

Figure 2: Average Parking Occupancy for a Typical Weekday at 1 pm on Campus

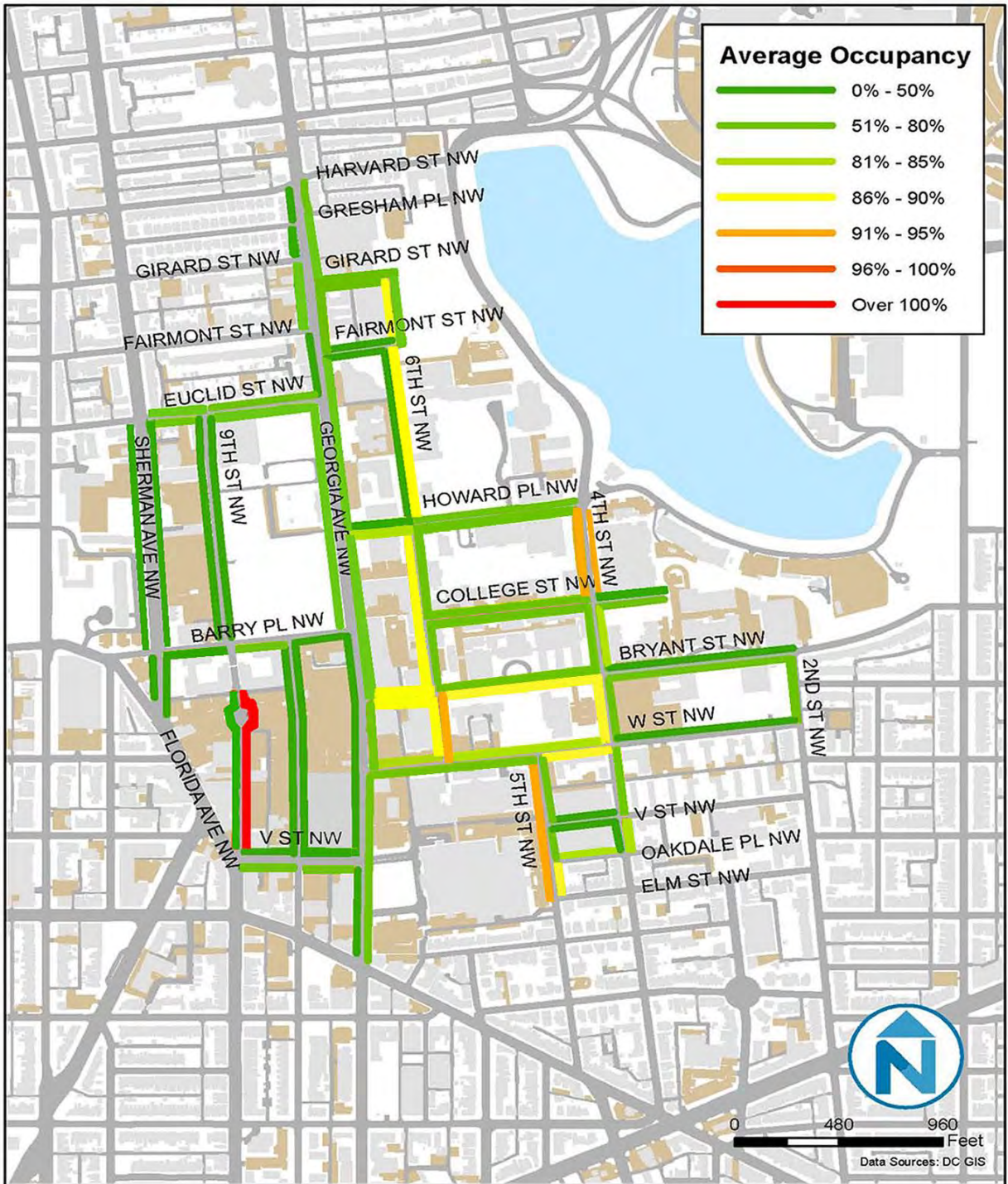


Figure 3: Average Parking Occupancy for a Typical Weekday at 3 pm on Campus

This survey effort also provided an opportunity to assess any campus-based impacts on parking availability within surrounding neighborhoods. Most of the blocks in these areas are managed through the District's residential parking permit program, which provides permits to local residents and restricts parking by non-permit-holders to one or two hours (two, in the case of Howard-area neighborhoods). To assess the impact of campus parking demand on these streets, occupancy surveys were conducted on most blocks within campus-adjacent neighborhoods. These surveys distinguished overall occupancy, as well as occupancy by non-residents (vehicles without a displayed Zone 1 Permit).

The following maps provide a summary weekday occupancy percentages on Campus-adjacent, residential streets observed during surveys conducted at 11:00 AM, 1:00 PM, and 3:00 PM.

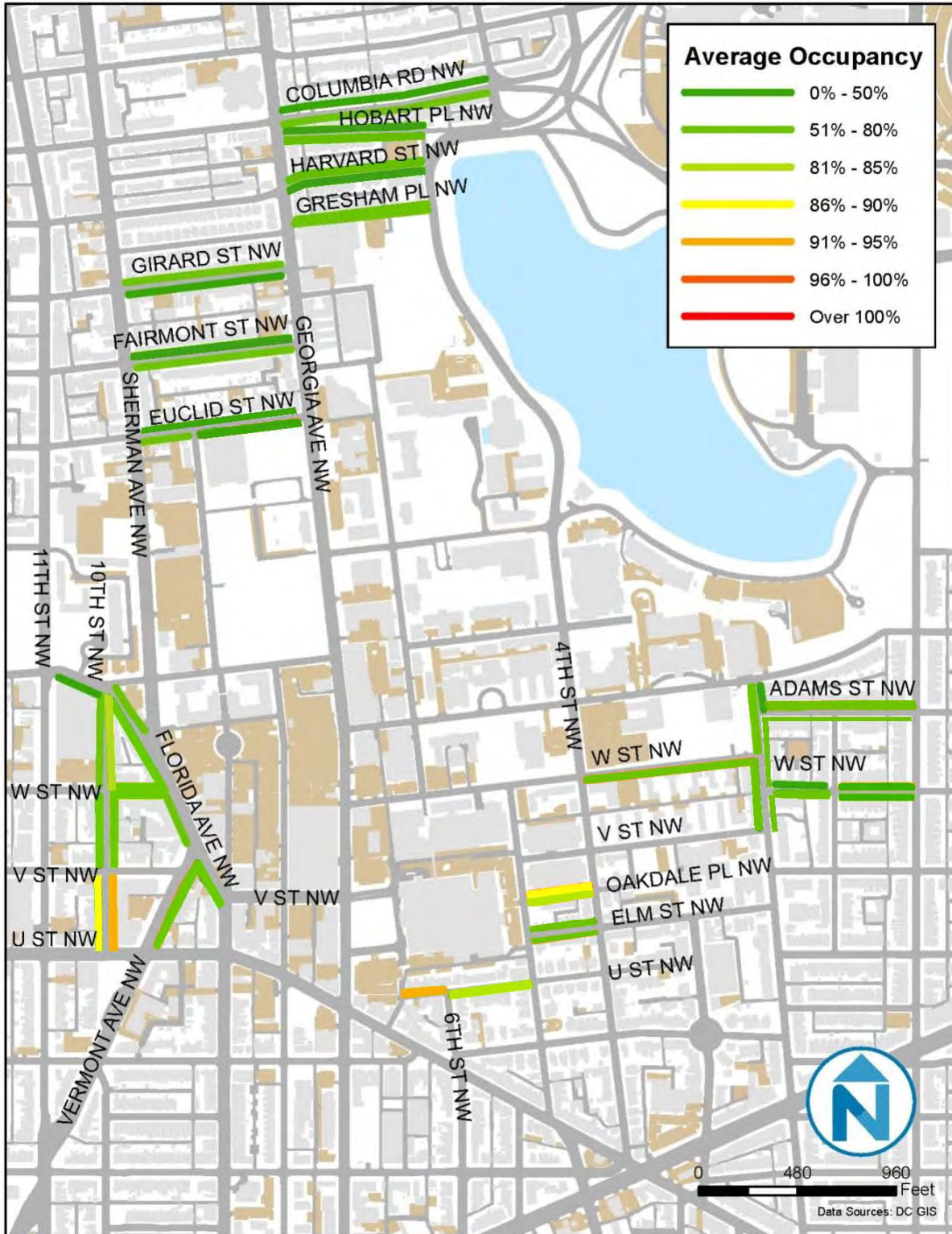


Figure 4: Average Parking Occupancy for a Typical Weekday at 11 am in surrounding neighborhood

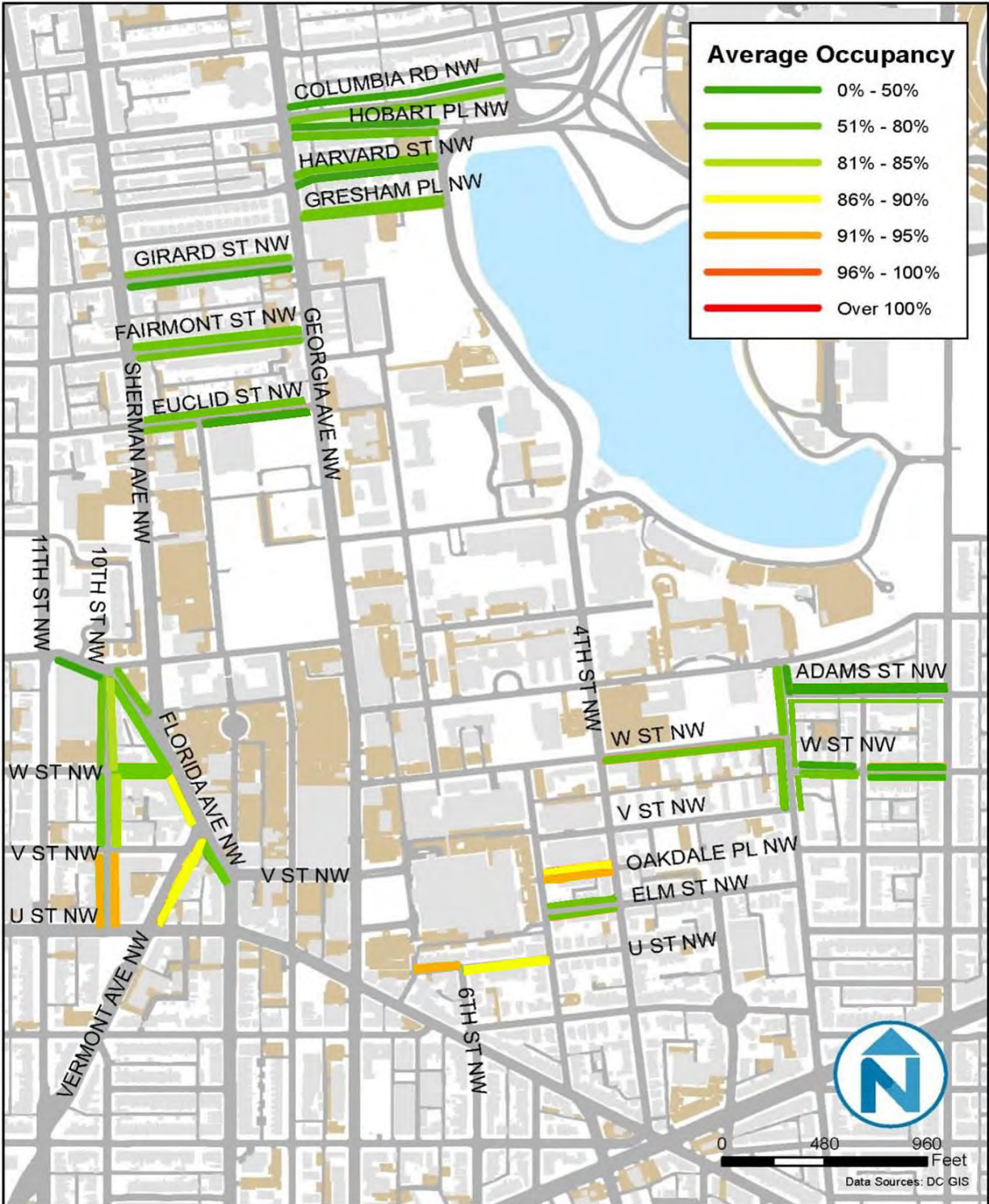


Figure 5: Average Parking Occupancy for a Typical Weekday at 1 pm in surrounding neighborhood

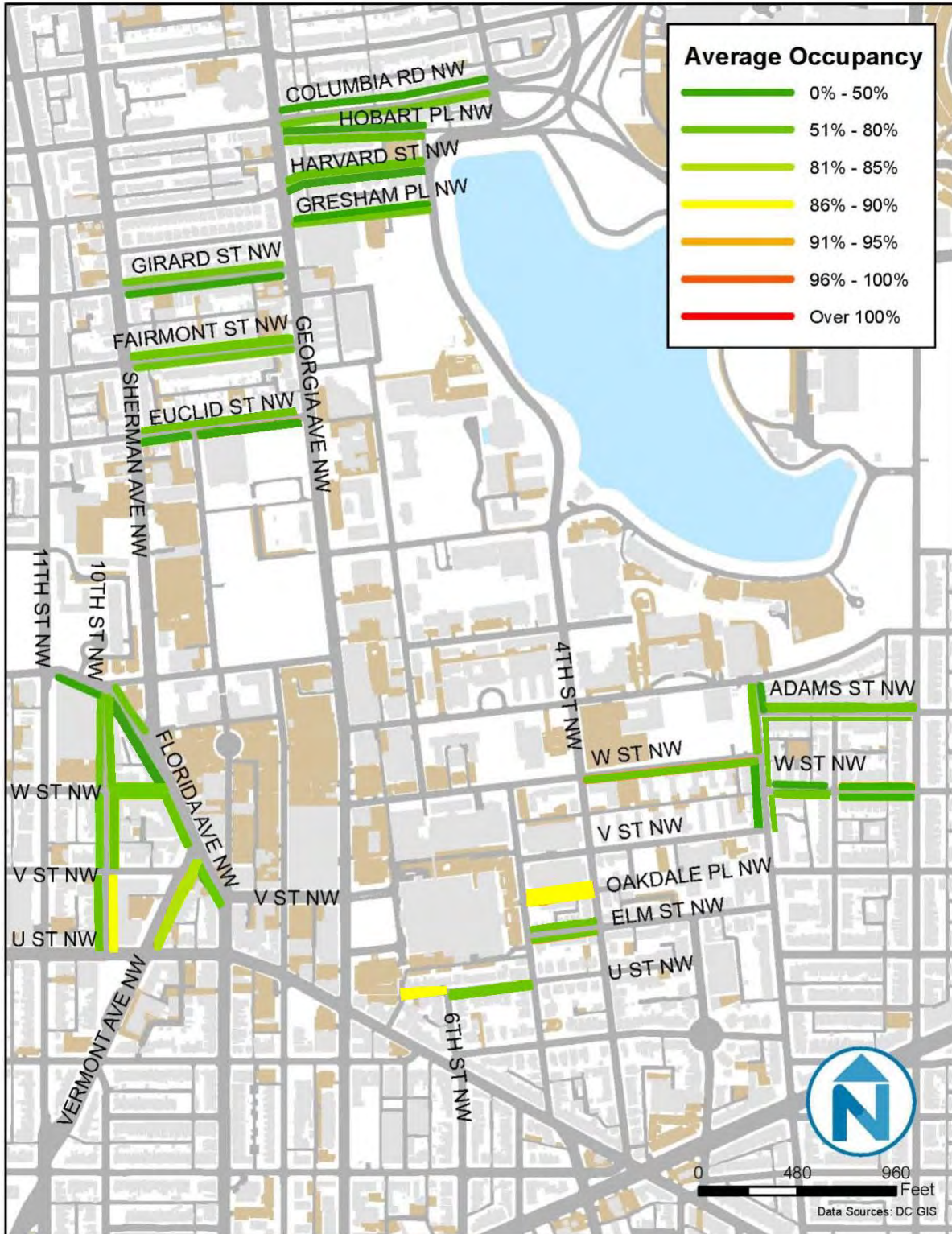


Figure 6: Average Parking Occupancy for a Typical Weekday at 3 pm in the surrounding neighborhood

