Exhibit E

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TECHNICAL MEMORANDUM

To: Robyn Jackson DDOT

From: Vinay Varadarajan, E.I.T.
Jim Watson, PTP
Erwin Andres, P.E.

Date: April 11, 2016

Subject: 4424 Georgia Avenue NW BZA Parking Study

INTRODUCTION

This memorandum presents the findings of a Parking Study conducted for the 4424 Georgia Avenue NW project in support of its Boarding of Zoning Adjustment (BZA) application (BZA Case Number 19230). The site is located in Ward 4 in the Petworth neighborhood of Northwest Washington, D.C. The site is bounded by Allison Street to the north, Georgia Avenue to the east, and adjacent properties to the south and west as noted on Figure 2. This project consists of redeveloping the site which currently contains a one-story business and two story residential building attached to it, The resulting development will be a single multi-story mixed-use structure containing approximately 1,160 square feet (sf) of community-serving ground floor retail with seven residential units.

For purposes of this memorandum, the Applicant is seeking an area variance from the parking (§ 2101.1). Under D.C. Code § 6-641.07(g)(3) and 11 DCMR § 3103.2, the Board is authorized to grant an area variance when it finds that three conditions exist: (1) The property is affected by exceptional size, shape or topography or other extraordinary or exceptional situation or condition; (2) The owner would encounter practical difficulties if the zoning regulations were strictly applied; and (3) The variance would not cause substantial detriment to the public good and would not substantially impair the intent, purpose and integrity of the zone plan as embodied in the Zoning Regulations and Map. Under these three conditions, the site sits in a corner lot that is landlocked without alley access and has a 15-foot building restriction line along Allison Street. With these physical barriers, the application of parking requirements would be difficult for the developer to remediate. Pursuant to 11 DCMR §§ 2101.1, four on-site parking spaces are required for the proposed residential uses, with no parking required for the commercial use due to the square footage of retail being under the parking requirement threshold. However, the Applicant does not propose to provide any on-site parking spaces, due to space limitations and no rear alley access.

The purpose of this study is to evaluate the development based on DDOT's standards and, more specifically, the potential impacts of the parking demands generated by the site. Based on a review of the surrounding transportation infrastructure, the site's design, and the parking demands of the development, the project will have negligible impact on the surrounding community. The following conclusions were made regarding the 4424 Georgia Avenue development:

- The observed supply of on-street parking options will adequately serve the project, particularly the site's central location from local streets in the Petworth neighborhood.
- The site's adequate access to transit, as well as improving bicycle and pedestrian facilities and other new development in the area results in a safe and effective environment for non-auto transportation access to the site.
- The development will incorporate loading services in consultation with DDOT.

EXISTING CONDITIONS

This section provides a review of the existing transit, bicycle, and pedestrian facilities in the vicinity of the site. The site is served by Metrobus, and is within 0.6 miles of the Georgia Avenue-Petworth Metrorail Station. The project site is also served by a pedestrian network consisting of sidewalks and crosswalks along the streets surrounding the project site. Additionally, the site is served by an on-street bicycle network, consisting of signed bicycle routes.

Transit

The site is serviced by Metrobus along multiple primary corridors with multiple bus stops located adjacent to the site. These bus lines connect the site to many areas of the District, Maryland, and Virginia, including several Metrorail stations. The site is currently served by the 60, 62, 63, 70, and 79 routes with stops along Georgia Avenue at the Buchanan Street and Webster Street intersections and along Kansas Avenue adjacent to the site. The following table 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. The closest Metrorail station is the Georgia Avenue-Petworth Metro station which is located approximately 0.6 miles walk from the site. Existing transit facilities surrounding the site are shown on Figure 3.

Table 1: Bus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
60	Fort Totten-Petworth Line	Southbound: 5:47 AM – 7:05 AM Northbound: 5:53 PM – 7:12 PM	20-45 min	0.3 miles, 5 minutes
62, 63	Takoma-Petworth Line	Weekdays: 4:42 AM – 1:14 AM Weekends: 5:00 AM – 2:17 AM	6-40 min	0.2 miles, 4 minutes
70	Georgia Avenue-7th Street Line	Weekdays: 4:16 AM – 3:22 AM Weekends: 4:20 AM – 3:32 AM	10-38 min	<0.1 miles, 1 minute
79	Georgia Avenue Limited Line	Weekdays: 6:18 AM – 7:29 PM Weekends: 6:22 AM – 7:25 PM	6-17 min	0.2 miles, 5 minutes

Bicycle Facilities

Although the proposed development is located along Georgia Avenue, a high-volume principal arterial oriented to vehicular commuting traffic, the site is surrounded on all other sides by low-volume local roadways that provide excellent bicycle connections to signed bicycle routes and bicycle lanes. Figure 4 illustrates the existing bicycle facilities in the area.

The existing conditions on local roadways provide a good environment for cycling that includes low traffic volumes and speeds, as well as wide travel lanes. To this end 7th, 8th, and 13th Streets provide a north-south connection between the site and the Georgia Avenue-Petworth Metrorail station. Signed bicycle routes are present on 8th Street, 13th Street, and Randolph Street. To the north and east, the Kansas Avenue bicycle route continues on to Maryland via 18th Street and can be used to access routes to the Fort Totten Metro station. To the south, the 13th Street bicycle route provides connections to several bicycle facilities like the 14th/15th Street bicycle lanes and the Q/R Street bicycle lanes that in turn connect to destinations like Union Station, Downtown, and Capitol Hill. A Capital Bikeshare station with 14 bicycle docks currently exists at the Upshur Street/ 9th Street intersection southeast of the site.

