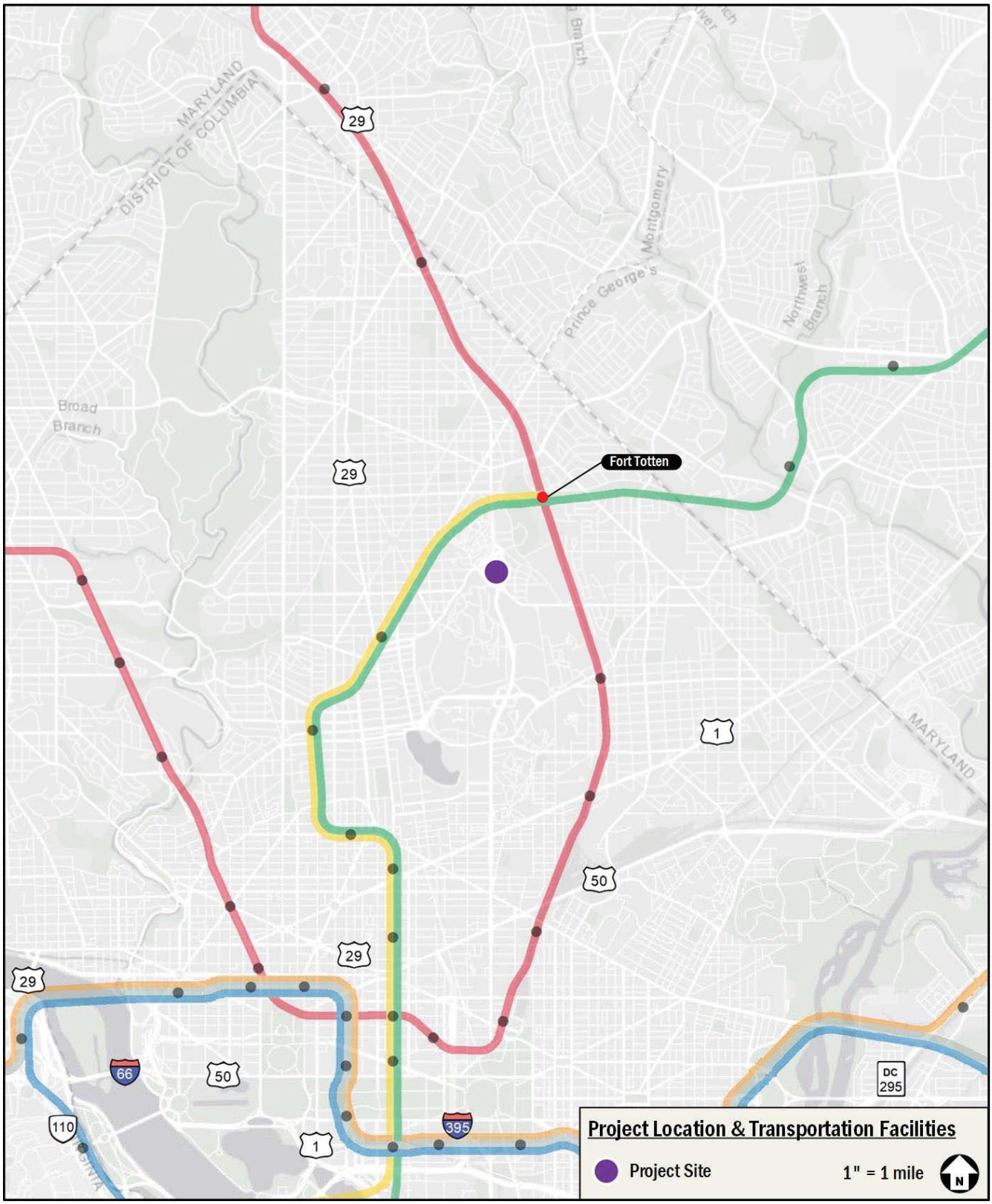

Figure 3: Major Transportation Facilities

Figure 4: Major Local Transportation Facilities

PROJECT DESIGN

This section reviews the transportation components of the 1 Hawaii Avenue development, including the proposed site plan and access points. It includes descriptions of the site's vehicular access, loading, parking, bicycle and pedestrian amenities, and Transportation Demand Management (TDM) elements.

The site for the proposed Planned Unit Development (PUD) is currently occupied by a 34-unit affordable apartment building. The resulting development will be an affordable multi-family residential building with approximately 78 units. The development will provide a below-grade parking garage with twelve (12) parking spaces that will be accessible from a proposed driveway off of Allison Street.

Figure 5 and Figure 6 shows an overview of the development program and site plan elements.

SITE ACCESS AND CIRCULATION

Pedestrian Access

The primary pedestrian entrance for the building will be on the corner of the building at the intersection of Rock Creek Church Road and Hawaii Avenue. Two (2) secondary pedestrian entrances will be located along Rock Creek Church Road and Allison Street.

Bicycle Access

The secure long-term bicycle parking is accessible from several access points throughout the perimeter of the building. The 48 long-term bicycle parking spaces will be located in a dedicated storage room and will include a bicycle repair station. Twelve (12) short term bicycle parking spaces in the form of six (6) bicycle racks will be provided along the perimeter of the site.

