Government of the District of Columbia
Department of Transportation

d. Planning and Sustainability Division

MEMORANDUM

TO: Sara Bardin
Director, Office of Zoning

FROM: Anna Chamberlin, AICP
Associate Director

DATE: March 26, 2021

SUBJECT: ZC Case No. 20-08 – Howard University Campus Plan

APPLICATION

Howard University (the "Applicant") seeks approval for a new ten-year plan for the period of 2020 through 2030. The Campus Plan generally encompasses the central campus with Georgia Avenue NW and Howard Place to the west, Harvard Street to the north; 4th Street to the east; U and V Streets to the south; and Florida and Sherman Avenues to the east. The Campus Master Plan proposes an increase in building square footage, an increase in the student cap from 12,000 to 15,000 students and does not propose an increase to the existing amount of on-site vehicle parking.

SUMMARY OF DDOT REVIEW

The District Department of Transportation (DDOT) is committed to achieve an exceptional quality of life in the nation's capital by encouraging sustainable travel practices, safer streets, and outstanding access to goods and services. As one means to achieve this vision, DDOT works through the zoning process to ensure that impacts from new developments are manageable within and take advantage of the District's multimodal transportation network.

The purpose of DDOT's review is to assess the potential safety and capacity impacts of the proposed action on the District's transportation network and, as necessary, propose mitigations that are commensurate with the action. After an extensive review of the case materials submitted by the Applicant, DDOT finds:

Site Design

- There are currently approximately 9,689 students enrolled, including 5,291 on-campus residence hall beds, and approximately 2,533 full-time faculty and 374 staff members;

- The Applicant proposes a maximum enrollment of 15,000 students, including 5,941 on-campus residence hall beds, and an increase in non-hospital faculty and staff to 4,506;
- All development contemplated in the Campus Master Plan will take place on existing Howard University parcels;
- A new Howard University Hospital is proposed which will leave the existing hospital campus vacated and decommissioned, making the site available for future mixed-use development;
- Existing off-street academic parking supply is under capacity with 62% peak hour occupancy and the Hospital parking is generally at capacity with 87% peak hour occupancy;
- In order to maintain the current parking supply while increasing the number of students, staff, and faculty, the Applicant will need to implement a robust TDM Plan and Performance Monitoring Plan (PMP);
- No specific loading plan was included with the analysis as the Applicant is proposing to return to DDOT for design of all proposed new buildings through future Further Processing applications;
- DDOT does not support vehicle access off of 5th Street NW along the McMillan Reservoir as this road has several sight distance concerns due to its curvilinear nature;
- In addition to the bicycle parking to be included with the new buildings, the University will install 20 bicycle parking spaces every year over the course of the Campus Plan; and
- New bicycle and pedestrian infrastructure on campus will be provided, including new dedicated north-south and east-west passages, and at access points to encourage additional non-auto transportation.

Travel Assumptions

- The site is well connected to transit service with 10 bus routes, two (2) Metro Rail Stations, and a Campus shuttle service;
- The Applicant provided trip generation estimates using a combination of four methodologies (Academic Parking, Hospital Parking, Hospital Curbside, and Retail Trips), which DDOT finds acceptable;
- The proposed increase in students, staff, and faculty combined with the parking reallocation generates a net increase of 240 AM and 282 PM peak hour vehicle trips;
- Of the 1,960 non-hospital parking spaces, approximately 980 are staff/faculty lots and approximately 980 are student lots;
- There were few missing sidewalk links and crosswalks identified, though many sidewalks did not meet DDOT standard for a high-density residential, mixed-use environment;
- There are several bicycle facilities in the vicinity of campus on W Street, V, Street, and 11th Street, but the only main facility directly adjacent to the campus is along 4th/5th Street NW; and
- There is only one (1) bikeshare facility on campus. The Applicant is proposing to add a new station to the south as part of the proposed TDM package, but DDOT also recommends identifying a location near Banneker Park to accommodate at least three (3) bikeshares on campus.

Analysis

- Since the Campus Plan was approved in 2011, the Applicant has completed TDM assessments in 2013, 2014, 2016, and 2019, per Condition #19 of the Zoning Order for ZC 11-15;
- The Applicant should resume the performance monitoring program as outlined in the TDM package starting with the first semester following approval of the Campus Plan;
- The Applicant submitted a Comprehensive Transportation Review (CTR), dated December 11, 2020, outlining the parking changes, anticipated trip generation, TDM proposal, a performance monitoring proposal, and other aspects of the project;
- The Applicant utilized sound methodology to perform the impact analysis;
- The 2030 Total Future Recommendations and Mitigations Geometry and Operations Assumptions scenario included proposed changes around the New Howard University Hospital which included the conversion of portions of Bryant Street and W Street to two-way operations and two traffic signal modifications; and
- Any proposed roadway reconfiguration or signal modification will require further analysis, review, and approval by DDOT.

Mitigations

- The TDM plan included in the December 11, 2020 CTR and included as Attachments A and B within this report, along with detailed annual performance monitoring, is sufficiently robust to encourage non-auto travel. Without TDM mitigations, the action is expected to increase travel delay in several study area locations with impacts to operations at 10 intersections;
- The proposed non-auto infrastructure, will need upgraded as future buildings are constructed;
- TDM measures proposed will be sufficiently robust to support high non-auto mode splits and the vehicular trip generation goals. However, TDM measures are subject to reexamination annually in the context of ongoing performance monitoring;
- The Applicant has committed to vehicular parking caps for both the university and hospital. This will be measured annually, in a detailed performance monitoring report; and
- The addition of approximately 5,000 students on-site without an increase in the amount vehicle parking is consistent with DDOT's approach to infill development that is focused on generating foot traffic and supporting adjacent transit routes.

RECOMMENDATION

DDOT has no objection to the approval of this Campus Plan application with the following conditions:

- The Campus Plan establish a maximum number of parking spaces at 3,580 spaces (inclusive of the hospital) and maximum of 4,506 non-hospital staff and 15,000 total student enrollment.
- The Applicant implement the TDM Plan and Performance Monitoring Plan, for the life of the project unless otherwise stated, with the criteria and modeshare goals outlined in Attachments A and B of this report, and additions noted at the end of this report. Compliance will be measured annually as part of the detailed performance monitoring; and
- Prior to the draft Zoning Order of this application, DDOT requests the Applicant submit a clean document to DDOT for concurrence containing the modified TDM program, performance

monitoring criteria, and infrastructure commitments which will ultimately be included as conditions. DDOT may have additional feedback prior to concurring with that plan. Once a plan is agreed to, it should be included in the case record and ultimately in the Final Zoning Order.