Using these connections along low-volume local roadways and signed bicycle routes within the study area, bicyclists have access to a number of robust regional bicycle facilities. To accommodate these cyclists, the developer has discussed with DDOT in gauging interest for a Capital Bikeshare station at the intersection of Allison Street and Georgia Avenue.

Pedestrian Facilities

Overall, the pedestrian facilities within the study area provide adequate connections to major local destinations, including the commercial establishments along Georgia Avenue east of the site and the Petworth neighborhood. A summary of the pedestrian facilities within a 0.25-mile walk of the site is shown in Figure 5. There are very few barriers and areas of concern within the study area that negatively impact the quality and attractiveness of walking, including walking distances between the site and some major destinations, manmade and natural barriers that increase walking distances, and roadway conditions that reduce the quality of walking conditions, including narrow sidewalks along a few streets, and lengthy crossings at some intersections.

Within the area shown, most roadways are considered residential (low to moderate density). The sidewalks that do not meet DDOT standards are typically along routes that do not provide an acceptable buffer width, but do maintain the minimum sidewalk width. ADA standards require that all 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 5, under existing conditions there are some curb ramps that do not feature detectable warnings, particularly along 9th and 8th Streets.

Table 2: Sidewalk Requirements

Street Type	Minimum Sidewalk Width	Minimum Buffer Width
Residential (Low to Moderate Density)	6 ft	4 ft (6 ft preferred for tree space)
Residential (High Density)	8 ft	4 ft (6 ft preferred for tree space)
Commercial (Non-downtown)	10 ft	4 ft
Downtown	16 ft	6 ft

Car Sharing

Three car-sharing companies serve the District: Zipcar, Enterprise CarShare, and Car2Go. All three services are private companies that provide registered users access to a variety of automobiles. Of these, Zipcar and Enterprise Car Share have vehicles currently placed within a quarter mile of the site. The closest car-sharing vehicles are located 0.2 miles away at 9th Street and Kansas Avenue, and along Upshur Street opposite the Petworth Library, operated by all car-sharing services. Access to carsharing services in the area surrounding the development is expected to increase with the additional development that is planned nearby.

Car-sharing is also provided by Car2Go, which provides point-to-point car sharing. Unlike Zipcar and Enterprise CarShare, which require two-way trips, Car2Go can be used for one-way rentals. Car2Go currently has a fleet of vehicles located throughout the District. Car2Go vehicles may park in any non-restricted metered curbside parking space or Residential Parking Permit location in any zone throughout the defined “Home Area”. Members do not have to pay the meter or pay stations. Car2Go does not have permanent designated spaces for their vehicles; however availability is tracked through their website and mobile app, which provides an additional option for car-sharing patrons. Thus, patrons and employees of the site may choose to use Car2Go as an option for accessing the site.

