Comprehensive Transportation Review

Howard University
2020 Central Campus Plan

Washington, DC

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Executive Summary

This report is an attachment to Howard University's 2020 Central Campus Plan. The purpose of this Comprehensive Transportation Review is to evaluate the transportation elements of the Campus Plan and present recommendations for their implementation.

The Campus Plan is guided by the planning principles of:

- Supporting the academic mission;
- Improving quality of life;
- Advancing smart and sustainable urban design;
- Enhancing the public realm;
- Enhancing physical access and connectivity; and
- Supporting interdisciplinary academics and research.

The Campus Plan's transportation strategy is guided by its Planning Principles of improving quality of life, improving the public realm, and enhancing physical access and connectivity. The transportation strategy is comprised of five (5) elements, including:

1. Ensuring there is no net increase in parking supply;
2. Improving pedestrian conditions and connectivity;
3. Increasing multimodal access;
4. Providing safe, efficient access to the new Howard University Hospital; and
5. Being a good transportation neighbor.

This report reviews existing transportation conditions in and around the Howard University campus and presents a series of proposed actions relating to parking, pedestrian facilities, bicycle facilities, transit service, Transportation Demand Management (TDM), and roadways. Each of these proposed actions supports some or all of the five (5) transportation strategy elements outlined in the Campus Plan, as will be demonstrated in the report.

This report also demonstrates how the Campus Plan supports the transportation goals of other citywide and local District planning initiatives, including *MoveDC*, the *DC Comprehensive Plan*, the *Vision Zero Action Plan*, the *Capital Bikeshare Development Plan*, the *7th Street and Georgia Avenue Great Streets Initiative*, and the *DUKE Framework for a Cultural Destination for Shaw-U Street*. Additionally, the report provides plans for roadway reconfigurations surrounding the proposed Howard University Hospital site to mitigate traffic concerns and ensure safe, orderly roadway operations for both the hospital and neighborhood residents.

Finally, this report presents recommendations for implementing these proposed actions and, by extension, the Campus Plan's transportation strategy. These recommendations involve campus-wide actions like managing parking supply and implementing the Committed Actions of the proposed TDM plan, as well as recommendations for Further Processing at the Campus Plan's proposed buildings.

Introduction

This report is an attachment to Howard University's 2020 Central Campus Plan.

Howard University's Central Campus is located in central Washington, DC, roughly bordered by the Shaw, LeDroit Park, Pleasant Plains, Park View, and Columbia Heights neighborhoods. Figure 1 shows the campus location within these neighborhoods, while Figure 3 shows the campus location within the region and relative to major transportation facilities.

This report presents the transportation planning and engineering analyses of the 2020 Howard University Central Campus Plan. The purpose of the transportation analyses is to evaluate the Campus Plan and present recommendations to ensure a successful implementation of the Campus Plan.

This information is organized into the following sections:

- A study area overview summarizing the major transportation features of the campus and its surroundings, as well as relevant planning projects which relate to and are impacted by the Campus Plan;
- An overview of the transportation implications of the Campus Plan, including population changes, campus infrastructure changes, potential impacts of the Plan, and the transportation strategies outlined in the Plan;
- A detailed review of the impacts of the Campus Plan on parking, pedestrian facilities, bicycle facilities, transit service, Transportation Demand Management (TDM) programs, and roadways including a detailed vehicular capacity analysis;
- A summary of the major transportation proposals presented in this CTR and how each relates to the overall transportation strategies of the Campus Plan, as well as campus-wide and parcel-specific recommendations for implementing the transportation elements of the Campus Plan.

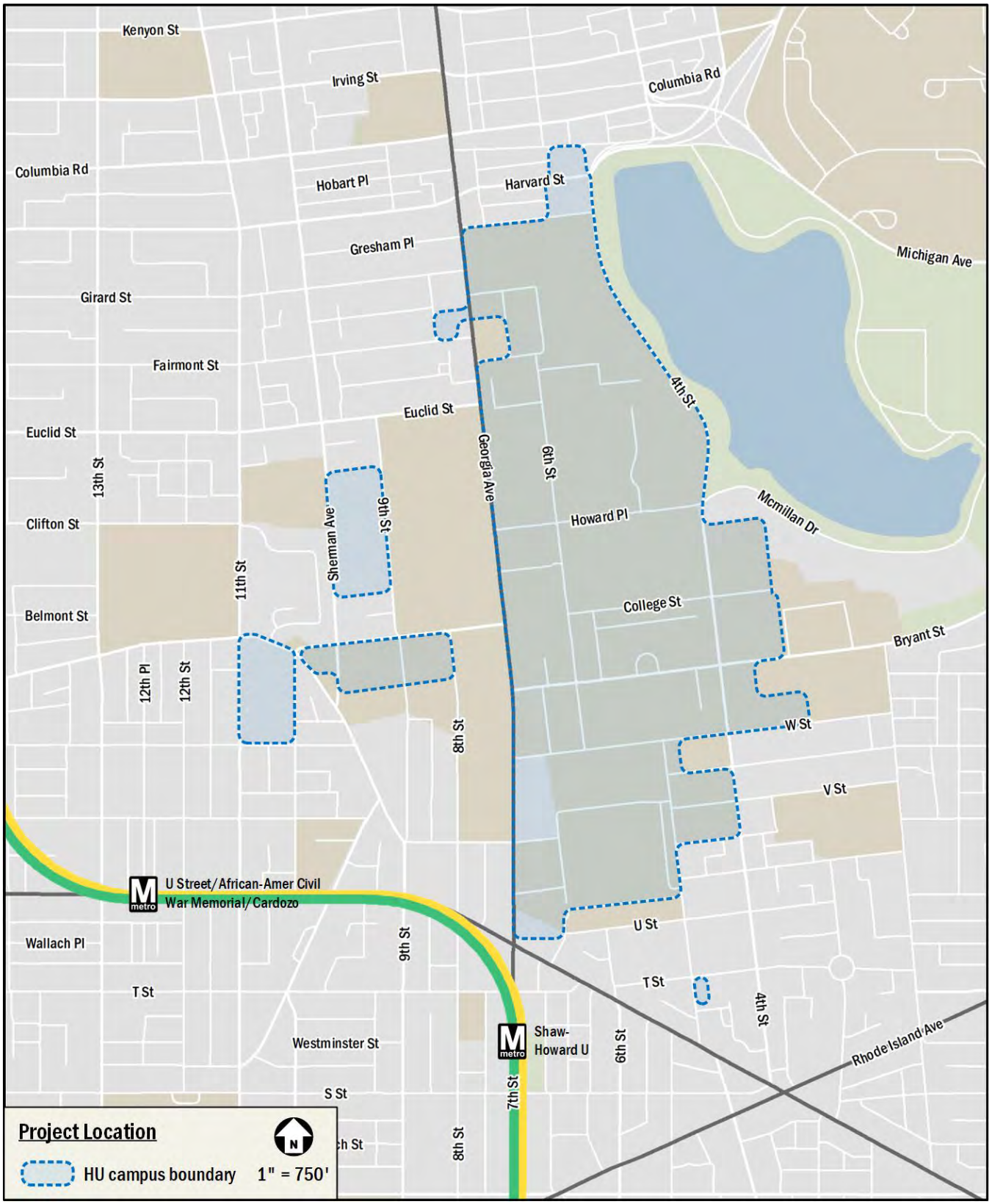

Figure 1: Project Location

Study Area Overview

This chapter includes a review of the area near the Howard University Central Campus and its surroundings, including a summary of major transportation characteristics and future regional projects in the area.

This chapter concludes:

- The campus is surrounded by an extensive regional and local transportation system that connects students, staff, and visitors of the University to the rest of the District and surrounding areas;
- The campus is well-served by transit with access to two (2) Metro stations and 10 bus routes providing service to local and regional destinations;
- The campus is accessible to several shared mobility options, including car-sharing, Capital Bikeshare, and personal mobility devices;
- There are several on-street bicycle facilities near the site, with several nearby bicycle improvements planned or proposed;
- The existing pedestrian infrastructure surrounding the site provides a mostly adequate walking environment, particularly along anticipated major walking routes; and
- There are several nearby District-wide and local planning initiatives whose goals are supported by the HU Central Campus Plan.

Major Transportation Features

Regional Access

As shown in Figure 3, the Howard University Central Campus has ample access to regional transportation facilities that connects the site to destinations within the District, Maryland, and Virginia.

The site is easily accessible from principal arterials such as Georgia Avenue and Florida Avenue. These roadways connect the site to expressways within the District such as the Anacostia Freeway (DC-295), the Southwest Freeway (I-395), the Southeast Freeway (I-695). These expressways connect with the Capital Beltway (I-495) and other regional Interstates.

The U Street and Shaw-Howard University Metro stations are both located 0.7 miles from the approximate center of the Howard University campus. Both stations are served by the Green and Yellow Lines, which run between Greenbelt and Branch Avenue, and between Greenbelt and Huntington, respectively.

Connections can be made at the L'Enfant Plaza and Metro Center stations to access the four (4) other Metrorail lines, allowing access to other points in the District, Maryland, and Virginia.

Overall, the site has ample access to regional roadways and transit options, allowing convenient travel between the site and regional destinations.

Local Access

There are a variety of local transportation options near the site that serve vehicular, transit, walking, and cycling trips, as shown on Figure 4. The primary campus entrance is ornamentally designated at the intersection of Georgia Avenue and Fairmont Street, though it is not the primary vehicular access point due to the one-way configuration of Fairmont Street. Secondary access points to the main campus and parking lots are dispersed along the roadways bordering campus, namely Georgia Avenue and 4th Street. Further detail about roadway access to the campus is provided in a later chapter of this report.

In addition to the two (2) Metro stations serving the campus, there are 10 local bus routes serving the campus, as shown on Figure 4. These routes run along Georgia Avenue, 11th Street, Sherman Avenue, 4th Street, Irving Street, Harvard Street, U Street, and Florida Avenue with multiple bus stops located within or near the campus boundary. Three (3) of these 10 routes are major routes featuring frequent, seven-day service. These routes connect the campus to many areas of Washington, DC, as well as Metro stations where transfers can be made to reach further areas in the District, Virginia, and Maryland. A detailed review of bus routes and transit stops within a quarter-mile walk of the site is provided in a later chapter of this report.

The campus contains or is adjacent to several on-street bicycle facilities, including bike lanes on 4th/5th Street and shared lanes on Georgia Avenue south of Barry Place. About 0.2 miles north of the campus, the 4th/5th Street bike lanes connect to the recently completed protected bike lanes on Irving Street and Kenyon Street. A detailed review of existing and proposed bicycle facilities is provided in a later chapter of this report.

The pedestrian network in and around the Howard University campus is mostly well-connected and of decent quality. The campus's pathways combine with the sidewalks and urban street grid surrounding the campus to form a fairly continuous and comfortable pedestrian network, though not without exception. The planned extensions of W Street and Bryant Street between Florida Avenue and Georgia Avenue will further improve pedestrian connectivity and comfort in the area. A detailed review of existing and proposed pedestrian facilities is provided in a later chapter of this report.

Overall, the site is surrounded by a well-connected local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

Carsharing

Two (2) carsharing companies provide service in the District: Zipcar and Free2Move. 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 three (3) Zipcar locations either within or less than a block from the campus boundary. These locations and their respective number of vehicles are shown in Table 1.

Carsharing is also provided by Free2Move, which provides point-to-point carsharing. Free2Move currently has a fleet located within the District and Arlington County, Virginia. Free2Move 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. Free2Move 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.

Table 1: Zipcar Locations

Location	Number of Vehicles
Georgia Ave & Harvard St NW	1
8th St & V St NW	3
4th St & Bryant St NW	2
Total	**6**

Capital Bikeshare

The Capital Bikeshare program provides additional bicycle options for students, staff, and visitors to the campus. The program has placed over 500 bikeshare stations across the Washington, DC metropolitan area with over 4,500 bicycles in the fleet. There are two (2) Capital Bikeshare stations within the Howard University campus boundary, and seven (7) additional stations within a quarter-mile of the campus boundary.

Personal Mobility Devices

Personal Mobility Device (PMD) service in the District is provided by nine (9) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies including Bird, Bolt, HelBiz, Jump, Lime, Lyft, Razor, Skip, and Spin. These PMDs are provided by private companies that give registered users access to a variety of e-scooter and e-bike options.

Walk Score and Bike Score

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 Howard University neighborhood has a walk score of 87 (or "Very Walkable"), a transit score of 76 (or "Excellent Transit"), and a bike score of 82 (or "Very Bikeable"). Figure 2 shows an outline of the campus area with heat maps for walkability and bikeability. The following conclusions can be made based on data obtained from Walkscore.com:

- The campus is situated in an area where most errands can be accomplished on foot;
- The campus is situated in an area where transit is convenient for most trips; and
- The campus is situated in an area where biking is convenient for most trips.

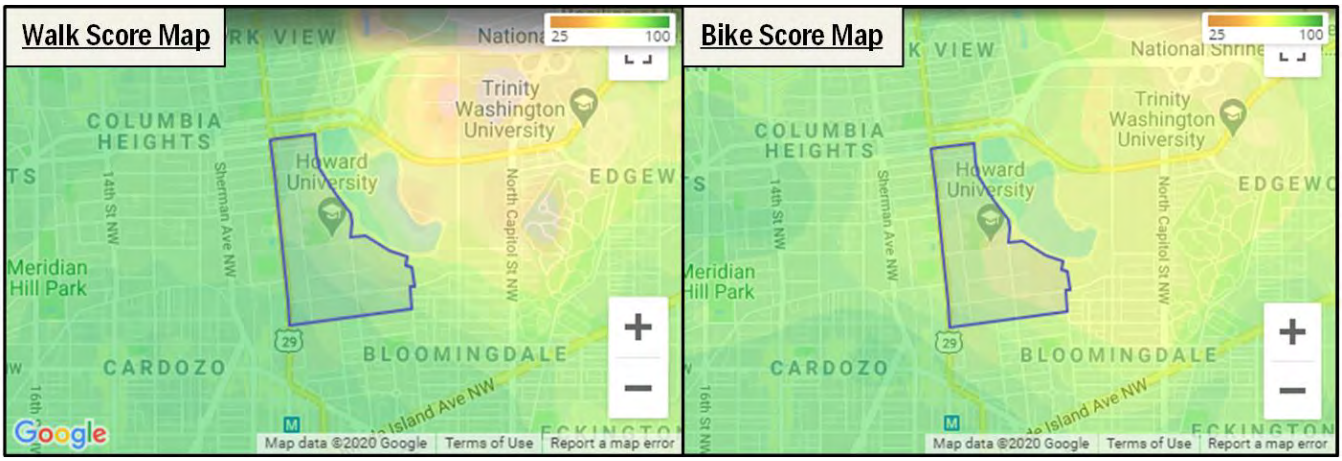

Figure 2: Walk Score and Bike Score

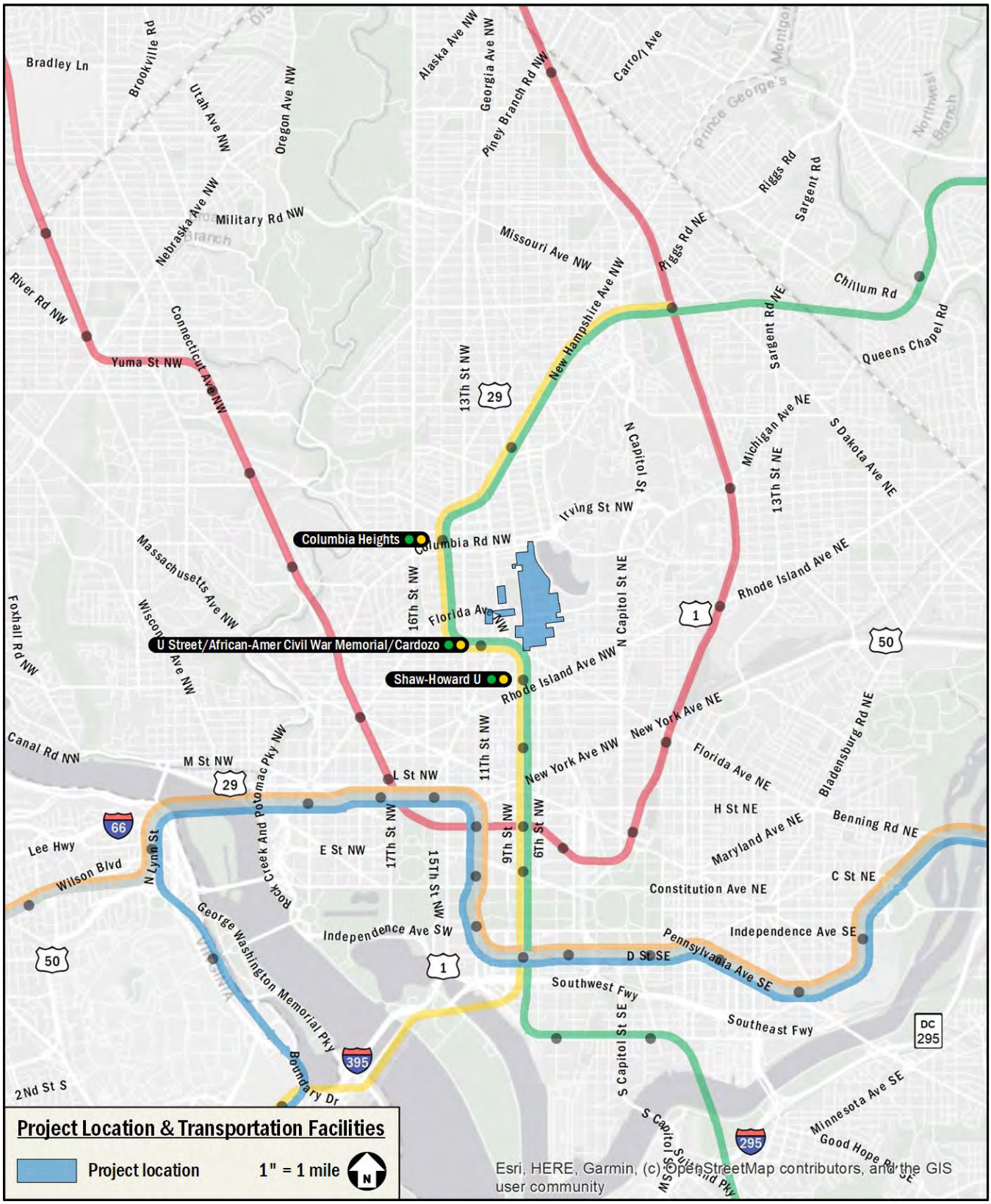

Figure 3: Regional Project Location and Major Transportation Facilities

Figure 4: Major Local Transportation Facilities

Future Projects

There are several District-wide and local planning documents and projects located near the Howard University Central Campus. These items are summarized below, along with their implications for or relations to the Campus Plan.