Vehicular Access

Vehicular access to the development, including parking and loading access, will be from a proposed driveway along Allison Street which will provide access to the below-grade parking garage. The garage will supply a total of twelve (12) vehicular parking spaces.

The loading area will include one (1) 30-foot loading berth and one (1) 20-foot service space. Truck routing to and from the Site will be focused on designated primary truck routes, such as Rock Creek Church Road.

The existing curb cut along Rock Creek Church Road will be eliminated, providing a more welcoming and pedestrian-friendly environment near the primary pedestrian entrance at the corner of Hawaii Avenue and Rock Creek Church Road.

LOADING AND TRASH

The proposed loading facilities will accommodate all delivery demand internal to the site. As required by zoning, the development is planned to be served by one (1) 30-foot loading berth and one (1) 20-foot service space.

The proposed development is expected to generate up to four (4) loading trips per day. This includes three (3) general deliveries consisting of trash removal, mail, and parcel delivery, and an occasional residential move-in/move-out. Residential move-in/move-outs are calculated based on an average unit turnover of 18 months with two deliveries per turnover (one move-in and one move-out), meaning moving activities may occur two to three times per week. Figure 5 shows the location of the loading zone and trash removal services. The loading facilities provided by the development will be sufficient to accommodate this demand.

DDOT standards stipulate that truck movements for a site should be accommodated without backing maneuvers through public space. The proposed development has been designed to accommodate head-in/head-out loading for all loading-related vehicles. Turning maneuvers into and out of the Site are included in the Technical Attachments.

Based on the expected frequency of truck deliveries, the loading plan for the 1 Hawaii Avenue development is adequate to accommodate demand.

PARKING

Based on current District zoning requirements, the residential portion of the development is required to provide one (1) space per each three dwelling units in excess of four units. This requirement is halved due to the site being located within half a mile of Metrorail (measured radially), resulting in 12 spaces required. The development will provide 12 spaces, meeting zoning requirements.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle Facilities

Per zoning regulations, the development is required to supply one (1) short-term bicycle parking space for every 20 dwelling

units; therefore, the development is required to supply four (4) short-term bicycle spaces. The development will exceed these requirements by providing twelve (12) short-term bicycle spaces in the form of six (6) bicycle racks, placed along the perimeter of the site.

Per zoning regulations, the development is required to supply one (1) long-term bicycle parking space for every three (3) dwelling units, resulting in a total of 26 long-term bicycle parking spaces. The project will exceed the zoning requirements by supplying a total of 48 long-term bicycle parking spaces. Additionally, the long-term bicycle parking room will include a bicycle repair station.

Pedestrian Facilities

As part of the development, pedestrian facilities around the perimeter will meet or exceed the DDOT requirements. Additionally, landscaping surrounding the site will be improved, resulting in an improved pedestrian environment. The existing curb cut along Rock Creek Church Road will be eliminated, providing a more welcoming and pedestrian-friendly environment near the main pedestrian entrance.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

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 1 Hawaii Avenue development is based on the DDOT expectations for TDM programs. The Applicant proposes the following TDM measures.

- The Applicant will identify a TDM Leader (for planning, construction, and operations). The TDM Leader will work with residents of the building to distribute and market various transportation alternatives and options. This includes providing TDM materials to new residents and tenants in a welcome package. At a minimum, the Welcome Package will include the Metrorail pocket guide, Capital Bikeshare coupon or rack brochure, Guaranteed Ride Home (GRH) brochure, and the most recent DC Bike Map.
- The Applicant will provide TDM contact information to DDOT and goDCgo (info@godcgo.com) and report TDM efforts and amenities to goDCgo staff once per year.
- TDM Leaders will receive TDM training from goDCgo to learn about the TDM conditions for this project and nearby available options.
- The Applicant will post all TDM commitments online, publicize availability, and allow the public to see what commitments have been promised.
- The Applicant will provide website links to CommuterConnections.com and goDCgo.com on property websites.
- The Applicant will exceed Zoning requirements by providing 48 long-term bicycle parking spaces and twelve (12) short-term bicycle parking spaces around the perimeter of the site.
- Long-term bicycle storage rooms will accommodate non-traditional sized bikes including cargo, tandem, and kids' bikes.
- The Applicant will provide a bicycle repair station to be located in the secure long-term bicycle storage room.
- The Applicant will unbundle the cost of residential parking from the cost of lease or purchase of each unit. Parking costs will be set at the average market rate within a ¼ mile, at a minimum.
- The Applicant will install a Transportation Information Center Display (electronic screen) within the residential lobbies containing information related to local transportation alternatives