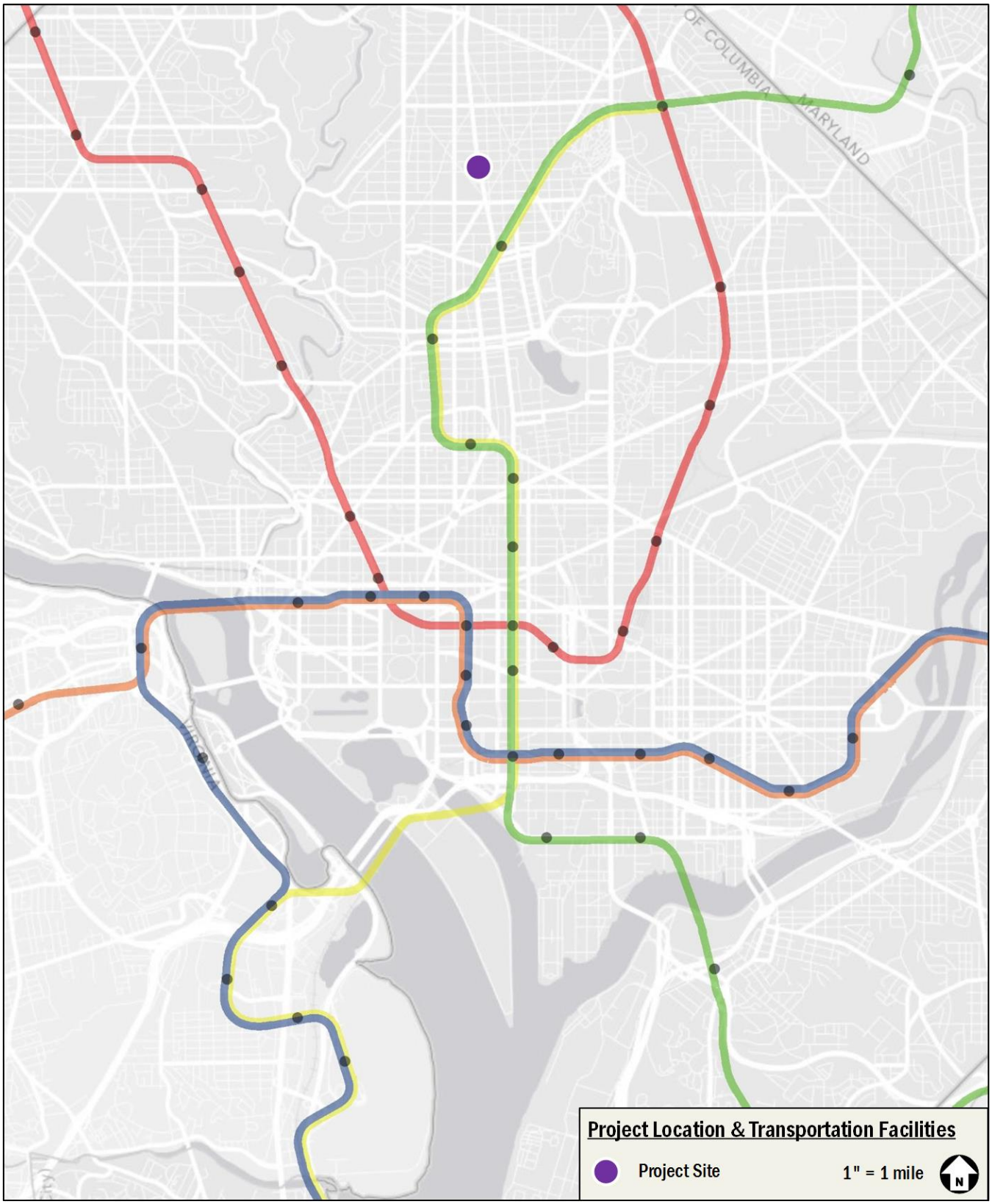

Figure 1: Site Location

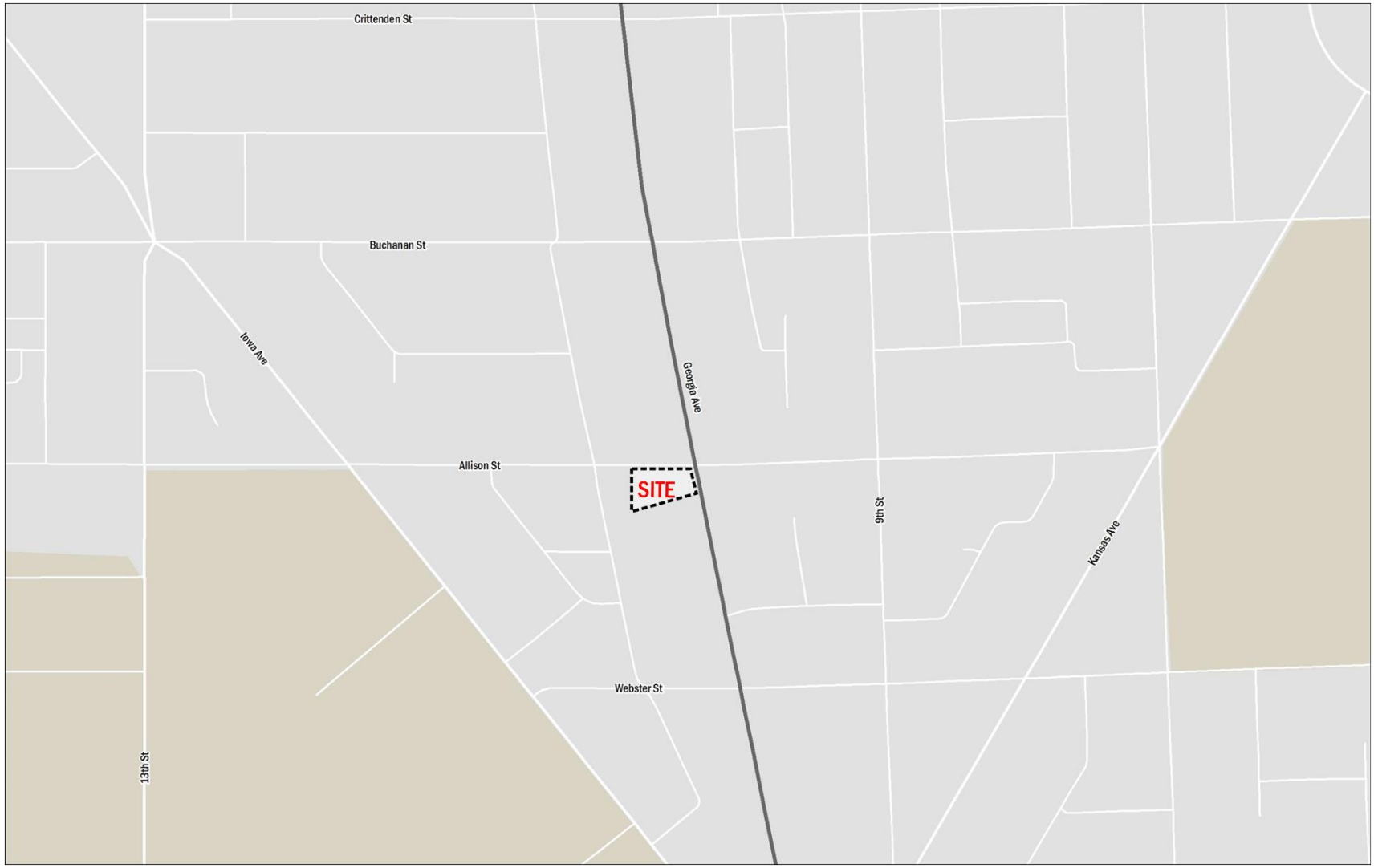

Figure 2: Study Area

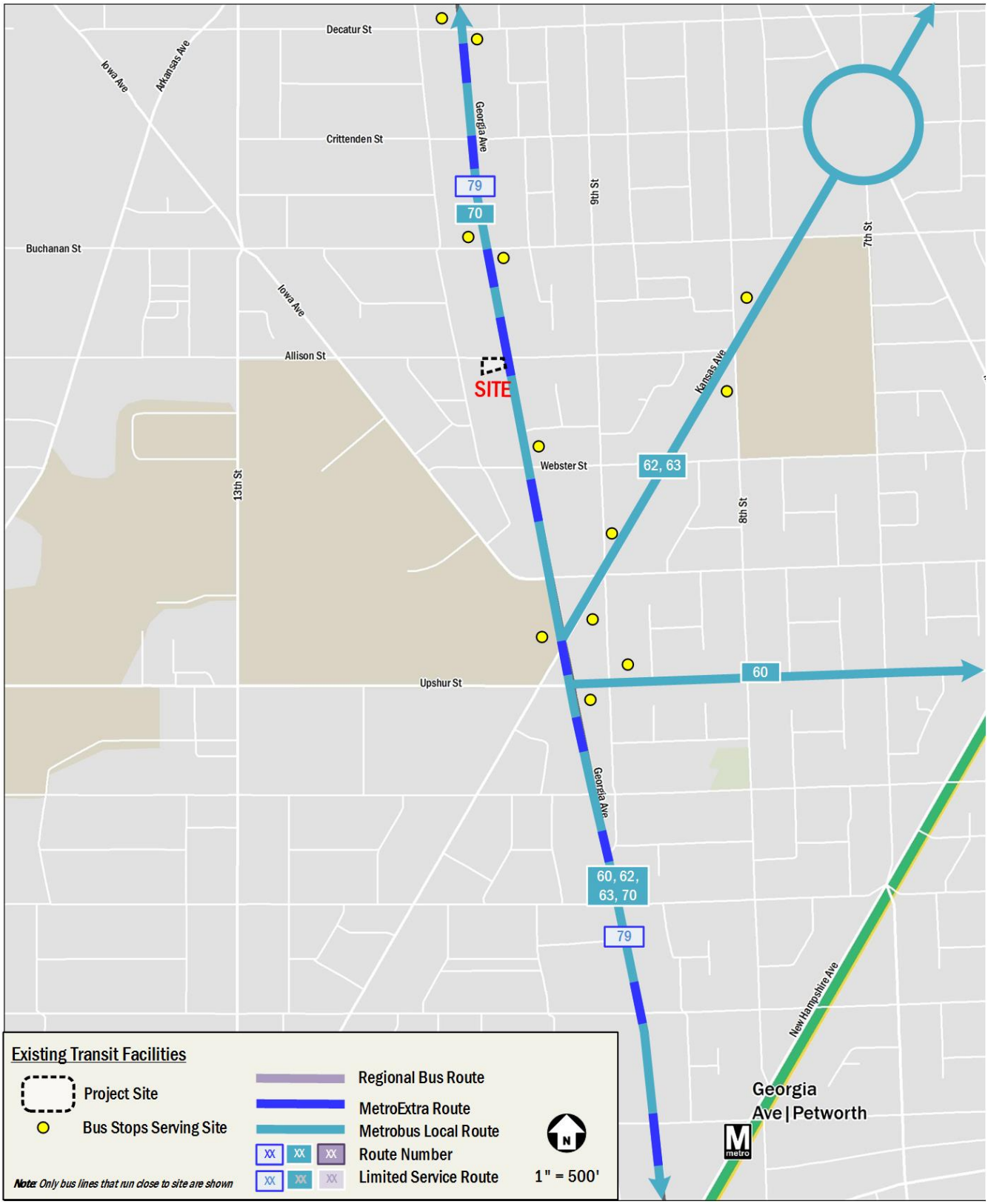

Figure 3: Existing Transit Service

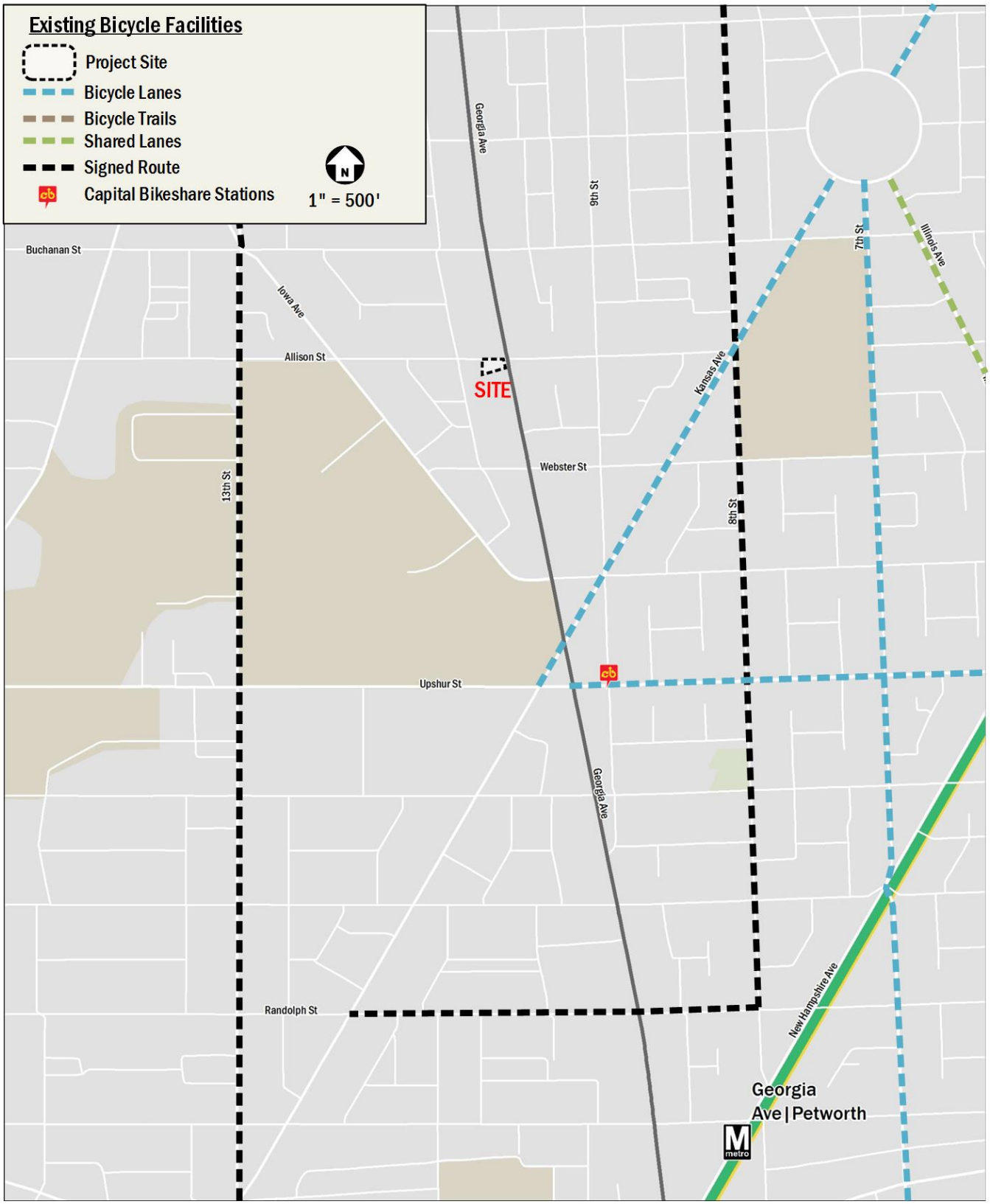

Figure 4: Existing Bicycle Facilities

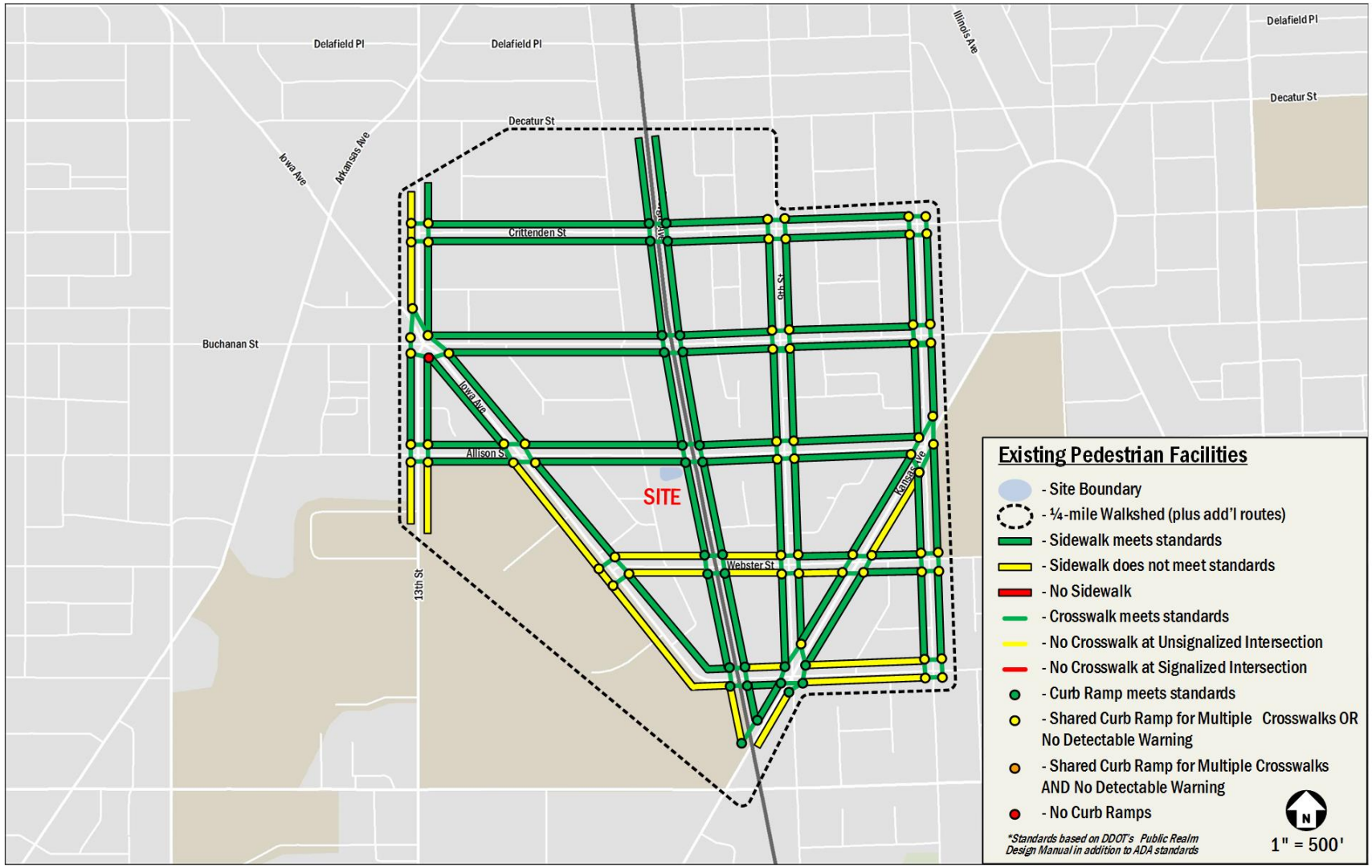

Figure 5: Pedestrian Infrastructure

DESIGN REVIEW

This section provides an overview of the transportation features of the proposed development. The development