MoveDC

MoveDC is an implementation-based 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* plan was released in 2014 and is currently undergoing an update. The updated plan is scheduled to be completed in summer 2021.

The *MoveDC* report outlines recommendations by mode with the goal of having them complete by 2040. The plan calls for 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; and
- Water taxis.

In direct relation to the proposed development, the *MoveDC* plan recommends the following:

- High-capacity transit on the U Street/Florida Avenue corridor;
- High-capacity transit on Columbia Road/Harvard Street corridor;
- Streetcar on the Georgia Avenue/7th Street corridor;
- Extension of the existing 4th Street/5th Street bike lane southwards toward Rhode Island Avenue;
- Extension of the existing T Street bike lane eastward toward 4th Street, and; and
- A cycle track on Rhode Island Avenue.

DC Comprehensive Plan

The *DC Comprehensive Plan* is a high-level guiding document that sets a positive, long-term vision for the District through the lens of its physical growth and change. The existing *Comprehensive Plan* was enacted in 2006, updated in 2011, and as of November 2020 is currently being updated.

The April 2020 proposed amendments to the *Comprehensive Plan's* Mid-City Area Element, which includes the Howard University Central Campus and its surroundings, contains the following policies and actions which are supported by the HU Central Campus Plan:

- "*Policy MC-1.1.2: Directing Growth.* Stimulate high-quality, transit-oriented development around the Columbia Heights, Shaw/Howard University, and U St./African American Civil War Memorial/Cardozo Metro station areas, as well as along the Georgia Avenue NW corridor and the North Capitol Street NW/Florida Avenue NW business district. Opportunities for new mixed-income housing developments that provide a greater mix of affordability as a result of a rezoning effort,

neighborhood retail, local-serving offices, and community services should be supported in these areas, as shown on the Comprehensive Plan Policy Map and Future Land Use Map."

  - The HU Central Campus Plan supports this policy by improving pedestrian conditions and connectivity within the campus core, along Georgia Avenue, at extracted parcels, and at the eventual development on the existing Howard University Hospital site. Improving the connectivity, safety, and attractiveness of the pedestrian environment will help facilitate a more transit-oriented environment.

- "*Policy MC-1.1.8: Multimodal Connections*. Improve traffic circulation along major Mid-City arterial streets, with a priority on 14th Street NW, Georgia Avenue NW, U Street NW, 16th Street NW, Rhode Island Avenue NW, 18th Street NW, Columbia Road NW, North Capitol Street NW, Connecticut Avenue NW, North Capitol Street, New York Avenue NW, and Florida Avenue NW. Implement programs in these areas to improve bus service, improve pedestrian and bicyclist safety and ease of travel, and mitigate the effects of increased traffic on residential streets. Consistent with the Transportation Element of the Comprehensive Plan, provide alternatives to automobile use—including improved transit and innovative personal transportation options—for existing and new residents to reduce the need for auto ownership, particularly where parking and traffic problems exist."

  - The HU Central Campus Plan supports this policy by: A) not increasing parking supply even as the campus population grows and new buildings are constructed; B) using Transportation Demand Management (TDM) measures to reduce parking demand; C) improving pedestrian conditions and connectivity within the campus core, along Georgia Avenue, at extracted parcels, and at the eventual development on the existing Howard University Hospital site; D) increasing multimodal access and facilities in the campus core, thereby reducing the need for auto trips to and from the campus; and E) providing safe, efficient access for all modes to the new Howard University Hospital.

- "*Policy MC-2.1.1: Revitalization of Lower Georgia Avenue NW*. Encourage continued revitalization of the Lower Georgia Avenue NW corridor. Lower Georgia Avenue NW should be an attractive, pedestrian-oriented 'Main Street' with retail uses, local-serving offices, mixed-income housing, civic and cultural facilities, and well-maintained public space."

  - The HU Central Campus Plan supports this policy by improving pedestrian conditions and connectivity along Georgia Avenue and at the eventual development on the existing Howard University Hospital site.

- "*Policy MC-2.1.2: Georgia Avenue NW Design Improvements*. Upgrade the visual quality of the Georgia Avenue NW corridor through urban design and public space improvements, including tree planting, new parks and plazas, upgraded triangle parks, and facade improvements that establish a stronger identity and improved image."

  - The HU Central Campus Plan supports this policy by improving pedestrian conditions and connectivity along Georgia Avenue and at the eventual development on the existing Howard University Hospital site, including replacing surface parking with terraces, sitting areas, green space, and other uses where possible.

- "*Policy MC-2.1.3: Howard University*. Encourage and strongly support continued relationship-building between Howard University and adjacent residential neighborhoods. Work with Howard University in the abatement of any outstanding community issues, such as the redevelopment of vacant property, facade/building enhancements, and buffering issues associated with campus expansion. Stimulate joint development opportunities with the university that benefit students and surrounding residents."

  - The HU Central Campus Plan supports this policy by: A) continuing and expanding the University's Transportation Demand Management (TDM) efforts, which are aimed at reducing vehicle trips to and from the campus and mitigating the impact of vehicle trips on the surrounding community; B) removing surface parking along Georgia Avenue, which will allow for a more engaging and less auto-centric presentation on Georgia

Avenue; and C) carefully considering multimodal impacts when planning new vehicle access points on campus and at the new hospital.

- "*Policy MC-2.1.6: Pocket Parks and Plazas*. Pursue opportunities to create new publicly accessible open spaces along the Georgia Avenue NW corridor."
    - The HU Central Campus Plan supports this policy by improving pedestrian conditions and connectivity along Georgia Avenue and at the eventual development on the existing Howard University Hospital site, including replacing surface parking with terraces, sitting areas, green space, and other uses where possible.

Vision Zero Action Plan

DDOT's *Vision Zero Action Plan* is the implementation strategy of DC's Vision Zero Initiative, which commits to reaching zero fatalities and serious injuries to travelers of DC's transportation system by the year 2024. The *Action Plan* is based on DC interagency workgroups, public input, local transportation data and crash statistics, and national and international best practices. Workgroups identified the guiding themes for the *Vision Zero Action Plan* and the goals of the DC government. The *Action Plan* focuses on the following themes:

- Create Safe Streets
- Protect Vulnerable Users
- Prevent Dangerous Driving
- Be Transparent and Responsive

Strategies within each theme assign lead and supporting agencies responsible for the planning and implementation of each program. The plan also calls for partners external to District government to ensure accountability and aid in implementation.

While the *Vision Zero Action Plan* does not propose any location-specific actions that relate to the HU Central Campus Plan, the Campus Plan supports DC's overall Vision Zero goals by: A) improving pedestrian conditions and connectivity within the campus core, along Georgia Avenue, at extracted parcels, and at the eventual development on the existing Howard University Hospital site; B) increasing multimodal access and facilities in the campus core, thereby reducing the need for auto trips to and from the campus; and C) providing safe, efficient access for all modes to the new Howard University Hospital.

Capital Bikeshare Development Plan

DDOT's *Capital Bikeshare Development Plan* was originally released in 2016 to guide the continued growth of Capital Bikeshare in the District of Columbia. The most recent update of the *Development Plan* was released in 2020 and proposes several new Capital Bikeshare stations near the Howard University campus, including one at Georgia Avenue and Barry Place NW and one at 4th Street and McMillan Drive.

7th Street and Georgia Avenue Great Streets Initiative

This initiative by the DC Office of Planning aims to transform the 7th Street and Georgia Avenue corridor into a thriving and inviting neighborhood center. It is part of a larger DC Great Streets program that strategically uses public investments to improve local quality of life and to attract private investment to communities. The 7th Street and Georgia Avenue Great Street Initiative specifically aims to:

- Improve the quality of life in neighborhoods along the corridors, including public safety, physical appearance, and personal opportunity;
- Support local demand for goods and services through economic development;
- Expand mobility choices and improve safety and efficiency of all modes of travel; and

- Attract private investment through the demonstration of a public commitment to Great Streets communities.

Right-of-way options are defined in the initiative's Framework Plan to improve bus service along the corridor and prepare for eventual streetcar service. Additionally, pedestrian facilities, including bulb-outs, high visibility crosswalks, and sidewalk extensions are included in the Plan, as well as signed bicycle routes and bike lanes. In order to improve vehicular travel, signal coordination and transit signal prioritization are suggested, as well as left-turn pockets at intersections where pedestrian bulb-outs are not planned.

The Campus Plan supports the 7th Street and Georgia Avenue Great Streets Initiative by improving pedestrian conditions and connectivity along Georgia Avenue and at the eventual development on the existing Howard University Hospital site, including replacing surface parking with terraces, sitting areas, green space, and other uses where possible. Improving the connectivity, safety, and attractiveness of the pedestrian environment along Georgia Avenue will help facilitate the mobility and investment goals outlined in the 7th Street and Georgia Avenue Great Streets Initiative.

DUKE Framework for a Cultural Destination for Greater Shaw-U Street

This DC Office of Planning initiative was approved in 2005 to address the redevelopment of key public-owned properties including the District's historic Howard Theatre and Grimke School on Vermont Avenue, Parcels 33 and 42, Metro's Shaw Parcels, the Housing Finance Agency (HFA) site, and select private parcels in the 7th Street/Georgia Avenue and U Street/Florida Avenue commercial corridors.

The plan provides guidance in public policy decision-making to District agencies and commissions on affordable housing needs, local business development, existing and new cultural facilities and programming, quality public realm investments, transportation and traffic, zoning and local resident participation.

The plan's transportation goals include:

- Maximizing the use of transit resources and expanding the range of transportation modes (i.e. shuttles, bicycles, light rail, etc.);
- Right-sizing parking to give priority to transit while accommodating project generated parking demands;
- Seeking opportunities to develop a shared or joint parking strategy for the area, maximizing off-street parking as possible;
- Managing off street service, loading and tour buses to reduce impact on surrounding neighborhoods; and
- Incorporating public parking for vehicles and bicycles within the destination district.

The Campus Plan supports these goals by: A) not increasing parking supply even as the campus population grows and new buildings are constructed; B) using Transportation Demand Management (TDM) measures to reduce parking demand; C) improving pedestrian conditions and connectivity within the campus core, along Georgia Avenue, at extracted parcels, and at the eventual development on the existing Howard University Hospital site; D) increasing multimodal access and facilities in the campus core, thereby reducing the need for auto trips to and from the campus; and E) providing safe, efficient access for all modes to the new Howard University Hospital.

Campus Plan Overview

The purpose of Howard University's 2020 Central Campus Plan, as stated in the Campus Plan itself, is to "create a dynamic, achievable, and flexible framework for Howard University's central campus's physical environment that supports and advances its mission and strategic plan."

The Campus Plan is guided by the planning principles of:

- Supporting the academic mission;
- Improving quality of life;
- Advancing smart and sustainable urban design;
- Enhancing the public realm;
- Enhancing physical access and connectivity; and
- Supporting interdisciplinary academics and research.

The transportation strategy for the Central Campus is guided by these principles, most notably of improving quality of life, advancing smart and sustainable urban design, enhancing the public realm, and enhancing physical access and connectivity. The following section summarizes the transportation-related elements of the Campus Plan that support these principles, including population changes, campus infrastructure changes, the inherent transportation impacts of these changes, and the plan's transportation strategies.

Population Changes

By the end of the Campus Plan, the number of students overall, the number of students living within the campus boundaries, and the number of faculty and staff employed by the University (in non-hospital roles) are expected to increase. The University has identified an enrollment cap of 15,000 for the duration of the Campus Plan, which would be a 55% increase from the current student population. This projection is due to the recent increase in applications compared to past years, as well as the University's prediction that growth in virtual learning will allow it to accommodate more students with the same amount of facility space.

The University has projected the faculty/staff population will increase at a similar rate as the student population. Table 2 summarizes the major population changes projected over the course of the Campus Plan.

Table 2: Projected Population Changes

Campus Population	Existing (2020)	With Campus Plan (2030)	Increase from 2020 to 2030
Students	9,689	15,000	55%
On-campus residence hall beds	5,291	5,941	12%
Faculty/staff	2,907	4,506	55%

Campus Infrastructure Changes

The Campus Plan includes several changes to campus infrastructure that will affect transportation within and adjacent to the campus. These changes are outlined below.

Proposed Buildings

The Campus Plan includes several proposed buildings to be constructed on existing HU parcels, resulting in the renovation, expansion, or replacement of existing HU buildings and/or parking facilities. These projects include:

- Burr Intercollegiate Athletic Center;
- Center for Arts and Communications;
- Howard University Union;
- Health Sciences Complex;
- STEM Building;
- Apartment-style, Upperclassmen Student Residences;
- Howard University Hospital and Medical Office Building Complex; and
- Howard Wonder Plaza Mixed-use Residential and Recreational project.

These proposed buildings are shown on Figure 5. Additionally, once the new Howard University Hospital is completed and occupied, the existing Howard University Hospital, health sciences buildings, and adjacent support buildings will be vacated and decommissioned, making the former hospital site available for mixed-use development. This Campus Plan does not include the redevelopment of the existing Hospital site, rather HU anticipates it will be incorporated into the next Campus Plan, or this plan will be amended.

More information on the proposed buildings can be found in the Campus Plan, although details about these proposed buildings are not established at this time, but will be provided during Further Processing for each site. This includes site specific transportation details, such as exact locations of access points and vehicular and bicycle parking amounts. Further Processing applications will include this information and a detailed review of multimodal conditions. This CTR recommends these applications devote particular attention to pedestrian conditions at the proposed buildings that front Georgia Avenue and 6th Street, which the Campus Plan identifies for pedestrian improvements.

Parking

Historical parking supply data of the campus core shows a decrease in academic (non-Hospital) parking supply from approximately 2,300 spaces in 2011 to approximately 1,960 spaces currently. With the inclusion of the Howard University Hospital parking supply, the existing parking supply in the campus core includes approximately 3,580 spaces.

The Campus Plan proposes removing substantial amounts of surface parking in the campus's central core and replacing it with garages on the campus's periphery that will be part of proposed new campus buildings. However, this process will not result in a net increase in parking supply.

Potential Impacts of Campus Plan

Transportation impacts of the Campus Plan are generated by changes to population and infrastructure that lead to increased traffic and parking demand, which in turn potentially lead to increased vehicular delays on surrounding streets. One of the Campus Plan's transportation commitments is to avoid a net increase in parking supply. This means that while the projected increase in student population will lead to more trips to and from campus, the University is taking measures to encourage these trips to be taken with non-auto modes of transportation.

The traffic impacts of the Campus Plan are expected to materialize in three distinct ways:

- The removal of substantial amounts of surface parking in the campus's central core and replacing it with garages on the campus's periphery will lead to shifts in vehicular volumes between the old and new parking locations. This is expected only to impact local streets.
- Moving Howard University Hospital from its current location to the proposed location will result in redistributed hospital-related traffic, pick-up/drop-off, ambulance, and loading activity. This is expected only to impact local streets.

- The increases in campus population will lead to more overall transportation demand to and from campus. Although this CTR includes recommendations on how to minimize the amount of new demand that is vehicular based, it is likely that the higher population will lead to more vehicular trips to and from campus.

These impacts are covered in greater detail in a later section of this report.

Campus Plan Transportation Strategy

The Campus Plan's transportation strategy is guided by its Planning Principles of improving quality of life, improving the public realm, and enhancing physical access and connectivity. The transportation strategy is comprised of five (5) elements, outlined below.

Element 1: Ensure there is no net increase in parking supply.

Historical parking supply data of the campus core shows a decrease in the academic parking from approximately 2,300 in 2011 to 1,960 spaces today. With the inclusion of the Howard University Hospital parking supply, the existing parking supply in the campus core includes approximately 3,580 spaces.

As part of the Campus Plan, parking lots will be removed from the campus core and replaced with structures on the campus periphery, in a manner that will not lead to a net increase in parking supply campus-wide. Parking to be removed includes spaces at sites planned for redevelopment, extracted parcels that fall outside of the proposed campus boundary, and portions of surface lots along Georgia Avenue between Bryant Place and Fairmont Street. On-street parking is not included in the campus supply; however, there are opportunities to improve multimodal access and facilities with the removal of on-street parking in the campus core, particularly along 6th Street.

A further goal of this element is to reduce the overall parking supply on campus, and not replace all of the parking removed. The Campus Plan aims to replace minimal parking, utilizing Transportation Demand Management (TDM) measures to reduce campus parking demand without constructing any net new parking. Further Processing for any project proposing new parking spaces will provide details on how the project meets this element, noting the current status of parking on campus and how the project does not lead to a net increase in supply.