CONTINUED COORDINATION

DDOT looks forward to coordinating with the Applicant in the public space permitting process as well as further CTR analyses. The Applicant is expected to work with DDOT further on the following elements:

- Any proposed public space improvements, including curb and gutter, street trees and landscaping, streetlights, sidewalks, and other features within the public rights of way, are expected to be designed and built to DDOT standards. Careful attention should be paid to pedestrian and bicycle connections along the site's perimeter and adjacent infrastructure;
- Coordinate with DDOT's Development Review team to scope a CTR or Transportation Statement for proposed new buildings, as they are evaluated through future Further Processing applications;
- Coordinate with DDOT's Capital Bikeshare team regarding installation of the two (2) stations on campus;
- Coordinate with DDOT's Active Transportation Group on any new proposed bicycle facilities;
- Coordinate with DDOT's Parking and Ground Transportation Division (PGTD) to streamline curbside uses as there are several different types of parking restrictions;
- Any proposed roadway reconfigurations or signal modifications will require further analysis, review, and approval by DDOT's Transportation Operations and Safety Division (TOSD) (i.e. converting one-way roads to two-way or vice versa); and
- Coordinate with DDOT's Transportation Demand Management (TDM) team and goDCgo regarding the implementation of the TDM and PMP programs. Submit future performance monitoring reports to TDM Team for review, concurrence, and adjustment.

TRANSPORTATION ANALYSIS

DDOT requires applicants requesting an action from the Zoning Commission complete a Comprehensive Transportation Review (CTR) in order to determine the action's impact on the overall transportation network. Accordingly, an applicant is expected to show the existing conditions for each transportation mode affected, the proposed impact on the respective network, and any proposed mitigations, along with the effects of the mitigations on other travel modes. A CTR should be performed according to DDOT direction. The Applicant and DDOT coordinated on an agreed-upon scope for the CTR that is consistent with the scale of the action.

Site Design

Site design, which includes site access, loading, and public realm design, plays a critical role in determining a proposed action's impact on the District's infrastructure. While transportation impacts can change over time, the site design will remain constant throughout the lifespan of the proposed development, making site design a critical aspect of DDOT's development review process. Accordingly,

new developments must provide a safe and welcoming pedestrian experience, enhance the public realm, and serve as positive additions to the community.

Site Access

The planned campus will continue to largely consist of public streets that connect the Site with a few private streets. The Site is accessible, via surrounding arterials, to several regional roadways such as Georgia Avenue NW and Florida Avenue NW. Most access points to campus will not be moved or adjusted, however, as new buildings are constructed, including the new Howard University Hospital, new curb cuts and access points to specific buildings will be added along public roadways.

Additional pedestrian and bicyclist connections are proposed to and through the campus as new buildings are constructed, improving overall accessibility compared to existing conditions. Overall, the project lays out its access points and internal roads in a manner that improves connectivity for drivers, bicyclists, and pedestrians. Figure 1 shows the Campus Plan location.

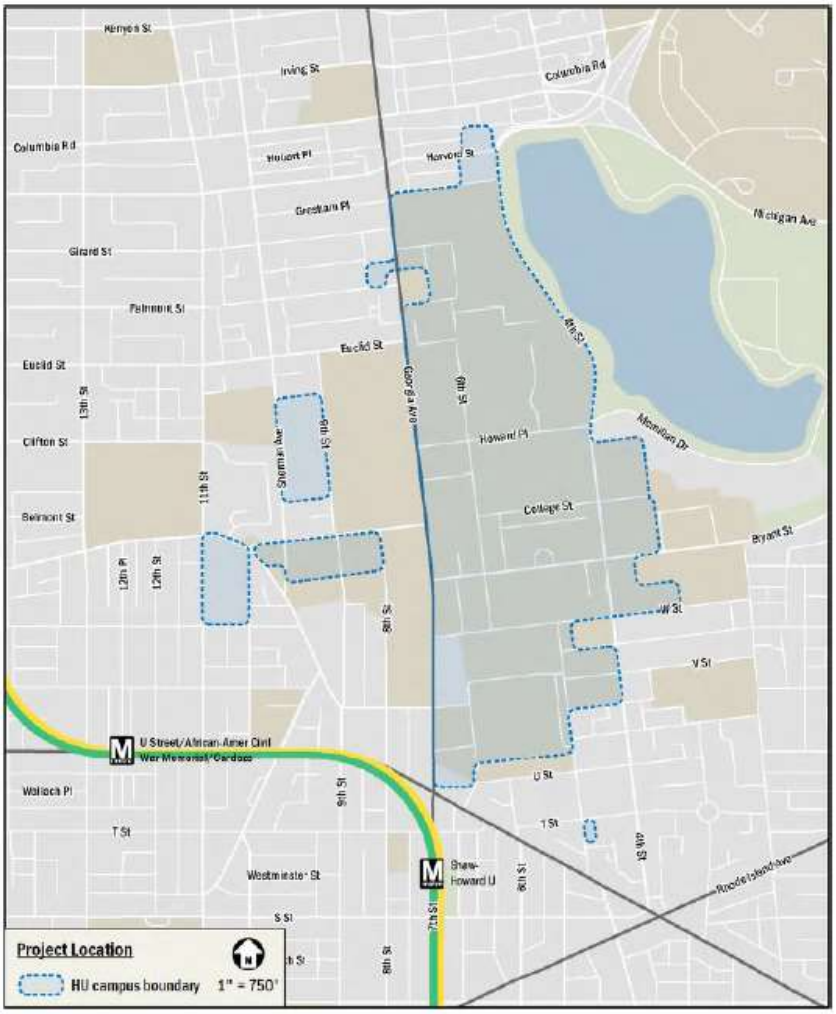


Figure 1. Project Location (Source: Gorove Slade, December 2020 CTR, Table Figure 1)

Loading

DDOT's practice is to accommodate vehicle loading in a safe and efficient manner, while at the same time preserving safety across non-vehicle modes and limiting any hindrance to traffic operations. For new developments, DDOT requires that loading take place in private space and that no back-up maneuvers occur in the public realm.