program consists of a multi-story structure containing approximately 1,650 square feet of retail (with 580 sf on the ground floor and 580 sf in the cellar) and seven multi-family dwelling units. All loading and trash pick-up will take place as determined by DDOT. Figure 6 shows the proposed site plan.

Site Access and Internal Circulation

Site Access

There will be no direct vehicular access to the site as there is no vehicular parking spaces to be added by the developer. The site and its immediate vicinity sits within Zone 4 of the DC parking zone map. Residents of the proposed multi-family dwellings could be entitled to a residential parking permit (RPP) for on-street parking, but it is our understanding that the developer will agree that the project will not be RPP eligible. For the retail portion of the project, an abundance of on-street parking spaces are available with a two-hour limit. Loading access to the site will occur curbside as approved by DDOT, with pedestrian access to the retail will be from Allison Street and Georgia Avenue, and residential access occurring on Allison Street.

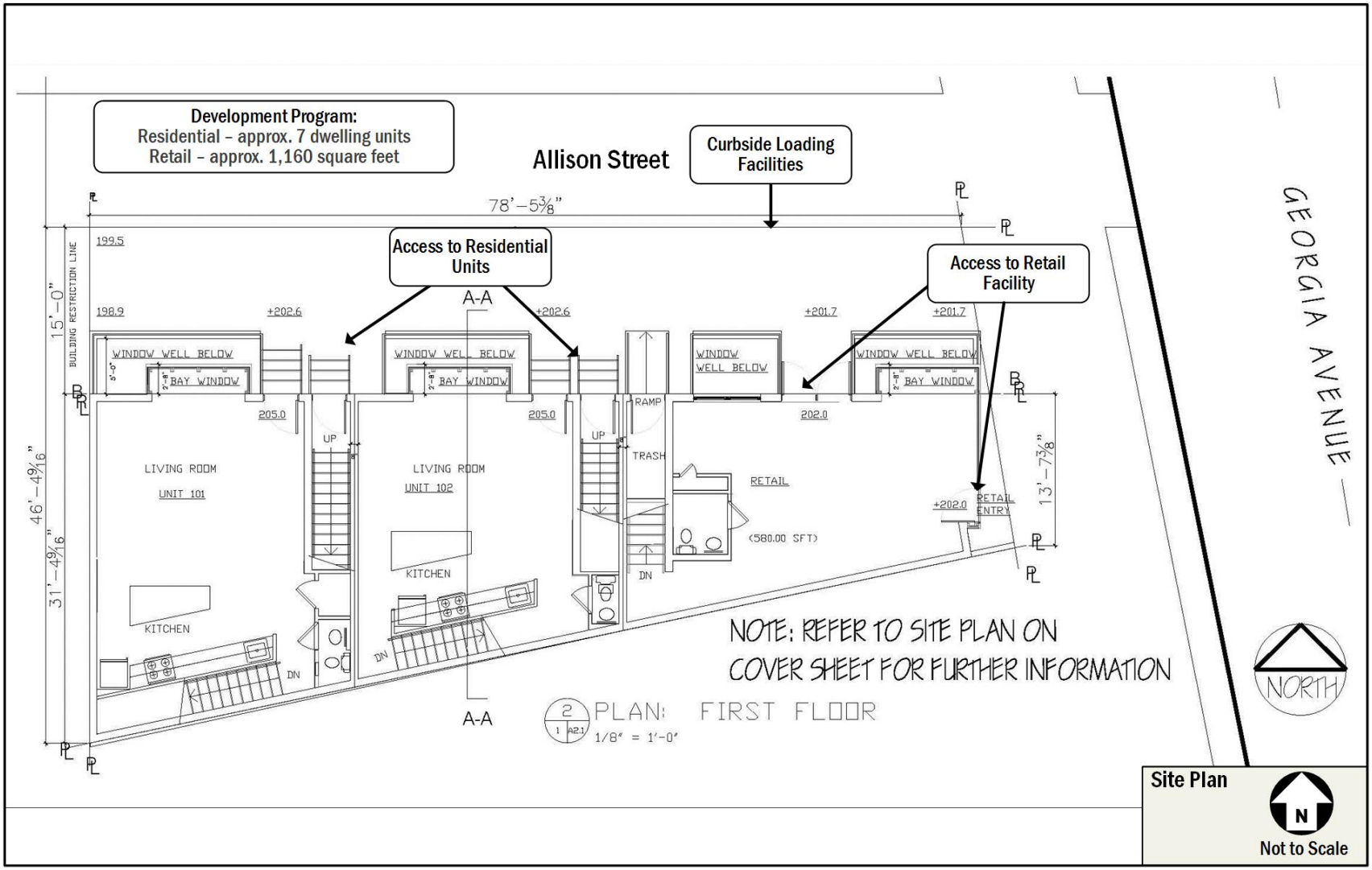

Figure 6: Site Plan

Parking

As mentioned previously, there is no vehicular parking to be added by the developer. Parking for the development will be accommodated by the on-street parking spaces in the vicinity of the site. The site and its immediate vicinity sits within Zone 4 of the DC parking zone map.