Element 2: Improve pedestrian conditions and connectivity.

The Campus Plan aims to improve pedestrian conditions within the campus boundary and create a porous, connective overall pedestrian network within the campus that integrates seamlessly with the surrounding neighborhoods. To this end, three (3) pedestrian areas of focus are outlined below.

Campus core

The Campus Plan proposes to remove a substantial amount of surface parking within the campus core, replacing it with new parking facilities accessed from peripheral roads. Reducing the amount of vehicles accessing parking from campus core roadways will result in a more inviting pedestrian experience in this area.

Along Georgia Avenue

Along Georgia Avenue between Bryant Place and Fairmont Street, the Campus Plan proposes to remove portions of the surface parking lots facing Georgia Avenue, replacing them with terraces, sitting areas, green space, and other uses that will present a more engaging front on Georgia Avenue. As part of these renovations, pedestrian connections between Georgia Avenue and 6th Street will be created wherever feasible.

Old Howard University Hospital site and extracted parcels

At the old Howard University Hospital site and at other parcels recently extracted from the campus boundary, the Campus Plan proposes working closely with the eventual developers to ensure that new public spaces along Georgia Avenue incorporate

wide sidewalks and generous pedestrian facilities, and that the new street pattern at the old hospital site breaks up the existing superblock, creating a more porous, connected pedestrian network.

Element 3: Increase multimodal access and facilities in the campus core.

With the replacement of parking lots in the campus core with new parking facilities on the periphery, vehicle access points will similarly shift from the core to the periphery. Under existing conditions, most of the parking serving the campus core is accessed from core roadways like 6th Street, Howard Place, and College Street, as opposed to peripheral roadways like Georgia Avenue, Gresham Place, and 4th/5th Street. Under proposed conditions, the opposite will be true. The resulting reduced vehicular activity on core roadways will make space available for multimodal improvements like bike/scooter parking corrals, bike lanes, or curb extensions.

Element 4: Provide safe, efficient access to the new Howard University Hospital.

The Campus Plan proposes to develop a transportation and access scheme for the new hospital that meets the facility's needs while maintaining a safe, orderly, and pleasant environment for all modes on the roadways surrounding the hospital. This scheme, informed by transportation data collected at the old hospital site, will include ride-hailing pick-up/drop-off operations, shuttle operations, parking access, loading access, and ambulance/emergency access. The Roadway Impacts section of this report recommends several modifications at the existing roadways surrounding the proposed Howard University Hospital and Medical Office Building sites to ensure safe, efficient, and orderly operations.

Element 5: Be a good transportation neighbor.

The Campus Plan proposes to continue Howard University's commitment to being a good transportation neighbor to the surrounding community. This goal will be served by the following measures:

- Continuing and expanding the University's Transportation Demand Management (TDM) efforts, which are aimed at reducing vehicle trips to and from the campus and mitigating the impact of vehicle trips on the surrounding community;
- Removing surface parking along Georgia Avenue, which will allow for a more engaging and less auto-centric campus frontage on Georgia Avenue; and
- Carefully considering multimodal impacts when planning new vehicle access points on campus and at the new hospital.

Figure 5: Campus Plan Proposed Buildings

Parking Supply and Demand

This section reviews the parking-related progress Howard University has made since its last Campus Plan (2011), existing parking supply and demand, and the parking-related proposals in the Campus Plan. The on- and off-street parking facilities analyzed in this section are shown on Figure 6.

Progress since 2011 Campus Plan

Since the 2011 Campus Plan, Howard University has increased student and staff parking permit rates, decreased academic (non-hospital) parking supply, and seen a decrease in overall peak parking occupancy of academic lots. The 2011 Campus Plan also included a goal of reducing academic (i.e., not including Hospital-based parking) parking demand to 1,400 spaces, which the University had exceeded by 2017 (and again in 2019) when demand was 1,225 spaces.

Finally, the University saw a decrease in peak parking demand per student from 0.158 spaces per student in 2011 to 0.126 spaces per student in 2019. This will be the primary performance measure of Transportation Demand Management (TDM) for the proposed Campus Plan.

These performance measures are reviewed in further detail later in this section, but a selected summary is provided in Table 3.

Table 3: Parking Performance Measures, 2011 – 2019

Performance Measure	2011	2017	2019
Student parking permit cost	$240	$680	$680
Staff parking permit (reserved) cost	$400	$2,288	$2,288
Number of academic (non-hospital) parking spaces	2,295	1,964	1,963
Peak academic (non-hospital) parking demand	1,748	1,225	1,225
Peak academic (non-hospital) parking occupancy rate	76%	62%	62%
Total enrollment	11,037	9,392	9,689
Peak academic parking demand per student	0.158	0.130	0.126

The parking strategies presented in this CTR seek to build from these successes.

Off-street Parking Supply

As shown in Table 3 and in further detail in Table 6, Howard University's off-street parking supply in academic lots has decreased from approximately 2,300 spaces in 2011 to approximately 1,960 spaces today. Approximately 980 of these 1,960 spaces are in staff/faculty lots, with the remaining 980 in student lots. An additional approximately 1,620 spaces are provided in Howard University Hospital lots and garages.

One of the Campus Plan's transportation strategies is ensuring there is no net increase in parking supply. This strategy's implications for off-street parking are that as surface lots are removed from the campus core, they will be replaced with structured parking on the campus periphery that accompany the new buildings proposed in the Campus Plan. Throughout the duration of the Campus Plan, each site's Further Processing will note the existing number of parking spaces and demonstrate that the proposed building will not lead to an increase in parking supply.

Figure 7 shows off-street parking facilities to remain, facilities to be removed, quantities of removed spaces, and the locations of proposed facilities with an estimated range of parking spaces. Details about proposed facilities, including whether the facility will be above or below ground, its number of spaces, and its designation of spaces, will be provided during Further Processing for each site.

On-street Parking Supply

In addition to the approximately 1,960 off-street parking spaces provided in academic lots, a supply of on-street parking is provided on many streets within and near the campus. This supply contains various types and restrictions including time-limited metered and unmetered parking, residential parking permit (RPP) parking, HU permit parking, and undesignated parking. These types and their locations are shown on Figure 8. Several of the time-restricted and metered spaces are used by University faculty/staff and students who do not have HU parking permits. Available spaces may also be used by HU visitors that cannot find parking within the University or do not wish to pay for a visitor permit.

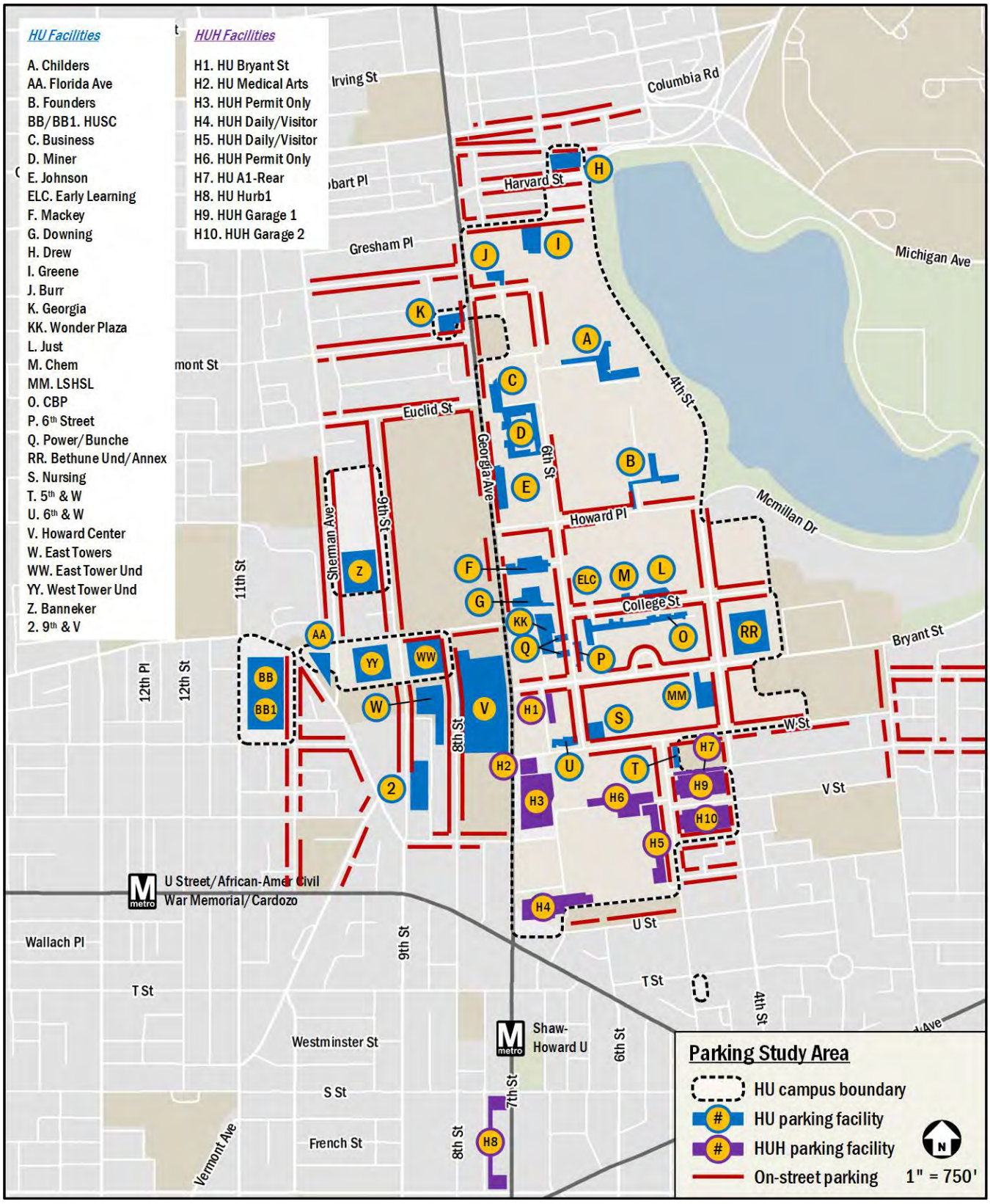

Figure 6: Parking Study Area

Permitting

Faculty and staff who wish to secure parking must contact the Parking Coordinator for their department and register for parking using the University's online portal. Employees must access their parking accounts to register, add, or make any changes. Parking permits and expiration stickers are provided for an annual fee of $2,288 for a reserved type or $1,760 for a non-reserved type. Faculty and staff may pay their parking fees by payroll deduction or by advance payment. Employees who are unable to obtain a parking assignment must find alternatives to driving to campus.

Students register for parking permits during allotted days during the spring and fall semesters. Student parking permits are available for an annual price of $680. Freshmen (first time) students are not eligible for a parking permit.

Visitor parking is limited with daily parking permits available for $10 and monthly permits for $160. This is slightly less than monthly rates in nearby private garages, which range from $180 to $225. Visitors may park in any open lot with a daily parking permit. On-street parking spaces are also available throughout the campus.

During summer sessions, monthly parking permits are available for faculty/staff and students. Parking for students is $75 per month and students must be registered for summer school in order to qualify for parking. Summer monthly faculty/staff permits are $66 for a non-reserved type and $88 for a reserved type.

Parking management is provided by the Office of Parking and Transportation, which is managed by the Office of Auxiliary Enterprises. The University requires that all vehicles parked on University property display a valid hangtag or parking permit for the appropriate parking lot or area. Vehicles parking without a valid permit are subject to ticketing, towing, and/or immobilization. Personnel from Parking Enforcement, Campus Police, and Hospital Security enforce University parking regulations.

All parking permit costs have been increased since 2011 as part of the University's Transportation Demand Management (TDM) efforts. Costs comparisons for each permit type between 2011 and 2020 are shown in Table 4.

Table 4: Parking Permit Costs

Permit Type	Period	Cost		Increase from 2011 to 2020
		2011	2020	
Student	Annual	$240	$680	183%
Staff (non-reserved)	9-month	-	$1,320	-
Staff (reserved)	9-month	-	$1,760	-
Staff (non-reserved)	12-month	$300	$1,760	487%
Staff (reserved)	12-month	$400	$2,288	472%
Daily (visitor)	Daily	$4	$10	150%
Monthly (visitor)	Monthly	-	$160	-
Summer (student)	Monthly	$24	$75	213%
Summer (staff non-reserved)	Monthly	$30	$66	120%
Summer (staff reserved)	Monthly	$30	$88	193%

On-street and Off-street Parking Demand

Methodology

Parking supply and demand observations were conducted for the on- and off-street parking facilities within and near the Howard University Central Campus. These observations were used to identify trends or patterns associated with parking demand.

The area surveyed for this study, shown in Figure 6, includes all off-street parking facilities for which data collection was feasible, as well as on-street parking spaces within approximately two blocks of the campus boundary. Each block-face in the study area was surveyed to determine whether parking is allowed and the approximate number of spaces on the block-face.

Parking occupancy data was collected on Thursday, October 24, 2019 and Wednesday, November 20, 2019, once per hour from 7:00am to 7:00pm, for all on- and off-street facilities for which data collection was feasible. These dates were selected because they represented typical weekdays on campus when no major events were taking place.

It should be noted that parking lot 2 (9th & V Street Lot) was open at the time of the 2019 counts, but has since permanently closed. It is still included in the campus supply and demand information in Table 6, but is noted accordingly.

Results

Table 6 presents 2019 off-street parking supply and demand for both academic and hospital lots compared with 2011 and 2017 data. The data was collected by inventorying the existing lots and performing observations on their occupancy over several times during a typical weekday while classes were in session.

Generally, a parking supply is considered at capacity when peak hour occupancy reaches 90% of the supply. Thus, as seen in Table 6, existing off-street academic parking supply is under capacity at 62% peak hour occupancy. This is a reduction from 2011 peak hour occupancy, which was 76% even before parking supply was reduced in subsequent years. Hospital parking is generally at capacity, with 87% peak hour occupancy.

Timed parking occupancy maps for all studied on- and off-street parking facilities are shown for 7:00am, 11:00am, 3:00pm, and 7:00pm on Figure 9, Figure 10, Figure 11, and Figure 12, respectively. Figure 13 and Figure 14 show these occupancy patterns for each facility type in graph form.

As seen in the Figure 13 graph, the occupancies of all off-street facility types follow an inverted “U”-shaped pattern of being fairly empty in the early morning and evening hours, while filling up during day. Peak occupancy is approximately 60% for faculty/staff lots, 70% for student lots, and 80% for hospital lots, and occurs between 11:00am and 1:00pm for all off-street facilities. The two (2) HUH garages were included in this study, but counts were only conducted between 10:00am and 12:00pm, and between 2:00pm and 4:00pm, as shown on the graph. Occupancy of these garages was around 85% for all times observed.

As seen in the Figure 14 graph, on-street parking occupancy patterns vary by type. On-street spaces designated for HU staff permit-holders follow the pattern of the off-street facilities, filling up during the morning, peaking around 75% at midday, and emptying out in the evening. Time-limited (metered and unmetered) on-street spaces follow a similar pattern, but remain more occupied during the morning and evening hours. Unrestricted on-street spaces have the highest peak occupancy at around 85% at midday, with slightly lower occupancy in the morning and evening hours. Residential parking permit (RPP) spaces are consistently 60% to 70% occupied throughout the day.

Conclusions

On-street parking occupancy generally follows expected patterns for an area like Howard University – an urban, multi-use setting with a mixture of reserved, time-limited, unrestricted, and resident-only parking. More parking could be designated for residential use by converting some time-restricted spaces on residential streets to RPP, but RPP is shown to be under capacity throughout the day under current conditions.

Impacts of Campus Plan

Off-street Parking Impacts

The Campus Plan proposes removing substantial amounts of surface parking in the campus’s central core and replacing it with garages on the campus’s periphery that will be part of proposed new campus buildings. However, this will not result in a net increase in parking supply. Rather, the increased supply from the proposed new parking facilities will be offset by the closure

and removal of some existing parking lots. It is expected that anticipated parking demand will be met with no supply increase because current parking demand is lower than the supply.

Figure 7 shows the locations of parking facilities to be removed, as well as proposed parking facilities to accompany the proposed buildings identified in the Campus Plan. The exact capacities of new parking facilities and whether their spaces will be designated for students, staff, or some combination is undetermined at this time. However, additional parking supply and demand analyses will be performed as part of Further Processing for the new campus buildings, at which time the amount and designations of new parking and access points associated with each site will be determined.

On-street Parking Impacts

One of the Campus Plan's transportation strategies is increasing multimodal access and facilities in the campus core. As off-street surface lots in the campus core are replaced with new parking facilities on the campus periphery, the campus's core roadways will see reduced vehicular activity, making room for multimodal improvements like bike/scooter parking corrals, bike lanes, or curb extensions. These improvements will likely involve removing some on-street parking in the campus core. However, this is not expected to generate negative parking impacts as it fits with the overall Campus Plan strategy of promoting and investing in non-auto modes of transportation and discouraging auto trips, thereby reducing parking demand.

Relation to Campus Plan Transportation Strategies

The above actions constitute a two-pronged parking strategy of:

- Replacing surface parking lots in the core with garages on the periphery, and;
- Removing some on-street parking in the core to make room for multimodal improvements.

There are several ways this strategy reflects the overall transportation strategies identified in the Campus Plan. These are outlined in Table 5.