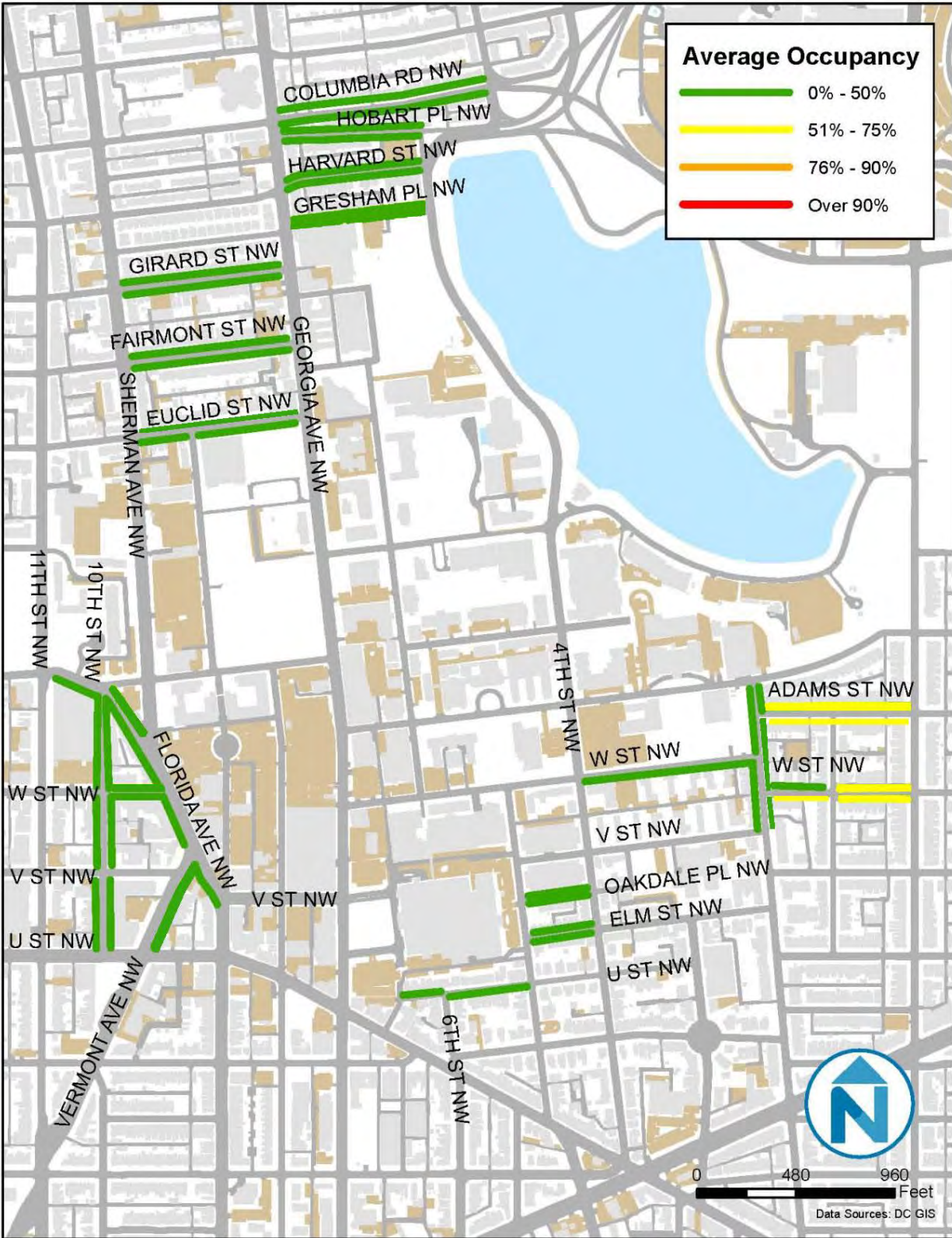


Figure 7: Average Parking Occupancy for a Typical Weekday at 11 am for Non-Residents in surrounding Neighborhood

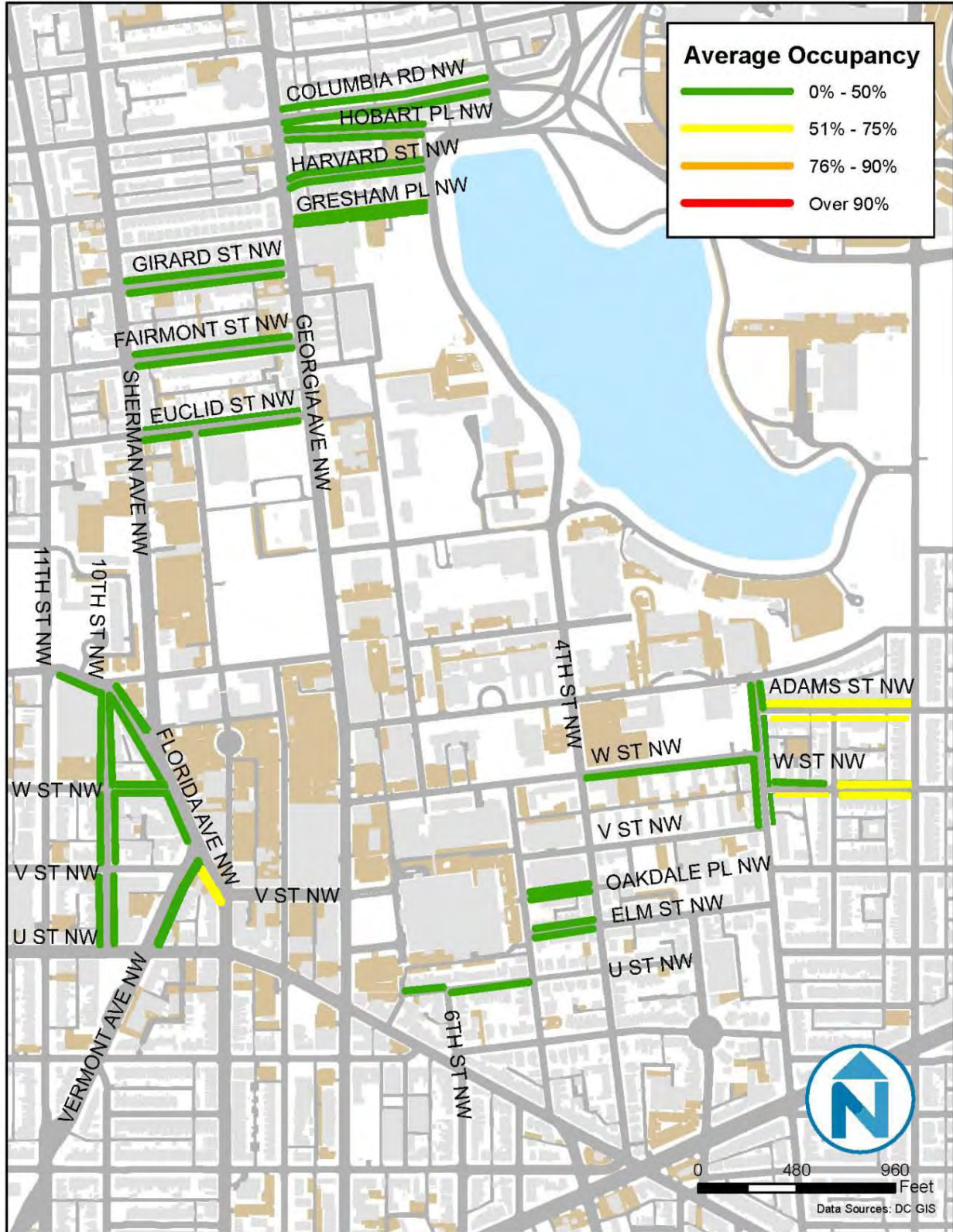


Figure 8: Average Parking Occupancy for a Typical Weekday at 1 pm for Non-Residents in surrounding neighborhood

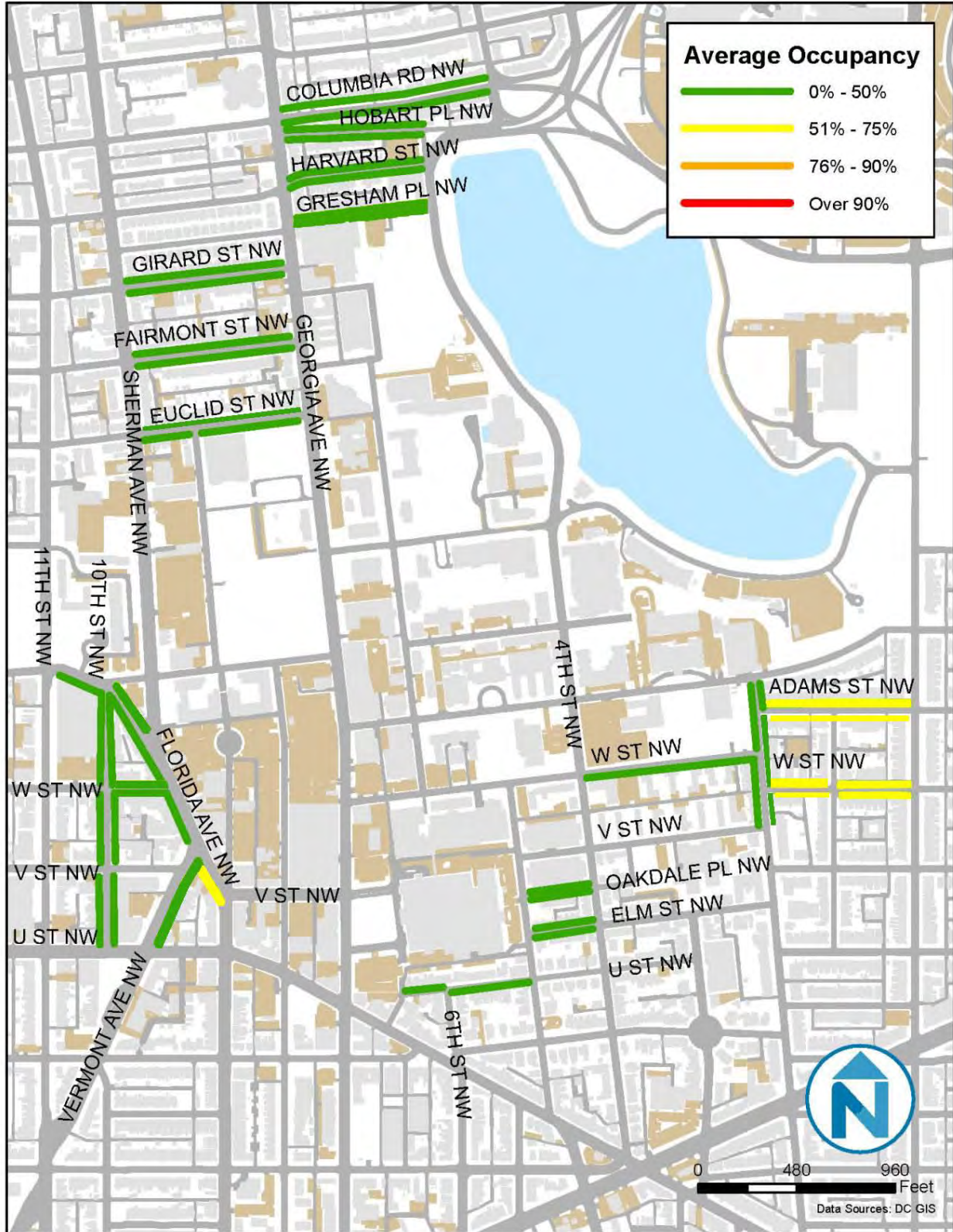


Figure 9: Average Parking Occupancy for a Typical Weekday at 3 pm for Non-Residents in surrounding neighborhood

3 SUMMARY OF SURVEY RESULTS

To assess current mode split conditions of student, faculty, and staff members at the Central Campus, an online survey was conducted. This survey included questions designed to gain a comprehensive understanding of the current modal choices and the preferences and perspectives underlying those choices. A total of 1,124 students, faculty and staff responded to the survey. Figure 7 provides a breakdown of the number of surveys completed by members of each of these groups.

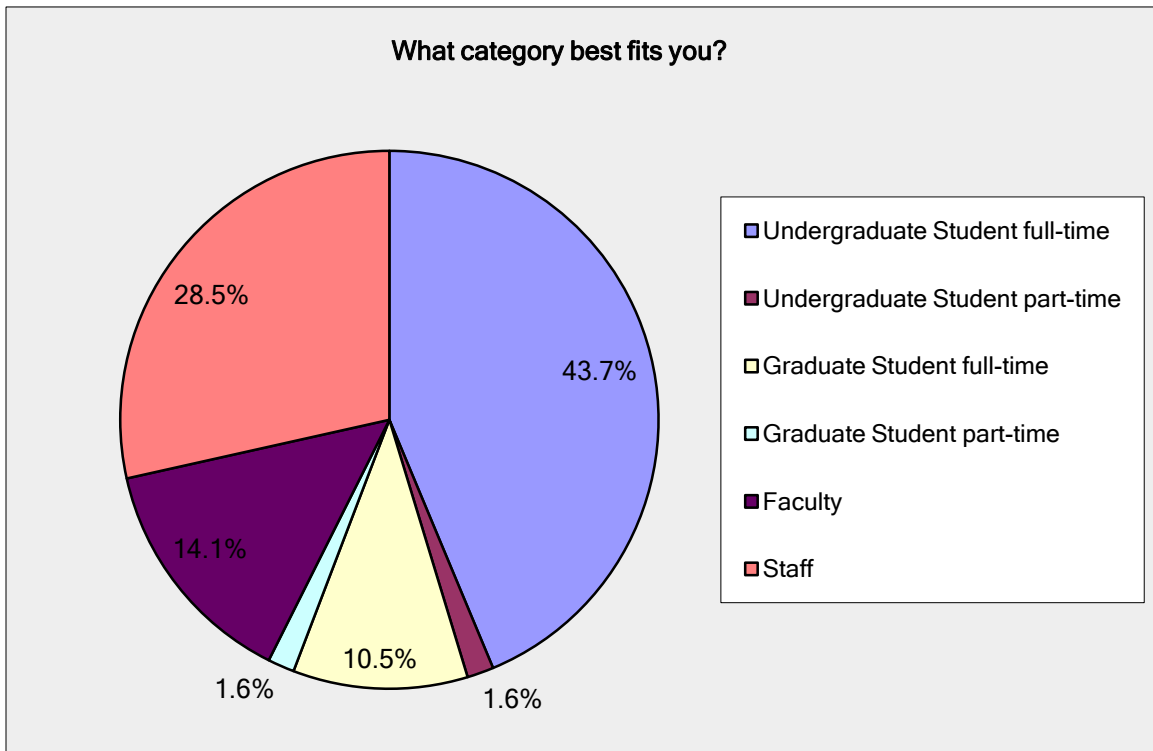


Figure 7: Breakdown of those who participated in the Survey

The following provides a summary of the responses to the questions posed to the members of the Howard University Community.