No specific loading plan was included with the analysis as the Applicant is proposing to return to DDOT for review and analysis of all proposed new buildings through future Further Processing applications to be reviewed by the Zoning Commission. Any future loading should be considered holistically and located on private space with no back-up maneuvers through public space. DDOT encourages the Applicant to combine facilities where possible to minimize conflicts.

Figure 2 outlines proposed locations of loading and vehicle access. DDOT does not support access off of 5th Street NW and 4th Street NW along the McMillan Reservoir as this road has several sight distance concerns. Currently the plan proposes potential parking and loading access 5th Street NW at buildings B and C and DDOT recommends the Applicant propose access internally, such as along Howard Place NW.

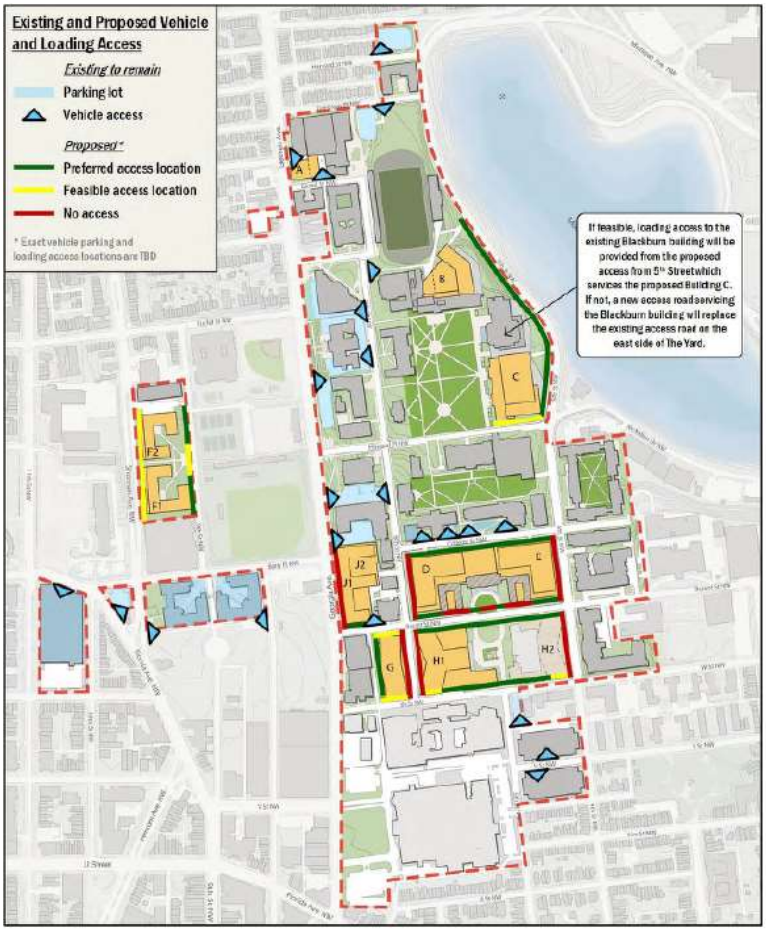
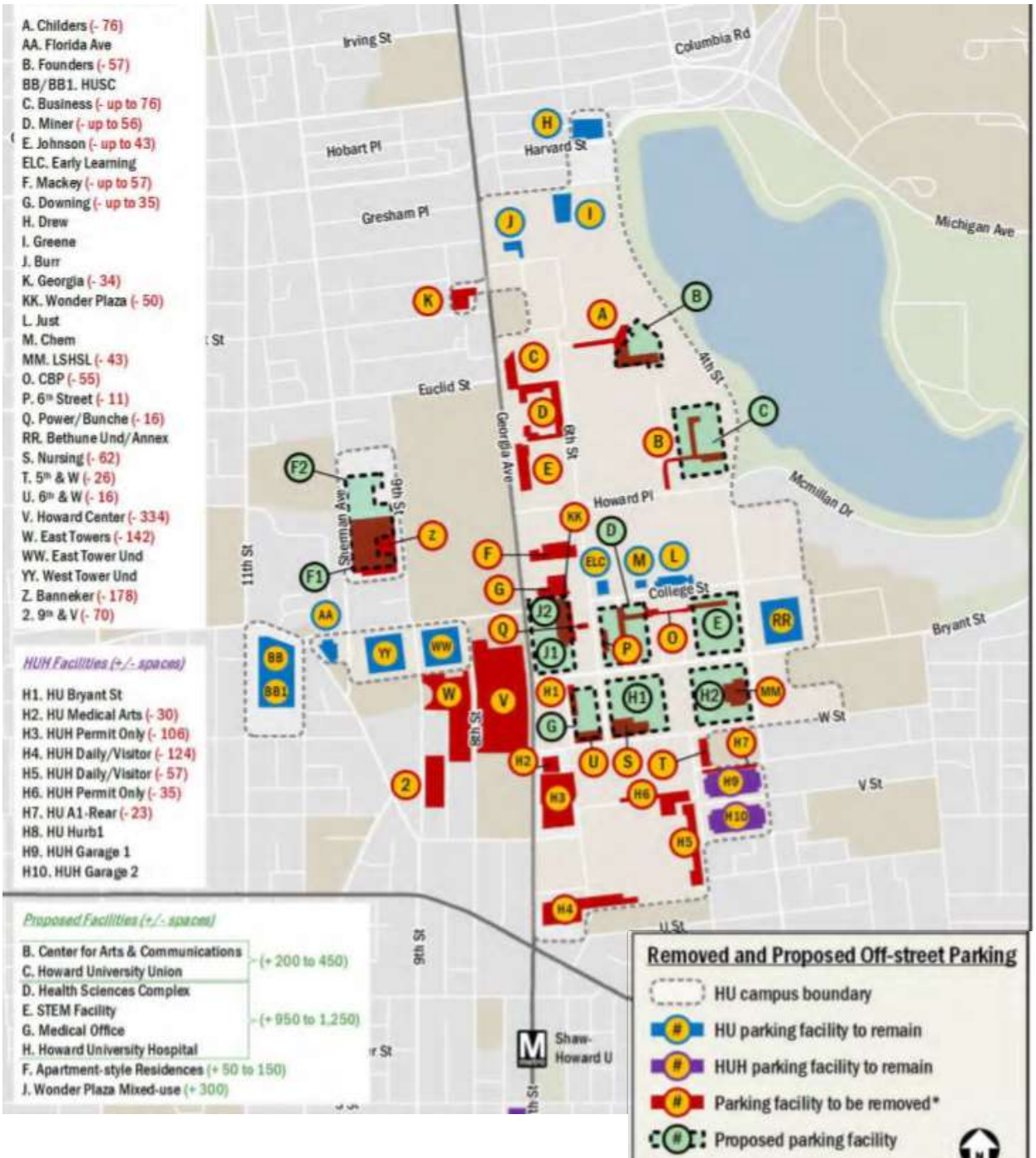