Table 5: How Parking Proposals Support Campus Plan Transportation Strategies

Campus Plan Transportation Strategy	How Parking Proposals Support the Strategy
1. Ensure these is no net increase in parking supply.	Remove parking from the campus core; Ensure each proposed building's Further Processing notes the number and existing parking spaces on campus and demonstrates the project will not lead to an increased parking supply.
2. Improve pedestrian conditions and connectivity.	Removing parking from the campus core will reduce the amount of vehicular activity in the core, which will result in a more pedestrian-friendly environment and allow new pedestrian connections where parking lots currently exist.
3. Increase multimodal access and facilities in the campus core.	Removing vehicular activity from the campus core will allow for multimodal improvements like bike/scooter parking corrals, bike lanes, or curb extensions.
4. Provide safe, efficient access to the new Howard University Hospital.	N/A
5. Be a good transportation neighbor.	Reduce vehicle trips to and from the campus, creating a more pedestrian-friendly environment for students, faculty, and nearby residents and allow a less auto-centric frontage along Georgia Avenue.

Table 6: Supply and Peak Hour Occupancy of HU Academic and Hospital Lots, 2011 – 2019

Lot Code	Lot Name	2011			2017			2019		
		Supply	Peak Hour Occupancy		Supply	Peak Hour Occupancy		Supply	Peak Hour Occupancy	
			Veh's	%		Veh's	%		Veh's	%
A	Childers	72	71	99%	76	83 [1]	109%	76	70	92%
AA	Florida Avenue	23	19	83%	23	23	100%	23	21	91%
B	Founders	56	39	70%	57	50	88%	57	22	39%
BB	HUSC	37	37	100%	26	25	96%	26	25	96%
BB1	HUSC Garage	--	--	--	94	40	43%	94	69	73%
C	Business	36	36	100%	36	32	89%	36	28	78%
D	Miner	52	54 [1]	104%	56	42	75%	56	38	68%
E	Johnson	43	43	100%	43	33	77%	43	34	79%
ELC	Early Learning Center	--	--	--	7	6	86%	7	6	86%
F	Mackey	63	57	90%	57	32	56%	57	32	56%
G	Downing	35	34	97%	35	17	49%	35	21	60%
H	Drew	54	45	83%	56	32	57%	56	8	14%
I	Greene	46	44	96%	46	20	43%	46	22	48%
J	Burr	12	9	75%	12	7	58%	12	15 [1]	125%
K	Georgia	34	29	85%	34	20	59%	34	12	35%
KK	Wonder Plaza	52	39	75%	50	42	84%	50	0	0%
L	Just	23	16	70%	23	21	91%	23	17	74%
M	Chem	8	6	75%	6	5	83%	6	3	50%
MM	LSHSL	43	19	44%	43	34	79%	43	17	40%
O	C.B.P.	53	42	79%	53	47	89%	55	44	83%
P	6th Street	10	5	50%	11	6	55%	11	6	55%
Q	Power/Bunche	12	3	25%	16	9	56%	16	4	25%
R	Bethune	218	210	96%	--	--	--	--	--	--
RR	Bethune Underground	63	24	38%	63	25	40%	63	25 [2]	40%
RR	Bethune Annex	12	14 [1]	117%	12	9	75%	12	9 [2]	75%
S	Nursing	61	45	74%	62	48	77%	62	41	66%
T	5th & W	26	10	38%	26	22	85%	26	11	42%
U	6th & W	18	10	56%	16	13	81%	16	14	88%
V	Howard Center	315	281	89%	303	137	45%	334	282	84%
W	East Tower	138	112	81%	142	97	68%	142	93	65%
WW	East Tower Underground	103	82	80%	99	57	58%	99	57 [2]	58%
X	9th Street	33	22	67%	31	5	16%	--	--	--
YY	West Tower Underground	103	58	56%	99	5	5%	99	5 [2]	5%
Z	Banneker	314	173	55%	178	133	75%	178	114	64%
1	Howard Center II	47	29	62%	--	--	--	--	--	--
2	9th & V Street Lot	68	20	29%	60	36	60%	70 [3]	60	86%
3	Annex I Rear	12	11	92%	13	12	92%	--	--	--
Total Academic Supply		**2,295**	**1,748**	**76%**	**1,964**	**1,225**	**62%**	**1,963**	**1,225**	**62%**
H1	HU Bryant St Lot	--	--	--	--	--	--	--	--	--
H2	HU Medical Arts Lot	--	--	--	--	--	--	30	16	53%
H3	HUH Permit Only Lot	--	--	--	--	--	--	106	87	82%
H4	HUH Daily/Visitor Lot	--	--	--	--	--	--	124	111	90%
H5	HUH Daily/Visitor Lot	--	--	--	--	--	--	57	54	95%
H6	HUH Permit Only Lot	--	--	--	--	--	--	35	29	83%
H7	HU A1-Rear Lot	--	--	--	--	--	--	23	11	48%
H8	HU Hurb1 Lot	--	--	--	--	--	--	50	46	92%
H9	HUH Garage 1	--	--	--	--	--	--	609	544	89%
H10	HUH Garage 2	--	--	--	--	--	--	580	508	88%
Total Hospital Supply		**--**	**--**	**--**	**--**	**--**	**--**	**1,614**	**1,406**	**87%**

Observations performed on a weekday when classes were in session, at several times in the morning and afternoon. Peak occupancy listed is the highest observed occupancy at each lot among all times.

[1] Illegal parking observed, leading to occupancy greater than 100%.
[2] 2019 data collection not feasible; 2017 data substituted.
[3] Lot was open during 2019 counts, but is now permanently closed.