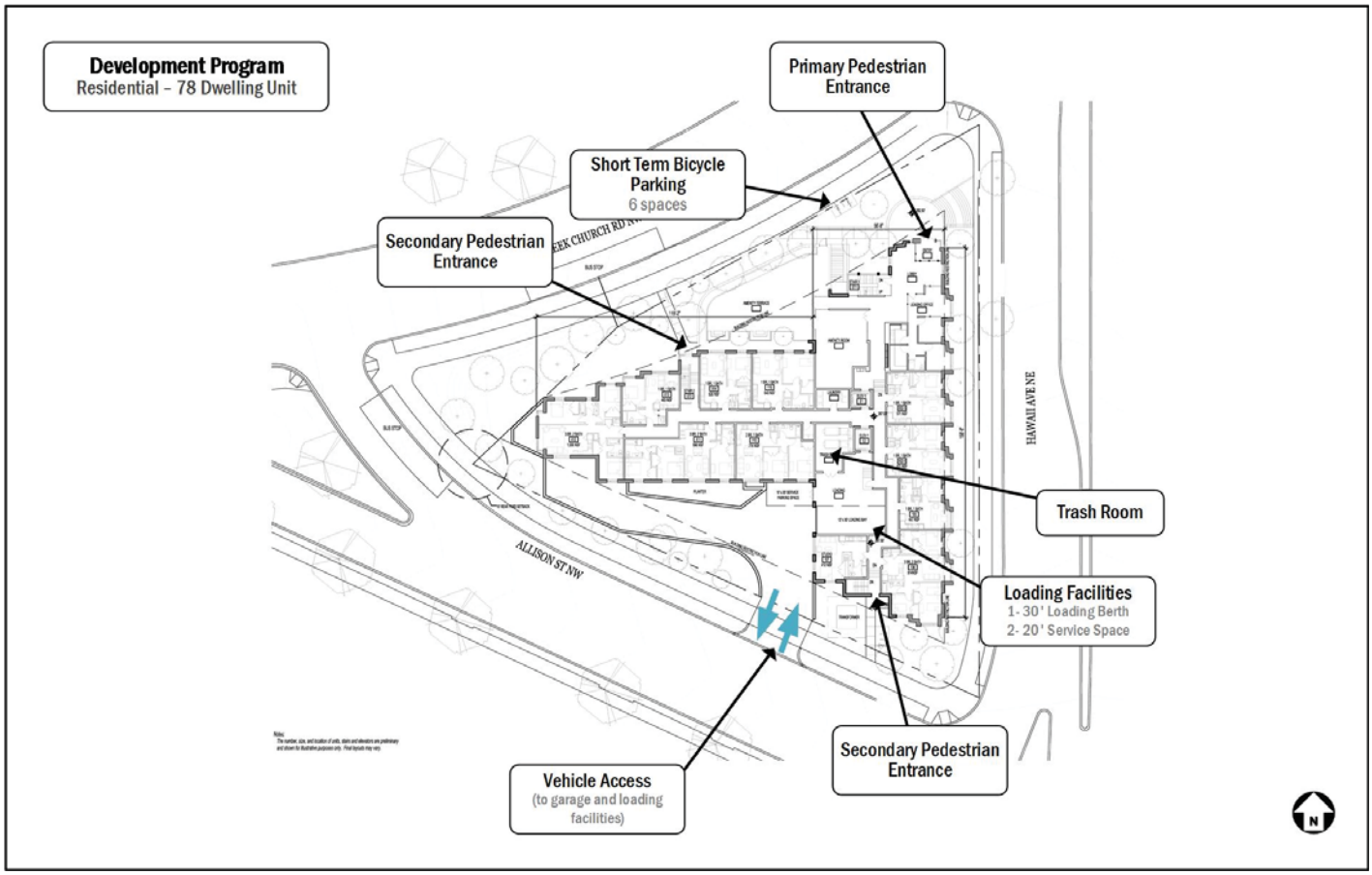

Figure 5: Ground Floor Site Plan

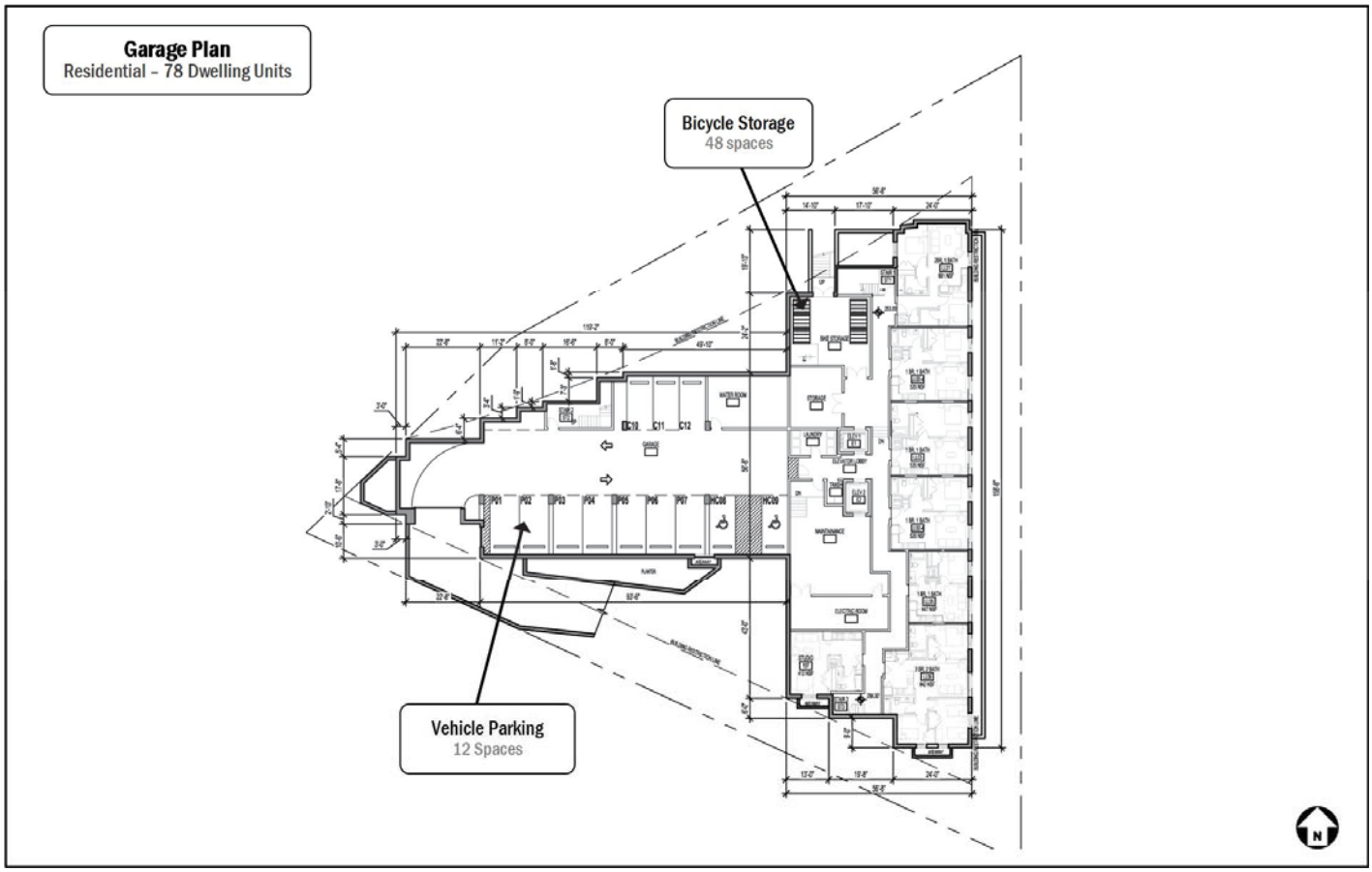

Figure 6: Garage Plan

TRIP GENERATION

This section outlines the transportation demand of the proposed 1 Hawaii Avenue development. It summarizes the projected trip generation of the site by mode, which forms the basis for the chapters that follow. Because the site is currently occupied by a 34-unit apartment building, trip generation projections were calculated for both the existing and proposed development programs to determine the net new trips generated by the project.

Traditionally, weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 10th Edition. This methodology was supplemented to account for the urban nature of the site (Trip Generation provides data for non-urban, low transit uses) to generate trips for multiple modes, as vetted and approved by DDOT.

Residential trip generation for both the existing and proposed buildings was calculated based on ITE Land Use 220, Multifamily Low-Rise Housing, splitting trips into different modes using assumptions derived from census data for the residents that currently live near the site. The vehicular mode split was then adjusted to reflect the parking supply and other developments with similar proximity to Metrorail and Metrobus.

The mode split assumptions for the site is summarized in Table 1. A summary of the multimodal trip generation is shown on Table 2 for morning and afternoon peak hours, for both the existing and proposed building. The net new site trips were calculated by subtracting the existing trips from the proposed trips.

