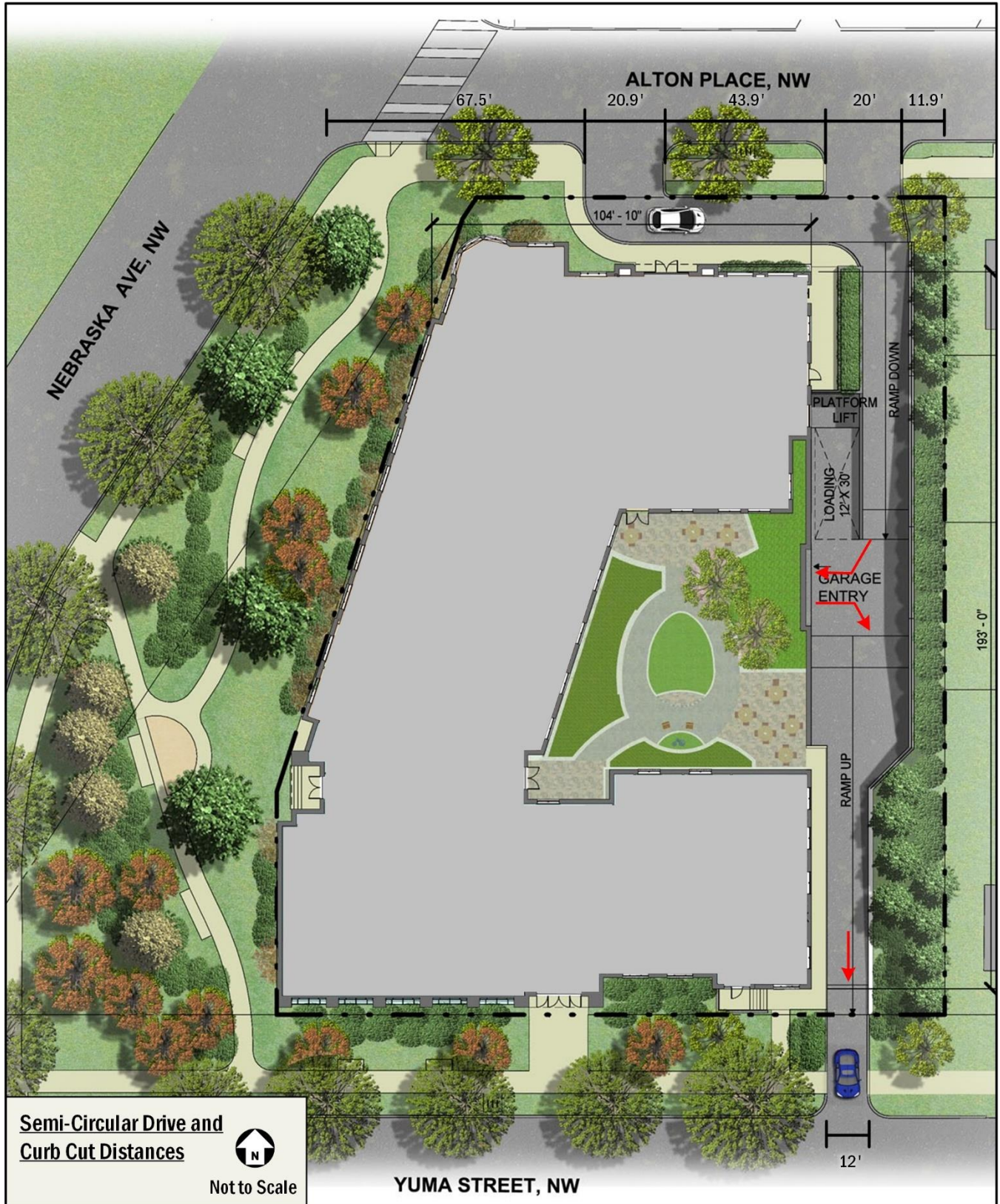


Figure 8: Semi-Circular Driveway and Curb Cut Distances

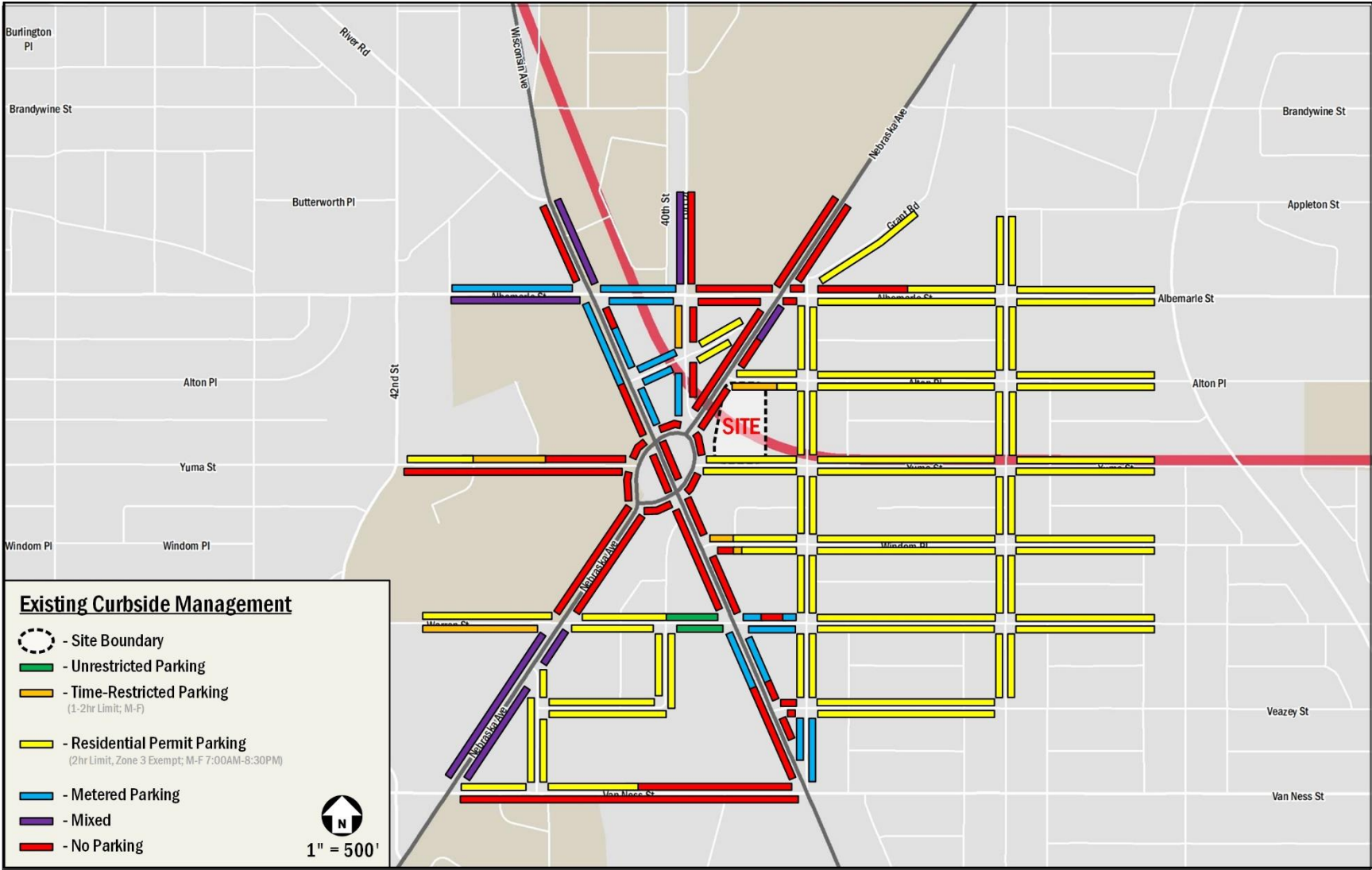


Figure 9: Existing Curbside Management



TRIP GENERATION

This section outlines the transportation demand of the proposed Wisconsin Avenue Baptist Church and Sunrise Senior Living (WABC) development. It summarizes the projected trip generation of the existing facility and the proposed development by mode. These assumptions were vetted and approved by DDOT as a part of the scoping process for the study.