Figure 2. Existing and Proposed Vehicle and Loading Access (Source: Gorove Slade, December 2020 CTR, Table Figure 21)

Vehicular Parking

There are currently 1,960 non-hospital vehicle spaces on campus totaling 3,580 spaces with the hospital. The Campus Plan proposes to reallocate the parking around campus, but does not propose increasing parking supply. This Campus Plan shall set a maximum of 3,580 total parking spaces on campus (inclusive of the hospital) and the Applicant should work with DDOT in intervening years between Campus Plans to develop a plan for reduced parking over time. At the time of the next Campus Plan update, the maximum should be re-evaluated and reduced as appropriate. Of the 1,960 non-hospital spaces, approximately 980 are staff/faculty lots and approximately 980 are student lots. The 2011 Campus Plan (ZC 11-15) included a goal of reducing academic parking demand to 1,400 spaces, which the University achieved in 2017 with a demand of 1,225 spaces. The student parking demand also saw a reduction from 0.158 spaces per student in 2011 to 0.126 spaces per student in 2019. These reductions were in large part based on increasing parking costs for vehicle parking as shown in Figures 3 and 4.



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 4. Supply and Peak Hour Occupancy of HU Academic and Hospital Lots, 2011-2019 (Source: Gorove/Slade, December 2020 CTR, Table 6)

Bicycle Parking

The District is committed to enhancing bicycle access by ensuring consistent investment in bicycle infrastructure by both the public and private sectors. DDOT expects the Campus to serve the needs of all trips they generate, including bicycling trips.

The University is proposing to expand the number of bicycle parking facilities on campus, both at existing building sites and at the new University development sites identified in the Campus Plan. Like loading, the Applicant is proposing to return to DDOT for review and analysis of all proposed new buildings as part of the Zoning Commission Further Processing process, which will include bicycle parking. The Applicant will be expected to meet all short-term and long-term bicycle parking requirements per ZR16 Subtitle C § 802.1, as well as showers and lockers for employee commuters.

In addition to the additional bicycle parking to be included with the new 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 and does not include parking spaces added as part of new buildings.

Streetscape and Public Realm

In line with District policy and practice, any substantial new building development or renovation is expected to rehabilitate streetscape infrastructure between the curb and the property lines. This includes curb and gutters, street trees and landscaping, streetlights, sidewalks, and other appropriate features within the public rights of way bordering the site.

The Applicant must work closely with DDOT and the Office of Planning (OP) to ensure that the design of the public realm meets current standards and will substantially upgrade the appearance and functionality of the streetscape for public users needing to access the property or circulate around it. In conjunction with Titles 11, 12A, and 24 of the DCMR, DDOT's most recent version of the *Design and Engineering Manual (DEM)* and the *Public Realm Design Manual* will serve as the main public realm references for the Applicant. Public space designs will be reviewed in further detail during the public space permitting process. DDOT staff will be available to provide additional guidance during these processes and encourages the Applicant to participate in a Preliminary Design Review Meeting (PDRM) to address design related comments provided by DDOT and OP.

As new buildings are proposed, the Applicant will be required to rehabilitate the streetscape to DDOT standards. In areas with narrow sidewalks, the Applicant will be required to accommodate the DDOT standard. The location of utility vaults. DDOT expects vaults to be located on private property.

DDOT's standard is to minimize the number of curb cuts when possible and to locate curb cuts on the roadway with the lowest volume of vehicular traffic. Thus, DDOT would not expect new curb cuts proposed on Georgia Avenue or 5th and 4th Streets NW due to sight distance concerns.

The Applicant should also provide added bicycle and pedestrian infrastructure on campus, including new dedicated north-south and east-west passages and at access points to encourage additional non-auto transportation and porosity through campus.

Heritage Trees

Heritage Trees are defined as a tree with a circumference of 100 inches or more and are protected by the Tree Canopy Protection Amendment Act of 2016. With approval by the Mayor and DDOT's Urban Forestry Division (UFD), Heritage Trees might be permitted to be relocated. As such, the Applicant may be required to redesign the site plan in order to preserve the Non-Hazardous Heritage Trees. Special Trees are defined as being between 44 inches and 99.99 inches in circumference. Special trees may be removed with a permit. However, if a Special Tree is designated to remain by UFD, protection is necessary. UFD generally does not support the removal of healthy street trees. A proposed change to street trees as a result of the Campus Plan or related new buildings requires coordination with UFD.

Travel Assumptions

The purpose of the CTR is to inform DDOT's review of a proposed action's impacts on the District's transportation network. To that end, selecting reasonable and defensible travel assumptions is critical to developing a realistic analysis.

Trip Generation

Each trip a person makes is made by a certain means of travel, such as vehicle, bicycle, walking, and transit. The means of travel is referred to as a 'mode' of transportation. A variety of elements impact the mode of travel, including density of development, diversity of land use, design of the public realm, proximity to transit options, availability and cost of vehicle parking, among many others.

The Applicant applied several methodologies to identify trip generation because a college campus does not necessarily adhere to the traditional building/land-use based ideology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation, 10th Edition. In order to more holistically capture the proposed enrollment increase and parking reconfiguration, the Applicant provided trip generation estimates using four methodologies:

- **Academic Parking** - Trips generated by academic parking facilities are calculated by shifting trips from removed parking facilities to proposed parking facilities, while also accounting for population growth This methodology mirrors the process used in the 2011 Campus Plan Transportation Report.
- **Hospital Parking** - Trips generated by hospital parking facilities are calculated by shifting trips from removed parking facilities to proposed parking facilities, except without the population growth factor included in academic parking trips.
- **Hospital Curbside** - Trips generated by hospital curbside activity are calculated by simply moving all existing curbside activity from the existing hospital location to the proposed hospital location.
- **Retail Trips** - Trips generated by retail facilities are calculated using traditional ITE trip generation methodology.