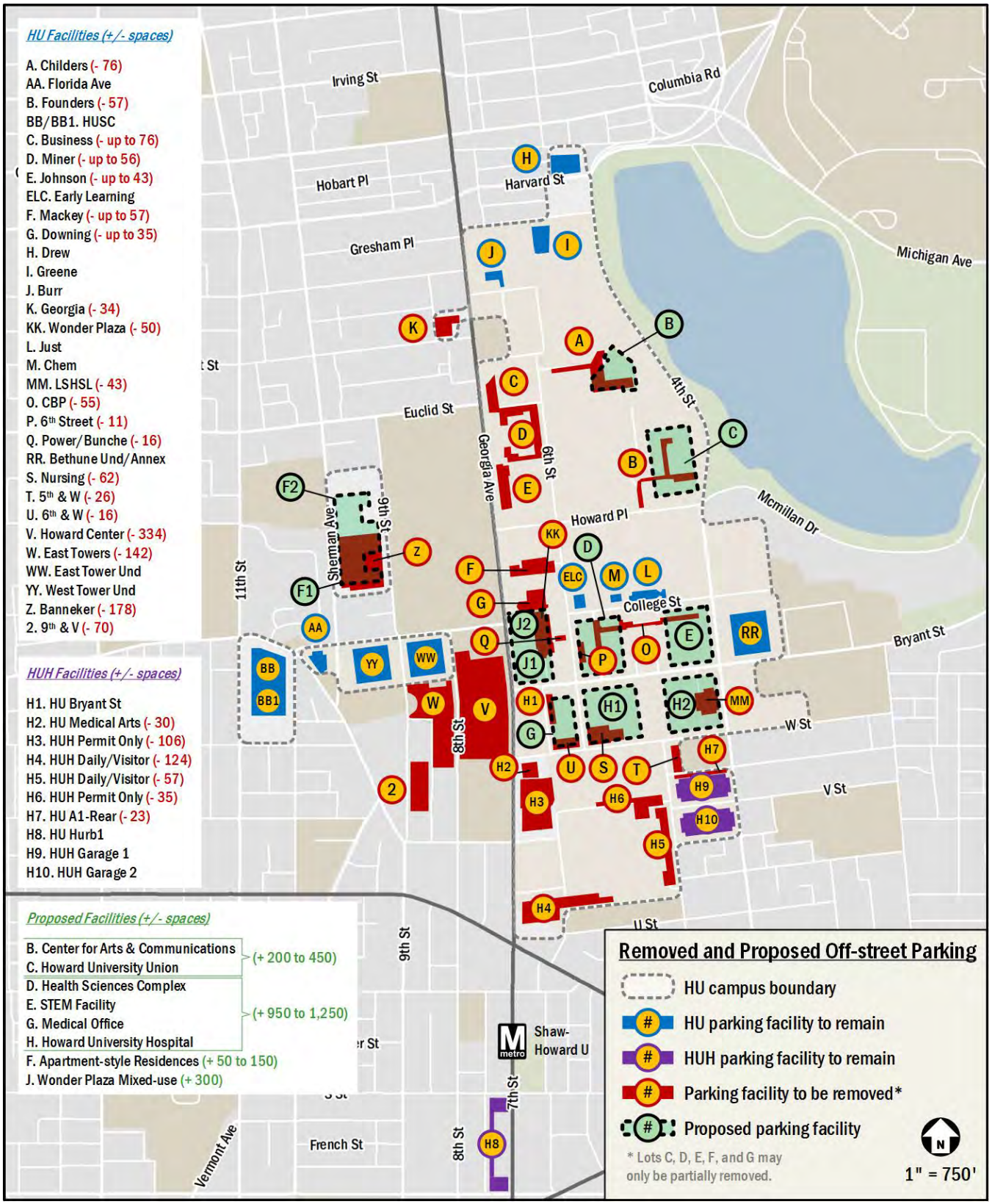

Figure 7: Removed and Proposed Off-street Parking Facilities

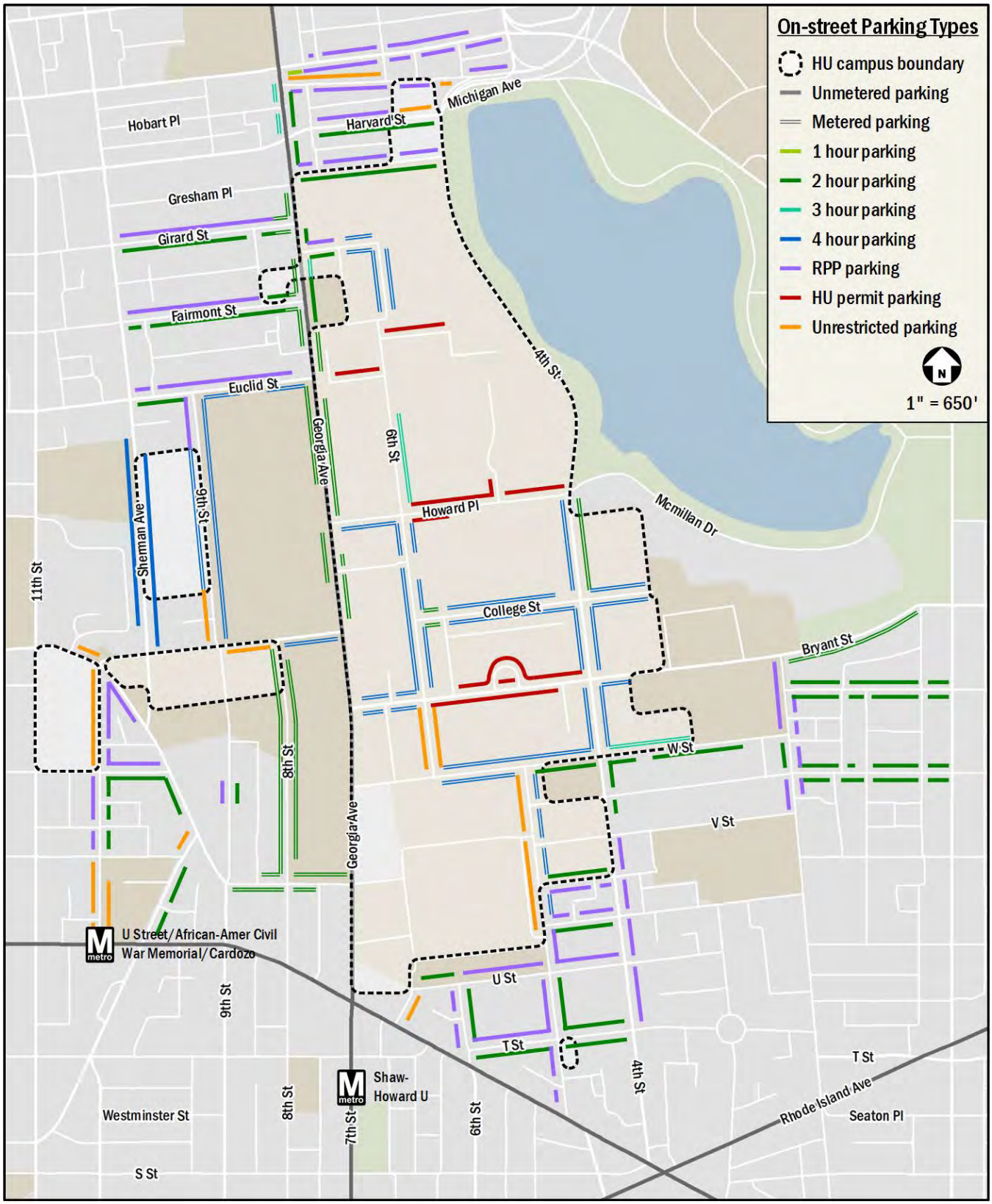

Figure 8: On-street Parking Types

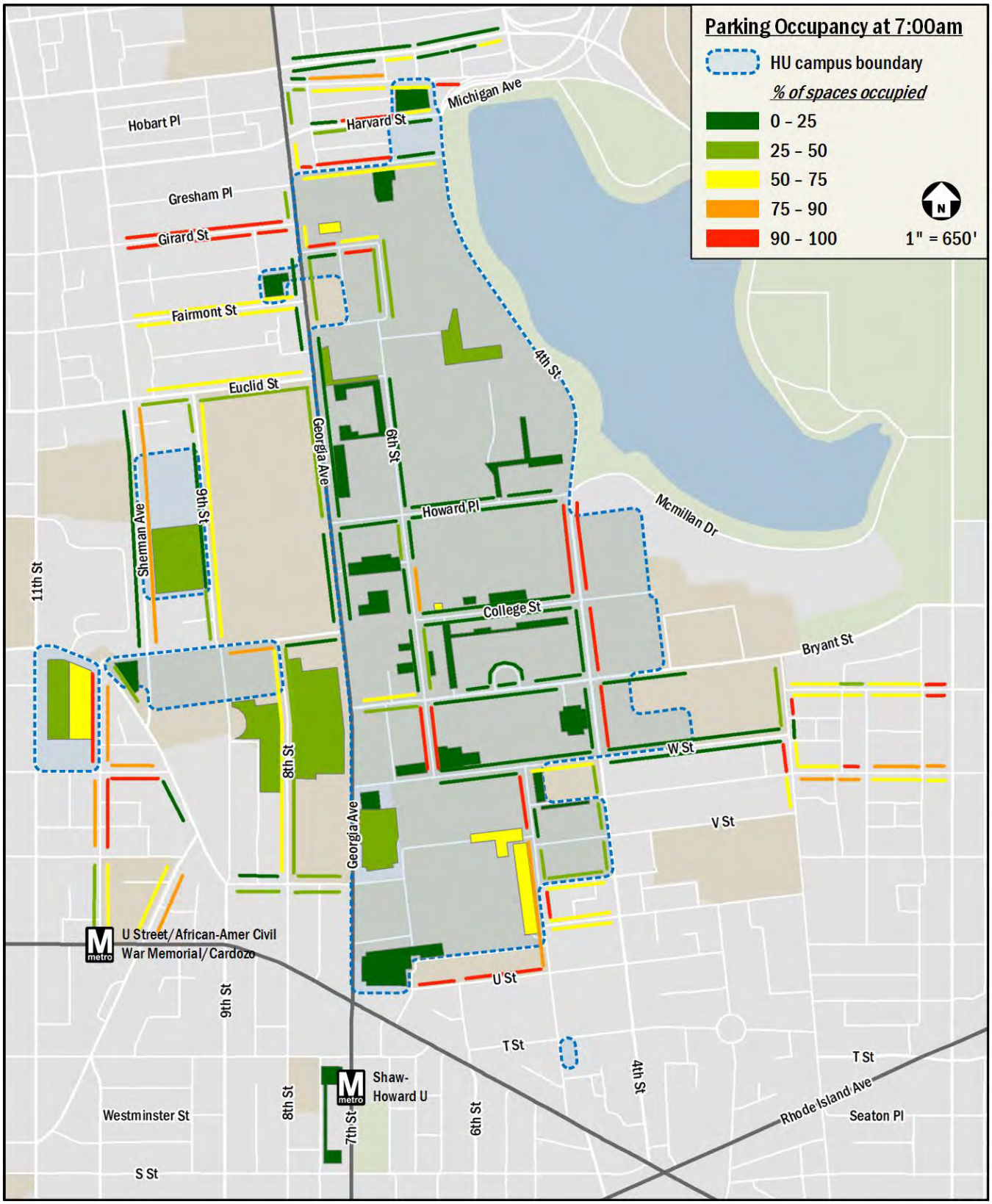

Figure 9: On- and Off-street Parking Occupancy at 7:00am

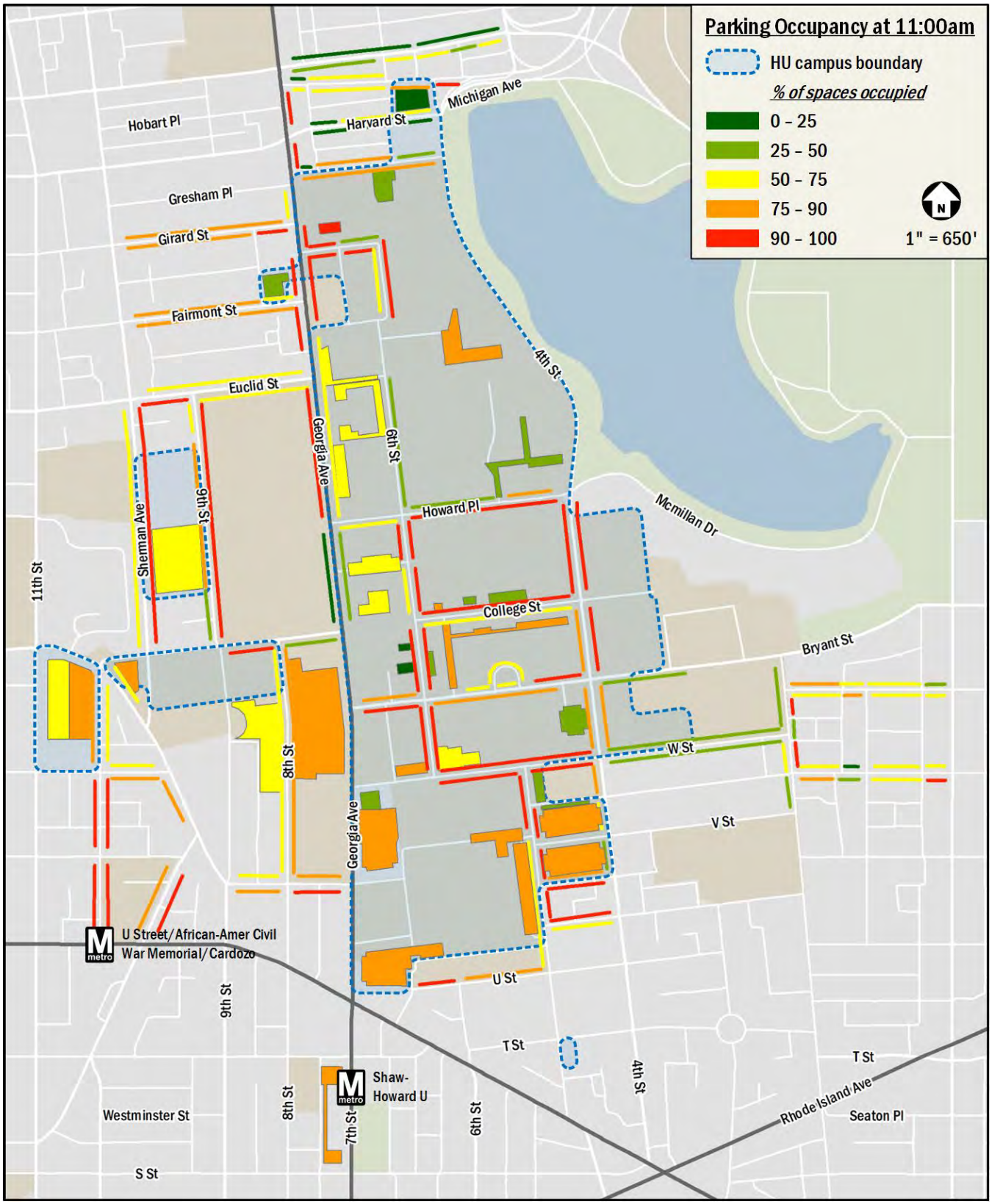

Figure 10: On- and Off-street Parking Occupancy at 11:00am

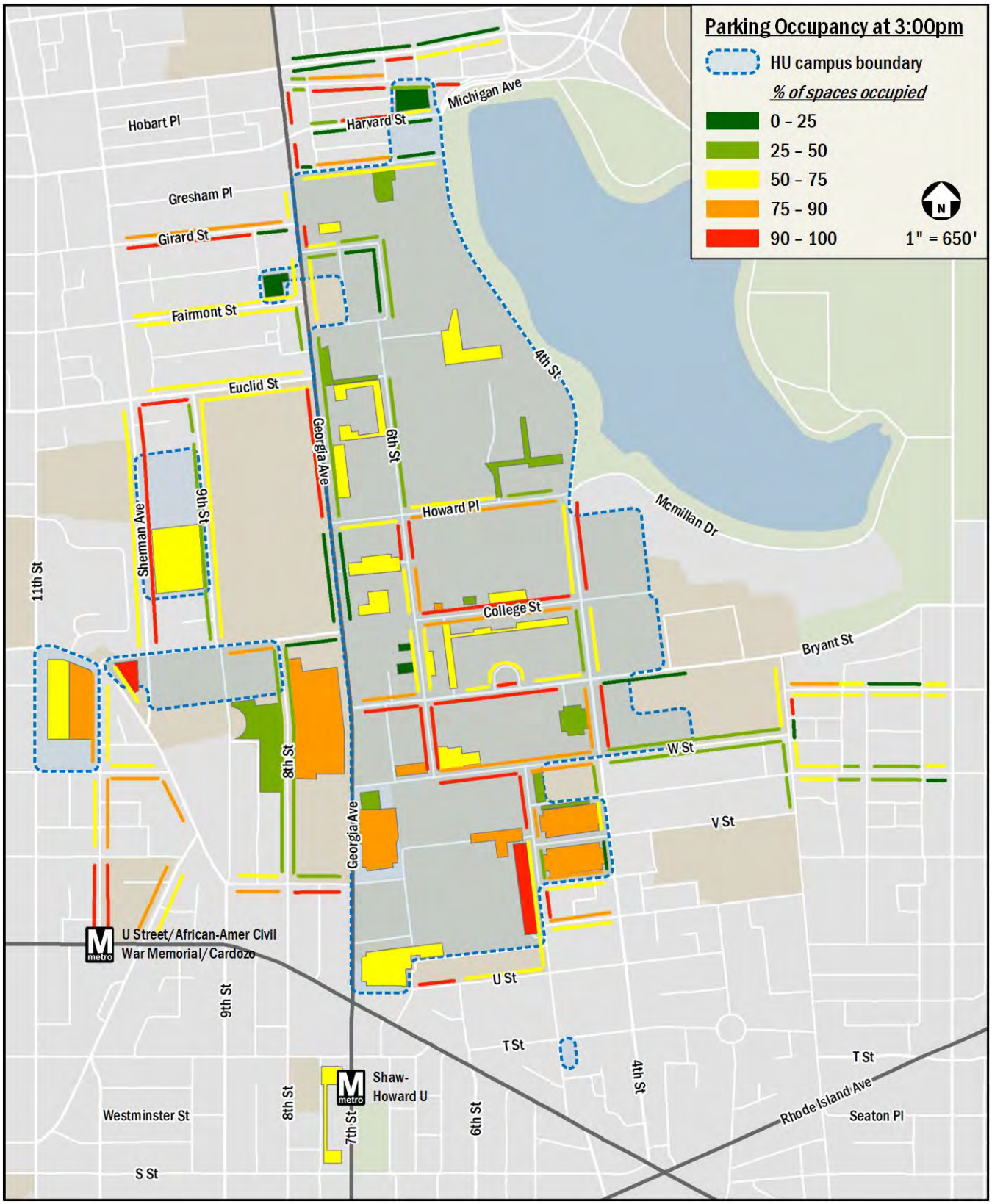

Figure 11: On- and Off-street Parking Occupancy at 3:00pm

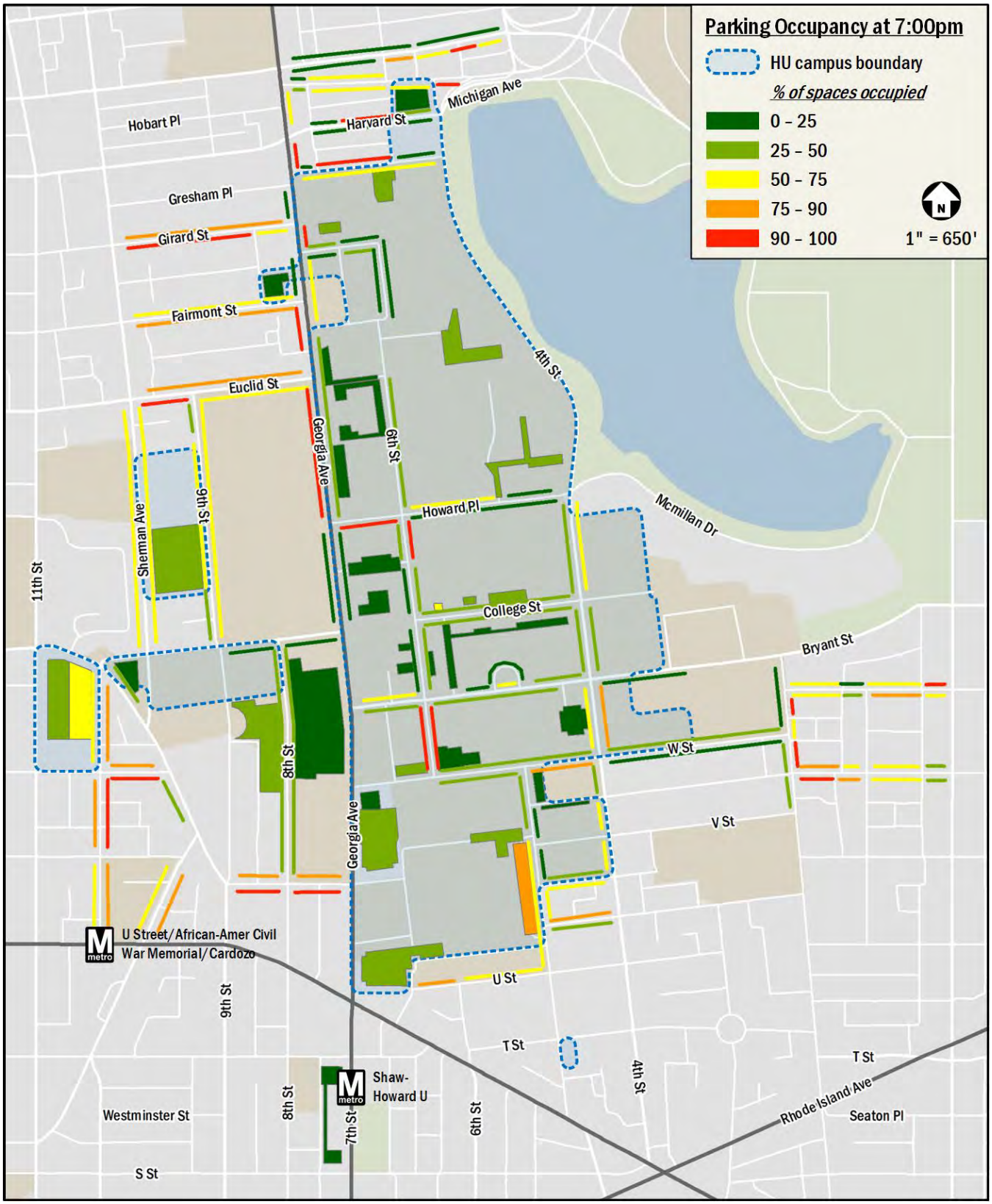

Figure 12: On- and Off-street Parking Occupancy at 7:00pm

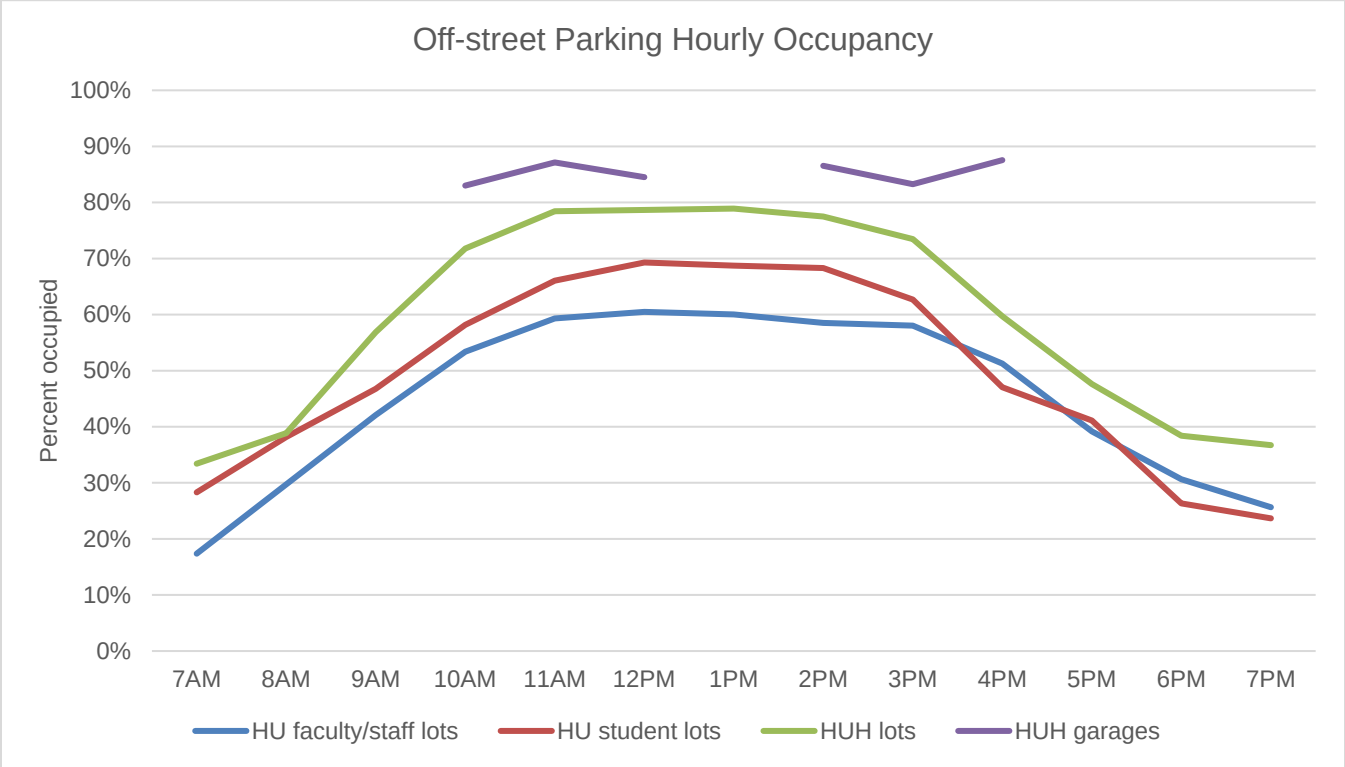

Figure 13: Off-street Parking Hourly Occupancy

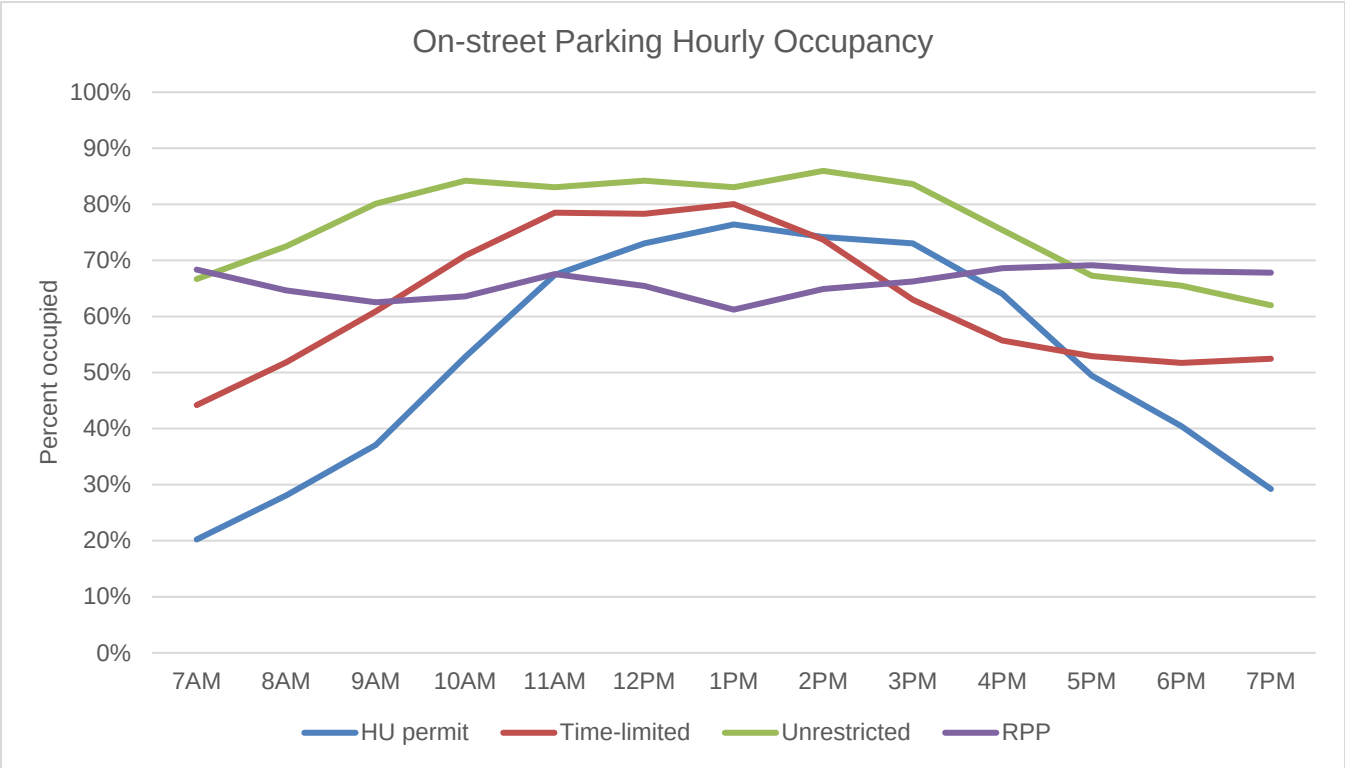

Figure 14: On-street Parking Hourly Occupancy

Pedestrian Facilities

Existing Pedestrian Conditions

The pedestrian network in and around the Howard University campus is mostly well-connected and of decent quality. The campus's pathways combine with the sidewalks and urban street grid surrounding the campus to form a fairly continuous and comfortable pedestrian network, though not without exception. The planned extensions of W Street and Bryant Street between Florida Avenue and Georgia Avenue will further improve pedestrian connectivity and comfort in the area.