Traditionally, weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. This methodology was supplemented to account for the urban nature of the proposed development (the *Trip Generation Manual* provides data for non-urban, low transit use Sites) and to generate trips for multiple modes, as vetted and approved by DDOT. As requested by DDOT, a Sunday Peak Hour trip generation is provided. This analysis uses a combination of trip generation methodologies: traditional ITE Trip Generation for the daycare and church land uses and a comparison of comparable Sunrise facilities for the assisted living facility land use.

Daycare trip generation was calculated based on ITE Land Use 565, Day Care Center. Mode splits for the daycare component were primarily based on the assumption that the daycare operates via mostly pick-up/drop-offs with some walking traffic from nearby households. Church trip generation was calculated based on ITE Land Use 560, Church. Mode splits for the church component were primarily based on census data for the employees that travel to the proposed development area to account for employees that will be arriving or departing during peak hours. Mode split assumptions are shown in Table 3.

Data was collected at two comparable Sunrise communities to compare the expected trip generation of the proposed development with the trip generation of existing communities. These two comparable Sunrise locations are:

1. Sunrise of Friendship Heights (5555 Friendship Blvd # 100, Chevy Chase, MD 20815)
2. Sunrise of Alexandria (3520 Duke St, Alexandria, VA 22304)

This data collection captured existing vehicular trip generation for each of the comparable sites, including the pick-up/drop-off area. Data was collected on both a Thursday and Sunday to capture a typical weekday and to understand how the assisted living community will overlap with the church component of the development.

A summary of the vehicular trip generation for the existing and proposed development is provided in Table 4 for the morning, afternoon, and Sunday peak hours. Detailed calculations are included in the Technical Attachments.

As noted in Table 4, compared to existing conditions it is estimated that the proposed development will generate fewer trips. With an estimated total of 18 AM peak hour trips (11 inbound and 7 outbound) and 19 PM peak hour trips (7 inbound and 12 outbound), these estimates do not meet DDOT thresholds for further study; therefore, no vehicular capacity analysis is required or necessary.

Table 3: Summary of Mode Split Assumptions

Land Use	Mode			
	Drive	Transit	Bike	Walk
Daycare	65%	0%	0%	35%
Church	60%	36%	2%	2%

Table 4: Existing Peak Hour Trip Generation

Mode	Land Use	AM Peak Hour			PM Peak Hour			Sunday Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Existing (veh/hr)	Church (350 seats)	1	1	2	3	4	7	47	48	95
	Daycare (56 students)	16	14	30	14	15	29	2	2	4
Proposed (veh/hr)	Church (250 seats)	1	1	2	2	2	4	34	34	68
	Assisted Living (85 units)	10	6	16	5	10	15	11	6	16
Net Vehicular Trips		-6	-8	-14	-10	-7	-17	-4	-10	-15

TRANSIT

This section discusses the existing and proposed transit facilities in the vicinity of the Site, accessibility to transit, and evaluates the overall transit impacts of the proposed development.

The following conclusions are reached within this chapter:

- The proposed development has excellent access to transit.
- The proposed development is located 0.2 miles from the Tenleytown-AU Station Metrorail station.
- The proposed development is in the vicinity of 11 Metrobus routes that travel along multiple primary corridors.
- The proposed development is expected to generate an insignificant number of new transit trips and the existing service is capable of handling these trips.

EXISTING TRANSIT SERVICE

The Site is very well served by Metrobus, which provides direct access to Metrorail. Combined, these transit services provide local, city-wide, and regional transit connections and link the Site with major cultural, residential, employment, and commercial destinations throughout the region. Figure 10 identifies the major transit routes, stations, and stops in the study area.

The Site is located approximately 0.2 miles from the Tenleytown-AU Station Metrorail station. The station is serviced by the Red Line, which provides direct connections to areas in the District and Maryland. The Red Line travels south from Shady Grove in Rockville, travels through Downtown DC, and continues north to terminate at Glenmont in Silver Spring. Red Line trains run every 4 to 8 minutes during the weekday morning and every 8 minutes afternoon peak hours between 5:00 AM to 9:30 AM and 3:00 PM to 7:00 PM, approximately every 12 minutes during the weekday midday hours from 9:30 AM to 3:00 PM, approximately every 8 to 12 minutes during the weekday evening hours from 7:00 PM to 9:30 PM, and every 12 to 18 minutes during the weekday off-peak periods and on weekends. The Red Line provides direct service to Union Station where transfers can be made to MARC, VRE, DC Streetcar, and Amtrak services. Transfers to Blue, Silver, and Orange Lines can be made at Metro Center and transfers to

Green and Yellow Lines can be made at Gallery Place-Chinatown.

The Site is directly serviced by nineteen (19) Metrobus stops and eleven (11) Metrobus routes, including six (6) major routes, three (3) local routes, one (1) commuter route, and one (1) express route, providing the Site with additional connectivity to nearby Metrorail stations where transfers can be made to other bus routes and the Metrorail lines. The MetroExtra 37 route provides direct commuter service from the Site to Metrorail stations in Downtown, DC. Together, these routes provide connectivity to the downtown core and other areas of the District, Maryland, and Virginia. Table 5 shows a summary of the bus route information for the routes that serve the Site, including service hours, headway, and distance to the nearest bus stop.

PLANNED TRANSIT SERVICE

MoveDC

Due to growth of population, jobs, and retail in several neighborhoods in the District, and the potential for growth in other neighborhoods, the District's infrastructure is challenged with the need for transportation investments to support the recent growth and to further strengthen neighborhoods. In order to meet these challenges and capitalize on future opportunities, DDOT has developed a plan to identify transit challenges and opportunities and to recommend investments. *MoveDC* is a long-range plan that provides a vision for the future of DC's transportation system, specifically in a way that expands transportation choices while improving the reliability of all transportation modes.

The *MoveDC* report outlines recommendations by mode with the goal of having them complete by 2040. The plan hopes to achieve a transportation system for the District that includes:

- 70 miles of high-capacity transit (streetcar or bus)
- 200 miles of on-street bicycle facilities or trails
- Sidewalks on at least one side of every street
- New street connections
- Road management/pricing in key corridors and the Central Employment Area
- A new downtown Metrorail loop
- Expanded commuter rail
- Water taxi



Related to the WABC development, *MoveDC* outlines recommended transit improvements such as new high-capacity transit (HCT) on Wisconsin Avenue, from Tenleytown to Georgetown. These recommendations would create additional multi-modal capacity and connectivity to the Site.