Both the hospital and academic trip generation methodologies are based on estimates of the rate of trips generated per occupied parking space. The rates were then applied to the new proposed parking

facilities. The curbside hospital trip generation was generated using video data from every hospital entrance and applying those observations to the new proposed hospital location.

The only land use to utilize ITE trip methodology is retail which utilized census data provided by the Census Transportation Planning Products (CTPP) program at the Transportation Analysis Zone (TAZ) level for employees and the WMATA Ridership Survey. Figure 5 below presents the summaries of mode split assumptions. The mode split assumptions were then applied to the retail square footage to calculate retail trips.

Land Use	Mode			
	Drive	Transit	Bike	Walk
Retail	35%	15%	5%	45%

Figure 5. Retail Mode Split Assumptions (Source: Gorove Slade, December 2020 CTR, Table 16)

Figure 6 below summarizes the trip generation for all four methodologies. The increase in students, staff, and faculty combined with the parking reallocation generates a net increase of 240 AM and 282 PM peak hour trips. The proposed Campus Plan is expected to generate a significant number of vehicle trips during the peak hours even though it is not proposing additional vehicle parking.

Trip Type	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)		
	In	Out	Total	In	Out	Total
Existing trips removed from removed lots	-452	-216	-668	-186	-515	-701
Existing trips relocated to remaining lots	87	14	101	14	101	115
Existing trips relocated to proposed garages	366	202	568	172	414	586
New trips bound for proposed garages	202	33	235	33	236	269
Curbside trips removed from old hospital	-37	-37	-74	-42	-42	-84
Curbside trips added to new hospital	37	37	74	42	42	84
Existing Wonder Plaza retail trips to be removed	-10	-6	-16	-32	-35	-67
New Wonder Plaza retail trips to be added	12	8	20	38	42	80
Net new trips generated by Campus Plan	**205**	**35**	**240**	**39**	**243**	**282**

Figure 6. Vehicular Trip Generation for Campus Plan (Source: Gorove Slade, December 2020 CTR, Table 17)

Pedestrian Facilities

The District of Columbia is committed to enhance the pedestrian accessibility by ensuring consistent investment in pedestrian infrastructure on the part of both the public and private sectors. As such, DDOT requested the Applicant provide an inventory of the current pedestrian network conditions surrounding the site and a circulation analysis internal to the campus.

The Applicant's inventory of the pedestrian infrastructure in the vicinity of the campus, as shown in Figure 7, is fairly connected both within the campus and connected to public infrastructure. The planned extensions of W Street and Bryant Street between Florida Avenue and Georgia Avenue will further improve pedestrian connectivity, breaking down existing large blocks. The pedestrian network between Campus and both U Street/African-American Civil War Memorial/Cordoza and Shaw-Howard University Metrorail Stations. There were few missing sidewalk links and crosswalks identified, though many

sidewalks did not meet the DDOT standard for a high-density residential, mixed-use environment. There are several unsignalized crossings along Georgia Avenue and in some cases missing crosswalks. There are also missing crosswalks and curb ramps along the section of Florida Avenue between 9th Street and 10th Street.

The 2020-2030 Campus Plan proposes removing a significant amount of the surface parking in the area which will improve the pedestrian landscape, and where new buildings are constructed, will improve the pedestrian experience.

As part of the development of the old Howard University Hospital site and other parcels recently extracted from the campus boundary, the Campus should work 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.

Figure 7. Existing Pedestrian Facilities (Source: Gorove Slade, December 2020 CTR, Figure 15)

Bicycle Facilities

The District is committed to enhancing bicycle accessibility by ensuring consistent investment in bicycle infrastructure on the part of both the public and private sectors. DDOT expects new developments to serve the needs of all trips they generate, including bicycling trips. Bicycling is expected to be an important mode of transportation for this development.

As shown in Figure 8, there are several bicycle facilities in the vicinity of campus on W Street, V, Street, and 11th Street, but the only main facility directly adjacent to the campus is along 4th/5th Street NW. In order to improve bicycle connectivity the Applicant is proposing the following:

- Explore on-street bike paths and facilities within the Campus boundary;
- Develop a bike parking map to direct bicyclists to existing and future bike parking facilities;
- 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; and
- The University will explore ways to promote and enhance micro-mobility services on campus, such as providing on-street bike and scooter parking corrals.

There is only one (1) bikeshare facility on campus. The Applicant is proposing to add a new station to the south as part of the proposed TDM package, but DDOT also recommends identifying a location near Banneker Park to accommodate three bikeshares on campus.

Figure 8. Existing Bicycle Facilities (Source: Gorove Slade, December 2020 CTR, Figure 17)

Transit Service

The District and Washington Metropolitan Area Transit Authority (WMATA) have partnered to provide extensive public transit service in the District of Columbia. DDOT's vision is to leverage this investment to increase the share of non-automotive travel modes so that economic development opportunities increase with minimal infrastructure investment.

The site is located approximately 0.7 miles, roughly a 14 minute walk, from the U Street and Shaw-Howard University Metrorail stations which are served by the Green and Yellow Lines. Trains serve the Metrorail station every 8 minutes during weekday peak hours, 15 minutes during weekday non-peak times, and 15 minutes on weekends. There are 10 bus routes along Georgia Avenue NW, 11th Street NW, Sherman Avenue NW, 4th Street NW, Irving Street NW, Harvard Street NW, U Street NW, and Florida Avenue NW. The University also has four existing shuttle service routes that run Monday through Friday and one on weekends.

Curbside Management

Figure 10 shows the existing on-street parking around the campus. There is a mix of parking options that will likely change as new buildings are constructed. DDOT will work with the Applicant during Further Processing and public space permitting to ensure that the appropriate signage and parking restrictions are implemented.

Figure 9. On-Street Parking Types (Source: Gorove Slade, December 2020 CTR, Figure 8)

Traffic Impact Analysis (TIA)

To determine the proposed development's impacts on the transportation network, the Applicant completed a Traffic Impact Analysis (TIA) as a component of the larger CTR which includes an extensive analysis of 1) existing conditions (2019 Existing), 2) future with no development (2030 Background), 3) future conditions with development (2030 Future), 4) future conditions with the development, development-related recommendations, and mitigations (2030 Total Future with Recommendations and Mitigations), and 5) future conditions with the development and the old HUH site development (2035 Total Future) scenarios.