3.1 General: Number of Trips to Central Campus

The respondents were asked about how many trips they make to the Central Campus in a typical week. A trip is defined as travel from home or other origin to the Central Campus and includes starting at an on-campus dormitory to another on-campus

building. This trip excludes trips made once the person arrived on campus. The summary of the results is presented in Figure 8. From the results, approximately 39% of the respondents travel to campus more than 5 times a week.

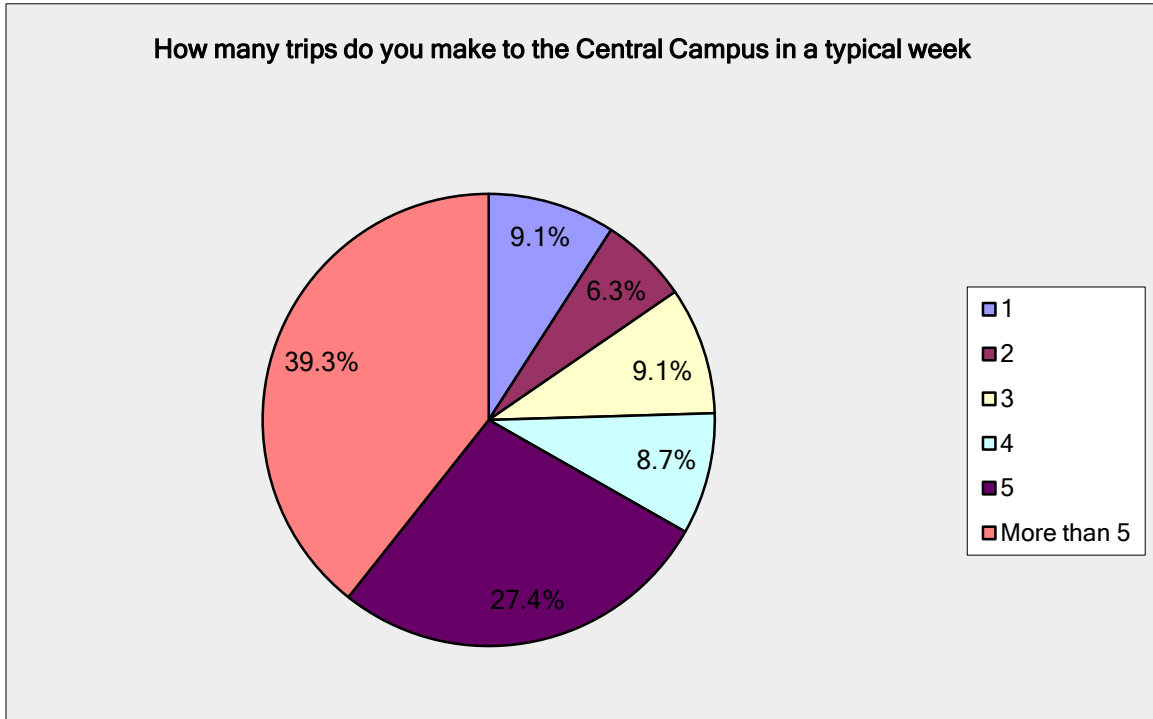


Figure 8: Number of Trips Made to the Central Campus per Week

3.2 Mode of Travel to Central Campus

The summary of the responses obtained for mode of travel to the Central Campus are summarized in Table 1 and Figure 9. From the results, approximately 35% of the members of the university community travel to Campus alone in their private vehicles while 21% use the HU Shuttle Bus. Less than 1% of the respondents take travel to Campus using a combination of the Metrorail with the MARC, UTC shuttle and VRE.

Table 1: Mode of Travel to Central Campus

Options	Response Percent
HU Shuttle Bus	26.3%
Other Transit Bus (Metrorail, DC Circulator, etc.)	3.2%
Metrorail	9.3%
Private Vehicle (alone)	34.5%
Private Vehicle (as passenger)	2.2%
Private Vehicle (with passenger/s)	3.0%
Bike	0.3%
Walking	21.0%
Motorcycle/ Scooter	0.2%

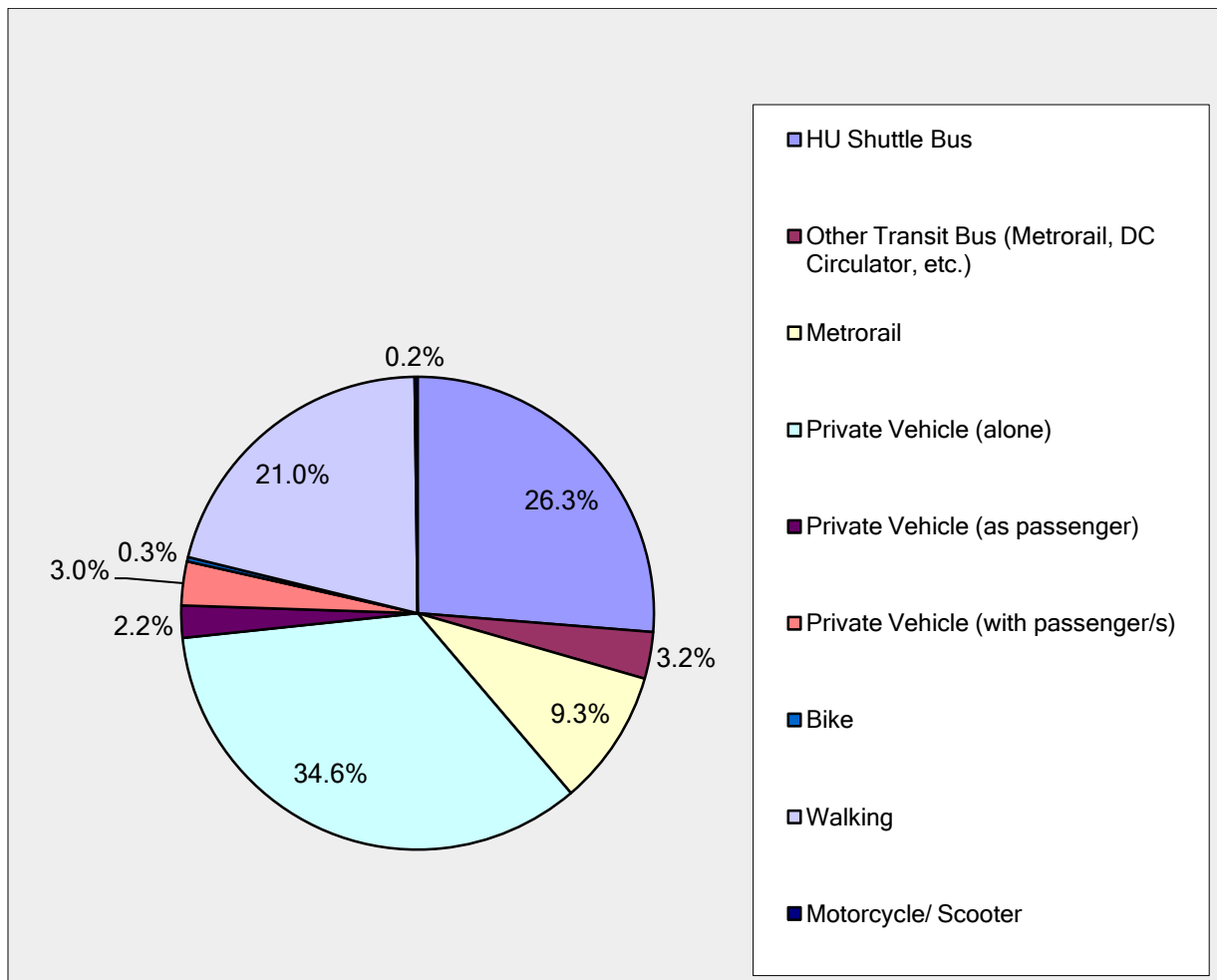


Figure 9: Modal Splits for travel to the Central Campus

3.3 Issues for those who Walk to Central Campus

For those who walk to campus, the survey sought to identify any problems associated with their mode of travel. The summary of the results are presented in Table 2 and Figure 10.

Table 2: Problems with Walking to Central Campus

Options	Response Percent
Cost of housing within walking distance of campus	30.4%
Distance to campus	49.0%
Physically difficult	20.6%

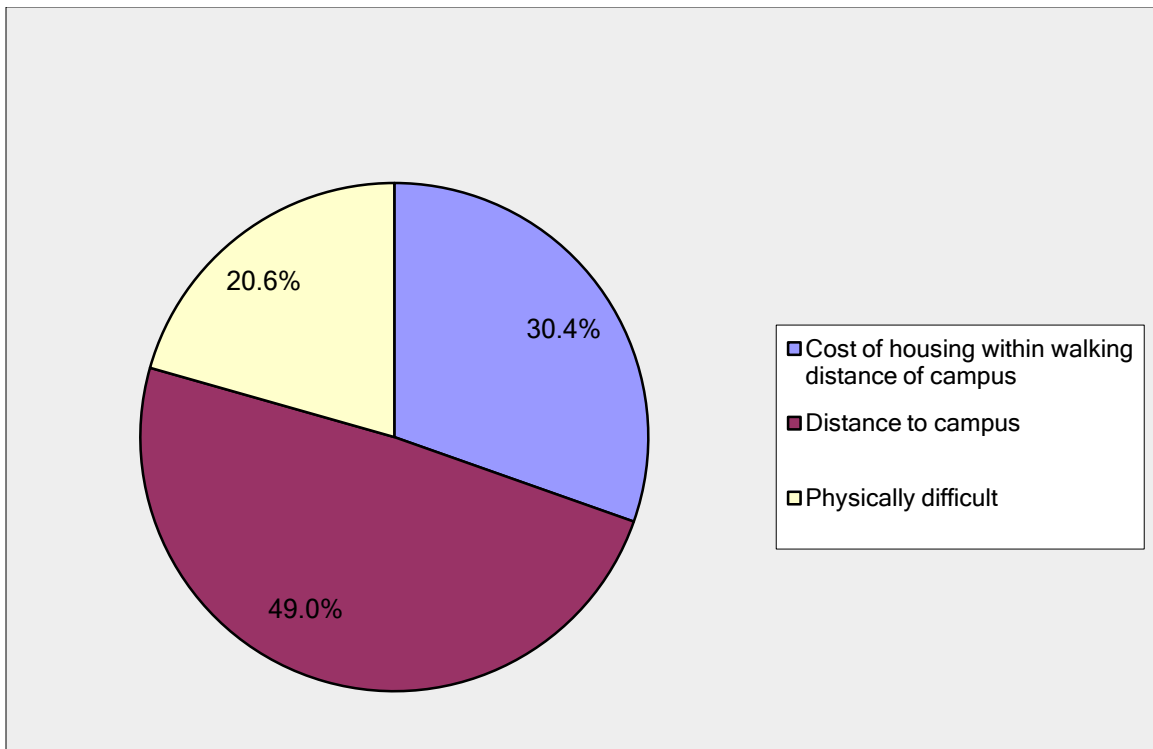


Figure 10: Problems with Walking to the Central Campus

In addition to the predefined responses, respondents were given the opportunity to provide additional information regarding any other issues they contend with while walking to campus. The majority (about 70%) identified safety and weather as the most important problems they deal with while walking to campus.

3.4 Motorcycles/Scooters

The survey sought to identify any problems associated with those who use motorcycles or scooters as their preferred mode of travel to campus. The summary of the results are presented in Table 3 and Figure 11. Only 7% of the respondents use this mode of transportation. The majority (~50%) of those who use this mode of transportation indicated that there is a lack of suitable parking near or on campus.

Table 3: Problems with Riding Motorcycles/Scooter to Central Campus

Options	Response Percent
Vehicle cost	10.1%
Fuel costs	26.6%
Lack of suitable parking near campus destination	49.4%
Lack of suitable parking at place of residence	13.9%

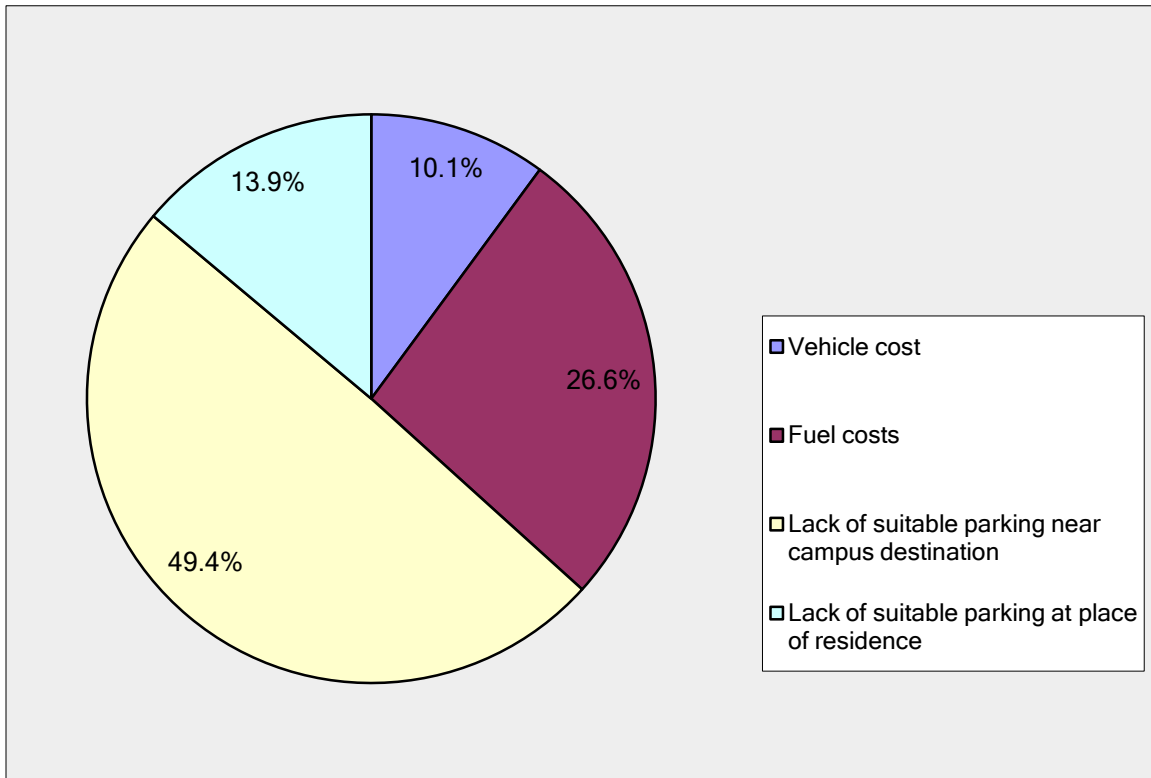


Figure 11: Issues with Riding Motorcycles/Scooter to the Central Campus

3.5 Travel Cost to Central Campus

The summaries of responses from the survey regarding travel costs to the Central Campus are presented on Table 5 and Figure 12 for all transportation modes. Approximately 54% of the respondents indicated that they spend less than \$100 on a monthly basis.