Table 5: Metrobus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
30N	Friendship Heights-Southeast Line	Weekdays: 4:27 AM – 2:22 AM Weekends: 4:34 AM – 2:40 AM	60 min	<0.1 miles, 2 min
30S	Friendship Heights-Southeast Line	Weekdays: 4:55 AM – 2:52 AM Weekends: 5:04 AM – 3:05 AM	60 min	<0.1 miles, 2 min
31	Wisconsin Avenue Line	Weekdays: 6:05 AM – 10:59 PM Weekends: 5:48 AM – 11:51 PM	15-30 min	<0.1 miles, 2 min
33	Wisconsin Avenue Line	Weekdays: 5:11 AM – 8:55 PM Weekends: 6:11 AM – 9:06 PM	15-30 min	<0.1 miles, 2 min
H2	Crosstown Line	Weekdays: 6:15 AM – 12:02AM Weekends: 6:48 AM – 12:30 AM	30 min	<0.1 miles, 2 min
H3	Crosstown Line	Weekdays: 8:10 AM – 6:36 PM	15-30 min	<0.1 miles, 2 min
H4	Crosstown Line	Weekdays: 5:18 AM – 1:30 AM Weekends: 5:28 AM – 2:05 AM	30 min	<0.1 miles, 2 min
N2	Massachusetts Ave Line	Weekdays: 5:52 AM – 7:26 PM	15-30 min	<0.1 miles, 2 min
96	East Capitol Street-Cardozo Line	Weekdays: 6:04 AM – 12:36 AM Weekends: 5:40 AM – 12:10 AM	15-30 min	<0.1 miles, 2 min
M4	Nebraska Ave	Weekdays: 6:10 AM – 9:18 PM Weekends: 6:10 AM – 9:18 AM	15 min	<0.1 miles, 2 min
37	Wisconsin Avenue Limited Line	Weekdays: 6:49 AM – 9:25 AM (SB) 4:37 PM – 7:40 PM (NB)	15 min	0.2 miles, 4 min

WMATA and DDOT Transit Studies

Regarding Metrobus service, WMATA and DDOT completed the *Metrobus Service Evaluation Study East Capitol Street-Cardozo Line (Route 96/97) (January 2013)*, which examined the Route 96 Metrobus Line. This study recommended improvements to the route, including the assignment of a dedicated supervisor to monitor on-time performance and the consolidation of bus stops.

WMATA also studied capacity along Metrobus routes. DC’s *Transit Future System Plan (2010)* lists the bus routes with the highest load factor (a ratio of passenger volume to bus capacity). A load factor is considered unacceptable if it is over 1.2 during peak periods, or over 1.0 during off-peak or weekend periods. According to this study, the 30 series routes that travel along Wisconsin Avenue adjacent to the Site

operate at a peak hour load factor of 1.2, the threshold for acceptable load standards.

SITE IMPACTS

Transit Trip Generation

Based on the estimated trip generation, the proposed development is projected to generate an insignificant number of new transit trips. As such, Metrorail vertical transportation and faregate capacity, and Metrobus capacity will not present an issue.

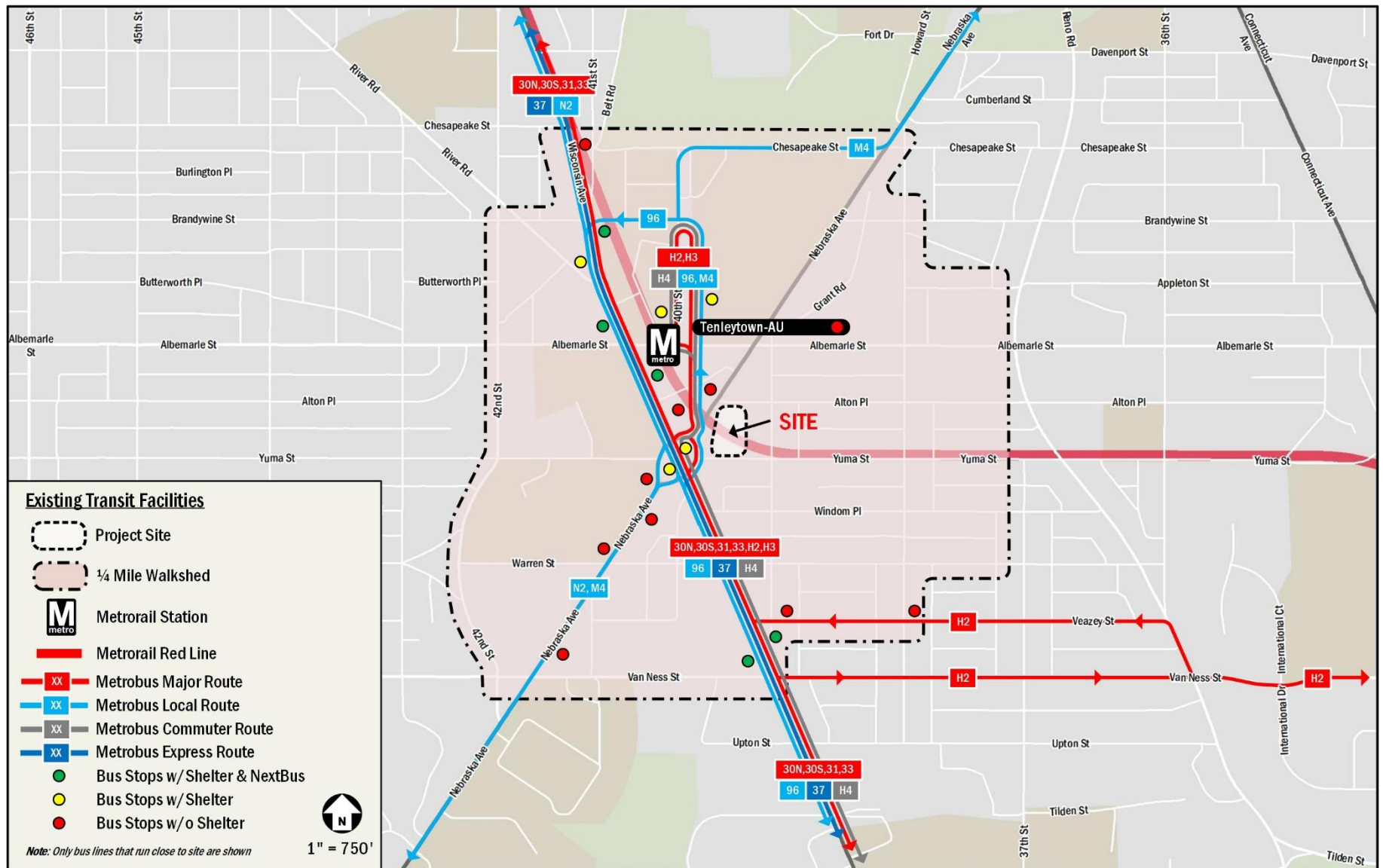


Figure 10: Existing Transit Service



PEDESTRIAN FACILITIES

This section summarizes the existing and future pedestrian access and reviews walking routes to and from the Wisconsin Avenue Baptist Church and Sunrise Senior Living (WABC) Site.

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the Site provides an adequate walking environment.
- There are sidewalks along all primary routes to pedestrian destinations.
- The Site is expected to generate a manageable number of pedestrian trips.
- The Site is not expected to generate a significant number of walking trips; therefore, all Site-generated walking trips can be accommodated on the pedestrian facilities surrounding the Site.