As such, the development is expected to generate 7 net new vehicular trips (2 inbound and 5 outbound) during the morning peak hour and 9 net new vehicular trips (6 inbound and 3 outbound) during the afternoon peak hour. This is fewer than the threshold of 25 peak hour trips in the peak direction required to warrant a vehicular capacity analysis, per DDOT CTR guidelines. As part of the scoping process, DDOT confirmed that a detailed vehicular capacity analysis was not warranted for this project.

Detailed trip generation and mode split calculations are included in the Technical Appendix.

Table 1: Mode Split

Land Use	Mode			
	Drive	Transit	Bike	Walk
Residential	40%	40%	10%	10%

Table 2: Multimodal Trip Generation

Mode	Land Use	AM Peak Hour			PM Peak Hour		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Auto	Proposed	4 veh/hr	9 veh/hr	13 veh/hr	11 veh/hr	6 veh/hr	17 veh/hr
	Existing	*2 veh/hr*	*4 veh/hr*	*6 veh/hr*	*5 veh/hr*	*3 veh/hr*	*8 veh/hr*
	Net New Trips	**2 veh/hr**	**5 veh/hr**	**7 veh/hr**	**6 veh/hr**	**3 veh/hr**	**9 veh/hr**
Transit	Proposed	5 ppl/hr	18 ppl/hr	23 ppl/hr	18 ppl/hr	11 ppl/hr	29 ppl/hr
	Existing	*3 ppl/hr*	*7 ppl/hr*	*10 ppl/hr*	*8 ppl/hr*	*6 ppl/hr*	*14 ppl/hr*
	Net New Trips	**2 ppl/hr**	**11 ppl/hr**	**13 ppl/hr**	**10 ppl/hr**	**5 ppl/hr**	**15 ppl/hr**
Bike	Proposed	0 ppl/hr	2 ppl/hr	2 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr
	Existing	*0 ppl/hr*	*1 ppl/hr*	*1 ppl/hr*	*1 ppl/hr*	*0 ppl/hr*	*1 ppl/hr*
	Net New Trips	**0 ppl/hr**	**1 ppl/hr**	**1 ppl/hr**	**0 ppl/hr**	**1 ppl/hr**	**1 ppl/hr**
Walk	Proposed	1 ppl/hr	3 ppl/hr	4 ppl/hr	3 ppl/hr	1 ppl/hr	4 ppl/hr
	Existing	*0 ppl/hr*	*2 ppl/hr*	*2 ppl/hr*	*1 ppl/hr*	*1 ppl/hr*	*2 ppl/hr*
	Net New Trips	**1 ppl/hr**	**1 ppl/hr**	**2 ppl/hr**	**2 ppl/hr**	**0 ppl/hr**	**2 ppl/hr**

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 due to the 1 Hawaii Avenue project.