A notable exception to the high-quality pedestrian environment around the campus is Georgia Avenue, whose four-lane configuration and infrequent vehicle stopping points encourage high speeds, making it a barrier for pedestrians. Of particular note is the section of Georgia Avenue between Euclid Street and Gresham Place, which has several unsignalized crosswalks that cross four vehicle lanes, and some intersection legs that lack a crosswalk altogether. There are also missing crosswalks and curb ramps along the section of Florida Avenue between 9th Street and 10th Street.

Figure 15 shows the existing pedestrian facilities within a quarter-mile walkshed of the Howard University campus boundary. As can be seen, nearly every street near and within the campus has sidewalks on both sides. Most streets within the campus have sidewalks meeting DDOT's width requirements for low- to moderate-density residential areas, but not for the high-density residential and mixed use areas the campus is zoned for under DC's Zoning Regulations of 2016. However, nearly every intersection on campus has ADA-compliant curb ramps and crosswalks.

Areas outside the campus similarly have ADA-compliant curb ramps and crosswalks at almost every intersection, and have more sidewalks meeting DDOT's width requirements, which are lower in the low- to moderate-density areas surrounding the campus.

While many sidewalks within and near the campus do not meet DDOT's width requirements, nearly every sidewalk is at least five (5) feet wide.

The size of the campus, pedestrian amenities, and the location of transit stations and parking facilities results in high pedestrian traffic throughout campus. Campus housing, transit services, and student amenities located on the periphery of the central campus are the primary sources of pedestrian traffic. Campus shuttle stops and parking lots located within campus also generate high volumes of pedestrian traffic. Pedestrian pathways from the campus to major local destinations are shown on Figure 15.

One primary destination on campus is The Yard, a quadrangle located north of Howard Place between 5th and 6th Streets, buffered from adjacent roads by buildings and landscaping. This "living room" of campus attracts and concentrates academic and social activities and is a primary location for formal and informal outdoor gatherings. Students and staff are frequently seen throughout The Yard socializing. Vehicular access to the central core of campus and The Yard is limited by gates located at 6th Street and Howard Place, and at 4th Street and Howard Place. However, vehicular traffic throughout this area is still present, with multiple vehicles parked along the periphery of the quad and occasional truck deliveries to the student union. This vehicular access results in pedestrian-vehicle conflicts along access routes to The Yard.

Impact of Campus Plan

The Campus Plan proposes improving pedestrian conditions and connectivity within the campus boundary using the following strategies:

- Within the campus core, the Campus Plan proposes removing a substantial amount of surface parking, replacing it with new parking facilities accessed from peripheral roads. Reducing the amount of vehicles accessing parking from campus core roadways will result in a more inviting pedestrian experience in this area and allow new pedestrian connections where surface parking lots currently exist.

- At the old Howard University Hospital site and other parcels recently extracted from the campus boundary, the Campus Plan proposes working closely with the eventual developers to ensure that new public spaces along Georgia Avenue incorporate wide sidewalks and generous pedestrian facilities, and that the new street pattern at the old hospital site breaks up the existing superblock, creating a more porous and connected pedestrian network.

There are several ways these strategies support the overall transportation strategies identified in the Campus Plan. These are outlined in Table 7.

Table 7: How Pedestrian Proposals Support Campus Plan Transportation Strategies

Campus Plan Transportation Strategy	How Pedestrian Proposals Support the Strategy
1. Ensure these is no net increase in parking supply.	Remove parking from the campus core; Ensure each proposed building's Further Processing notes the number and existing parking spaces on campus and demonstrates the project will not lead to an increased parking supply.
2. Improve pedestrian conditions and connectivity.	Removing parking from the campus core will reduce the amount of vehicular activity in the core, which will allow a more pedestrian-friendly environment as well as room for physical improvements such as curb extensions and green spaces.
3. Increase multimodal access and facilities in the campus core.	Improved pedestrian facilities will foster better pedestrian access to shuttles, transit, and other multimodal facilities.
4. Provide safe, efficient access to the new Howard University Hospital.	The new hospital's forthcoming transportation and access scheme will include pedestrian-friendly streets and facilities.
5. Be a good transportation neighbor.	Removing parking from the campus core will allow a more pedestrian-friendly environment at the public-facing areas of the campus, particularly along Georgia Avenue and at the eventual development of the old hospital site.

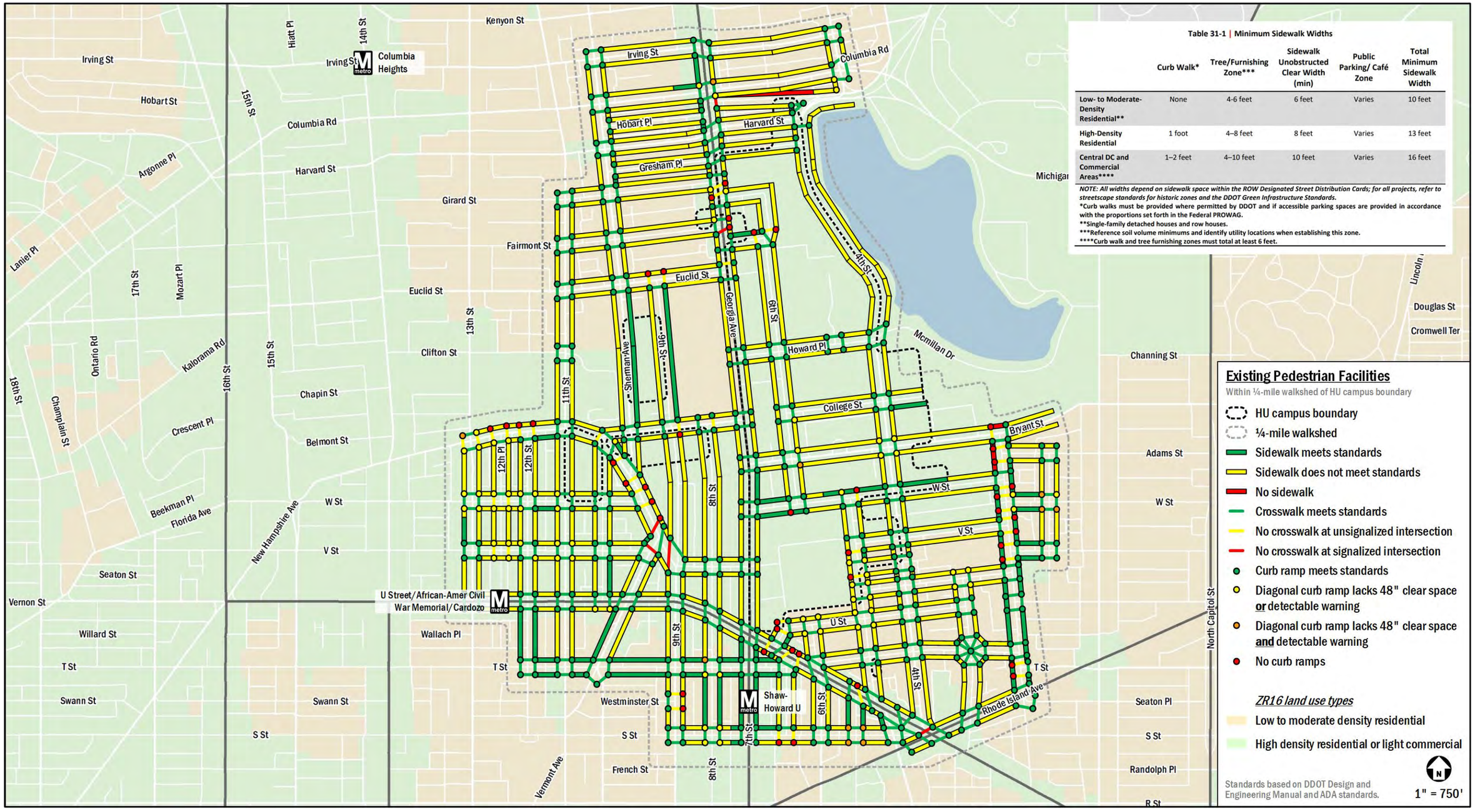

Table 31-1 | Minimum Sidewalk Widths

	Curb Walk*	Tree/Furnishing Zone***	Sidewalk Unobstructed Clear Width (min)	Public Parking/ Café Zone	Total Minimum Sidewalk Width
Low- to Moderate-Density Residential**	None	4-6 feet	6 feet	Varies	10 feet
High-Density Residential	1 foot	4–8 feet	8 feet	Varies	13 feet
Central DC and Commercial Areas****	1–2 feet	4–10 feet	10 feet	Varies	16 feet

NOTE: All widths depend on sidewalk space within the ROW Designated Street Distribution Cards; for all projects, refer to streetscape standards for historic zones and the DDOT Green Infrastructure Standards.
*Curb walks must be provided where permitted by DDOT and if accessible parking spaces are provided in accordance with the proportions set forth in the Federal PROWAG.
**Single-family detached houses and row houses.
***Reference soil volume minimums and identify utility locations when establishing this zone.
****Curb walk and tree furnishing zones must total at least 6 feet.

Figure 15: Existing Pedestrian Facilities

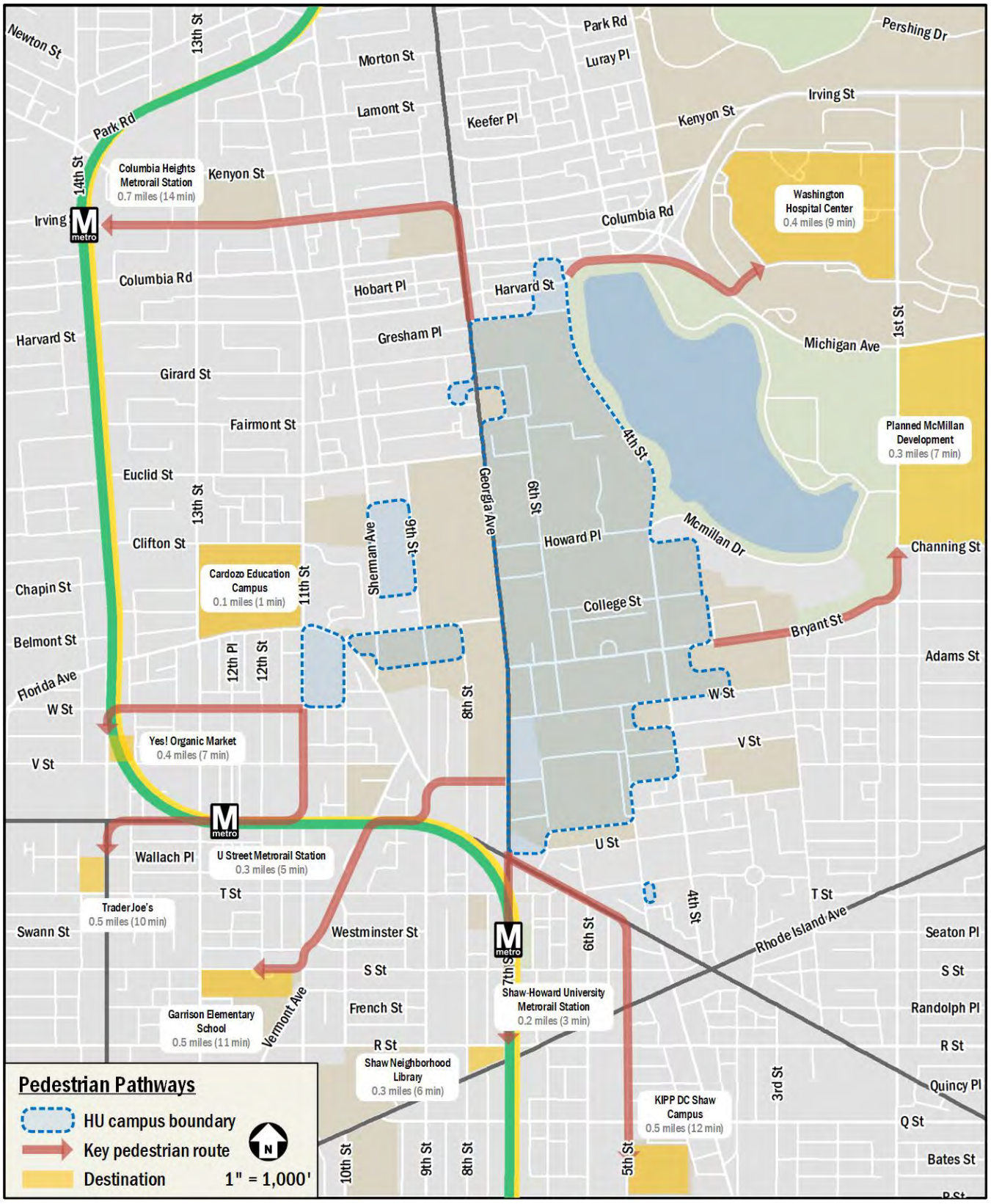

Figure 16: Pedestrian Pathways

Bicycle Facilities

Existing Bicycle Facilities

Currently, the only on-street bicycle facilities on or adjacent to the campus are the north-south bicycle lanes on 4th/5th Street and the north-south shared lanes on Georgia Avenue south of Barry Place. Numerous facilities exist west of the campus, like the bike lanes on W Street, V Street, and 11th Street, but they do not extend onto the campus, leaving critical gaps in the bicycle facilities network. No bicycle facilities exist directly east of the campus. Existing bicycle facilities within and near the campus are shown on Figure 17.

Topography changes and roadway configurations to the north impede bicycle circulation between campus and the bike lanes on Warder Street and Park Place. To the northwest, topography changes and conditions along Georgia Avenue reduce routing options between campus and signed bike routes along Kenyon Street and Irving Street. To the west, conditions on Georgia Avenue and lack of roadway connections between campus and W Street and V Street reduce the ease of using the bike lanes located along these streets. To the south, there are limited options for crossing Florida Avenue to access bike lanes to the south, including those located along 7th Street, 5th Street, T Street, R Street, and Q Street.

One-way streets impede bicycle circulation within campus and require cyclists to uses off-campus roads without proper bicycle facilities. For example, it is not possible to enter campus at Girard Street and travel south down 6th Street without riding on the sidewalk or cycling in the wrong direction on 6th Street, which is northbound-only in this location.

Planned and Proposed Bicycle Facilities

Planned and proposed bicycle facilities will improve bicycle safety and connectivity near the campus. DDOT's Crosstown Protected Bike Lanes Project is partially complete with protected bike lanes installed on Irving Street and Kenyon Street, connecting the Columbia Heights and Brookland Neighborhoods. The project is scheduled to be fully completed in 2021 with additional protected bike lanes on Warder Street and Park Place.

In the longer term, *MoveDC*, the District's long-range transportation plan, proposes the following improvements to the bicycle network within and near the HU campus:

- Extending the existing 4th Street/5th Street bike lane southwards toward Rhode Island Avenue;
- Extending the existing T Street bike lane eastward toward 4th Street, and;
- Installing a cycle track on Rhode Island Avenue.

DDOT's *Capital Bikeshare Development Plan* was originally released in 2016 to guide the continued growth of Capital Bikeshare in the District of Columbia. The most recent update of the *Development Plan* was released in 2020 and proposes several new Capital Bikeshare stations near the Howard University campus, including one at Georgia Avenue and Barry Place NW and one at 4th Street and McMillan Drive.

Existing, planned, and proposed bicycle facilities within and near the campus are shown on Figure 18.

Capital Bikeshare

The Capital Bikeshare program provides additional bicycle options for students, staff, and visitors to the campus. The program has placed over 500 bikeshare stations across the Washington, DC metropolitan area with over 4,500 bicycles in the fleet.

There are two Capital Bikeshare stations within the Howard University campus boundary, including:

- An 11-dock station at the corner of Georgia Avenue and Fairmont Street; and
- A 19-dock station at the corner of 10th Street and Florida Avenue.

There are seven additional stations within a quarter-mile of the campus boundary, including:

- A 19-dock station at the corner of Columbia Road and Georgia Avenue;
- An 18-dock station at the corner of 11th Street and Girard Street;
- A 27-dock station at the corner of 12th Street and U Street;
- A 14-dock station at the corner of 10th Street and U Street;
- A 14-dock station at the corner of 7th Street and T Street;
- A 19-dock station at the corner of 7th Street and S Street; and
- A 15-dock station at the corner of 3rd Street and Elm Street.

Personal Mobility Devices

Personal Mobility Device (PMD) service in the District is provided by nine (9) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies including Bird, Bolt, HelBiz, Jump, Lime, Lyft, Razor, Skip, and Spin. These PMDs are provided by private companies that give registered users access to a variety of e-scooter and e-bike options. These devices are used through each company-specific mobile phone application. Many PMDs do not have designated stations where pick-up/drop-off activities occur like with Capital Bikeshare; instead, they are parked in public space, most commonly in the "furniture zone" (the portion of sidewalk between where people walk and the curb, often where other street signs, street furniture, trees, parking meters, etc. are found). PMD pilot/demonstration programs are currently underway in the District of Columbia, Arlington County, Fairfax County, the City of Fairfax, the City of Alexandria, and Montgomery County.

Impacts of Campus Plan

There are several ways the bicycle-related impacts of the Campus Plan reflect the overall transportation strategies identified in the Campus Plan. These are outlined in Table 8.