PEDESTRIAN STUDY AREA

Facilities within ¼-mile of the Site were evaluated as well as routes to nearby transit facilities and prominent and neighborhood destinations. The Site is easily accessible to bus stops along Wisconsin Avenue and Nebraska Avenue. There are a few areas of concern away from the Site but within the study area, however, these should not negatively impact the quality and attractiveness of the walking environment. This includes roadway conditions that reduce the quality of walking conditions, narrow or nonexistent sidewalks, dilapidated ADA ramps, and incomplete or insufficient crossings at busy intersections. Figure 11 shows likely pedestrian pathways, walking time and distances, and barriers and areas of concern.

PEDESTRIAN INFRASTRUCTURE

This section outlines the existing and proposed pedestrian infrastructure within ¼-mile walking distance of the Site.

Existing Conditions

A review of pedestrian facilities surrounding the Site shows that most facilities meet DDOT standards and provide a quality walking environment. The presence of on-street parking along

Table 6: Sidewalk Requirements

Street Type	Min. Buffer Width	Min. Sidewalk Unobstructed Width	Total Min. Sidewalk Width
Low- to Moderate-Density Residential	4-6 ft	6 ft	10 ft
High-Density Residential	4-8 ft	8 ft	13 ft
Central DC and Commercial Areas	4-10 ft	10 ft	16 ft

one or both sides of many roadways in the Site vicinity acts as a buffer between the sidewalk and the travel way. Figure 12 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 DDOT's *Design and Engineering Manual (2017)* in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 6.

Within the vicinity of the Site, the majority of roadways are considered residential with a low to moderate density. The majority of sidewalks surrounding the Site comply with DDOT standards. All primary pedestrian destinations are accessible via routes with sidewalks, most of which meet DDOT standards.

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. Under existing conditions, crosswalks and curb ramps are present near the Site.

Pedestrian Infrastructure Improvements

Pedestrian access to the Site will be from entry points on Alton Place NW and Yuma Street NW. The existing pedestrian infrastructure surrounding the Site provides an adequate walking environment, and there are sidewalks along all primary routes to pedestrian destinations.

SITE IMPACTS

This section summarizes the impacts of the proposed development on the overall pedestrian operations in the vicinity of the Site.

Pedestrian Trip Generation

The WABC development is expected to generate significantly fewer walking trips. The origins and destinations of those that walk are likely to be employees and visitors that walk to:

- The Site;
- Retail locations outside of the Site; and
- Neighborhood destinations such as residences, schools, and parks in the vicinity of the Site.



Transit trips generated by the Site will generate an insignificant number of new pedestrian trips between the Site and nearby transit stops.

The Site is not expected to generate a significant number of walking trips; therefore, all site-generated walking trips can be accommodated on the pedestrian facilities surrounding the Site. Improvements include the removal of two (2) curb cuts and the addition of three (3) curb cuts along study area roadways.