The following conclusions are reached within this chapter:

- The development site is 0.5 miles radially from the Fort Totten Metrorail Station and is surrounded by several Metrobus routes with metrobus stops surrounding the perimeter of the site.
- The site is expected to generate a manageable amount of transit trips, and the existing service is capable of handling these new trips.

EXISTING TRANSIT SERVICE

The study area is well served by Metrobus and has 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 identifies the major transit routes, stations, and stops in the study area.

The site is located 0.5 miles radially from the Fort-Totten Metro Station. The station is serviced by the Red, Yellow and Green Line.

The Red line provides direct connections to areas in the District and Montgomery County, Maryland. The Red Line travels south from Shady Grove, travels through downtown DC, and continues north to Glenmont. The Red Line provides direct service to Union Station, where transfers can be made to MARC, VRE, DC Streetcar, and Amtrak services. Additionally the Red Line connects to the Yellow and Green Line at Gallery Place-China Town, and the Blue, Orange, and Silver Lines at Metro Center.

The Yellow Line provides direct connections to areas in Virginia and the District, with access to Maryland via connecting lines. The Yellow Line connects Huntington in Fairfax County, Virginia to Fort Totten in the District while providing access to the District core and National Airport, Crystal City, and Pentagon City in Arlington, Virginia. Additionally, the Yellow Line connects to the Orange, Silver, Blue, and Green lines at L'Enfant Plaza Station, and the Red Line at Gallery Place Station.

The Green Line connects northern and southern Prince George's County, Maryland, while providing access to the District core. Additionally, the Yellow Line connects to the Orange, Silver, Blue, and Green lines at L'Enfant Plaza Station, and the Red Line at Gallery Place Station.

Metrorail trains run every 8 minutes during the weekday morning and afternoon peak hours between 5:00 AM to 9:30 AM and 3:00 PM to 7:00 PM and approximately every 12 minutes during the weekday midday hours from 9:30 AM to 3:00 PM and every 12 to 20 minutes during the weekday off-peak periods and on weekends.

The site is also serviced by local Metrobus routes, providing connectivity to the downtown core and other areas of the District, Maryland, and Virginia. The H8 and 60 bus routes serve the site directly with three bus stops surrounding the site. The 60 bus route provides the site access to the Fort Totten Metro Station and the Georgia Avenue-Petworth Station. The H8 bus route provides the site access to the Georgia Avenue-Petworth Station, the Brookland CUA Station and the Rhode Island Avenue-Brentwood Station. Table 3 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.

Figure 7 shows a detailed inventory of the existing Metrobus stops within a quarter-mile walkshed of the Site. Each stop is evaluated based on the guidelines set forth by WMATA's Guidelines for the Design and Placement of Transit Stops. A detailed breakdown of individual bus stop amenities and criteria for standards is included in the Technical Attachments.

PROPOSED TRANSIT SERVICE

MoveDC

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 taxis

No transit related improvements were outlined in the MoveDC plan that directly affect the proposed development.

WMATA and DDOT Transit Studies

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study (2008).* The study analyzed the capacity of Metrorail stations for their vertical transportation, for example the capacity of the station at elevators, stairs, and escalators to shuttle patrons between the street, mezzanine, and platforms. The study also analyzed stations capacity to process riders at fare card gates. For both analyses, vertical transportation and fare card gates, volume-to-capacity ratios were calculated for existing data (from 2005) and projections for the year 2030. According to the study, the Fort Totten station can currently accommodate future growth at all access points.

WMATA has 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 Metrobus routes that travel near the site operate at a load factor that is at or below its capacity during peak periods of the day.

Transit Site Impacts

Site-Generated Transit Trips

The proposed development is projected to generate 13 net transit trips (2 inbound, 11 outbound) during the morning peak hour and 15 net transit trips (10 inbound, 5 outbound) during the afternoon peak hour.

US Census data from 2006 to 2010 was used as a basis for determining the distribution of those taking Metrorail and those taking Metrobus. The site lies within TAZ 10245 which shows that approximately 66 percent of transit riders used Metrorail and the remaining 34 percent use Metrobus. Due to the sites proximity to several bus stops it was assumed that 50 percent of transit riders will use Metrorail and 50 percent of transit riders will use Metrobus. That said, approximately 6 people will use Metrorail and 7 will use Metrobus during the morning peak hour and approximately 7 people will use Metrorail and 8 will use Metrobus during the afternoon peak hour.