Background Developments and Regional Growth

As part of the analysis of future conditions, DDOT requires applicants to account for future growth in traffic on the network or what is referred to as background growth. The Applicant coordinated with DDOT on the appropriate background developments to include in the analysis. Traffic from seven (7) specific future development projects, the Lower Georgia Avenue Transportation and Streetscape Improvements project, and recommended roadway modifications at the new Howard University Hospital were taken into account as a background projects anticipated to be constructed and open by 2030.

DDOT requires Applicants account for regional growth through the build-out year of 2030. This can be done by assuming a general growth rate or by evaluating growth patterns forecast in MWCOG's regional travel demand model. The Applicant coordinated with DDOT on an appropriate measure to account for regional growth that accurately accounted for background growth on the network. Annually compounding background regional growth rates of between 0.10% and 0.50% were assumed in the study area, differing based on roadway and peak hour.

DDOT also requires applicants to consider future changes to the roadway network. In coordination with DDOT staff it was determined that volumes are expected to reroute due to the planned extensions of Bryant Street and W Street between Georgia Avenue and Florida Avenue before 2030.

The Campus Plan is also proposing changes around the New Howard University Hospital which are proposed in the 2030 Total Future Recommendations and Mitigations Geometry and Operations Assumptions scenario:

- The conversion of Bryant Street between Georgia Avenue and 4th Street to two-way operations;
- The conversion of W Street between Georgia Avenue and 4th Street to two-way operations; and
- The modification of traffic signals at Georgia Avenue and Bryant Street, and Georgia Avenue and W Street, to accommodate two-way traffic on Bryant Street and W Street.

Study Area and Data Collection

The Applicant in conjunction with DDOT identified 30 existing intersections where detailed capacity analysis would be performed. These intersections are adjacent to the site and include intersections radially outward from the site with the greatest potential to see impacts in vehicle delay. DDOT acknowledges that not all affected intersections are included in the study area and there will be

intersections outside of the study area which would realize new trips. However, DDOT expects minimal to no increase in delay outside the study area as a result of the proposed action.

The intersection traffic volumes were collected on Wednesday, October 23, 2019 and Thursday, October 24, 2019 from 6:30 AM-9:30 AM and 4:00 PM-7:00 PM while District of Columbia Public Schools and Congress were in session.

Trip Distribution and Assignment

The Applicant assumed the trips related to each of the proposed four trip-generation methodologies. The Campus Plan-generated inbound and outbound trips were distributed through the study area intersections. Trip distribution for the Campus Plan-generated trips was determined using the home ZIP codes from Howard University's 2019 Travel Demand Market Survey. DDOT is in agreement with the methodology and results of the trip distribution used in the analysis.

Roadway Capacity and Operations

DDOT aims to provide a safe and efficient roadway network that provides for the timely movement of people, goods and services. As part of the evaluation of travel demand generated by the site, DDOT requests analysis of traffic conditions for the agreed upon study intersections for the current year and after growth occurs or any transportation changes.

The roadway capacity analysis provided in the CTR demonstrated that 10 of the 30 study intersections would have an approach that degrades from Level of Service (LOS) D or better to LOS E or worse due to the addition of site generated traffic:

- Georgia Avenue & Harvard Street, NW
- Harvard Street & 5th Street, NW
- Georgia Avenue & Barry Place, NW
- 4th Street & College Street, NW
- Georgia Avenue & Bryant Street, NW
- 4th Street & Bryant Street, NW
- Georgia Avenue & W Street, NW
- 4th Street & W Street, NW
- Georgia Avenue & V Street/HU Hospital, NW
- Georgia Avenue/7th Street & Florida Avenue, NW

At some of these locations, the site generated trips exacerbate existing failing conditions. Additionally, some queuing at additional intersections saw impacts. The Applicant has proposed mitigations including signal adjustments, directional lane changes, parking removal. DDOT does not typically adjust signal timings with an individual development project because most traffic signals are in coordinated networks and would impact other signals upstream and downstream. Instead, DDOT retimes corridors throughout the district on a 4-5 year rotating basis and at that time, the future signal timing adjustments will

capture traffic associated with the new development. Additionally, any proposed roadway reconfiguration will require further processing, analysis, support, and review by DDOT. Based on these significant impacts, the Applicant has agreed to performance targets that require trip reductions that would be realized due to a comprehensive TDM program.

Mitigations

DDOT requires the Applicant to mitigate the impacts of the development in order to positively contribute to the District's transportation network. The mitigations must sufficiently diminish the action's vehicle impact and promote non-auto travel modes. This can be done through Transportation Demand Management (TDM), physical improvements, operations, and performance monitoring.

DDOT preference is to mitigate vehicle traffic impacts first through establishing an optimal site design and operations to support efficient site circulation. When these efforts alone cannot properly mitigate an action's impact, a reduction in parking and implementation of TDM measures may be necessary to manage travel behavior to minimize impact. Only when these other options are exhausted will DDOT consider capacity-increasing changes to the transportation network because such changes often have detrimental impacts on non-auto travel and are often contrary to the District's multi-modal transportation goals.

The following analysis is a review of the Applicant's proposed mitigations and a description of DDOT's suggested conditions for inclusion in the Zoning Order:

Transportation Demand Management (TDM)

As part of all land development cases, DDOT requires the Applicant to produce a comprehensive TDM plan to help mitigate an action's transportation impacts. TDM is a set of strategies, programs, services, and physical elements that influence travel behavior by mode, frequency, time, route, or trip length in order to help achieve highly efficient and sustainable use of transportation facilities. In the District, this typically means implementing infrastructure or programs to maximize the use of mass transit, bicycle and pedestrian facilities, and reduce single occupancy vehicle trips during peak periods. The Applicant's proposed TDM measures play a role in achieving the desired and expected mode split.

The specific elements within the TDM plan vary depending on the land uses, site context, proximity to transit, scale of the development, and other factors. The TDM plan must help achieve the assumed trip generation rates to ensure that an action's impacts will be properly mitigated. Failure to provide a robust TDM plan could lead to unanticipated additional vehicle trips that could negatively impact the District's transportation network.