Table 4: Monthly Travel Costs to Central Campus for all modes

Options	Response Percent
Less than \$100	53.8%
\$100 to \$200	17.0%
\$201 to \$300	16.1%
\$301 to \$450	6.4%
\$451 to \$600	2.6%
\$601 to \$800	1.5%
More than \$800	2.6%

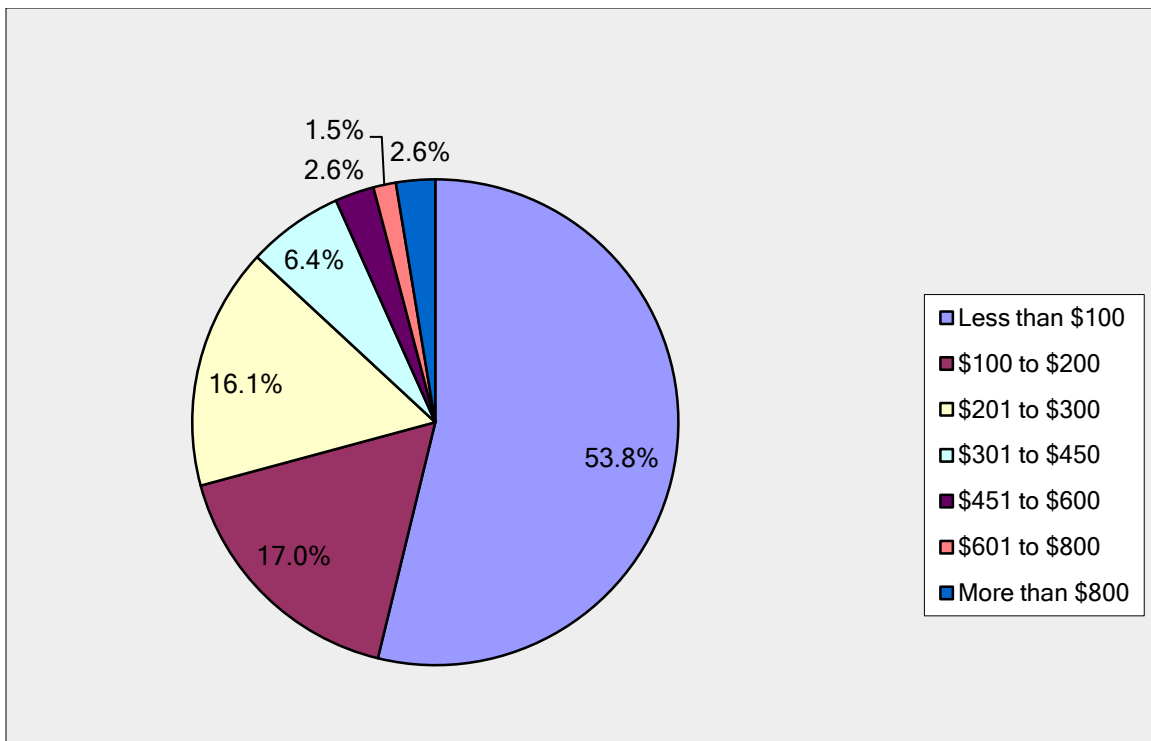


Figure 12: Monthly Cost of Travel to the Central Campus for all Modes

4 RESPONSES FROM HOWARD UNIVERSITY (HU) SHUTTLE BUS USERS

The summary of the patronage of the Howard University Shuttle Bus service is presented in Table 5 and depicted graphically in Figure 13. About 35% of the respondents indicated that they use the shuttle bus a few times a week while approximately 21% of them do not use the shuttle at all.

Table 5: Frequency of Travel to Campus

Options	Response Percent
Multiple times a day	5.9%
A few times a day	7.6%
A few times per week	35.4%
Weekly or less	30.3%
Not at all	20.7%

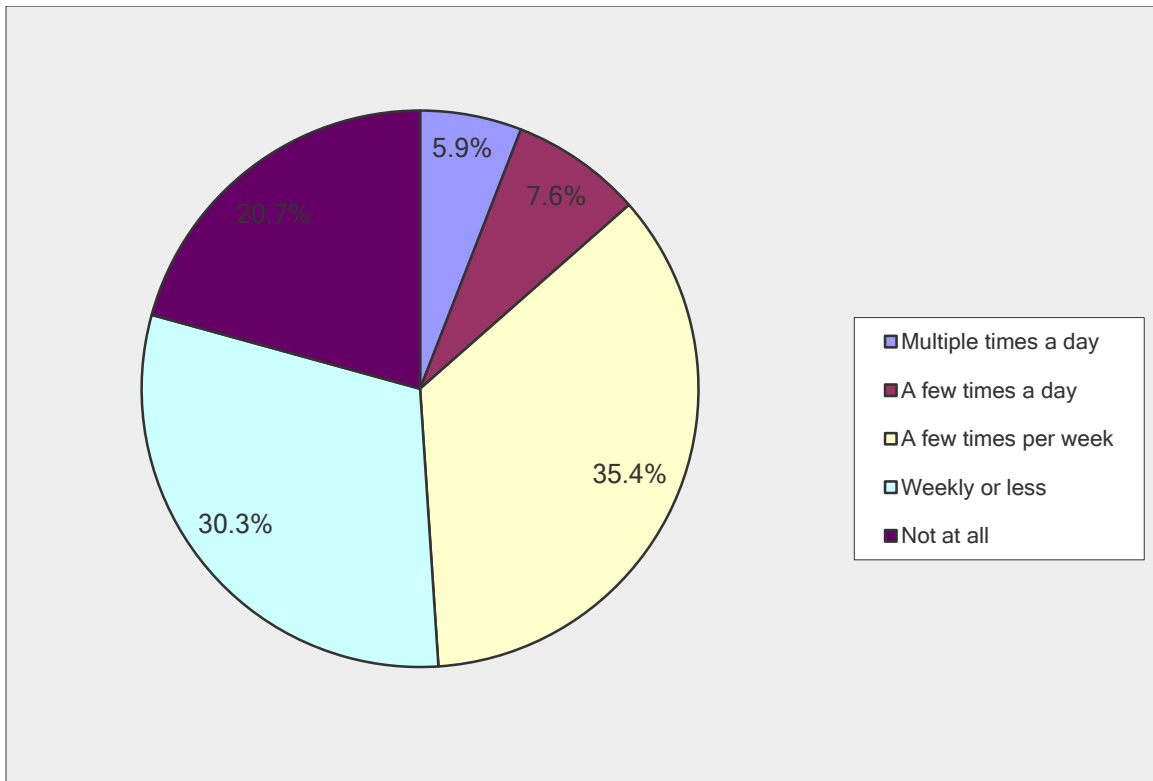


Figure 13: Patronage of HU Shuttle Bus Per Week

Forty two percent of the survey respondents (42%) indicated that they use the HU Shuttle to avoid walking/cycling in bad weather (see Table 6 and Figure 14). Other reasons for the patronage of the HU shuttle bus are provided in the Appendix.

Table 6: Description of the use of HU Shuttle

Options	Response Percent
They are my primary means of accessing Central Campus destinations	13.3%
To reach Central Campus destinations that are too far to walk to when I don't want to move my car.	3.2%
To reach Central Campus destinations that are too far to walk to and offer limited or no parking nearby.	4.4%
To reach Central Campus destinations that are too far to walk to when I don't have a car or bicycle on campus.	15.0%
To travel between the Central Campus and the Divinity or Law School campuses	2.7%
To avoid walking/ cycling in bad weather	42.2%
I do not ride the Howard University Shuttles	19.2%

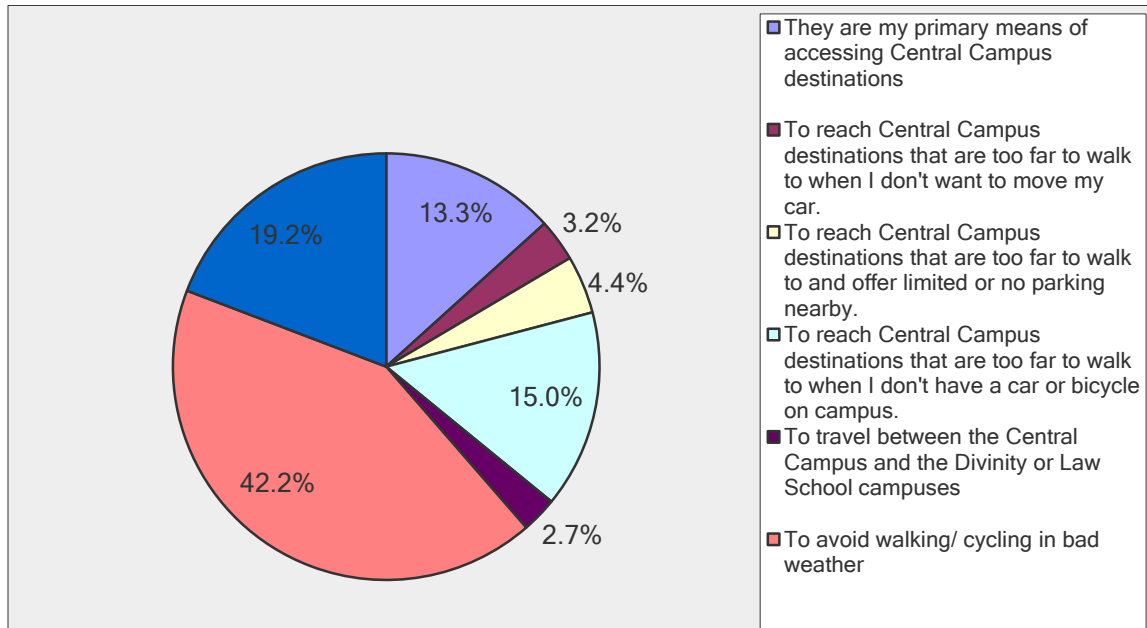


Figure 14: Reason for use of HU Shuttle Bus

From the survey, it was determined that 48% percent of those who use the HU Shuttle Bus use the North Roth/North Express shuttle. Approximately 43% use the respondents use the South Route. The summary of the results of their responses are presented in Table 7 and Figure 15. It was also determined from the survey that about 78% of the patrons of the HU Shuttle transfer between shuttle routes (see Figure 16).

Table 7: Breakdown of HU Shuttle Patronage by Route

Options	Response Percent
South Route	42.7%
South Express	17.8%
North Route/North Express	48.0%
UTC	15.3%
Divinity	7.1%
Law	5.3%

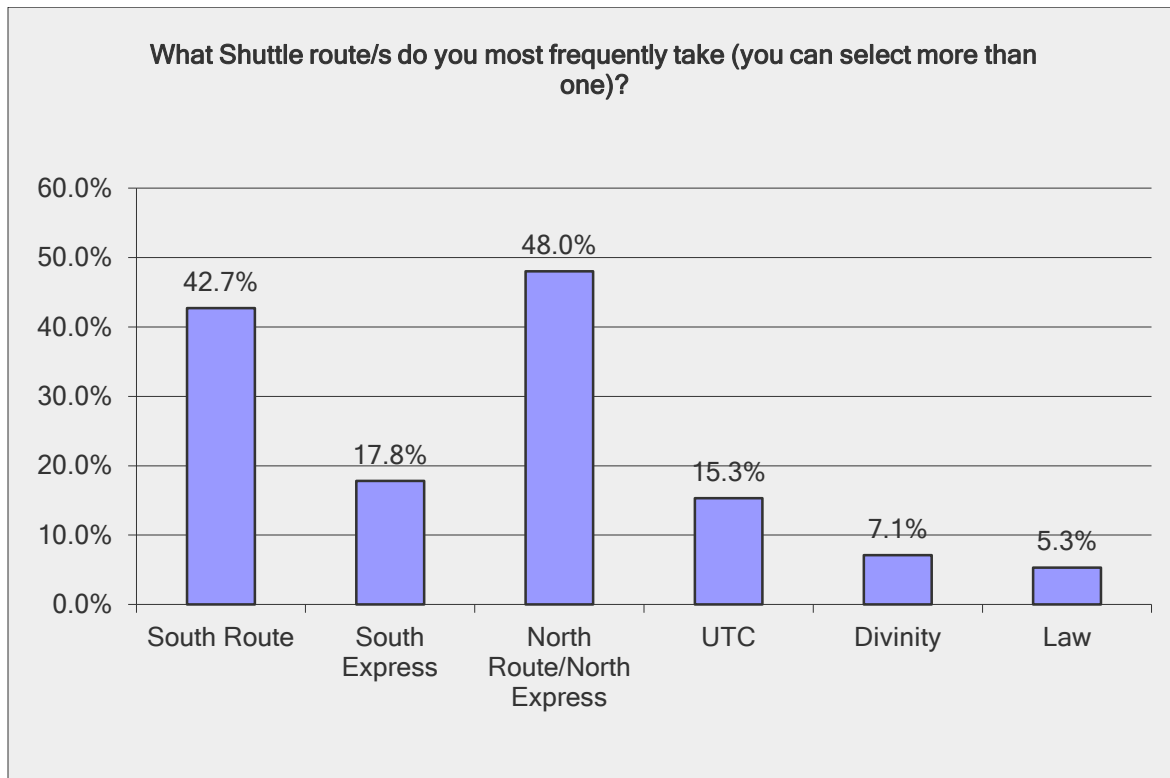


Figure 15: Breakdown of HU Shuttle Patronage by Route

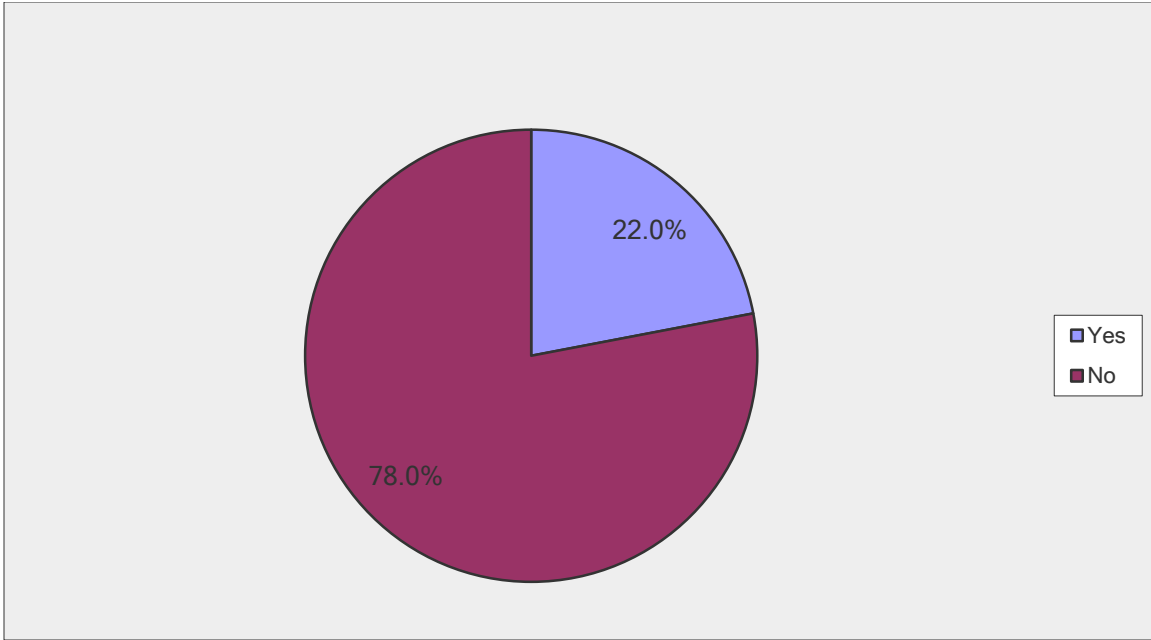


Figure 16: Percentages of those who transfer between HU Shuttle Routes

Respondents also provided an insight of some of the challenges they encounter with the HU Shuttle bus. The summary is presented in Figure 17.