Table 3: Metrobus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
H8	Park Road-Brookland Line	Weekdays: Westbound 5:16 am - 11:52 pm Eastbound 5:30 am - 11:51 pm Weekends: Westbound 6:14 am - 12:02 am Eastbound 5:58 am – 12:00 am	20-25 min	<0.1 miles, 1 minute
60	Fort Totten-Petworth Line	Weekdays: Northbound 6:11 am -7:36 pm Southbound 5:43am - 7:03pm	10-21 min	<0.1 miles, 1 minute

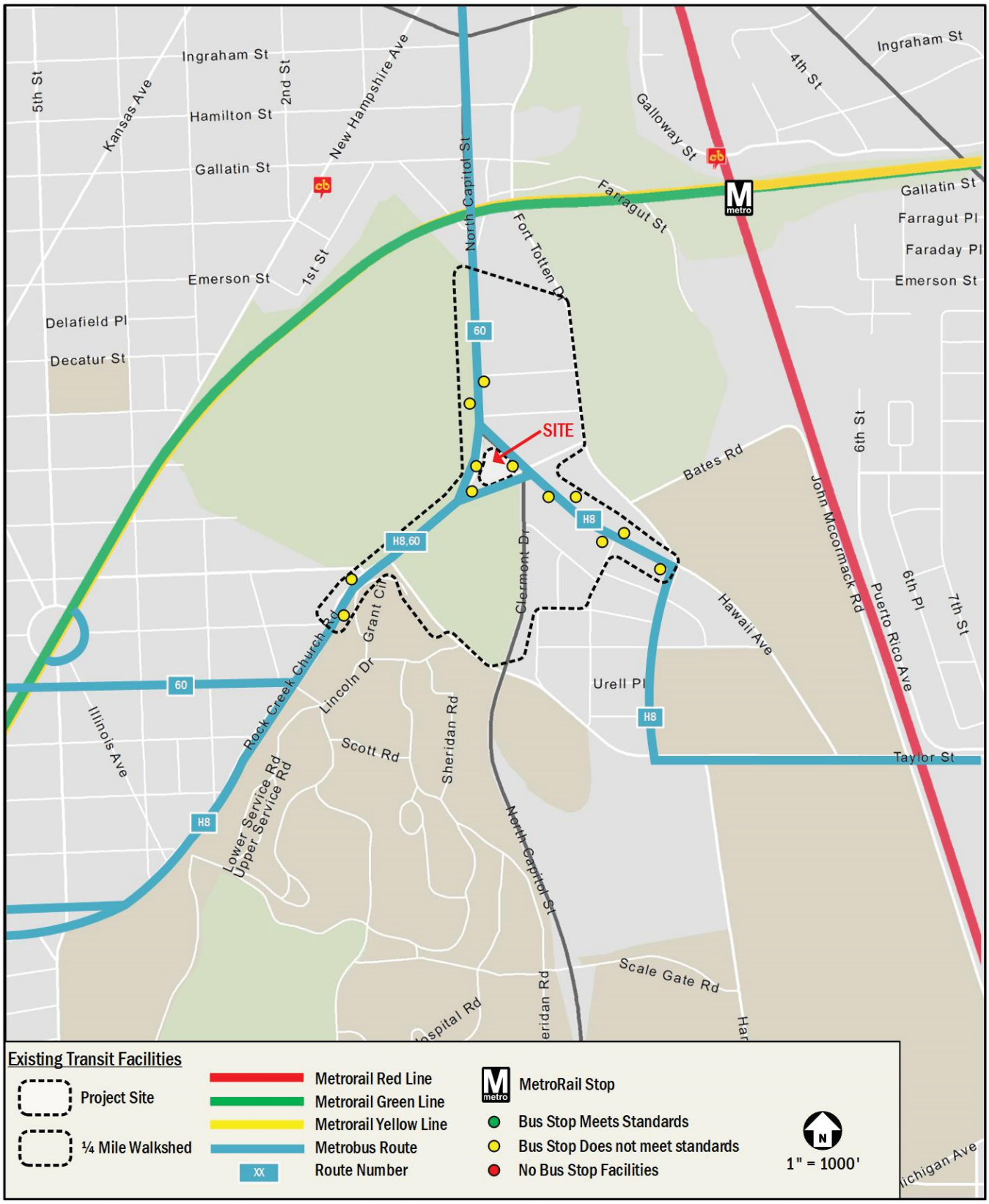

Figure 7: Existing Transit Facilities

PEDESTRIAN FACILITIES

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

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the site provides an adequate walking environment. There are sidewalks along the majority of primary routes to pedestrian destinations with some gaps in the system.
- The development is expected to generate a minimal number of pedestrian trips; however, the pedestrian trips generated by walking to and from transit stops will be more substantial, particularly bus stops directly surrounding the site.
- External pedestrian improvements at the intersection of Hawaii Avenue/Allison Street/Clermont Drive were evaluated, including the addition of a crosswalk along the northern leg in conjunction with signal timing adjustments. Given the minimal walking trips generated by this project, it is recommended that these improvements be further evaluated for implementation by DDOT outside of the scope of this project.

PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the site were evaluated as well as routes to nearby transit facilities and prominent retail and neighborhood destinations. The site is generally accessible to transit options such as bus stops directly adjacent to the site along Hawaii Avenue, Rock Creek Church Road and Allison Street. There are some areas of concern within the study area that negatively impact the quality of and attractiveness of the walking environment. This includes roadway conditions that reduce the quality of walking conditions, narrow or nonexistent sidewalks, and incomplete or insufficient crossings at signalized intersections. Figure 11 shows suggested pedestrian pathways, walking time and distances, barriers and areas of concern, including the 0.7 mile walking route to the Fort Totten Metrorail station.