Table 8: How Bicycle Proposals Support Campus Plan Transportation Strategies

Campus Plan Transportation Strategy	How Bicycle Proposals Support the Strategy
1. Ensure these is no net increase in parking supply.	N/A
2. Improve pedestrian conditions and connectivity.	N/A
3. Increase multimodal access and facilities in the campus core.	Reducing the amount of vehicles accessing parking from campus core roadways will result in an improved bicycling experience in this area, with fewer vehicles overall and more road space that can be dedicated to bike lanes and bike/scooter parking. Bicycle parking will be increased over the life of the Campus Plan through the TDM plan. The TDM plan also proposes a new Capital Bikeshare station on the southern end of the campus.
4. Provide safe, efficient access to the new Howard University Hospital.	The new hospital's forthcoming transportation and access scheme will include bicycle-friendly streets, facilities, and parking for all users
5. Be a good transportation neighbor.	Reducing the amount of vehicles accessing parking from campus core roadways will result in an improved bicycling experience in this area, which can be enjoyed by students, faculty, and nearby residents alike.

In addition to these strategies that will help improve bicycle conditions, the Campus Plan includes the following bicycle-related committed actions in the proposed Transportation Demand Management (TDM) plan.

- The University will significantly expand the quantity and quality of bicycle parking facilities on campus, both at existing building sites and at the new University development sites identified in the Campus Plan.
- For new buildings/projects, a more detailed discussion of their proposed bicycle parking quantities and locations will be included in their Further Processing applications.

- The University will install an additional 20 bicycle parking spaces every year over the course of the Campus Plan and include a bicycle parking inventory with every annual TDM report. These spaces are intended to serve existing buildings that do not have sufficient bicycle parking and does not include parking spaces added as part of new buildings.
- The University will provide space for and fund an additional Capital Bikeshare station on the central campus. Based on the location of existing and planned stations, this CTR recommends somewhere on the southern part of campus near the new Howard University Hospital as a potential location.

The proposed TDM plan also includes the following bicycle-related discretionary actions:

- The University will explore installing on-street bike paths and bike/scooter parking facilities as made possible by reduced vehicular activity and removed parking supply in the campus core. The University will coordinate with DDOT on any such public space changes.
- The University will develop a bike parking map to direct bicyclists to existing and future bike parking facilities.
- The University will explore implementing a bike repair and maintenance education program.
- As capital projects identified in the Campus Plan are developed, the University will seek to include changing and showering facilities where feasible and where concentrations of faculty and staff are expected.
- The University will explore ways to promote and enhance micro-mobility services on campus, such as providing on-street bike and scooter parking corrals.

Figure 17: Existing Bicycle Facilities

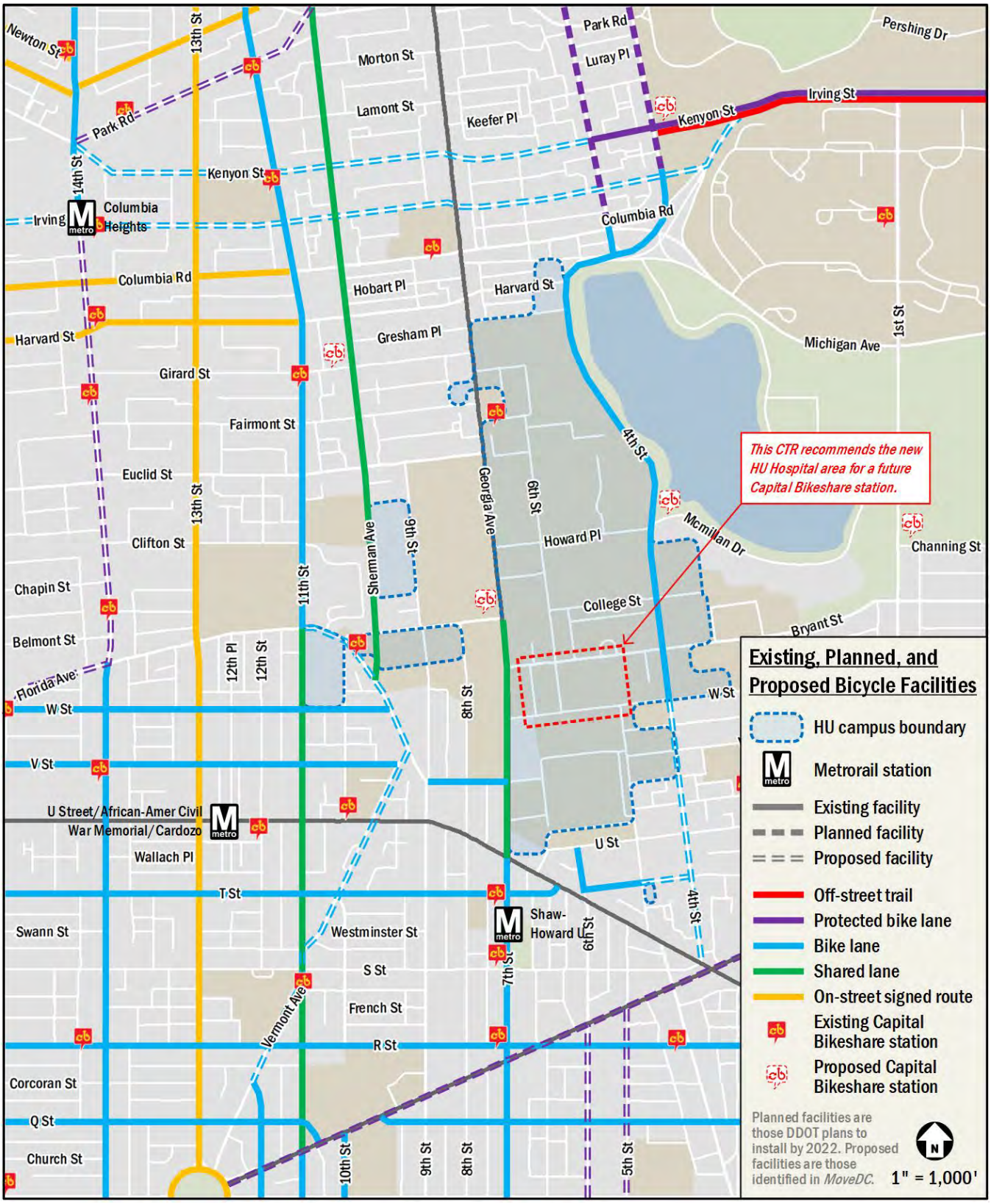

Figure 18: Existing, Planned, and Proposed Bicycle Facilities

Transit Facilities

Existing Transit Service

Howard University's Central Campus is served by 10 local bus routes along Georgia Avenue, 11th Street, Sherman Avenue, 4th Street, Irving Street, Harvard Street, U Street, and Florida Avenue with multiple bus stops located within or near the campus boundary. These bus routes connect the campus to many areas of Washington, DC, as well as Metro stations where transfers can be made to reach further areas in the District, Virginia, and Maryland.

Table 10 provides information for all bus routes serving the campus, including frequency and distance to the nearest bus stop. Table 11 shows WMATA's recommended amenities for each type of bus stop. Table 12 provides information about the features available at the 25 Metrobus stops serving the campus.

The closest Metro stations to the HU campus are the U Street and Shaw-Howard University stations, which are both served by the Green and Yellow Lines and located 0.7 miles (a 14-minute walk) from the approximate center of the campus.

The Green Line provides service between Greenbelt and Branch Avenue and runs every eight (8) to 15 minutes on weekdays and every 15 minutes on weekends.

The Yellow Line provides service between Greenbelt and Huntington and runs every eight (8) to 15 minutes on weekdays and every 15 minutes on weekends.

According to 2019 Metrorail data, approximately 10,700 riders enter and exit the two Metro stations serving the HU campus on a typical weekday, including 6,000 at the U Street station and 4,700 at the Shaw-Howard University station.

According to 2019 Metrobus data, approximately 2,200 riders board and 1,900 riders alight at the 25 Metrobus stops serving the HU campus.

Existing HU Shuttle Service

Howard University currently operates four campus shuttle routes, which are shown on Figure 20.

The North Campus route runs Monday through Friday every 15 to 20 minutes between 7:00am and 6:40pm, and every 35 minutes between 6:40pm and 12:30am.

The South Campus route runs Monday through Friday every 15 minutes between 7:00am and 7:00pm, and every 30 minutes between 7:00pm and 12:30am.

The West Campus route runs Monday through Friday every 60 minutes between 7:10am and 10:10pm, and Saturdays every 60 minutes between 10:10am and 5:10pm.

The Weekend route runs Saturday and Sunday every 25 minutes between 12:00pm and 12:00am.

Proposed Transit Service

As part of *MoveDC*, the District of Columbia's long-range transportation plan, the following transit improvements are proposed in the vicinity of the HU campus:

- High-capacity transit on the U Street/Florida Avenue corridor;
- High-capacity transit on Columbia Road/Harvard Street corridor; and
- Streetcar on the Georgia Avenue/7th Street corridor.

Impact of Campus Plan

The Campus Plan includes several proposed buildings to be constructed on existing HU parcels, resulting in the renovation, expansion, or replacement of existing HU buildings and/or parking facilities. These projects will affect shuttle ridership patterns as new activity centers emerge on campus. The Campus Plan recommends continually evaluating shuttle routes and ridership based on these changes, and making necessary adjustments to best serve the campus population.

Additionally, once the new Howard University Hospital is completed and occupied, the existing Howard University Hospital, health sciences buildings, and adjacent support buildings will be vacated and decommissioned, making the former hospital site available for mixed-use development. The resulting new street pattern will necessitate altering the shuttle routes currently serving the existing hospital, as well as offer opportunities to serve the mixed-use development with HU shuttles.

Finally, for those proposed buildings whose parcels contain existing shuttle or WMATA bus stops, potential upgrades to the bus stops will be evaluated during Further Processing.

There are several ways these strategies support the overall transportation strategies identified in the Campus Plan. These are outlined in Table 9.

Table 9: How Transit Proposals Support Campus Plan Transportation Strategies

Campus Plan Transportation Strategy	How Transit Proposals Support the Strategy
1. Ensure these is no net increase in parking supply.	N/A
2. Improve pedestrian conditions and connectivity.	Reevaluating HU shuttle routes as new activity centers emerge on campus will help the shuttles better function as "pedestrian accelerators" for short trips around campus.
3. Increase multimodal access and facilities in the campus core.	Reevaluating HU shuttle routes as new activity centers emerge on campus will help the shuttles better function as "pedestrian accelerators" for short trips around campus, contributing to a more multimodal profile in the campus core. Considering upgrades to existing shuttle or WMATA bus stops during Further Processing for applicable buildings will improve multimodal facilities.
4. Provide safe, efficient access to the new Howard University Hospital.	The new hospital's forthcoming transportation and access scheme will include considerations of how best to serve the facility with existing public transit and a possible reconfiguration of HU shuttles.
5. Be a good transportation neighbor.	Reevaluating HU shuttle routes as new activity centers emerge on campus will allow the campus to maintain a multimodal transportation profile, reducing vehicular trips to and from the campus. Considering upgrades to existing shuttle or WMATA bus stops during Further Processing for applicable buildings will improve transit facilities for students, faculty, and nearby residents alike.

Table 10: Existing Bus Route Information

Route Number	Route Name	Typical frequency (minutes)								Walking Distance from The Yard to Nearest Stop
		Early morn -ing	*AM rush*	*Mid-day*	*PM rush*	*Eve-ning*	*Late night*	*Sat.*	*Sun.*	
63	Takoma-Petworth Line	25	15	-	15	-	-	30 [1]	30 [1]	0.4 mile (7 min)
64	Fort Totten-Petworth Line	25	15	25	15	25	30	30	30	0.5 mile (9 min)
70	Georgia Avenue-7th Street Line	12	12	12	12	12	12	15	15	0.1 mile (2 min)
79	Georgia Avenue MetroExtra	-	12	12	12	-	-	-	-	0.1 mile (2 min)
90, 92	U Street-Garfield Line	15	10	10	15	15	15	15	15	0.5 mile (10 min)
96	East Capitol St.-Cardozo Line	25	25	25	25	30	45	40	40	0.5 mile (10 min)
G2	P Street-LeDroit Park Line	25	15	30	25	30	40	30	30	0.4 mile (7 min)
H1[4]	Brookland-Potomac Park Line	-	25 [2]	-	25 [2]	-	-	-	-	0.5 mile (11 min)
H2, H3[4], H4	Crosstown Line	25	15	20	20	20	30	20	20	0.5 mile (11 min)
X3[4]	Benning Road Line	-	30 [3]	-	25 [3]	-	-	-	-	0.5 mile (10 min)

[1] At the stop nearest the HU campus (Sherman Ave & Barry Pl), buses only operate from 5:05 to 7:05am and 5:45 to 7:15pm, and only in the peak direction (southbound in the AM, northbound in the PM).
[2] At the stop nearest the HU campus (Columbia Rd/Irving St & Georgia Ave), buses only operate from 6:35 to 9:07am and 5:30 to 6:38pm, and only in the peak direction (southbound in the AM, northbound in the PM).
[3] At the stop nearest the HU campus (Florida Ave & Georgia Ave/7th St), buses only operate from 6:20 to 9:03am and 4:04 to 6:06pm, and only in the peak direction (westbound in the AM, eastbound in the PM).
[4] The H1, H3, and X3 routes are currently not running to the ongoing COVID-19 emergency.

Table 11: WMATA Recommended Bus Stop Amenities

Amenity	Basic Stop		Enhanced Stop	Transit Center Stop
	< 50 daily boardings	≥ 50 daily boardings		
Bus stop flag	●	●	●	●
Route map and schedule	●	●	●	●
5' x 8' landing pad	●	●	●	●
40'/60' x 8' landing pad			●	●
4' sidewalk	●	●	●	●
Bench		●	●	●
Shelter		●	●	●
Lighting (on shelter or within 30' if overhead)	Required for stops with early morning and evening service		●	●
Dynamic information signage	Contingent on presence of shelter			
Trash and recycling receptacles	Recommended where surrounding uses may generate trash			

Source: 2019 WMATA *Bus Stop Amenity Reference Guide*

Table 12: Existing Bus Stop Information

Location	Stop ID	Routes Served	Features								
			Bus stop flag	Route map & sched-ule	Land-ing pad	Side-walk	Bench	Shel-ter	Dy-namic info sign	Light-ing	Trash recep.
Irving St + Warder St (EB)	1002027	H1, H2, H3, H4	●	●	●	●				●	●
Columbia Rd + Warder St (WB)	1001991	H1, H2, H3, H4	●	●	●	●				●	●
Georgia Ave + Gresham Pl (SB)	1001948	70	●	●	●	●				●	●
Georgia Ave + Gresham Pl (NB)	1001939	70	●	●	●	●				●	●
Georgia Ave + Euclid St (SB)	1001871	70	●	●	●	●				●	●
Georgia Ave + Euclid St (NB)	1001860	70	●	●	●	●				●	●
Georgia Ave + Howard Pl (SB)	1001820	70, 79	●	●	●	●				●	●
Georgia Ave + Howard Pl (NB)	1001803	70, 79	●	●	●	●				●	●
Georgia Ave + Barry Pl (SB)	1001786	70	●	●	●	●				●	●
Georgia Ave + Barry Pl (NB)	1001774	70	●	●	●	●				●	●
Georgia Ave + W St (NB)	1001739	70	●	●	●	●	●	●		●	●
Georgia Ave + V St (SB)	1001709	70	●		●	●				●	●
Georgia Ave + Florida Ave (SB)	1001661	70	●	●	●	●				●	●
Georgia Ave + Florida Ave (NB)	1003615	70, 79	●	●	●	●	●	●		●	●
Sherman Ave + Euclid St (NB)	1001851	63	●		●	●				●	●
Sherman Ave + Euclid St (SB)	1001847	63	●		●	●				●	●
Sherman Ave + Barry Pl (SB)	1001780	63	●	●	●	●				●	●
Sherman Ave + Barry Pl (NB)	1001767	63	●	●	●	●				●	●
Florida Ave + 11th St (WB)	1003918	64	●			●				●	
Florida Ave + 11th St (EB)	1003917	64	●			●				●	
Bryant St + #301 (WB)	1001776	G2	●		●	●				●	
W St + 4th St (EB)	1001745	G2	●		●	●				●	
4th St + W St (SB)	1001737	G2	●		●	●	●	●		●	●
4th St + V St (NB)	1001720	G2	●		●	●				●	
4th St + U St (SB)	1003840	G2	●		●	●				●	

Figure 19: Existing Transit Facilities

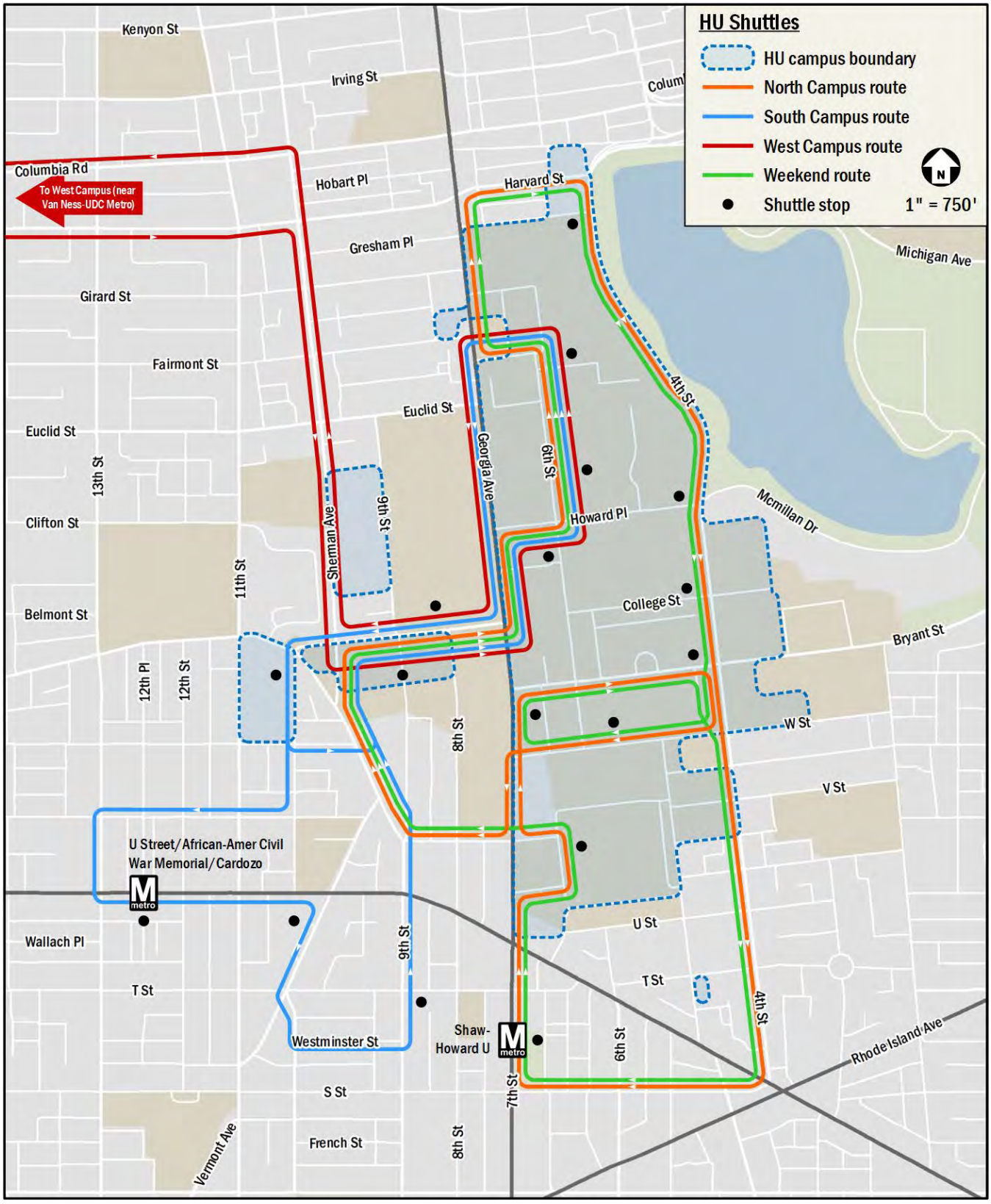

Figure 20: HU Shuttle Routes

Transportation Demand Management

Transportation Demand Management (TDM) is the application of policies and strategies used to reduce travel demand or redistribute demand to other times or spaces. TDM 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.