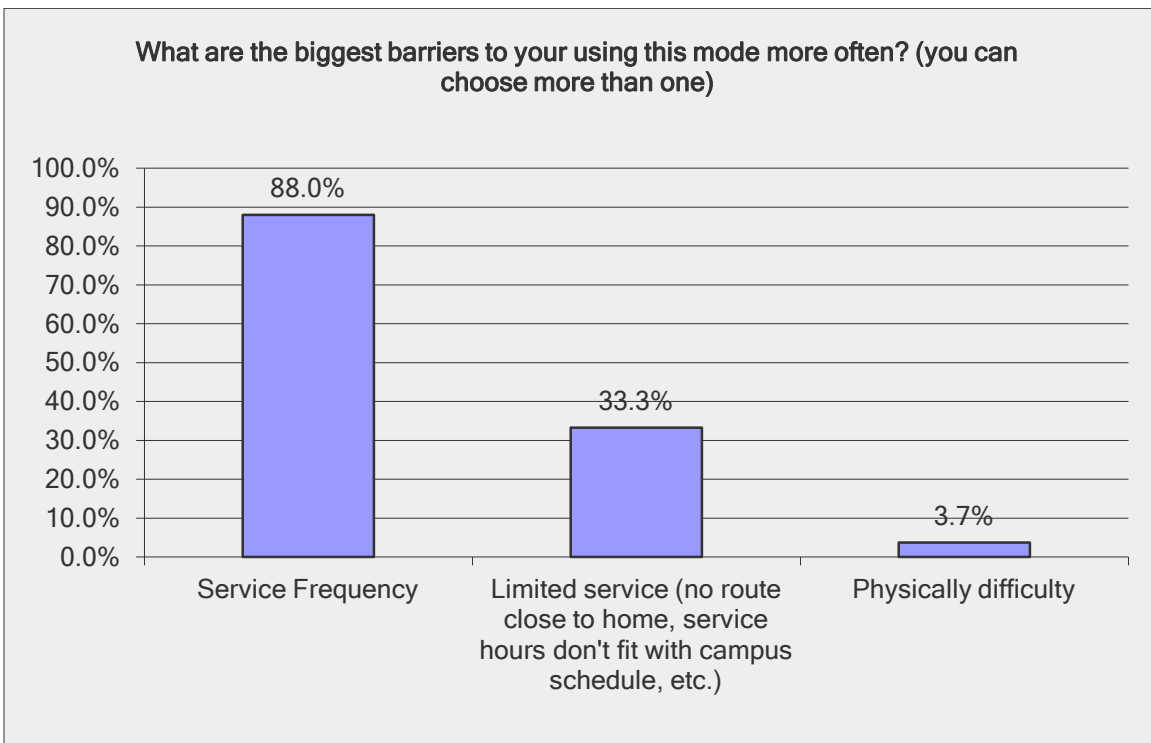


Figure 16: Percentages of those who transfer between HU Shuttle Routes

About 88% of the patrons cited service frequency as the main issue with the Bus Shuttle. Several comments regarding the service frequency were made by the respondents and are presented in the Appendix.

HU Shuttle users' responses of their monthly cost are presented in Table 10 and Figure 17. Approximately 61% of HU Shuttle users spend less than \$100 per month on transportation costs to the Central Campus.

Table 10: Monthly Costs of Transportation Using HU Shuttle

Options	Response Percent
Less than \$100	60.7%
\$100 to \$200	19.3%
\$201 to \$300	7.9%
\$301 to \$450	6.1%
\$451 to \$600	3.2%
\$601 to \$800	1.4%
More than \$800	1.4%

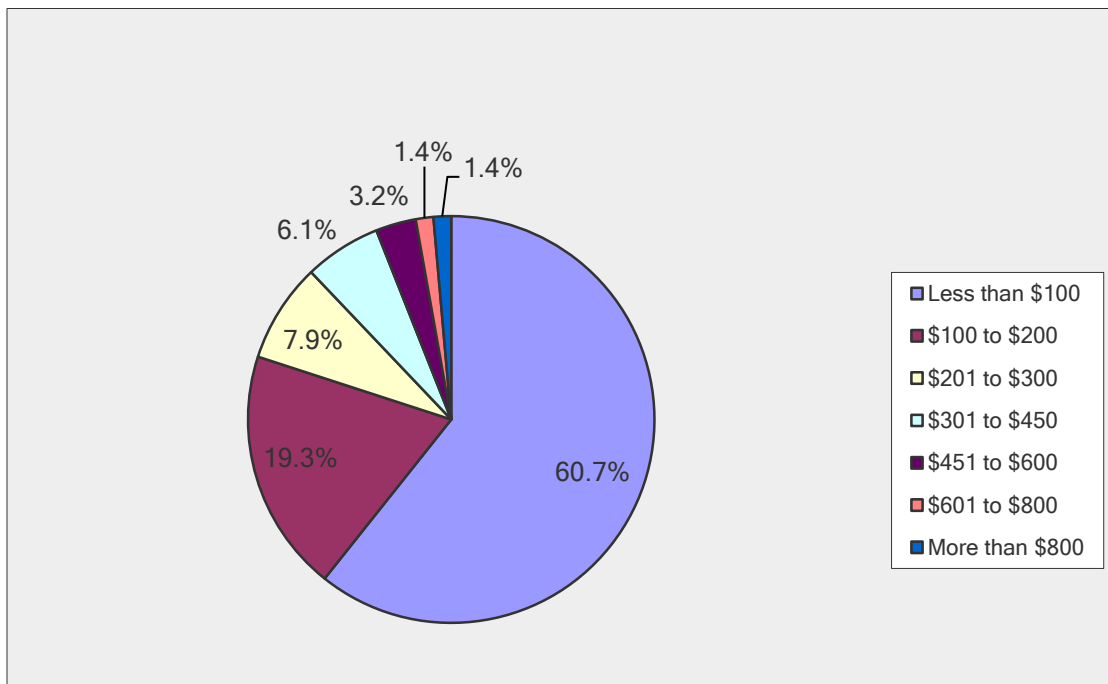


Figure 17: Percentages of those who transfer between HU Shuttle Routes

The summary of the frequency of the HU Shuttle is presented in Table 11 and depicted in Figure 18. From the results, approximately 49% of the respondents use the shuttle multiple times a day.

Table 11: Frequency of Using the HU Shuttle

Options	Response Percent
Multiple times a day	48.7%
A few times a day	23.7%
A few times per week	17.6%
Weekly or less	9.3%
Not at all	0.7%

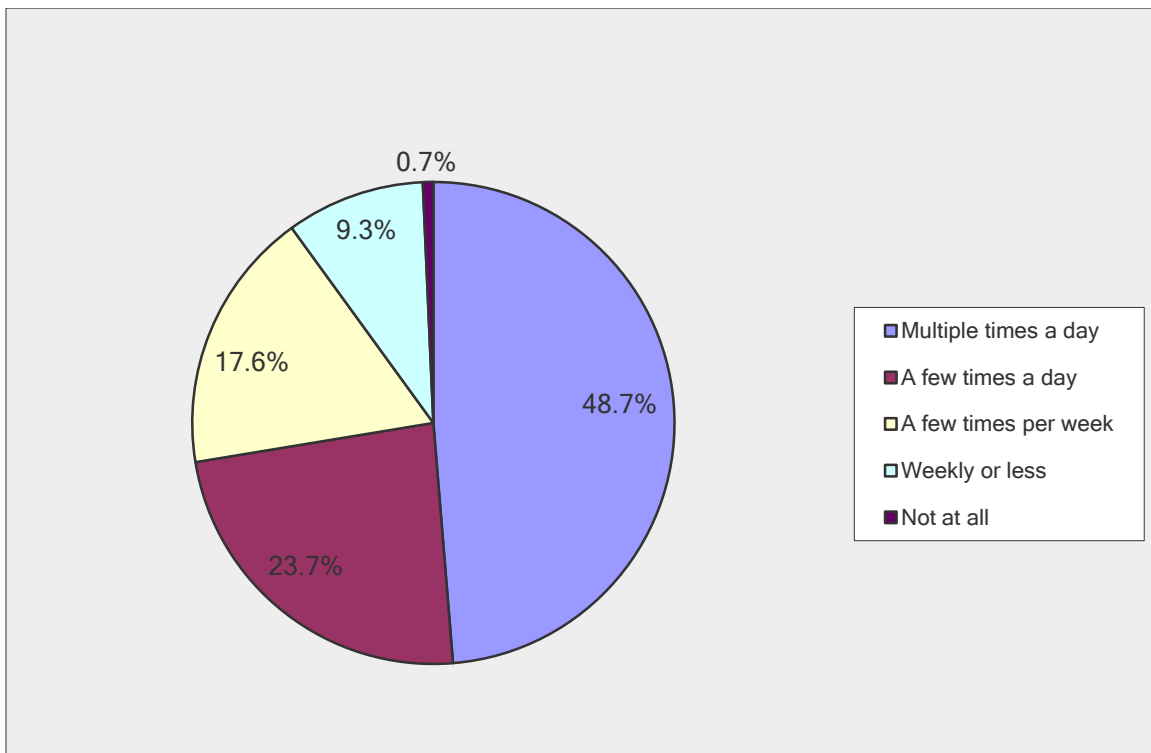


Figure 18: Frequency of Using the HU Shuttle

The summary of the reason(s) for the use of the Shuttle is presented in Table 12 and shown in Figure 19. According to the summary, approximately 67% of the respondents use the shuttle as the primary means of traveling to the Central Campus.

Table 12: Reason for Using the HU Shuttle

Options	Response Percent
They are my primary means of accessing Central Campus destinations.	67.3%
To reach Central Campus destinations that are too far to walk to when I don't want to move my car.	2.5%
To reach Central Campus destinations that are too far to walk to and offer limited or no parking nearby.	6.4%
To reach Central Campus destinations that are too far to walk to when I don't have a car or bicycle on campus.	10.0%
To travel between the Central Campus and the Divinity or Law School campuses	5.3%
To avoid walking/ cycling in bad weather	8.2%
I do not ride the Howard University Shuttles	0.4%

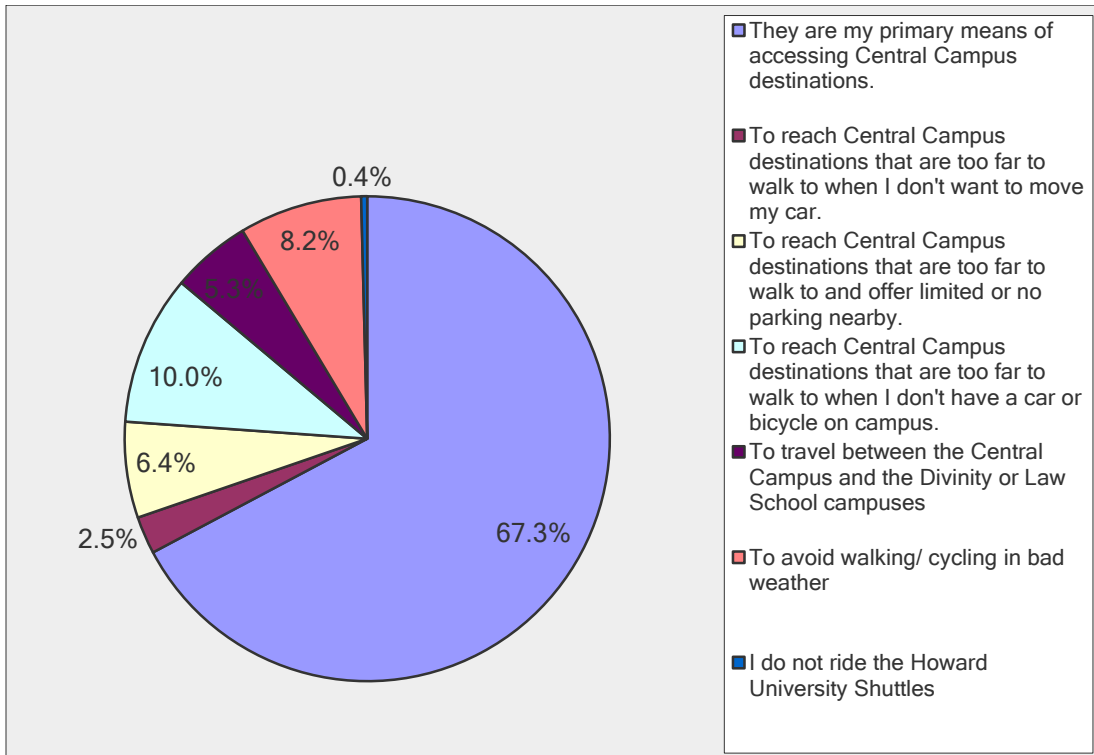


Figure 19: Reason for using the HU Shuttle

5 OTHER TRANSIT BUSES

The summary of the reason(s) for the use of the Shuttle is presented in Table 13 and shown in Figure 20. From the summary, approximately 47% of the respondents cited service frequency as their main barriers for using other transit services to travel to the Central campus.