PEDESTRIAN INFRASTRUCTURE

This section outlines the existing and proposed pedestrian infrastructure within the pedestrian study area.

Existing Conditions

A review of pedestrian facilities surrounding the proposed development shows that many facilities meet DDOT standards, resulting in an adequate walking environment. Figure 10 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 (2019)* in addition to ADA standards. Sidewalk widths and requirements for the District are shown in Table 4.

The site is surrounded by a sufficient pedestrian network. Most roadways north of the site within a quarter-mile radius provide sidewalks, curb ramps, and crosswalks particularly along the primary walking routes. There are areas west and south of the site which lack buffers, curb ramps, or crosswalks that meet DDOT and ADA standards. There are areas along Rock Creek Church Road and Clermont Drive which lack sidewalks all together. Additionally, there are missing crosswalks at signalized intersections, adjacent to the site.

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 are not desired. As shown in Figure 10 under existing conditions crosswalks and curb ramps with detectable warnings are present within the quarter-mile walkshed at the intersections that provide crosswalks.

Table 4: 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

Pedestrian Infrastructure Improvements

As part of the development, pedestrian facilities around the perimeter will meet or exceed the DDOT requirements. Additionally, landscaping surrounding the site will be improved, resulting in an improved pedestrian environment. The existing curb cut along Rock Creek Church Road will be eliminated, providing a more welcoming and pedestrian-friendly environment near the main pedestrian entrance.

External Pedestrian Improvements

This section summarizes the potential external pedestrian improvements at the intersection of Hawaii Avenue/Allison Street/Clermont Drive, as requested by DDOT during the scoping process for this project. As shown on Figure 10, there is a missing crosswalk along the northern leg of Hawaii Avenue, which limits pedestrian connectivity between the site and nearby bus stops, as well as for the surrounding community in general. Per DDOT's request, minor physical and signal timing adjustments have been evaluated as part of this study; however, given the minimal walking trips generated by this project, it is recommended that these improvements be further evaluated for implementation by DDOT outside of the scope of this project.

Existing Conditions

In order to help evaluate the need for pedestrian improvements, pedestrian crosswalk volumes were collected at nearby intersections as shown on Figure 11. Additionally, pedestrian crossing times and intersection cycle lengths were collected to determine the proportion of time available pedestrian movements at each crosswalk. As shown, the majority of crosswalks observe pedestrian crossing times of under 20 percent of the total cycle length, which can result in more significant wait times. Additionally, the lack of crosswalks at some locations results in more circuitous routes and additional wait time. This is particularly true at the intersection of Hawaii Avenue/Allison Street/Clermont Drive.

Potential Improvements

This section outlines the potential improvements evaluated to improve pedestrian connectivity, specifically at the intersection of Hawaii Avenue/Allison Street/Clermont Drive.

Adding a crosswalk

Adding a crosswalk to the northern leg of the intersection of Hawaii Avenue/Allison Street/Clermont Drive would give pedestrians more direct access to and from the site. With the addition of the northern leg crosswalk, pedestrian routes between the site and bus stop 1002430 would only require two (2) crossings as opposed to three (3).

Currently all signal phases include vehicles traveling northbound through the northern leg of the intersection, therefore a signal timing adjustment would be required to accommodate a crosswalk on the northern leg.

The signal mitigation can be done one of two ways in order to accommodate the proposed crosswalk:

- *Change to Phase 2/Phase 5 Interval*

  The current phasing diagram is shown on Figure 8. Sufficient crossing time for the northern crosswalk could be accommodated within this phasing structure by eliminating the Phase 2 movement in the Phase 2/Phase 5 interval, as shown on Figure 8. Phase 2 receives significant green time in the Phase 2/Phase 6 interval; therefore, it is not expected that significant delay will be added by adjusting the Phase 2/Phase 5 interval.

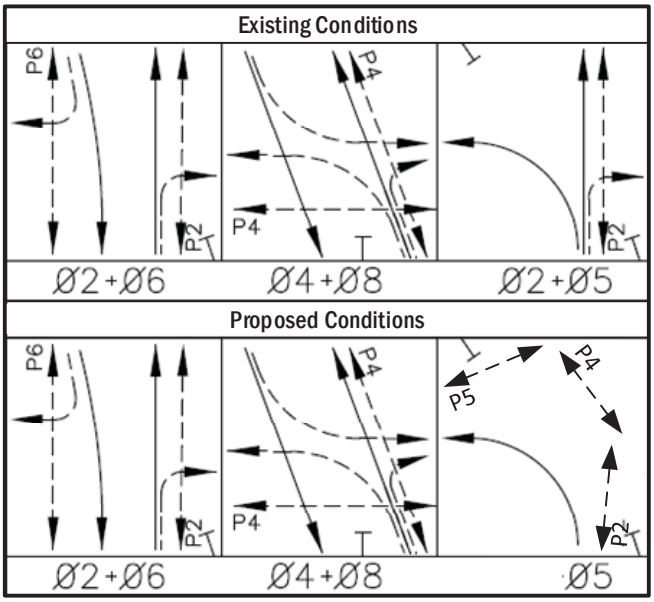

Figure 8: Existing and Proposed Phasing Diagram

- *Exclusive Pedestrian Phase*

  An exclusive pedestrian phase would stop all vehicular movements and allow pedestrians to cross at any crosswalk within the intersection during a designated phase. Per MUTCD and DEM guidelines the exclusive pedestrian phase would have to be approximately 32 seconds to accommodate the 90-foot distance of the proposed northern crosswalk. Adding an exclusive pedestrian phase would significantly decrease the travel

and wait time for pedestrians traversing this intersection. Additionally, as discussed in more detail in the Bicycle Facilities section, a pedestrian phase could also provide designated time for bicycle crossings that are limited by the one-way diverging configuration of Allison Street. That said, an exclusive pedestrian phase would have more impacts to vehicular delay than the adjustments to the phasing described above.