The Applicant is seeking variance relief from the parking requirements of 11 DCMR § 2101.1, which under current zoning requirements the proposed development would need to supply a total of four spaces. In this case, the practical difficulty of supplying off-street parking due to the constrained nature of the site as well as the adequate supply of available on-street and off-street parking satisfy the requirements for the seeking relief from the parking requirements of 11 DCMR § 2101.1.

In order to assess whether the nearby on-site parking spaces has available capacity to accommodate the increase in parking demand that the proposed development would generate, a parking occupancy study was conducted on Tuesday, April 7, 2016. The parking occupancy study consisted of hourly sweeps of nearby streets by the site location between the hours of 6:00 PM and 9:00 PM, as advised by DDOT. The results of the study indicate that the on-street parking spaces have the ability to absorb anticipated parking demand that the proposed development may generate. As shown in Figure 7, the highest demand observed in the parking sweep was in the 9:00 PM hour, where 228 (71%) of the 320 available parking spaces were occupied. When nearby two-hour parking restrictions were in effect, the highest demand was in the 6:00 PM hour where 68% of the available parking spaces were occupied.

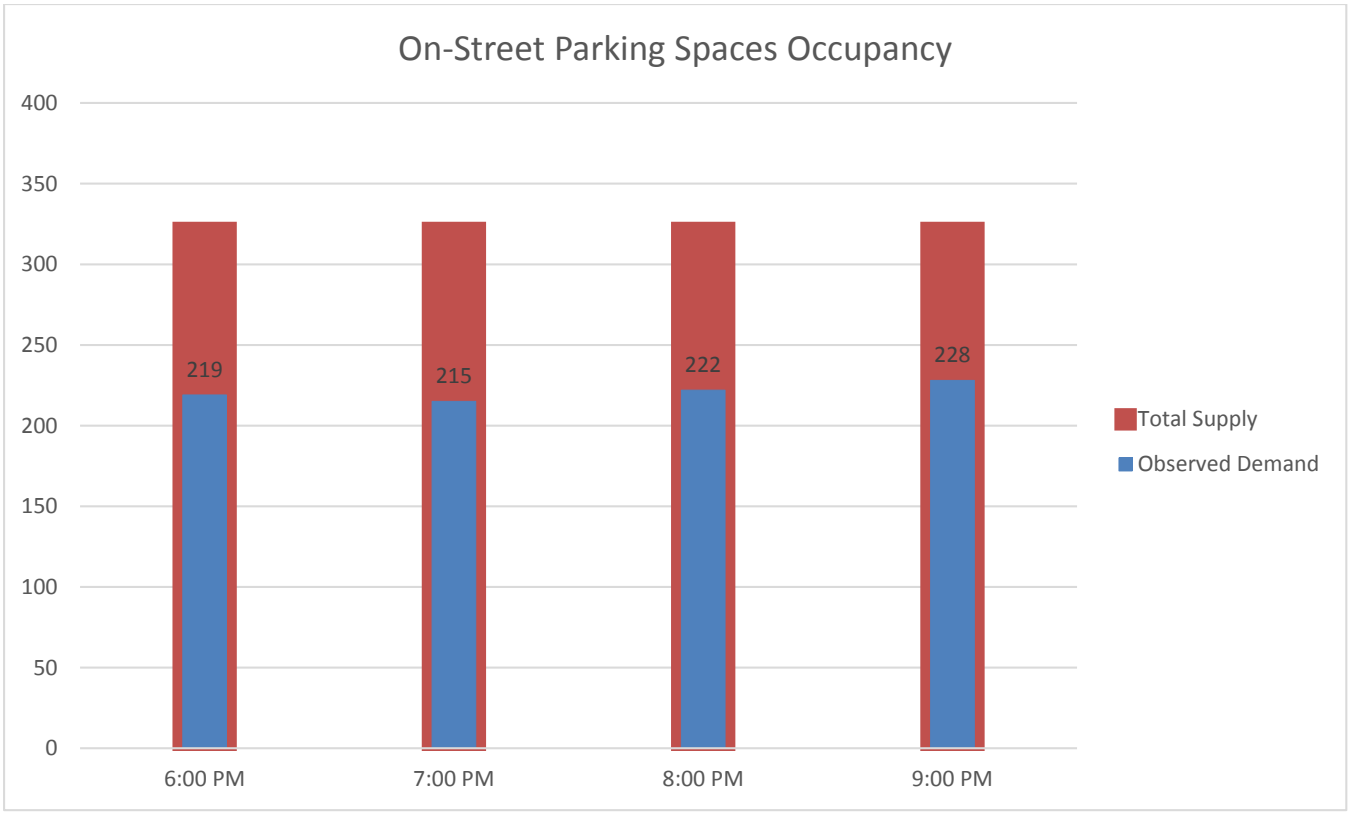

Figure 7: On-Street Parking Sweep Occupancy

Parking restrictions by block are shown on Figure 8 and the peak period occupancy by block is shown on Figure 9. During the peak period, occupancies by block varied greatly, but generally the most densely occupied street parking facilities were located east of Georgia Avenue along Allison Street and 9th Street. Most block faces along these streets realized peak period occupancies of 90 percent or higher. The block of Allison Street where the site is located realized peak occupancies of 50 to 70 percent.