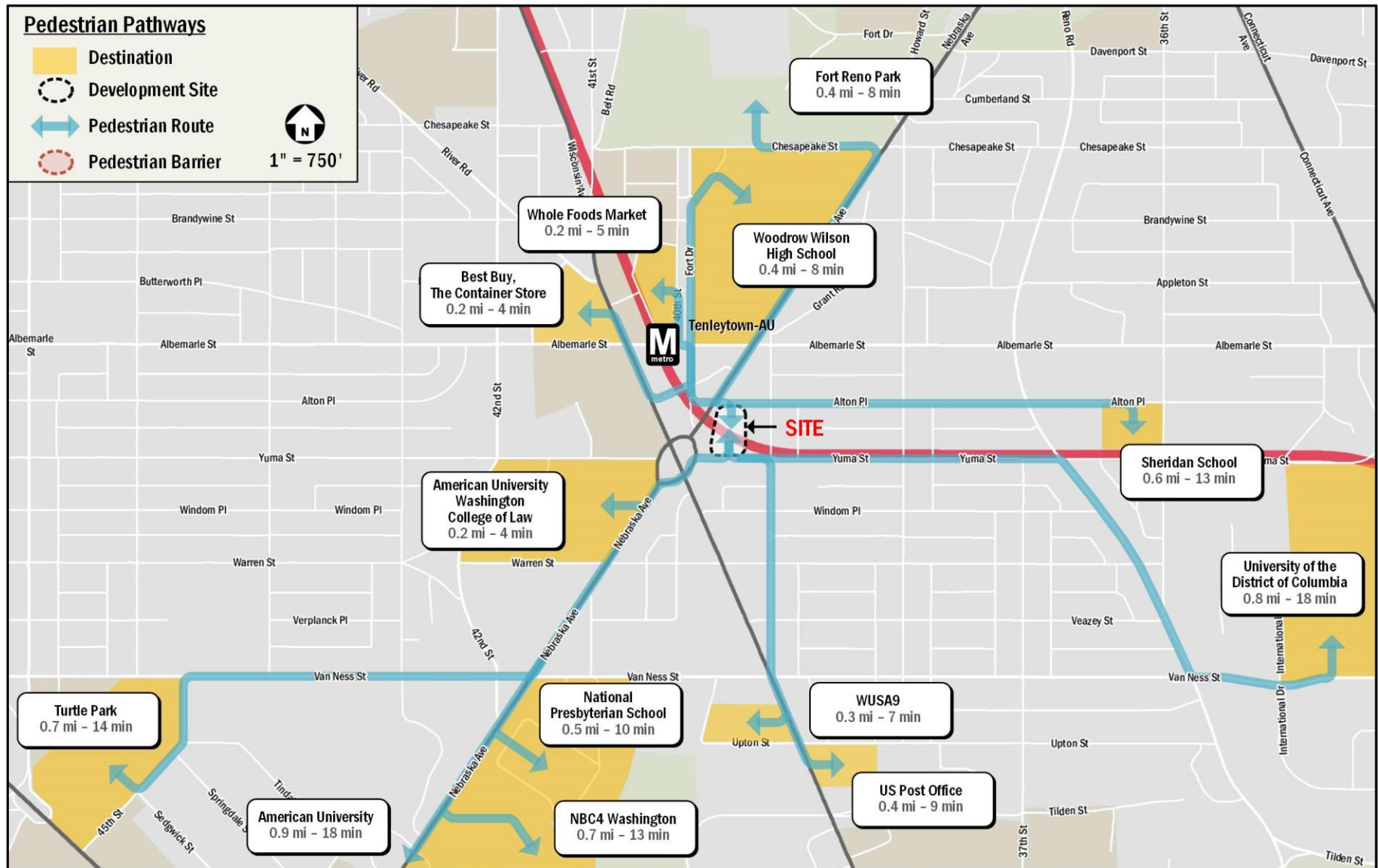


Figure 11: Pedestrian Pathways

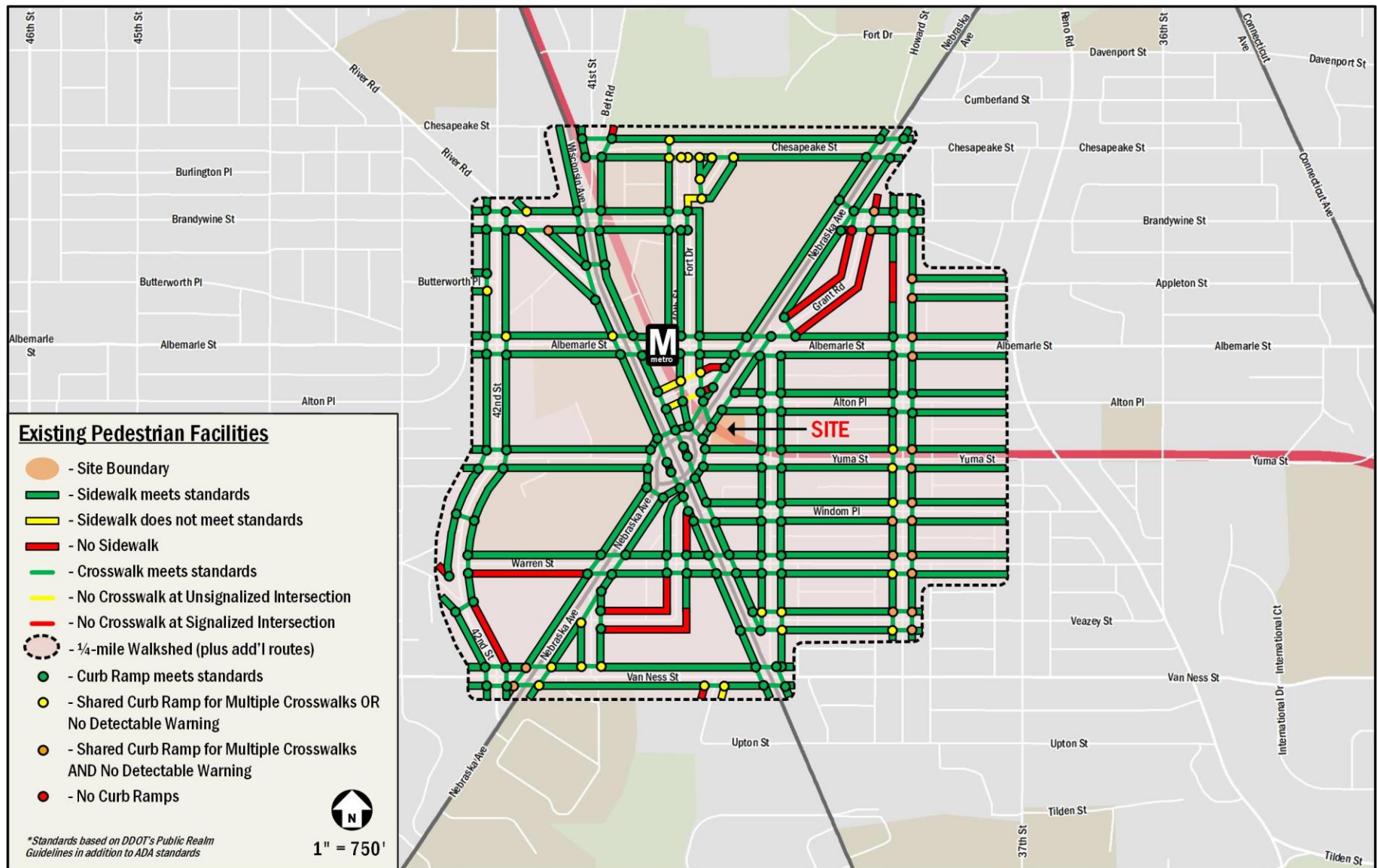


Figure 12: Existing Pedestrian Facilities



BICYCLE FACILITIES

This section summarizes existing and future bicycle access, reviews the quality of cycling routes to and from the Wisconsin Avenue Baptist Church and Sunrise Senior Living (WABC) Site, and presents recommendations.

The following conclusions are reached within this chapter:

- There are several bicycle facilities in the vicinity of the Site.
- The Site is not expected to generate a significant amount of bicycle trips; therefore, all Site-generated bike trips can be accommodated on the bicycle facilities surrounding the Site.

EXISTING BICYCLE FACILITIES

The Site is in the vicinity of several bicycle facilities. The residential low volume streets surrounding the Site provide connectivity to the bicycle facilities that are near the Site. There is a dedicated bicycle lane along 39th Street NW directly east to the Site that provides connection to a Capital Bikeshare to the south. Additional dedicated lanes are along 40th Street, Van Ness Street, and 41st Street. Shared lanes along River Road NW, 42nd Street NW, and Van Ness Street NW provide connectivity to the north and east. The signed routes along 36th and 37th Street NW provide north-south connectivity. These bicycle facilities connect the Site to the Capital Crescent Trail, C & O Canal Trail and bicycle facilities on the Key Bridge, providing connectivity to areas within the District, Maryland and Virginia.

Figure 13 illustrates the existing bicycle facilities in the area. Bicycle access is available via the previously described vehicular and pedestrian access points to the WABC Site.

PROPOSED BICYCLE FACILITIES

MoveDC

The *MoveDC* plan outlines several bicycle improvements in the vicinity of the Site. These improvements are broken into four tiers that rank priority for implementation. The four tiers are as follows:

- Tier 1
Investments should be considered as part of DDOT’s 6-year Transportation Improvement Program (TIP) and annual work program development, if they are not already

included. Some projects may be able to move directly into construction, while others become high priorities for advancement through the Project Development Process.

There is one Tier 1 addition in the vicinity of the Site that will positively affect bicycle connectivity: a 1-mile bicycle trail along Nebraska Avenue NW, from Rockwood Parkway NW to Wisconsin Avenue, NW.

- Tier 2
Investments within this tier are not high priorities in the early years of *MoveDC* implementation. These investments could begin moving through the Project Development Process if there are compelling reasons for their advancement.
- Tier 3
Investments within this tier are not priorities for DDOT-led advancement in the early years of *MoveDC*’s implementation. They could move forward earlier under circumstances, such as real estate development initiatives and non-DDOT partnerships providing the opportunity for non-District-led completion of specific funding.
- Tier 4
Generally, investments within this tier are not priorities for DDOT-led advancement and are lower priority for project development in the early years of implementation.

Capital Bikeshare

The Capital Bikeshare program provides additional cycling options for employees and visitors of the Site. The Bikeshare program has placed 440 stations across Washington, DC, Arlington, and Alexandria, VA, Montgomery County, MD, and most recently Fairfax County, VA, with 3,700 bicycles provided. Capital Bikeshare currently has 4 existing stations with 48 available bicycle docks just over ½-mile from the Site at the intersections of Wisconsin Avenue and Brandywine Street NW, Tenleytown/Wisconsin Avenue and Albemarle Street NW, Yuma Street NW and Tenley Circle NW, and 39th Street NW and Veazey Street NW.

Figure 13 illustrates the existing Capital Bikeshare facilities in the area.

On-Site Bicycle Parking

On the first level of the below-grade parking facility will be a bike storage room with thirty (30) long-term parking spaces. Additionally, bicycle racks will be located on the north and south side of the Site, along Alton Place NW and Yuma Street

NW. Racks on the north side will provide parking for Sunrise and racks on the south side will provide parking for the Church. These racks will provide a combined twelve (12) short-term parking spaces.

SITE IMPACTS

This section summarizes the impacts of the proposed development on the overall bicycle operations in the vicinity of the Site.

Bicycle Trip Generation

The WABC Site is not expected to generate a significant number of additional bicycle trips. Therefore, no new bicycle connections or facilities to the Site are proposed.