Table 13: Barriers facing Community Other Transit Users

Options	Response Percent
Cost	38.2%
Service Frequency	47.1%
Limited service (no route close to home, service hours don't fit with campus schedule, etc.)	32.4%
Physically difficult	2.9%
Other (please specify)	11.8%

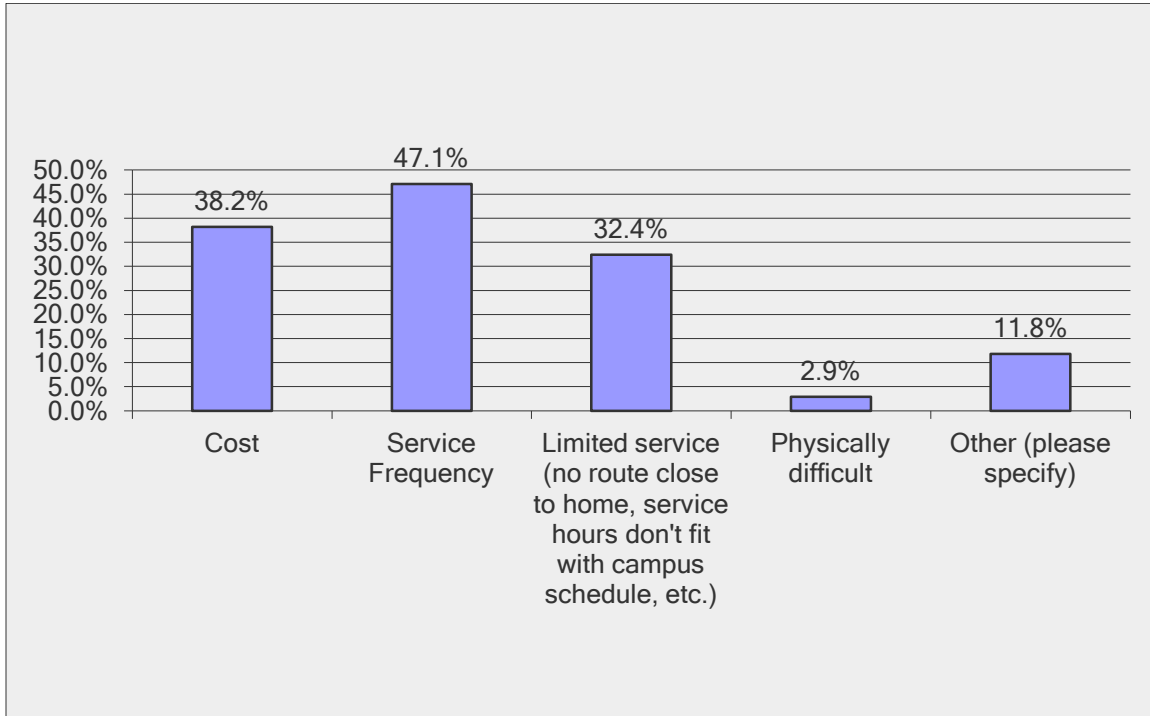


Figure 20: Barriers facing Other Transit Users

From Table 14 (and shown in Figure 21), about 42% of those who use other transit modes to travel to Central Campus indicated that they spend between \$100 and \$200 per month.

Table 14: Cost of Travel using Other Transit Mode

Options	Response Percent
Less than \$100	39.4%
\$100 to \$200	42.4%
\$201 to \$300	0.0%
\$301 to \$450	9.1%
\$451 to \$600	3.0%
\$601 to \$800	0.0%
More than \$800	6.1%

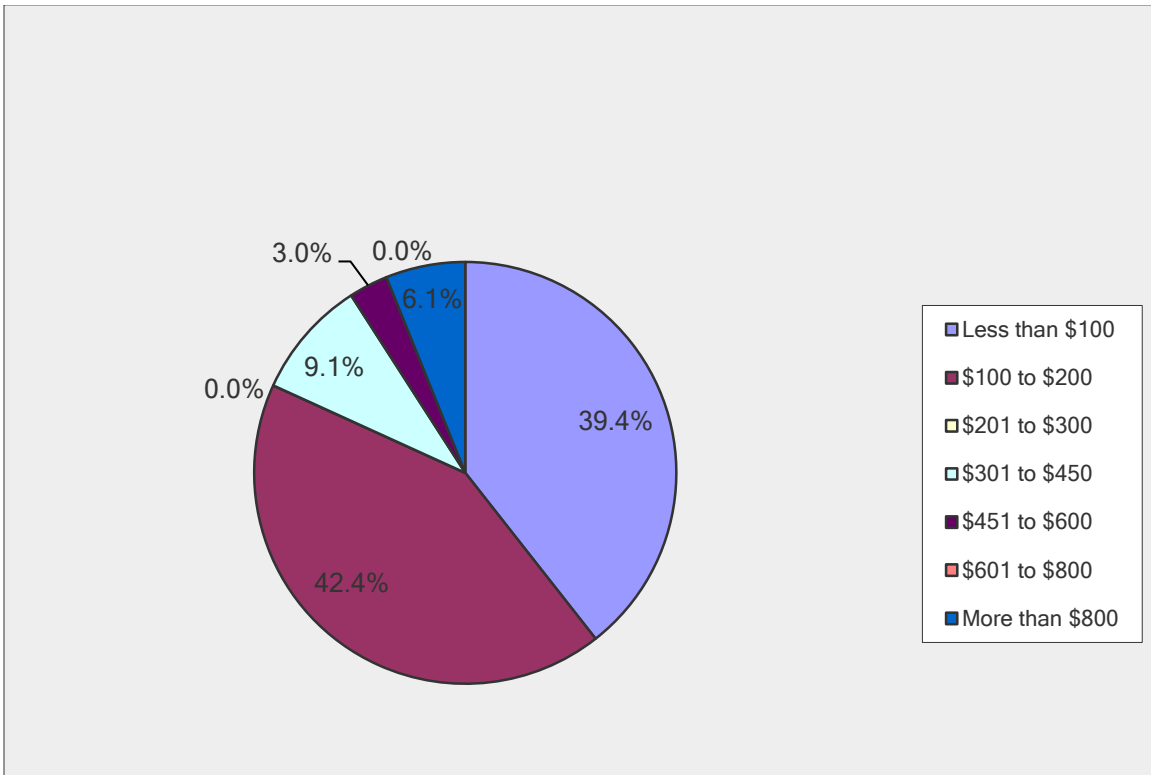


Figure 21: Monthly Cost of travel for Other Transit Users

6 SINGLE OCCUPIED VEHICLES (DRIVE ALONE)

Approximately 35% of those who took the survey drive alone to the Central Campus. Of these, about 64% indicated that fuel cost is the biggest barrier of this mode of transportation. This is presented in Table 15. In addition, about 39% cited costs of parking on campus as an issue.

Table 15: Concerns of those who Driving Alone

Options	Response Percent
Direct vehicle costs (purchase/ lease, maintenance, insurance, etc.)	22.5%
Fuel cost	64.1%
Cost of parking at place of residence	2.7%
Cost of parking on campus	39.3%
Lack of parking near campus destination	35.1%
Lack of parking at place of residence	1.1%

While on Campus, approximately 62% of those who drive alone also use their private vehicles when traveling between Central Campus locations (See Table 16 and Figure 22). Approximately 23% of those who drive alone indicated that their monthly travel cost is between \$200 and \$300 (see Table 17). As presented in Table 18, the majority (~85%) of those who drive alone park on a Howard University parking lot with about 10% using on-street parking.

Table 16: Travel between Central Campus

Options	Response Percent
Private Vehicle	62.0%
HU Shuttle Bus	20.1%
Bicycle	0.0%
Motorcycle/ Scooter	0.0%
Other (please specify)	17.9%

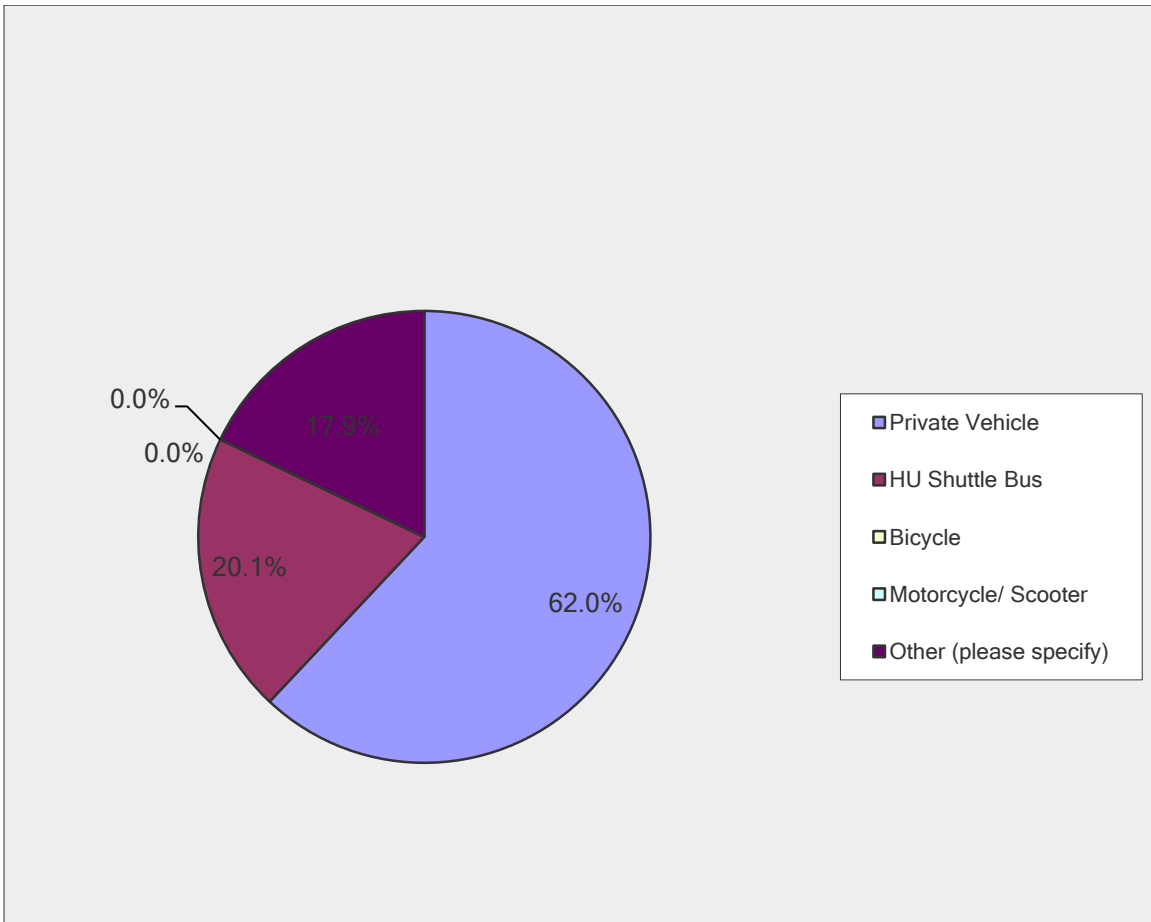


Figure 22: Travel between Central Campus for those who Drive Alone

Table 17: Monthly Cost of Travel for those who Drive Alone

Options	Response Percent
Less than \$100	8.3%
\$100 to \$200	20.1%
\$201 to \$300	23.2%
\$301 to \$450	19.4%
\$451 to \$600	14.0%
\$601 to \$800	7.0%
More than \$800	8.0%

Table 18: Parking Options for those who Drive Alone

Options	Response Percent
A Howard University parking lot	86.4%
A non-Howard University parking lot or garage	1.3%
On-Street (metered)	9.8%
On-Street (non-metered, residential permit area)	0.6%
On-Street (non-metered, non-permit-area)	1.9%

When asked about if the price of gas were to rise to \$10 per gallon, the Table 19 presents their average rating of the preferences listed. Drivers ranked ‘moving within cycling distance of campus’ the highest.

Table 19: Preferences for those who Drive Alone if Gas Prices Increase

Options	Rating
Moving within cycling distance of campus	8.20
Other ride sharing options	8.07
Walking	8.00
E-courses	7.56
Cycling	7.35
Moving within walking distance of campus	7.27
Motorcycle/ Scooter	6.93
Park and ride at home end with a connecting shuttle bus	6.75
Metrorail/Metrobus/DC Circulator + Cycling (personal or bikeshare)	5.36
Work from home/remote location	4.84
Metrorail/Metrobus/DC Circulator + HU Shuttle	4.24
Carpooling/Vanpooling	4.24
Metrorail/Metrobus/DC Circulator	3.42

Respondents were asked to rate several statements regarding conditions under which they could change this mode of travel to the Central Campus. This included increasing parking fees for those who park on Howard University parking lots, reduction in parking availability and increased traffic congestion. The summary of the average ratings are shown in the Appendix to this report. Respondents rated *"Parking shortage on campus is at or approaching the point where I'm interested in carpooling"* at 3.72 on a scale of 1 to 5; where 1 means strongly agree, 3 means neutral and 5 means strongly

agree. Using the same rating system, those who drive alone rated *"I drive to campus but cannot afford a parking permit"* at 3.83. Also, the same group rated the following statement at 4.04 using the same scale: *"I know how to find carpool partners for Central Campus commute"*. Thus, most drivers disagree that there are options for them to carpool to campus.

7 PRIVATE VEHICLE WITH PASSENGERS

Only a small percentage (~2%) of those surveyed drive with passengers to the Central Campus. From Table 20, they indicated that lack of parking near the Central Campus is their biggest issue. About 50% of those who use their private vehicles when traveling between locations on campus (see Table 21). Finally, they indicated that their monthly cost is between \$100 and \$200, as shown in Table 22.

Table 20: Issue for those who Drive with Passengers

Options	Response Percent
Finding suitable carpool/ rideshare partner/s	0.0%
Varying schedules/ workloads or other commitments	20.8%
Cost of parking on campus	37.5%
Lack of parking near campus destination	41.7%

Table 21: On-Campus Travel for those who Drive with Passengers

Options	Response Percent
Private Vehicle	50.0%
HU Shuttle Bus	42.3%
Bicycle	7.7%

Table 22: Monthly Cost of Travel for those who Drive with Passengers

Options	Response Percent
Less than \$100	13.8%
\$100 to \$200	27.6%
\$201 to \$300	13.8%
\$301 to \$450	10.3%
\$451 to \$600	24.1%
\$601 to \$800	0.0%
More than \$800	10.3%

8 BICYCLE USERS AND OTHER MODES

The sample of responses for bicycle users and other modes were too low for meaningful descriptive statistics to be reported.



2014 HOWARD UNIVERSITY PARKING AND TRAVEL DEMAND CONDITIONS ASSESSMENT

Submitted to:



District Department of Transportation

Prepared by:



Howard University Transportation Research Center
2300 Sixth Street NW, Washington, DC 20059

May 29, 2014

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1 SUMMARY

Howard University's Central Campus, which is located in Washington DC's Ward 1, has been the focus of its 2011 Campus Master Plan (HUCMP). Located within five miles of the Nation's Capital, the historic central campus is on a 118-acre property (see Figure 1) which forms the setting for most of the University's academic and administrative buildings and activities.

The HUCMP was submitted to the District Department of Transportation (DDOT) for approval in 2011 and has been since utilized as a strategic tool and guide for the physical development of the campus over the next ten years. The plan discloses details for enhancing the physical condition of the campus gearing towards creating new opportunities for excellence in the future development of new facilities. The plan also provided the physical framework within which the University can achieve its academic mission.

The Travel Demand Model (TDM) provided detailed assessment of opportunities that could be used to mitigate



Figure 1: Howard University

adverse transportation impact primarily by enhancing multi-modal Central Campus access and mobility for the extended Howard University community.

This report summarizes the effort undertaken by Howard University Transportation Research Center on the following:

- Parking studies – existing on-street parking conditions within the DDOT approved boundaries of the campus and the surrounding community. This was achieved through parking field data collection and analysis.
- A Review of Campus Travel Patterns - An assessment of the how faculty/staff and students are getting to and around the Central Campus, the recurrence thereby, and where they are coming from. This was achieved through an online survey.

The results of the parking studies showed that the average occupancy rate for on-street parking was determined to be 68% for streets on the Central Campus while that for the neighborhood parking, which also included metered parking, was 71%. Average occupancy by non-residents (vehicles without a displayed Zone 1 Permit) was determined to be 15% within the surrounding residential neighborhoods.