The Applicant has prepared a draft TDM included as Attachments A and B in this document. DDOT finds the proposed TDM plan to be sufficiently robust for this project if implemented in conjunction with the following elements:

- The performance monitoring shall track progress against the vehicular parking cap as well as for mode splits, parking, and TDM expenditures and effectiveness:
    - Include both survey information and vehicular parking information; and
    - Agree to update the TDM plan as needed if performance targets are not met;

- Continue to prohibit freshmen residents from parking vehicles on campus, with exceptions for those students who need a car for medical purposes or are in the Reserve Officers' Training Corps;
- Coordinate with DDOT and WMATA to improve, pay for, and install Bus Shelter improvements across campus during further processing for any new building or if the TDM is found to be insufficient;
- Measures to be considered and implemented, as necessary:
    - Offer new carpool incentives and rideshare matching services to campus commuters through Commuter Connections, and/or other service providers;
    - Increase Campus Shuttle frequency during peak periods to every 10 minutes, if demand is present;
    - Expand Campus Shuttle to provide rides seven days a week and operate at least 30 minutes before/after Metro opens/closes, if demand is present;
    - Offer discounted Capital Bikeshare memberships to students;
    - Increase employee participation in pre-tax transit benefits;
    - Fund and install Transit Screens in additional student common areas;
    - Provide additional carshare spaces in easily accessible locations on campus;
    - Increase parking permit fees over the increases required pursuant to paragraph (b) of this condition;
    - Impose limitations on the number of parking permits issued;
    - Target access restrictions to commuter parking; and
    - Introduce new or increase existing financial incentives for alternative mode options.
- The Applicant will fund and install two (2) new 19-dock Capital Bikeshare stations on campus with one-year of maintenance and operations expenses. DDOT will work with the Applicant on the final location of the new stations during permitting. If it is located on private property, the Applicant will enter into a Memorandum of Agreement with DDOT to ensure public access to the station and bicycles. The bikeshare stations must be installed with the H1 or C structures or by the terminus of the Campus Plan
    - In addition to the proposed Bikeshare facility to the south of campus, work with DDOT to identify another location near Banneker Pool and Maury Wills Field for another bikeshare station to be installed by DDOT, the University, or another entity.

AC:kb

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.

Table 15: How TDM Proposals Support Campus Plan Transportation Strategies

Campus Plan Transportation Strategy	How TDM Proposals Support the Strategy
1. Ensure these is no net increase in parking supply.	The proposed TDM plan will reduce demand of single-occupant vehicles to and from campus, which will reduce pressure on parking supply. The plan includes committed actions of A) increasing parking rates, B) unbundling tenant parking, and C) monitoring and reporting parking occupancy that will support this strategy.
2. Improve pedestrian conditions and connectivity.	The proposed TDM plan includes a discretionary action to implement physical improvements to the campus's pedestrian network.
3. Increase multimodal access and facilities in the campus core.	The proposed TDM plan includes committed actions to A) fund and provide space for a new Capital Bikeshare station on campus, and B) expand bicycle parking, as well as discretionary actions to A) develop a bike parking map, B) add changing and showering facilities for bicycle commuters, and C) explore ways to improve multimodal services on campus, including on-street bike/scooter parking corrals.
4. Provide safe, efficient access to the new Howard University Hospital.	N/A
5. Be a good transportation neighbor.	The proposed TDM plan will reduce demand of single-occupant vehicles to and from campus, which will reduce the traffic and parking impacts of the campus.

- 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.

TDM Performance Monitoring

This CTR recommends conducting annual TDM surveys which will inform annual TDM monitoring. These surveys and assessments should follow the recommended survey question modifications outlined earlier in the TDM chapter of this report. 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.

Recommendations for Further Processing

This CTR recommends the following actions be taken during Further Processing for each of the proposed buildings in the Campus Plan.

Parcel A: Burr Intercollegiate Athletic Center

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- A detailed review of pedestrian, bicycle, and transit facilities along Georgia Avenue adjacent to the parcel;
- Details on the building's proposed loading operations; and
- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments.

Have the project explore upgrading the sidewalks adjoining the site along Georgia Avenue and Girard Street, which currently do not meet DDOT width requirements. The project should also explore improving the existing WMATA bus stop at Georgia Avenue and Gresham Place, just north of the parcel, which currently does not have all recommended bus stop amenities.

Parcel B: Center for Arts & Communications

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- An updated inventory of existing campus-wide parking supply and proposed parking facilities for the building, including bicycle parking;
- A potential analysis of parking access to ensure safe and efficient operations on HU and public streets, to be scoped with DDOT at the time of Further Processing;
- An examination of potential mitigations at the following intersections with movements or approaches that operate at unacceptable conditions, which are partially attributable to the addition of parking facilities at this parcel:
    - Georgia Avenue and Harvard Street NW (minor signal timing adjustments)
    - Harvard Street and 5th Street NW (minor signal timing adjustments)
- Details on the building's proposed loading operations; and

- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments.

Parcel C: Howard Student Union

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- An updated inventory of existing campus-wide parking supply and proposed parking facilities for the building, including bicycle parking;
- A potential analysis of parking access to ensure safe and efficient operations on HU and public streets, to be scoped with DDOT at the time of Further Processing;
- An examination of potential mitigations at the following intersections with movements or approaches that operate at unacceptable conditions, which are partially attributable to the addition of parking facilities at this parcel:
    - Georgia Avenue and Harvard Street NW (minor signal timing adjustments)
    - Harvard Street and 5th Street NW (minor signal timing adjustments)
- Details on the building's proposed loading operations; and
- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments.

Parcel D: Health Sciences Complex

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- A detailed review of pedestrian, bicycle, and transit facilities along 6th Street adjacent to the parcel;
- An updated inventory of existing campus-wide parking supply and proposed parking facilities for the building, including bicycle parking;
- A potential analysis of parking access to ensure safe and efficient operations on HU and public streets, to be scoped with DDOT at the time of Further Processing;
- An examination of potential mitigations at the following intersections with movements or approaches that operate at unacceptable conditions, which are partially attributable to the addition of parking facilities at this parcel:
    - 4th Street and College Street NW (minor signal timing adjustments)
    - 4th Street and Bryant Street NW (converting Bryant Street from one-way to two-way, converting on-street parking into a 75-foot eastbound right-turn lane, minor signal adjustments)
    - Georgia Avenue and W Street NW (converting W Street from one-way to two-way, minor signal timing adjustments)
    - 4th Street and W Street NW (converting W Street from one-way to two-way)
    - Georgia Avenue and V Street/HU Hospital NW (minor signal timing adjustments)
    - Georgia Avenue/7th Street and Florida Avenue NW (minor signal timing adjustments)
- Details on the building's proposed loading operations; and
- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments.