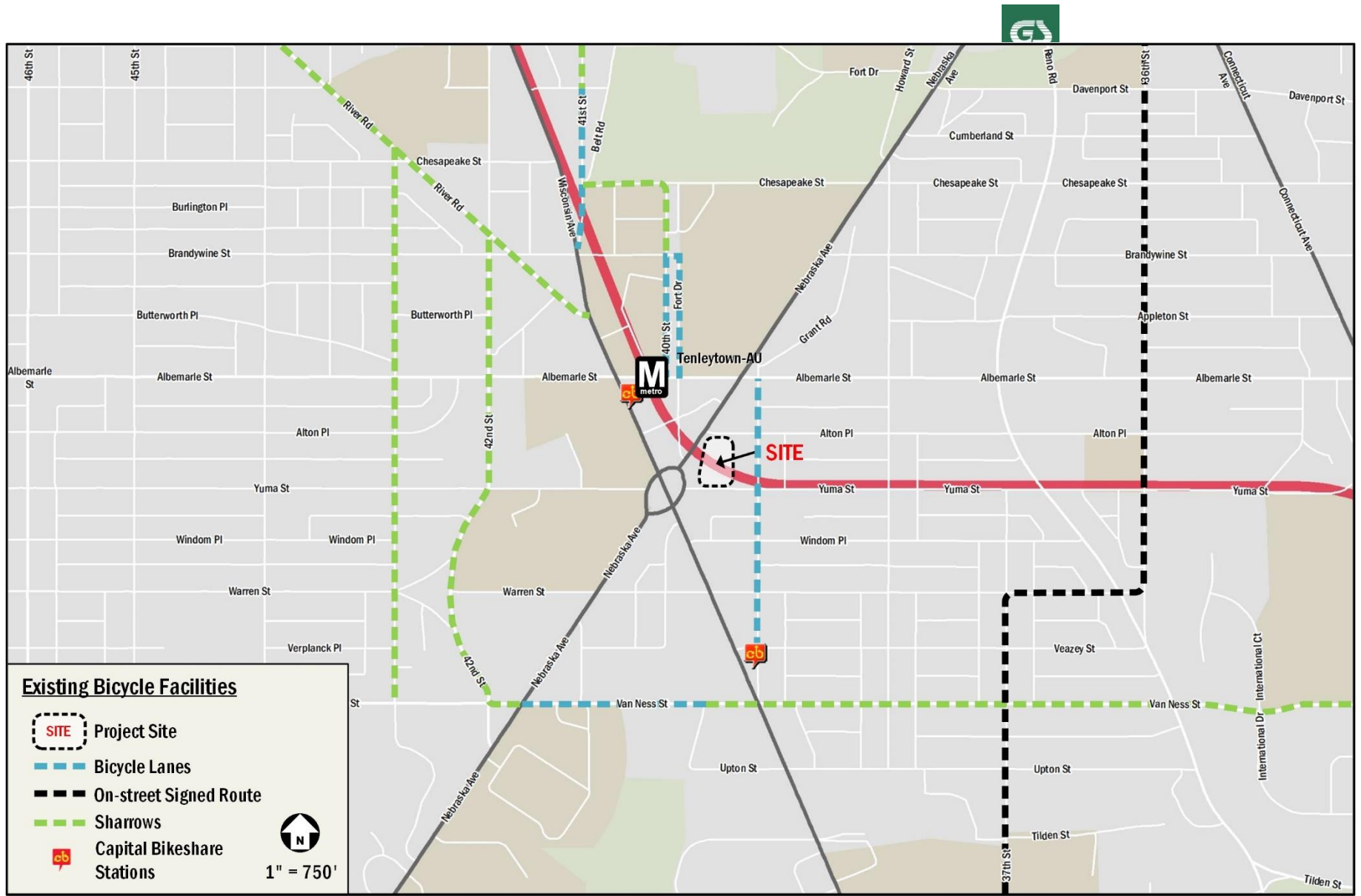


Figure 13: Existing Bicycle Facilities



CRASH DATA ANALYSIS

This section of the report reviews available crash data within the study area, reviews potential impacts of the proposed development on crash rates and makes recommendations for mitigation measures where needed.

SUMMARY OF AVAILABLE CRASH DATA

A crash analysis was performed to determine if there was an abnormally high crash rate at study area intersections, shown in Figure 14. DDOT provided the last three years of intersection crash data, from 2015 to 2017, for the study area. This data was reviewed and analyzed to determine the crash rate at each location. For intersections, the crash rate is measured in crash per million-entering vehicles (MEV). The crash rates per intersection are shown in Table 7.

According to the Institute of Transportation Engineer’s *Comprehensive Transportation Review for Site Development*, a crash rate of 1.0 or higher is an indication that further study is required. One intersection in this study area meets this criterion (as shown in red in Table 7 and detailed in Table 8). The WABC development should be developed in a manner to help alleviate, or at minimum not add to, the conflicts at this intersection.

A rate over 1.0 does not necessarily mean there is a significant problem at an intersection, but rather it is a threshold used to identify which intersections may have higher crash rates due to operational, geometric, or other issues. In some cases, the crashes were located near the intersection and not necessarily within the intersection.

Table 7: Intersection Crash Rates (2015 to 2017)

Intersection	Total Crashes	Ped Crashes	Bike Crashes	Rate per MEV*
1. Alton Place & 39 th Street, NW	3	1	0	1.38
2. Yuma Street & 39 th Street, NW	2	0	0	0.50

* - Million Entering Vehicles; Volumes estimated based on turning movement count data

Table 8: Crash Type Breakdown

Intersection	Rate per MEV	Right Angle	Left Turn	Right Turn	Rear End	Side Swiped	Head On	Parked	Fixed Object	Ran Off Road	Ped. Involved	Backing	Non-Collision	Under/Over Ride	Unspecified	Total
Alton Place & 39 th Street, NW	1.38	1 33%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 67%	3

For this intersection, the crash type information from the DDOT crash data was reviewed to see if there is a high percentage of certain crash types. Generally, the reasons for why an intersection has a high crash rate cannot be derived from crash data, as the exact details of each crash are not represented. However, some summaries of crash data can be used to develop general trends or eliminate possible causes. Table 8 contains a breakdown of crash types reported for the intersection with a crash rate over 1.0 per MEV.

POTENTIAL IMPACTS

This section reviews the location with existing crash rates over 1.0 per MEV and reviews potential impacts of the proposed development.

Alton Place & 39th Street, NW

This intersection was found to have a crash rate of 1.38 crashes per MEV (3 crashes) over the course of the three-year study period. Of the 3 crashes recorded, 1 was classified under a specific reason (right angle). Of these 3, the majority of crashes at this intersection were unspecified (2 crashes).

Despite the fact that the actual crash rate at both locations is below the threshold for further analysis, this report does identify potential traffic calming measures that could be implemented along the 39th Street NW corridor to improve safety. Along 39th Street NW, observed crash rates were low. However, a subsequent section of this report will address traffic calming improvements that could be implemented at the intersection of 39th Street NW & Alton Place NW to address community concerns, pending support from DDOT.



Figure 14: Study Area Intersections and Automated Traffic Recorder Locations



COMMUNITY CONCERNS

During this development process, the Applicant has heard concerns from the community about safety on neighborhood roadways, particularly along 39th Street NW directly east and adjacent to the site where there is a two-block segment without stop or signal control. Specifically, the community has requested the Applicant explore the following: (1) the implementation of an all-way-stop control at the intersection of 39th Street NW and Alton Place NW; (2) increasing pedestrian crossing time at Nebraska Avenue NW east of the Site; and (3) the addition of “Do Not Block Intersection” markings and signs at the intersection of Nebraska Avenue NW and Alton Place NW.