Howard University's last TDM plan was released in 2012, accompanying the zoning approvals of the 2011 Campus Plan. Since then, the University has made significant progress in increasing student and staff parking permit rates, reducing academic (non-hospital) parking supply, reducing overall academic parking demand, and reducing parking demand per student, as shown in Table 3. The proposed TDM plan for the 2020 Campus Plan is intended to build on these successes by continuing to reduce parking demand and improving the survey methodology that supports annual TDM assessments.

The 2012 TDM plan is included in the Technical Attachments of this report.

Annual TDM Assessments

Following the 2012 TDM plan, annual TDM assessments were produced in 2013, 2014, 2016 ,and 2019 by the Howard University Transportation Research Center. The goals of these assessments, as required by DDOT, are to measure TDM progress against targets and commit to increased TDM measures if targets are not met. The 2013, 2014, 2016, and 2019 annual TDM assessments are included in the Technical Attachments of this report.

The following section contains an analysis of TDM progress as reported in the annual assessments, noting some apparent data peculiarities and presenting recommendations to yield more useful trend data in future assessments.

On-street Parking Occupancy

Table 13 shows the peak occupancy of on-street parking on the campus and in surrounding neighborhoods in each of the years an assessment was conducted. According to the assessments, central campus overall on-street parking occupancy increased between 2013 and 2019, peaking at 90% in 2016 and falling to 82% in 2019. Overall on-street parking occupancy in surrounding neighborhoods similarly increased between 2013 and 2019, reaching 76% in 2019. On-street occupancy parking by non-residents (i.e. vehicles without a displayed Zone 1 parking permit) in surrounding neighborhoods fluctuated between 15% and 22% between 2013 and 2019.

Table 13: On-street Parking Peak Occupancy, 2013 – 2019

Location	Occupancy type	2013	2014	2016	2019
Central campus	Overall	65%	68%	90%	82%
Surrounding neighborhoods	Overall	64%	71%	67%	76%
	Non-resident	22%	15%	16%	21%

While the annual assessments distinguished between overall occupancy and occupancy by non-residents in surrounding neighborhoods, they did not distinguish between the various types of on-street parking in both the central campus and surrounding neighborhoods, including HU permit, time-limited (metered and unmetered), unrestricted, and RPP parking. Because the data is not separated in this manner, it is difficult to determine how much of the increase in overall on-street occupancy is attributable to the University as opposed to other parking demand generators in the area. As shown in Table 6, off-street parking peak occupancy in University lots has experienced the opposite trend, decreasing from 76% to 62% between 2011 and 2019 even as supply in those lots was reduced.

In order to better determine the effects of the University on on-street parking occupancy, this report recommends that on-street occupancy data in future TDM assessments distinguish between the various on-street parking types, as well as between overall and non-resident occupancy.

Drive-alone Rates

Each of the annual TDM assessments included responses to a survey question about preferred travel mode to the main campus. Table 14 shows the percentage of survey respondents whose response was driving alone, compared with the target cumulative drive-alone rates agreed to as part of the 2011 Campus Plan, which were of 18% by Phase II of the Campus Plan (2016) and 15% by Phase III of the Campus Plan (2021). Actual cumulative drive-alone rates as reported in the TDM assessments climbed from 35% in 2013 to 60% in 2014, and fell to 42% in 2019.

Table 14: Cumulative Drive-alone Rates, 2013 – 2019

2011 Campus Plan target		Actual			
2016	2021	2013	2014	2016	2019
18%	15%	35%	60%	58%	42%

In addition to the target cumulative drive-alone rates, the 2011 Campus Plan also agreed to target faculty and staff drive-alone rates of 50% each by Phase II of the Campus Plan (2016) and 40% each by Phase III of the Campus Plan (2021). However, the annual TDM assessments only reported cumulative rates.

The wide fluctuations in the reported drive-alone rates may be explained in part by the varying quantities and makeup of survey respondents from year to year. The total number of respondents each year ranged from 610 to 1,124, while the student/staff split of respondents ranged from 37%/63% to 65%/35%.

In order to better understand drive-alone rate trends among University staff and students, this report recommends that survey responses to all questions in future TDM assessments distinguish between staff, faculty, and student respondents. Even if the number of total respondents fluctuates from year to year, distinguishing between staff, faculty, and student responses will yield more useful trend data.

Survey Question Phrasing

This report recommends that in future TDM assessments, survey questions be phrased to minimize respondents' reliance on memory or estimation wherever possible. For example, it is recommended the question "How do you most frequently travel to campus?" be changed to "Which travel mode(s) did you use to get to campus today?". Limiting the scope of the question (tying it to "today" instead of "most frequently") reduces the possibility of the respondent making a potentially inaccurate estimation about their overall travel patterns.

Similarly, it is recommended that response options include concrete numbers instead of phrases open to interpretation. For example, the question "How frequently do you use HU shuttle buses?" has previously had separate response options of "multiple times a day" and "a few times a day". It is recommended these be changed to "1-2 times a day", "3-4 times a day", and so forth.

Finally, this report recommends that new transportation modes that have been introduced since the 2011 Campus Plan be included in travel mode survey questions, including ride-hailing, car-sharing, Capital Bikeshare, and dockless shared bikes and scooters.

Proposed TDM Plan

Following the structure of the 2012 TDM plan, this proposed TDM plan is categorized by Committed Actions (commitments the University agrees to as part of its zoning approvals) and Discretionary Actions (measures the University intends to implement as part of its own internal efforts).

Committed Actions

The University proposes to include the following Committed Actions in the updated TDM Plan:

- The University has already increased staff and student parking permit rates substantially since the 2011 Campus Plan. The University will continue to increase permit rates to help deter single-occupant driver parking and raise revenue for TDM programs.
- The University will unbundle tenant parking by raising the monthly visitor parking permit rate to $180. The University already charges non-University tenants for access to University parking facilities. However, to qualify as "unbundled" according to DDOT's CTR guidelines, tenant parking rates need to increase until they at least equal the lowest monthly rate offered by a commercial parking facility within one quarter-mile of the campus. Based on a recent survey of nearby parking rates, the lowest monthly rate is $180, compared to HU's current monthly rate of $160 for a visitor permit.
- The University will continue to invest in improving its shuttle services based on staff and student feedback, as well as in anticipation of new development projects that may alter traffic patterns and sources of demand for shuttle service. Further Processing for each building proposed in the Campus Plan will include a review of existing shuttle ridership patterns, whether the proposed building is expected to alter ridership patterns, and recommendations for improving shuttle service if applicable.
- The University will maintain existing bus routes and stops during any and all University construction events in order to avoid transit service disruptions for the University and surrounding communities. Further Processing for parcels abutting WMATA bus routes or stops (Parcels A, E, F, and J as shown on Figure 5) will include plans for maintaining bus service.
- The University will continue promoting transit commuting benefits for faculty and staff via WMATA's SmartBenefits program. Currently the maximum pre-tax allowed amount is $270/month for transit only, $104/month for parking only, and $374/month for transit and parking.
- The University will provide space for and fund an additional Capital Bikeshare station on the central campus. Based on the location of existing and planned stations, this CTR recommends somewhere on the southern part of campus near the new Howard University Hospital as a potential location. If this location is chosen, the University will fund the station as part of Further Processing for whichever of the hospital-related parcels (Parcels D, E, G, or H as shown on Figure 5) is developed first. If another location is chosen, the station will be funded as part of Further Processing for whichever of the Campus Plan proposed buildings (shown on Figure 5) is closest to the proposed station.
- The University will post a downloadable copy of the final TDM Plan on its website and in other University media.
- The University will continue designating a TDM Coordinator, who will implement, monitor, and market the TDM programs, provide personalized commuter counseling to help members of the HU population understand their options, and act as a point of contact with DDOT, goDCgo, and Zoning Enforcement.
- The University's Transportation Coordinator will develop, distribute, and market various transportation alternatives and options to employees and students, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on relevant websites and in any relevant internal newsletters, communications, or displays. These materials will contain sections oriented to different users, including faculty/staff, students, and visitors. Any students living on-campus will be provided with a packet of information upon or prior to moving-in. New faculty/staff hires will be provided with a similar packet of information. Further Processing for each building proposed in the Campus Plan will include a discussion of building-specific TDM marketing materials, if applicable.
- The University will prominently display links to commuter support websites on appropriate University webpages, including links to CommuterConnections.com, DDOT's Washington, DC Bicycle Map, Washington Walks, nearby bicycle vendors and service providers, goDCgo.com, and WMATA.
- The University will perform annual monitoring to understand student, faculty and staff mode choice in relation to TDM practices, parking pricing, and University transportation policies, and release annual monitoring reports containing this

information. The purpose of this monitoring is to make data-driven decisions about which TDM measures, if any, need to be adjusted to meet the primary TDM goal of ensuring that academic parking demand per student does not rise above its current level. The monitoring reports will include the recommended survey question modifications outlined in the above TDM Assessments section of this report. The monitoring will be used to inform future TDM- and parking-related decisions to further incentivize non-auto modes and minimize impacts by the University on the surrounding community. The monitoring reports will include the following:

  - Mode split surveys of the campus population, broken down by students and employees;
  - Current parking inventory and occupancy on a typical weekday;
  - Number of permits sold per year;
  - Parking availability on surrounding neighborhood streets;
  - Number of registered carpools;
  - Number of people enrolled in WMATA SmartBenefits; and
  - Inventory and occupancy of bicycle racks.

- The University will prepare an annual TDM and Parking report to be submitted to DDOT. These reports will focus first and foremost on documenting progress toward the TDM Plan performance targets that the University has agreed to. Further Processing for each building proposed in the Campus Plan will reference these reports, identifying trends and progress towards TDM goals and allowing these to inform parking and other transportation-related elements of the proposed buildings. The performance targets that the University has agreed to are as follows:
  - By the end of the 2020 Campus Plan (2030), the University sets a goal of ensuring that academic parking demand per student does not rise above its current level of 0.126 peak hour-occupied parking spaces per student. This will be the primary measure of success for the Campus Plan's five (5) transportation strategies, as this metric is the result of a direct measurement, not of surveys which may be susceptible to error. Achieving this goal will also help the University implement the Campus Plan, as reduced demand can lead to less parking supply being added to proposed buildings, reducing costs to the University. If parking demand per student increases, it will be seen as an indicator that more discretionary TDM measures are needed. A decrease in parking demand per student is an aspirational goal of the Campus Plan.
  - The University sets the following mode split goals for trips to campus by the end of the 2020 Campus Plan (2030), which are informed by A) *MoveDC*'s non-auto mode share goal for commute trips of 75%, B) the latest mode splits for both residents and employees in the campus's census Transportation Analysis Zone (TAZ), and C) the 2019 cumulative student/faculty/staff mode splits of 53% auto, 30% transit, 1% bike, and 16% walk for trips to campus. While the mode splits below are identified as aspirational goals, the primary measure of success for the TDM Plan is peak parking demand per student, as noted above. The mode split goals are as follows:
    - For students:
      - Drive alone: ≤ 40%
      - Carpool: ≥ 2%
      - Transit: ≥ 50%
      - Bike: ≥ 15%

        - Walk: ≥ 30%
    - For faculty/staff:
        - Drive alone: ≤ 20%
        - Carpool: ≥ 2%
        - Transit: ≥ 40%
        - Bike: ≥ 5%
        - Walk: ≥ 20%

- The University will develop formal "Alternative Work Schedule" guidelines, which will define opportunities for telecommuting as well as maintaining non-traditional weekly work schedules. The University's Transportation Coordinator will ensure that the TDM benefits of various policy options – reducing peak-hour travel and parking demand – are considered when developing and implementing these guidelines.
- The University will significantly expand the quantity and quality of bicycle parking facilities on campus, both at existing building sites and at the new University development sites identified in the Campus Plan. A more detailed discussion of proposed bicycle parking quantities and locations will be included in Further Processing for proposed buildings.
- The University will install an additional 20 bicycle parking spaces every year over the course of the Campus Plan and include a bicycle parking inventory with every annual TDM report. These spaces are intended to serve existing buildings that do not have sufficient bicycle parking and does not include parking spaces added as part of new buildings.
- As part of Further Processing for Parcel B or C (shown on Figure 5), whichever enters Further Processing first, the University will coordinate with DDOT to explore removing on-street parking spaces along 6th Street between Fairmont Street and Bryant Street to make room for multimodal improvements such as bike lanes, curb extensions, or bike/scooter parking corrals.

Discretionary Actions

The University proposes to include the following Discretionary Actions in the updated TDM Plan:

- The University will ensure that there is no net increase in parking supply resulting from the capital projects proposed in the Campus Plan. That is, any increased supply from new parking facilities will be offset by closures and removals of existing parking facilities. Further Processing for each proposed building in the Campus Plan will include an updated inventory of existing campus-wide parking supply and proposed parking facilities for the building.
- The University will explore installing on-street bike paths and bike/scooter parking facilities as made possible by reduced vehicular activity and removed parking supply in the campus core. The University will coordinate with DDOT on any such public space changes.
- The University will develop a bike parking map to direct bicyclists to existing and future bike parking facilities. Further Processing for each proposed building in the Campus Plan will include a commitment to display an up-to-date bike parking map in a prominent location within or outside the building.
- The University will create a dedicated webpage to identify and promote its transportation benefits and resources. For the purposes of this plan, this will be referred to as the future Transportation Services webpage when describing related TDM actions. This page will be the home for all information on:
    - Parking;

  - Transit;
  - Carpool and Vanpool;
  - TDM and Commuter Benefits;
  - TDM Survey results and reporting;
  - Transportation and parking maps;
  - Links to supportive programs;
  - Links to alternative mode services and vendors; and
  - Marketing materials.

- The University will explore the potential to utilize existing "Live Where You Work" programs to boost the proportion of faculty/staff and students living near campus. These programs provide low-interest mortgage loans or a cash payment to be applied at closing to those purchasing a home within a designated distance of where they work.
- As the Campus Plan is implemented, and most parking is provided within structured, access-controlled facilities, the University will explore gradually phasing out annual parking permits in favor of monthly permits and daily parking (including pay-per-use permits).
- The University will explore enrolling students in the WMATA U-Pass program.
- The University will explore strategies for reserving preferentially-located parking spaces for registered rideshare vehicles. This will require developing distinct parking permits for carpool and vanpool parking, including defining qualification criteria, and designating spaces at specific parking facilities.
- The University will explore implementing a bike repair and maintenance education program.
- As capital projects identified in the Campus Plan are developed, the University will seek to include changing and showering facilities where feasible and where concentrations of faculty and staff are expected.
- The University will implement physical improvements to the central campus's pedestrian network to improve the appeal, safety, and effectiveness of pedestrian circulation.
- The University will explore ways to promote and enhance micro-mobility services on campus, such as providing on-street bike and scooter parking corrals.
- During Further Processing for each of the proposed buildings in the Campus Plan, the University will consider building-specific TDM measures not mentioned in this report, e.g. specific TDM strategies for patients/visitors at the new hospital.

Relation to Campus Plan Transportation Strategies

There are several ways the above proposed TDM plan supports the overall transportation strategies identified in the Campus Plan. These are outlined in Table 15.