SITE IMPACTS

Pedestrian Trip Generation

The 1 Hawaii Avenue development is expected to generate two (2) net walking trips (1 inbound, 1 outbound) during the morning peak hour and two (2) net walking trips (2 inbound, 0 outbound) during the afternoon peak hour. The origins and destinations of these trips are likely to be:

- Employment opportunities where residents can walk to work;
- Retail locations outside of the site; and
- Neighborhood destinations such as schools, libraries, and parks in the vicinity of the site.

In addition to these trips, the transit trips generated by the site will also generate pedestrian demand between the site and nearby transit stops, including bus stops surrounding the site.

Overall, the pedestrian network will have the capacity to absorb the newly generated trips from the site.

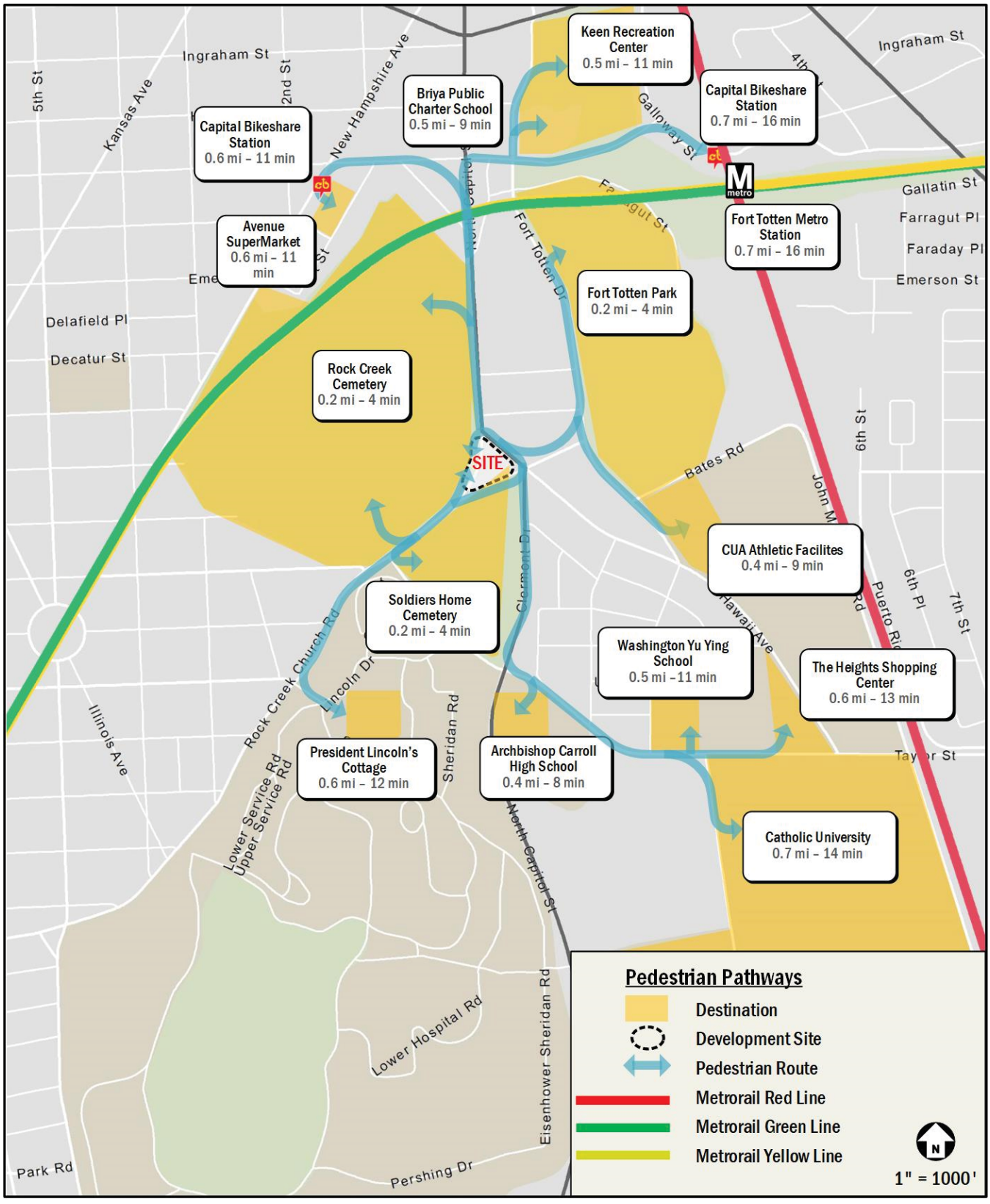

Figure 9: Pedestrian Pathways