The following conclusions are reached within this chapter:

- 39th Street adjacent to the site does not meet DDOT’s criteria for implementing traffic calming infrastructure. Sufficient traffic volumes exist along the segment, but it does not see a high enough percentage of speeding vehicles or have enough crashes attributable to speed to warrant DDOT-led traffic calming improvements.
- A review of the community concerns found that there are viable reasons for implementation for all of them, including (1) the addition of an all-way-stop control at the intersection of 39th Street NW and Alton Place NW; (2) increasing pedestrian crossing time at Nebraska Avenue NW east of the Site (if needed); and (3) the addition of “Do Not Block Intersection” markings and signs at the intersection of Nebraska Avenue NW and Alton Place NW. The final decision on implementation will be up to DDOT, and if DDOT agrees to implementation of any of them, the Applicant is willing to fund their implementation as part of the approval of this project.

DDOT TRAFFIC CALMING CRITERIA

In order to help provide context for examining the community’s concerns, this report reviewed DDOT’s traffic calming criteria against traffic data collected on 39th Street adjacent to the site. During scoping, DDOT provided a list of four criteria that are used to determine where traffic calming improvements are warranted:

- In a 48-hour period, the minimum average daily traffic (ADT) volume is greater than or equal to 1,000 vehicles per day
- In a 48-hour period, the minimum peak hour volume is greater than or equal to 100 vehicles per hour
- The 85th percentile speed of vehicles, measured over a 48-hour period, is at least 25% over the posted speed limit
- A minimum of 3 or more speed-related crashes susceptible to correction by traffic calming devices are observed within a 12-month period.

In addition, DDOT requests that any study of traffic calming also include a summary of several data points at each study location, including:

- Speed Data (85th percentile speed, average speed, speed by direction, and the most common 10 mph range of speeds, also known as the “pace speed”),
- Traffic Volumes (ADT and peak hour volumes), and
- Crash History (number of crashes, number of crashes having and injury or fatality, and number of crashes where police reports determined excessive speed to be a contributing factor).

These data points are discussed in more detail below.

Data Collection

One location, 39th Street NW (between Yuma Street NW and Alton Place NW), was selected for study. This location is noted in Figure 14, and is the corridor of primary community concern along 39th Street NW.

At this location, an Automated Traffic Recorder (ATR) was set up to collect vehicle volume and speed data for a 48-hour period, namely Wednesday and Thursday, November 1-2, 2017. An ATR consists of a set of pneumatic tubes that are installed across the travel lanes, which record data whenever they are struck by a car tire. From these records, the amount of traffic can be determined, and by measuring the time between consecutive tire hits the speed of each vehicle can be calculated as well.

This data was joined with crash data records requested from DDOT to round out the required analysis factors. DDOT crash data reports are discussed in more detail in the previous section. Since crash data reports are only available at intersections, data from the nearest study area intersection, as



noted in Table 10, was used as the basis for crash incidence at a particular ATR location.

The resulting data points are summarized in Table 10.

Evaluation per DDOT Criteria

As summarized at the end of Table 10, the location studied does not meet all four of DDOT’s criteria, indicating that traffic calming improvements are not strictly necessary there. The segment met the traffic volume criteria but did not meet either the criteria for speeding or speed-related crashes.

FEASIBILITY OF IMPROVEMENTS

The results in the previous section show that traffic calming is not required in order to mitigate existing conditions based on DDOT’s criteria. However, in order to address the concerns expressed by the community and the Applicant’s concerns for the safety of those traveling to the Site, this report will address the following improvements requested by the community. The Applicant has agreed to fund these improvements if DDOT is supportive of a specific improvement or improvements.

This report finds that the improvements are not required by any warrant criteria, but any of them could be feasibly implemented with the support of the community and DDOT.

Implementation of All-Way Stop Control

All-way stop control is a common method of increasing safety at intersections and calming traffic between intersections, particularly within the District.

The community is interested in the intersection of 39th Street and Alton Place NW from two-way stop to all-way stop control. The Federal Highway Administration has a set of tests to determine whether conversion to an all-way stop is warranted. By those tests all-way stop control is not required at this location because volumes along the minor street do not meet minimum thresholds (200 vehicles or pedestrians per hour are required but Alton Place NW sees at most 36 in existing conditions and is not expected to significantly increase in future conditions; see Technical Attachments for volumes) and there are not significant sight distance or left-turning conflicts.

However, converting this intersection to all-way stop control would be an effective way to simultaneously slow through traffic and increase pedestrian protection at the crosswalks. It is important to note that this intersection was identified as having a higher crash rate (1.38 per MEV), with 1 of 3 crashes

involving a pedestrian. Furthermore, this improvement could be implemented quickly if supported by DDOT since all-way stop conversions typically do not require modifications to curbs, drainage structures, or intersection geometry. The final decision on whether to convert the intersection to an all-way stop would be made by DDOT.

Increasing Pedestrian Crossing Time

The community has expressed concerns about pedestrian crossing times across Nebraska Avenue NW near the Site. It is expected that a portion of employees and visitors will access the Site from the Tenleytown-AU Station Metrorail station, walking along Fort Drive NW and crossing Nebraska Avenue NW. This is a signalized location where pedestrians cross with a ‘walk/don’t walk’ pedestrian signal. The crossing review at this location is based on ensuring pedestrians have sufficient time to cross when they get a ‘walk’ sign, by comparing the amount of walk time presented during the signal phases compared to the length of the crosswalk.

The main source of data for this review were crosswalk measurements taken in the field. The required pedestrian crossing time was calculated by dividing the distance by an average walking speed of three (3) feet per second. The 3 second assumption was used instead to be more conservative, and account for the age of the pedestrians walking to and from the assisted living facility. Please note that DDOT and the *Manual on Uniform Traffic Control Devices* (MUTCD) assume an average pedestrian walking speed of 3.5 feet per second.

Error! Not a valid bookmark self-reference. shows the results of the pedestrian crossing distance analysis.

Table 9: Crossing Distance Analysis

Crosswalk Location	Crossing Distance (ft)	Required Crossing Time (sec)*	Minimum Provided Crossing Time	
			AM (sec)	PM (sec)
Tenley Circle and Nebraska Avenue	47	16	n/a	n/a

*assuming a pedestrian walking speed of 3 ft/sec.

DDOT Signal timing sheets (which show pedestrian walk and don’t walk times during the carious times of day/week) were requested but not provided by DDOT at the time of writing this CTR. Thus, this report cannot be sure whether the traffic signal allows sufficient time for pedestrians to cross, although observations in the field indicated that the time is not sufficient. This report recommends that the existing pedestrian crossing time should be increased to 16 seconds, if needed.



This improvement could be implemented quickly since it would not require modifications to curbs, drainage structures, or intersection geometry.

“Do Not Block Intersection” Markings and Signs

“Do Not Block Intersection” markings may be used to mark the edges of an intersection area that is close to a signalized intersection or other nearby traffic control that might cause vehicles to stop within the intersection and block traffic from entering the intersection. If implemented, markings consist of one of the following alternatives:

- Wide solid white lines that outline the intersection area that vehicles must not block
- Wide solid white lines that outline the intersection area that vehicles must not block and a white word message such as “Do Not Block” or “Keep Clear”
- Wide solid white lines that outline the intersection area that vehicles must not block and white cross-hatching within the intersection area
- A white word message, such as “Do Not Block” or “Keep Clear,” within the intersection area that vehicles must not block

Do Not Block Intersection markings shall be accompanied by one or more “Do Not Block Intersection” signs.