Of the 995* respondents of the survey (staff, faculty and students), the following table presents the breakdown of the various modes of transportation used to travel to the Central Campus:

Travel Modes	Response Percent
Private Vehicle (alone)	59.8%
HU Shuttle Bus	11.0%
Walking	10.6%
Metrorail	7.2%
Other Transit Bus (Metrorail, DC Circulator, etc.)	1.8%
Private Vehicle (with passenger/s)	5.4%
Private Vehicle (as passenger)	3.7%
Bike	0.3%
Motorcycle/ Scooter	0.2%

**It must be noted that this survey was conducted during the final weeks of the Spring 2014 semester where the majority of the respondents were faculty and staff (~63%).*

Conclusions

- The results of the parking surveys over the past 3 years indicate that the reduction of parking availability to staff and students did not increase the

occupancy rates of both metered and on-street parking in the surrounding neighborhoods.

- Howard University also increased parking fees for both staff/faculty by 10% in 2013.
- A number of parking lots on the main campus were closed thereby reducing parking allocation in 2013 by approximately 12%.
- Finally, the University reduced its workforce by 200 employees from 2013 through June 2014, thereby reducing the demand for on-campus parking.

2 ON-STREET PARKING SURVEY

Parking is provided by the University throughout the HU Central Campus and the Hospital by use of surface lots. About 40% of the nearly 2,300 parking spaces are reserved for student parking while the remaining is reserved for faculty/staff. The HU Central Campus does not affiliate with any commercial public providers to offer parking to the Howard University community.

As part of this assessment, on street parking occupancy surveys were conducted in order to determine on-street parking usage or occupancy within the Central Campus and surrounding community. With the exception of a few locations, the management of on-street parking within and surrounding the Central Campus is not intended to accommodate standard commuter parking demand patterns. On street parking is typically not a viable option for students since the time-limits create a barrier while attending classes. On the contrary, some of the spaces offer four-hour parking limits, providing accommodation for students attending one or two classes at a time.

To assess the capacity and availability of these resources for Central Campus commuters, a series of occupancy surveys of all on-street spaces within the Central Campus were conducted during peak-demand times in Fall 2013/Spring 2014.

The following maps provide a summary of weekday occupancy conditions on metered, campus streets, as observed during surveys conducted at 11:00 AM, 1:00 PM, and 3:00 PM — hours when weekday parking demand tends to be at its highest.

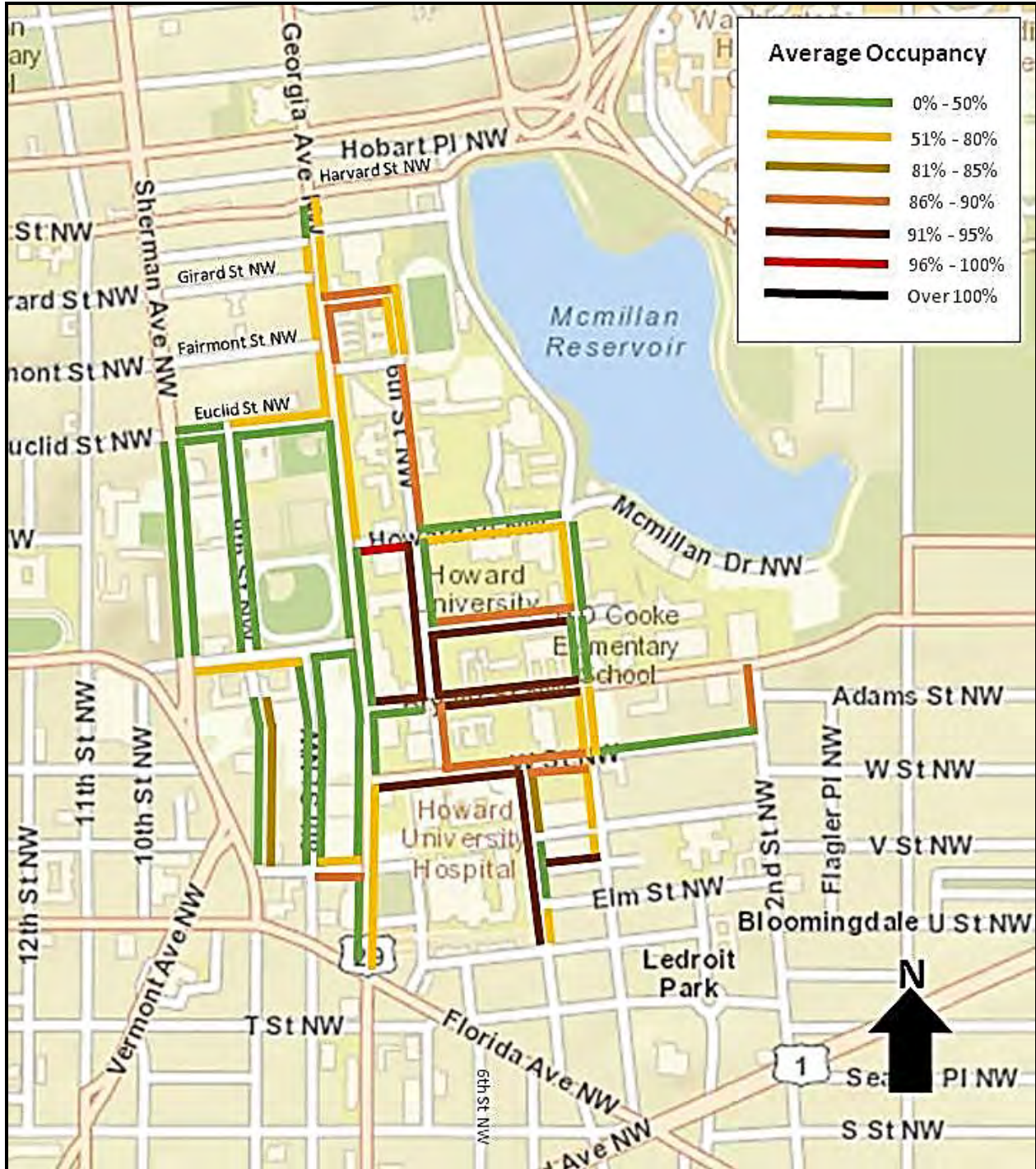


Figure 2: Average Parking Occupancy for a Typical Weekday at 11 AM on Campus

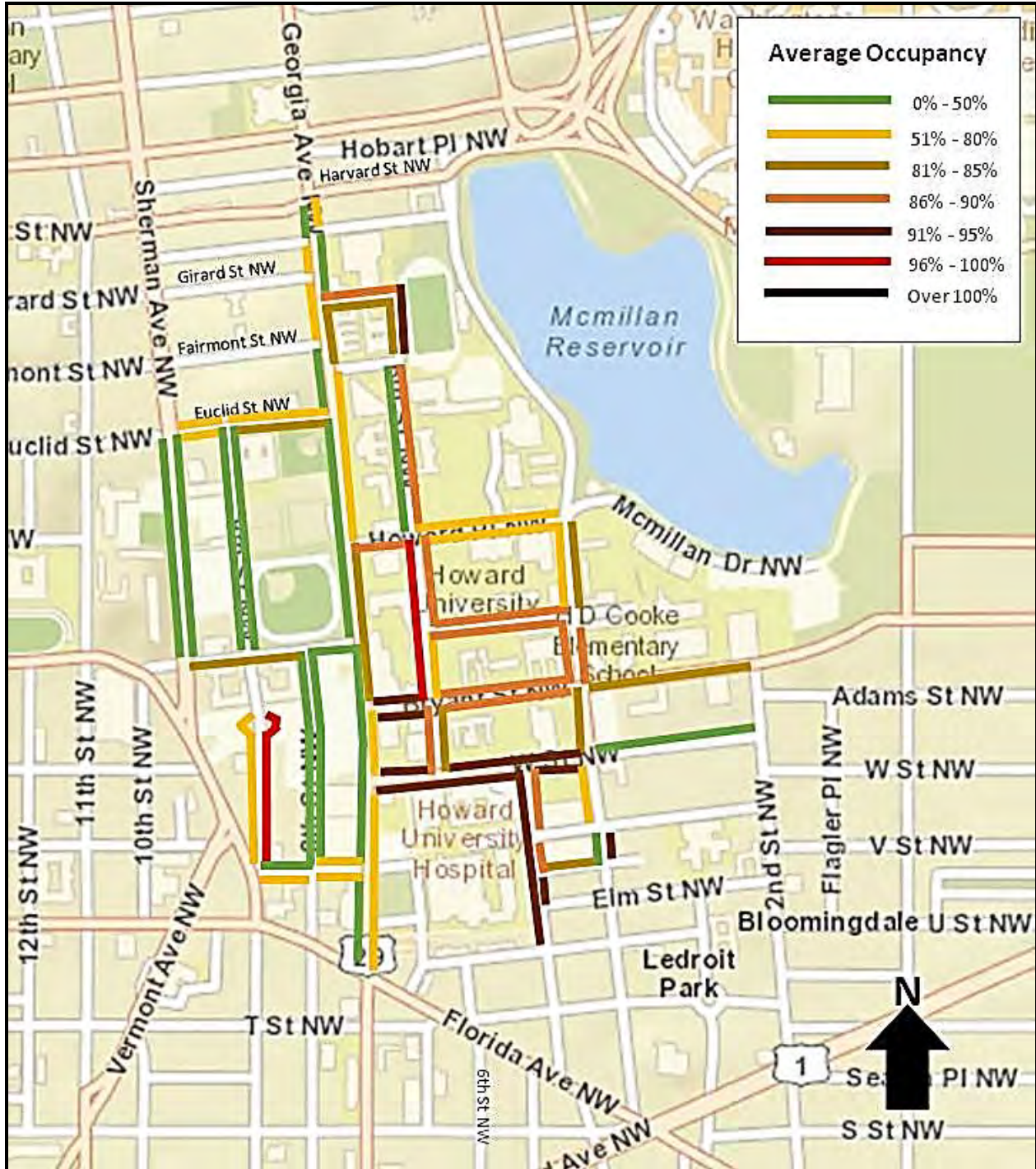


Figure 3: Average Parking Occupancy for a Typical Weekday at 1 PM on Campus

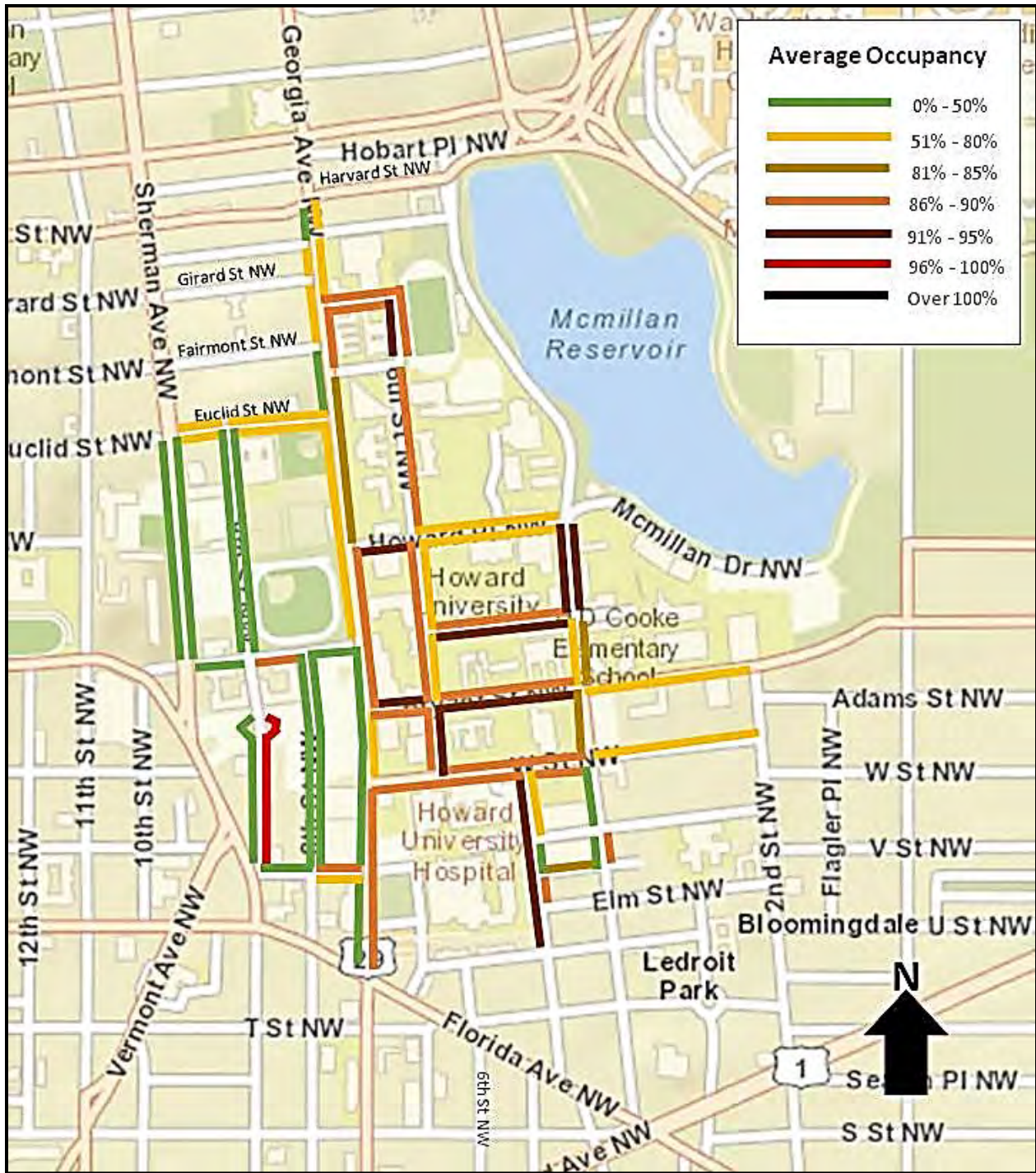


Figure 4: Average Parking Occupancy for a Typical Weekday at 3 PM on Campus

The effort of this survey has also provided an opportunity to assess any campus-based impacts on parking availability within surrounding neighborhoods. Most of the blocks in these areas are managed through the District's residential parking permit program, which provides permits to local residents and restricts parking by non-permit-holders to one or two hours (two, in the case of Howard-area neighborhoods). The northern part of most of the residential neighborhood roads provides parking to Zone 1 parking permit holders only between 7:00 AM and 8:30 PM. To assess the impact of campus parking demand on these streets, occupancy surveys were conducted on most blocks within campus-adjacent neighborhoods. These surveys distinguished overall occupancy, as well as occupancy by non-residents (vehicles without a displayed Zone 1 Permit).

The following maps provide a summary weekday occupancy percentages on Campus-adjacent, residential streets observed during surveys conducted at 11:00 AM, 1:00 PM, and 3:00 PM.