Have the project explore upgrading the sidewalks adjoining the site along 6th Street and College Street, which currently do not meet DDOT width requirements. The project should also explore upgrading the curb ramps adjoining the parcel at 6th Street and College Street, and 6th Street and Bryant Street, which do not comply with ADA standards.

Parcel E: STEM Facility

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- An updated inventory of existing campus-wide parking supply and proposed parking facilities for the building, including bicycle parking;
- A potential analysis of parking access to ensure safe and efficient operations on HU and public streets, to be scoped with DDOT at the time of Further Processing;
- An examination of potential mitigations at the following intersections with movements or approaches that operate at unacceptable conditions, which are partially attributable to the addition of parking facilities at this parcel:
    - 4th Street and College Street NW (minor signal timing adjustments)
    - 4th Street and Bryant Street NW (converting Bryant Street from one-way to two-way, converting on-street parking into a 75-foot eastbound right-turn lane, minor signal adjustments)
    - Georgia Avenue and W Street NW (converting W Street from one-way to two-way, minor signal timing adjustments)
    - 4th Street and W Street NW (converting W Street from one-way to two-way)
    - Georgia Avenue and V Street/HU Hospital NW (minor signal timing adjustments)
    - Georgia Avenue/7th Street and Florida Avenue NW (minor signal timing adjustments)
- Details on the building's proposed loading operations; and
- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments.

Have the project explore upgrading the sidewalks adjoining the site along 4th Street and College Street, which currently do not meet DDOT width requirements.

Parcel F: Apartment-style Residences

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- An updated inventory of existing campus-wide parking supply and proposed parking facilities for the building, including bicycle parking;
- A potential analysis of parking access to ensure safe and efficient operations on HU and public streets, to be scoped with DDOT at the time of Further Processing;
- Details on the building's proposed loading operations; and
- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments, which for this facility may include TDM strategies specifically targeted for students living on campus.

Have the project explore upgrading the sidewalks adjoining the site along 9th Street, which currently do not meet DDOT width requirements. The project should also consider installing a pedestrian path between the buildings that connects Sherman Avenue and 9th Street.

Parcel G: Medical Office

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- A detailed review of pedestrian, bicycle, and transit facilities along 6th Street adjacent to the parcel;
- An updated inventory of existing campus-wide parking supply and proposed parking facilities for the building, including bicycle parking;

- A potential analysis of parking access to ensure safe and efficient operations on HU and public streets, to be scoped with DDOT at the time of Further Processing;
- An examination of potential mitigations at the following intersections with movements or approaches that operate at unacceptable conditions, which are partially attributable to the addition of parking facilities at this parcel:
    - 4th Street and College Street NW (minor signal timing adjustments)
    - 4th Street and Bryant Street NW (converting Bryant Street from one-way to two-way, converting on-street parking into a 75-foot eastbound right-turn lane, minor signal adjustments)
    - Georgia Avenue and W Street NW (converting W Street from one-way to two-way, minor signal timing adjustments)
    - 4th Street and W Street NW (converting W Street from one-way to two-way)
    - Georgia Avenue and V Street/HU Hospital NW (minor signal timing adjustments)
    - Georgia Avenue/7th Street and Florida Avenue NW (minor signal timing adjustments)
- Details on the building's proposed loading operations; and
- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments, which for this facility may include TDM strategies specifically targeted for medical staff.

Have the project explore upgrading the sidewalks adjoining the site along 6th Street and Bryant Street, which currently do not meet DDOT width requirements.

Parcel H: Howard University Hospital

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- A detailed review of pedestrian, bicycle, and transit facilities along 6th Street adjacent to the parcel;
- An updated inventory of existing campus-wide parking supply and proposed parking facilities for the building, including bicycle parking;
- A potential analysis of parking access to ensure safe and efficient operations on HU and public streets, to be scoped with DDOT at the time of Further Processing;
- An examination of potential mitigations at the following intersections with movements or approaches that operate at unacceptable conditions, which are partially attributable to the addition of parking facilities at this parcel:
    - 4th Street and College Street NW (minor signal timing adjustments)
    - 4th Street and Bryant Street NW (converting Bryant Street from one-way to two-way, converting on-street parking into a 75-foot eastbound right-turn lane, minor signal adjustments)
    - Georgia Avenue and W Street NW (converting W Street from one-way to two-way, minor signal timing adjustments)
    - 4th Street and W Street NW (converting W Street from one-way to two-way)
    - Georgia Avenue and V Street/HU Hospital NW (minor signal timing adjustments)
    - Georgia Avenue/7th Street and Florida Avenue NW (minor signal timing adjustments)
- Details on the building's proposed loading operations; and
- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments, which for this facility may include TDM strategies specifically targeted for medical staff and hospital patients and visitors.

Have the project explore upgrading the sidewalks adjoining the site along 6th Street, Bryant Street, and W Street, which currently do not meet DDOT width requirements. The site plan should also explore upgrading the curb ramp adjoining the parcel at 6th Street and College Street, which does not comply with ADA standards.

Parcel J: Wonder Plaza Mixed-Use

Prepare a Comprehensive Transportation Review or Transportation Statement as required by DDOT, including:

- A detailed review of pedestrian, bicycle, and transit facilities along Georgia Avenue adjacent to the parcel;
- An updated inventory of existing campus-wide parking supply and proposed parking facilities for the building, including bicycle parking;
- A potential analysis of parking access to ensure safe and efficient operations on HU and public streets, to be scoped with DDOT at the time of Further Processing;
- An examination of potential mitigations at the following intersections with movements or approaches that operate at unacceptable conditions, which are partially attributable to the addition of parking facilities at this parcel:
    - Georgia Avenue and Barry Place NW (converting on-street parking into a 100-foot eastbound right-turn lane, minor signal timing adjustments)
    - Georgia Avenue and Bryant Street NW (converting Bryant Street from one-way to two-way, minor signal adjustments)
    - Georgia Avenue/7th Street and Florida Avenue NW (minor signal timing adjustments)
- Details on the building's proposed loading operations; and
- Any building-specific TDM measures that may be applicable or advisable in meeting the University's overall TDM commitments, which for this facility may include TDM strategies specifically targeted for students living on campus and retail patrons.

Have the project explore upgrading the sidewalks adjoining the site along Georgia Avenue and Bryant Street, which currently do not meet DDOT width requirements. The project should also explore improving the existing WMATA bus stop at Georgia Avenue and Barry Place adjoining the parcel, which currently does not have all recommended bus stop amenities.