The community has expressed concerns about the intersection of Nebraska Avenue NW and Alton Place NW. Because Alton Place NW is a two-way street, there is concern that traffic from the intersection of Nebraska Avenue NW and Fort Drive NW (i.e. Tenley Circle) will block the intersection and make entering Nebraska Avenue from Alton Place NW hazardous.

There are no warrants for this type of marking, and their implementation is based on field observations and engineering judgement. This intersection is close to Tenley Circle, and vehicular traffic waiting for the green light was observed in the field queuing beyond the intersection of Nebraska Avenue NW and Alton Place NW. The Applicant is willing to fund the implementation of appropriate signing and marking if DDOT approves of their installation.

This improvement could be implemented quickly if supported by DDOT since it would not require modifications to curbs, drainage structures, or intersection geometry.



Table 10: Traffic Calming Evaluation and Summary of Speed, Volume, and Traffic Safety Data

<i>Study Corridor</i>	39th Street NW
<i>ATR Count Location</i>	Between Alton Place NW & Yuma Street NW
Automated Traffic Recorder (Tube Count) Data (covers Wed Nov 1 & Thur Nov 2, 2017)	
<i>Speed Limit</i>	25 mph
<i>Overall Speed</i>	Avg: 20 mph 85%: 21 mph
<i>Speed by Direction</i> <i>(85th Percentile)</i>	NB: 21 mph
<i>Pace Speed</i> <i>(most common 10mph)</i>	15-25 mph
<i>Cars >25% over</i> <i>Speed Limit</i>	17 of 3,847 0.44%
<i>Cars >40mph</i>	0 of 3,847 0.00%
<i>Daily Traffic Volume</i> <i>(Nov 1 & 2, 2017)</i>	1,859 veh 1,988 veh
<i>Peak Hour Volume</i> <i>(Nov 1 & 2, AM/PM)</i>	105/241 veh 120/232 veh
DDOT Crash Report Data (covers 3 years, 2015-2017)	
<i>Nearest Intersection in DDOT Database</i>	39 th Street NW & Alton Place NW
<i>Total Crashes</i>	3
<i>Crash Rate</i>	1.38/MEV
<i>Fatalities</i>	0
<i>Injury Crashes</i>	2
<i>Ped/Bike-Involved Crashes</i>	1
<i>Speed-Related Crashes</i>	0
Evaluation per DDOT Traffic Calming Criteria	
<i>Minimum Daily</i> <i>Volume ≥ 1,000 veh</i>	Yes (1,859 veh)
<i>Minimum Peak Hour Volume ≥ 100 veh</i>	Yes (105 veh)
<i>85th Percentile Speed 25%+ over Speed Limit</i>	No (-16%)
<i>3+ Speed-Related Crashes in 12 Months</i>	No (0.00)
<i>Meets DDOT Criteria?</i>	No



SUMMARY AND CONCLUSIONS

The following report is a Comprehensive Transportation Review (CTR) for Wisconsin Avenue Baptist Church and Sunrise Senior Living (WABC) Site. The report reviews the transportation aspects of the Site's Board of Zoning Adjustment (BZA) application (BZA Application No. 19823).

The purpose of this study is to evaluate whether the project will generate a detrimental impact to the surrounding transportation network. This report concludes that **the proposal will not have a detrimental impact** to the surrounding transportation network once all planned site design elements are implemented.

Proposed Project

The WABC Site currently serves as the location of the Wisconsin Avenue Baptist Church. The Site is located at 3920 Alton Place NW (Square 1799, Lot 14) in Northwest, DC. The Site is generally bounded by Alton Place NW to the north, the rear yards of detached residential dwelling units on 39th Street NW to the east, Yuma Street NW to the south, and open space owned and maintained by the National Park Service (NPS) to the west. The proposed development program will replace the existing 350-seat church and 56-student day care facility with an 85-unit assisted living facility and a replacement 250-seat sanctuary for the Church. Both facilities will utilize the same building but will have separate entrances. The entrance to the assisted living community will be on the north side of the building, along Alton Place NW. The main entrance to the Church will be on the south side of the building, along Yuma Street NW. The project will be supported by a below-grade parking facility with ingress via Alton Place NW and egress to Yuma Street NW. The proposal also includes landscape improvements to the adjacent NPS property.

The average age of residents is approximately 86 years old, and the average stay is approximately two (2) years. Parking will be primarily for employees and visitors, as most of the residents are not expected to own a vehicle. Parking will be shared between the assisted living facility and church.

Multi-Modal Impacts and Recommendations

Transit

The Site is served by regional and local transit services via Metrobus and Metrorail. The Site is approximately 0.2 miles from Tenleytown-AU Station Metrorail station. Nineteen (19) Metrobus stops and eleven (11) Metrobus routes are located within ¼-mile of the Site.

The proposed development will generate a low number of new transit trips, and existing transit facilities have enough capacity to handle the new trips.

Pedestrian

The Site is surrounded by a well-connected pedestrian network. The roadways within a ¼-mile radius provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes, all of which meet DDOT and ADA standards.

Bicycle

Bicycle infrastructure in the vicinity of the proposed development is suitable for traveling to and from the WABC development. There is a dedicated bicycle lane along 39th Street NW immediately adjacent to the Site that provides connection to a Capital Bikeshare to the south, shared lanes along River Road NW, 42nd Street NW, and Van Ness Street NW, and signed routes along 36th and 37th Street NW. These facilities provide access to the Rock Creek Trail, Capital Crescent Trail, C & O Canal Trail, and bicycle facilities on the Key Bridge. Residential low volume streets surrounding the Site also provide bicycle connectivity.

Vehicular

The Site is well-connected to regional roadways and principal arterials such as Wisconsin Avenue and Nebraska Avenue, minor arterials such as River Road, and an existing network of collector and local roadways. The proposed development will not generate a significant number of vehicular trips and does not meet the DDOT threshold for detailed capacity analysis; therefore, no vehicular capacity analysis is required or necessary.

However, this report explores several traffic concerns expressed by the community and requested improvements: (1) the implementation of an all-way-stop control at the



intersection of 39th Street NW and Alton Place NW; (2) increasing pedestrian crossing time at Nebraska Avenue NW east of the Site; and (3) the addition of “Do Not Block Intersection” markings and signs at the intersection of Nebraska Avenue NW and Alton Place NW.

Intersection” markings and signs at the intersection of Nebraska Avenue NW and Alton Place NW.

A review of the community concerns found that there are viable reasons for implementation for all of them. The final decision on implementation will be up to DDOT, and if DDOT agrees to implementation of any of them, the Applicant is willing to fund their implementation as part of the approval of this project.

Summary and Recommendations

This report concludes that the proposed development will not have a detrimental impact on the surrounding transportation network assuming that the proposed site design elements are implemented.

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

- The Site’s close proximity to Metrobus stops with connections to Metrorail.
- All vehicular parking demand is accommodated on-site.
- The inclusion of secure long-term bicycle parking spaces within the development that meet or exceed (ZR16) zoning requirements.
- The installation of short-term bicycle parking spaces on the north and south sides of the Site that meet current (ZR16) zoning requirements.
- A Transportation Demand Management (TDM) plan for assisted living facility employees that reduces the demand of single-occupancy vehicles during peak period travel times.

In addition to the quality transportation site elements, the Applicant is willing to fund the following improvements with the support of the community and DDOT: (1) the implementation of an all-way-stop control at the intersection of 39th Street NW and Alton Place NW; (2) increasing pedestrian crossing time at Nebraska Avenue NW east of the Site (is needed); and (3) the addition of “Do Not Block