Table 3: Peak Parking Occupancy

	PM			
	6:00	**7:00**	**8:00**	**9:00**
Occupancy	219	215	222	228
Total Spaces	320	320	320	320
Utilization	68%	67%	69%	71%

Table 4: Peak Period Inventory and Occupancy Summary

Space Type	**Peak Period (9:00PM)**			
	Spaces	Occupancy	Utilization	Available
Non-RPP	22	3	14%	19
RPP	216	150	69%	66
Unrestricted	82	75	91%	7
All On-Street Spaces	**320**	**228**	**71%**	**92**

The observed supply of available on-street parking will adequately serve the vehicular needs of the development based on the proposed use of the site.

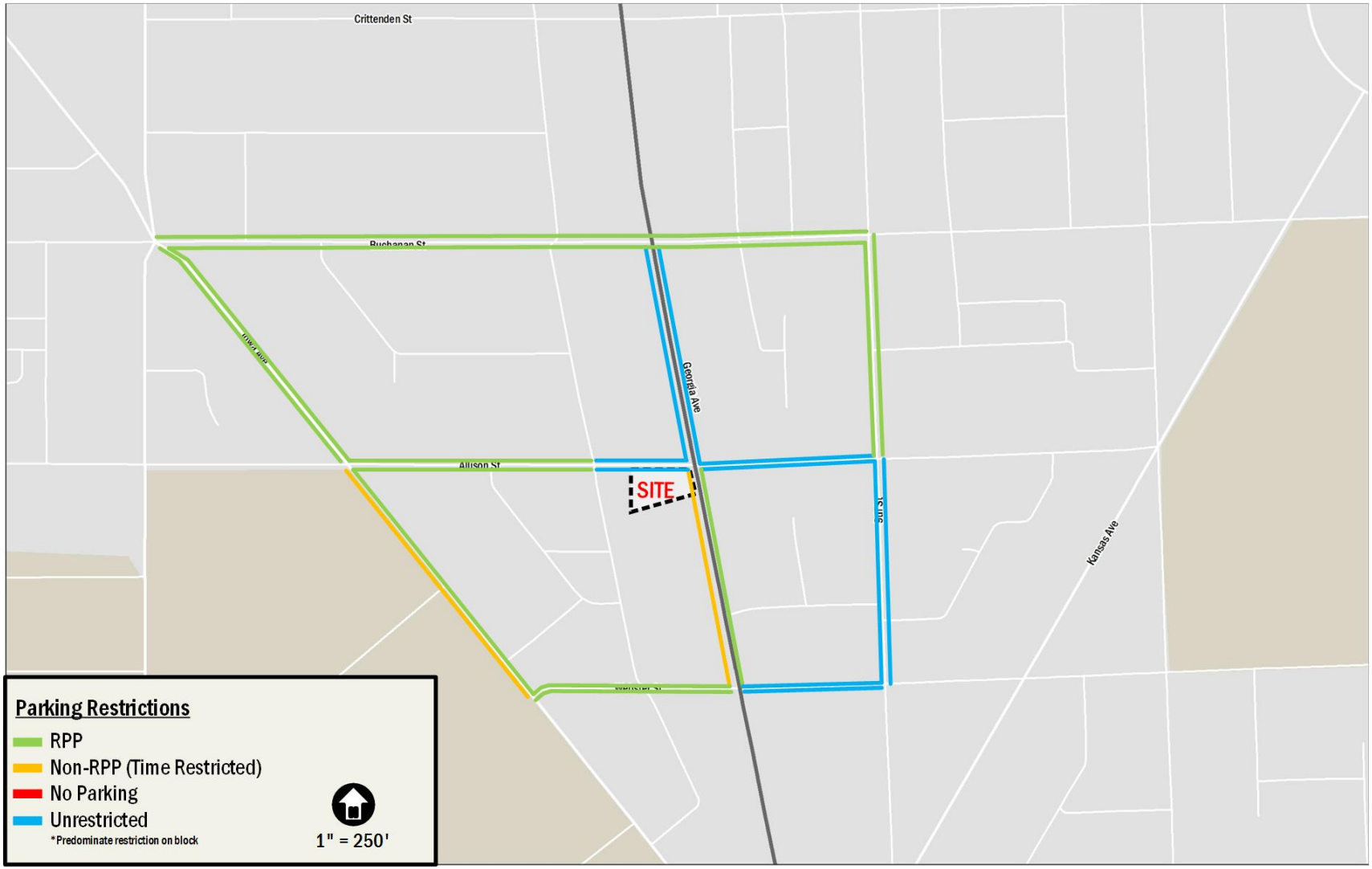

Figure 8: Parking Restrictions by Block Face

Figure 9: Peak Period Street Parking Occupancy

Conclusions

This memorandum presents the findings of a parking study conducted for the 4424 Georgia Avenue NW project in support of its Board of Zoning Adjustment (BZA) application (BZA Case Number 19230). The proposed development consists of a single multi-story mixed-use structure containing approximately 1,160 square feet (sf) of community-serving ground floor retail with seven residential units. The following conclusions were made regarding the 4424 Georgia Avenue development:

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