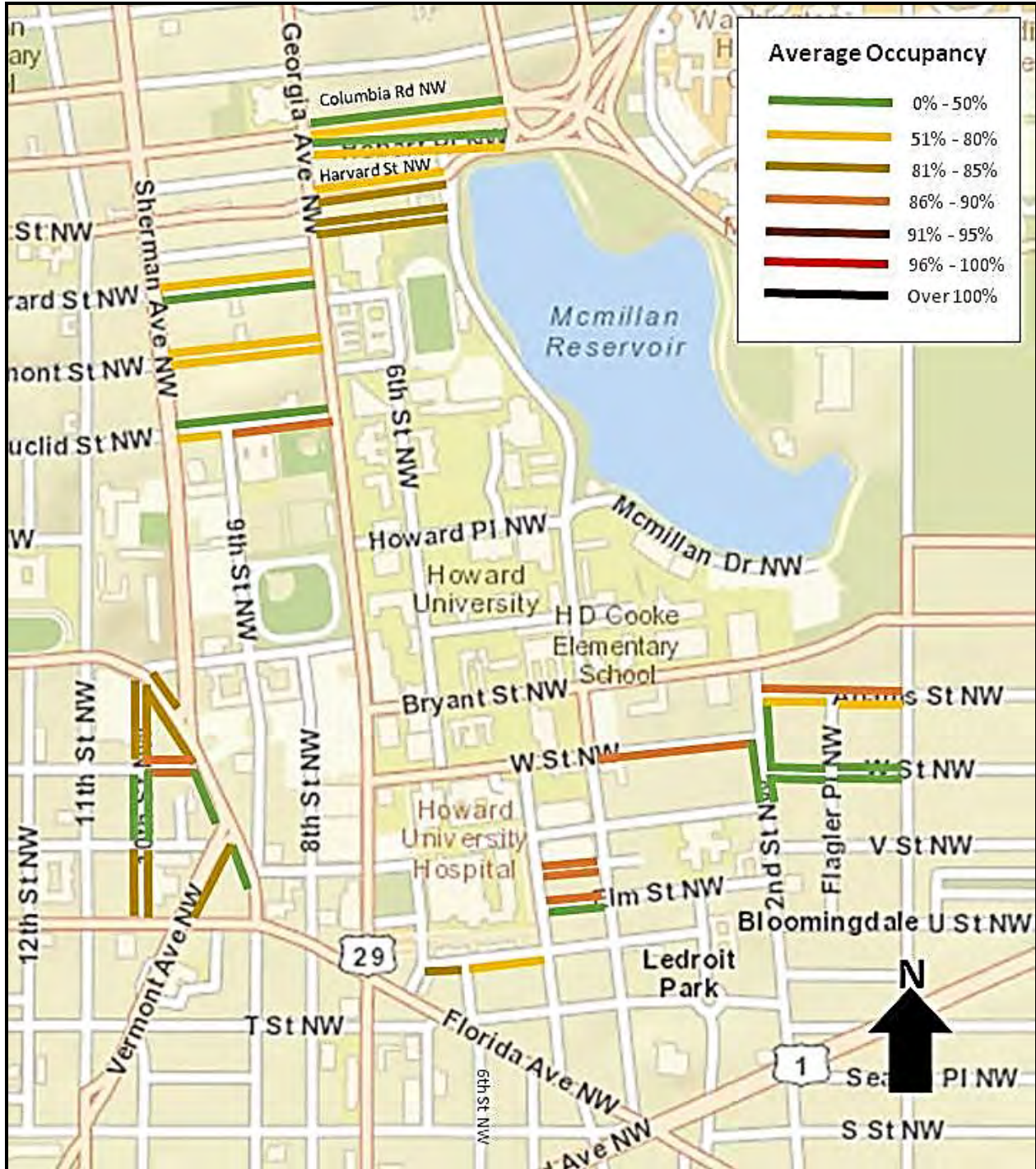


Figure 5: Average Parking Occupancy for a Typical Weekday at 11 AM in surrounding neighborhood

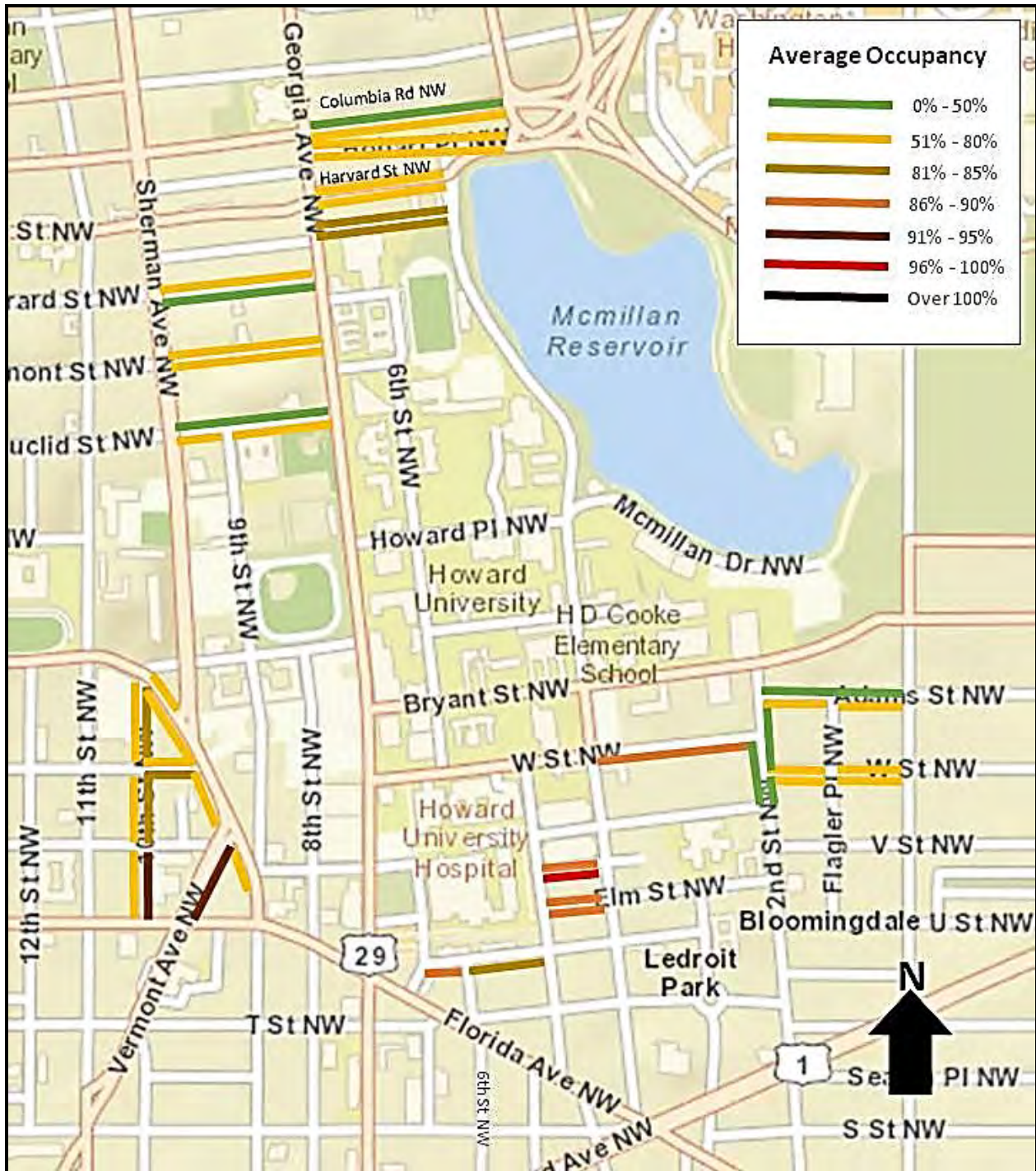


Figure 6: Average Parking Occupancy for a Typical Weekday at 1 PM in surrounding neighborhood

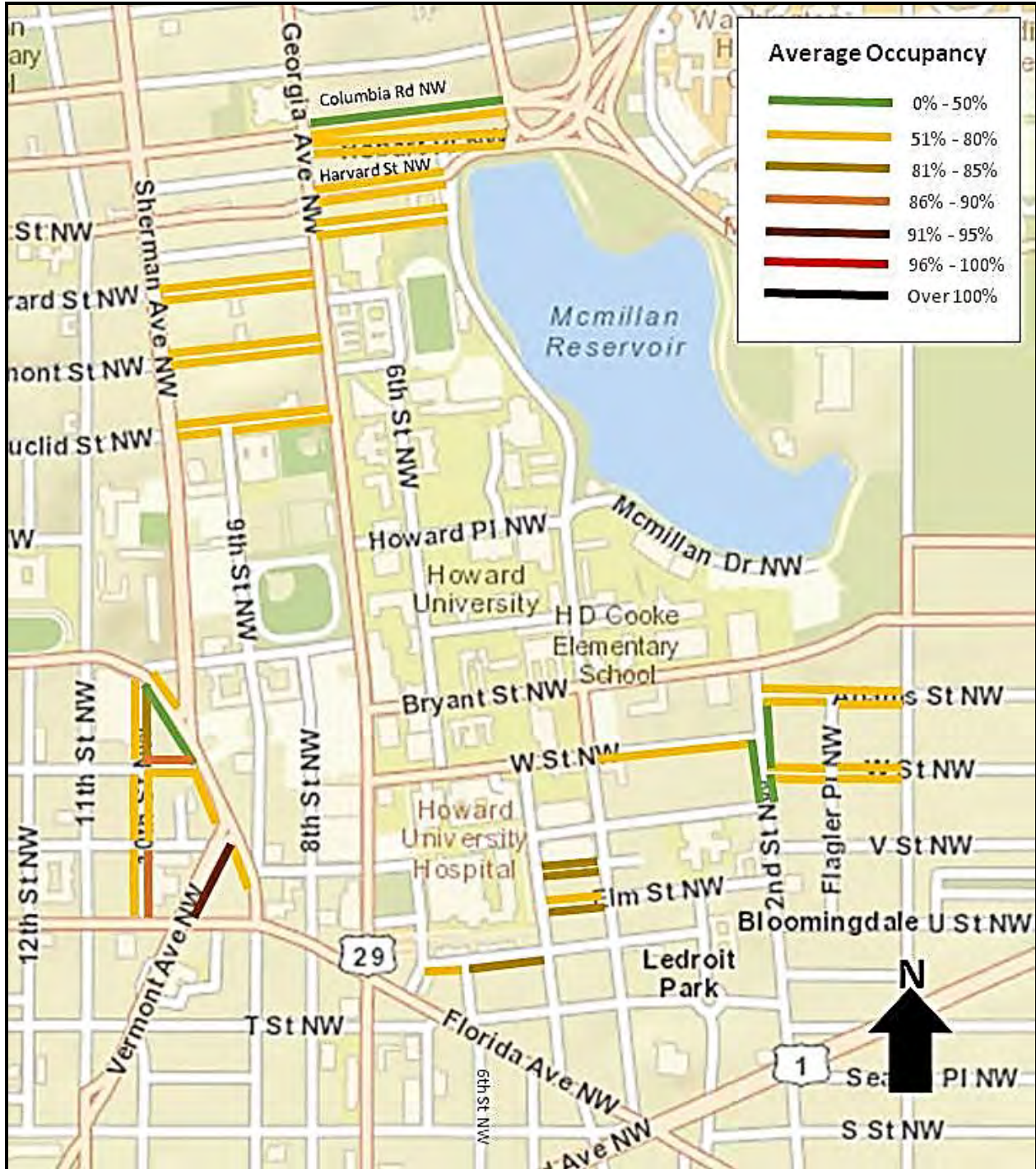


Figure 7: Average Parking Occupancy for a Typical Weekday at 3 PM in the surrounding neighborhood

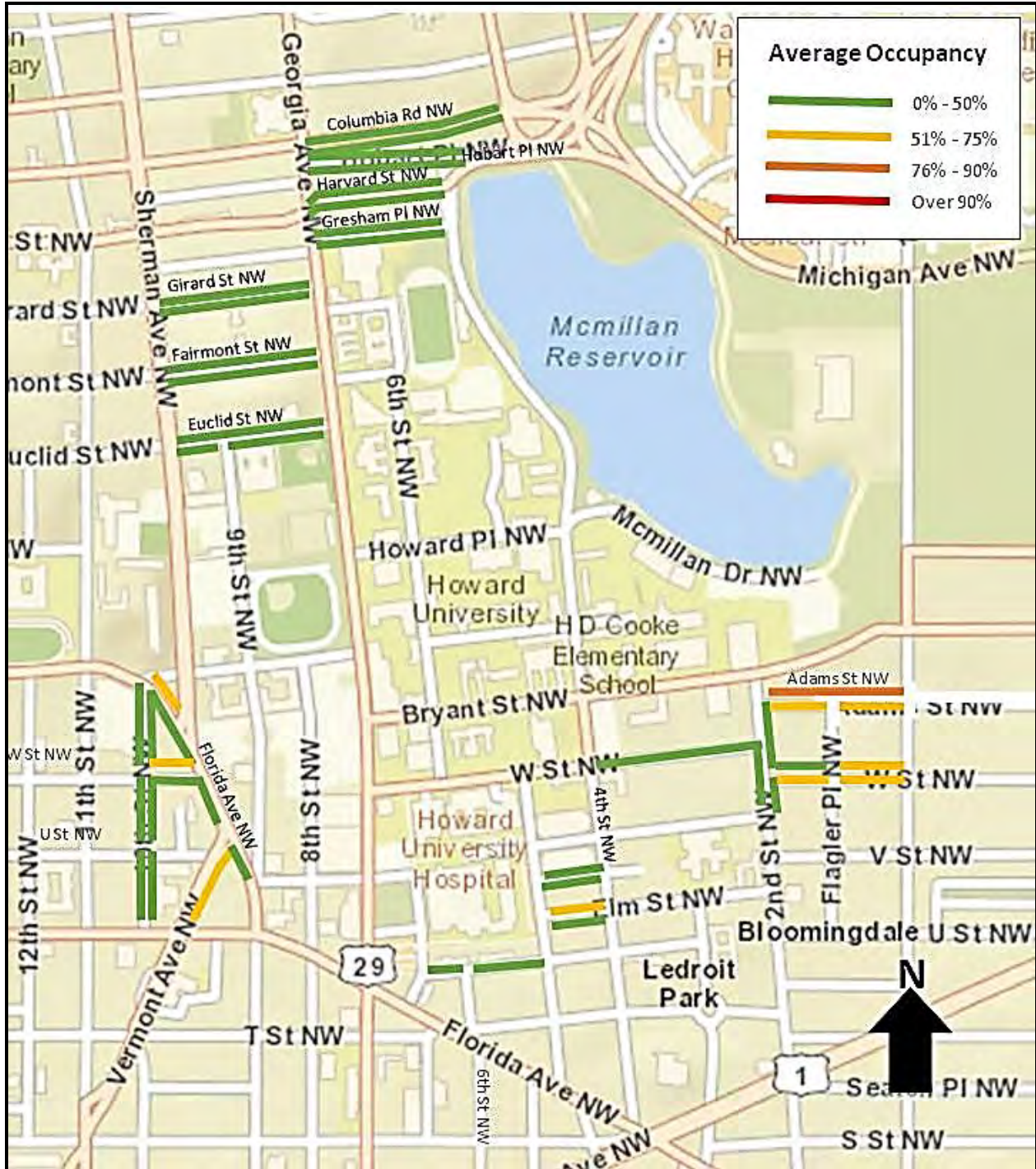


Figure 8: Average Parking Occupancy for a Typical Weekday at 11 AM for Non-Residents in surrounding Neighborhood

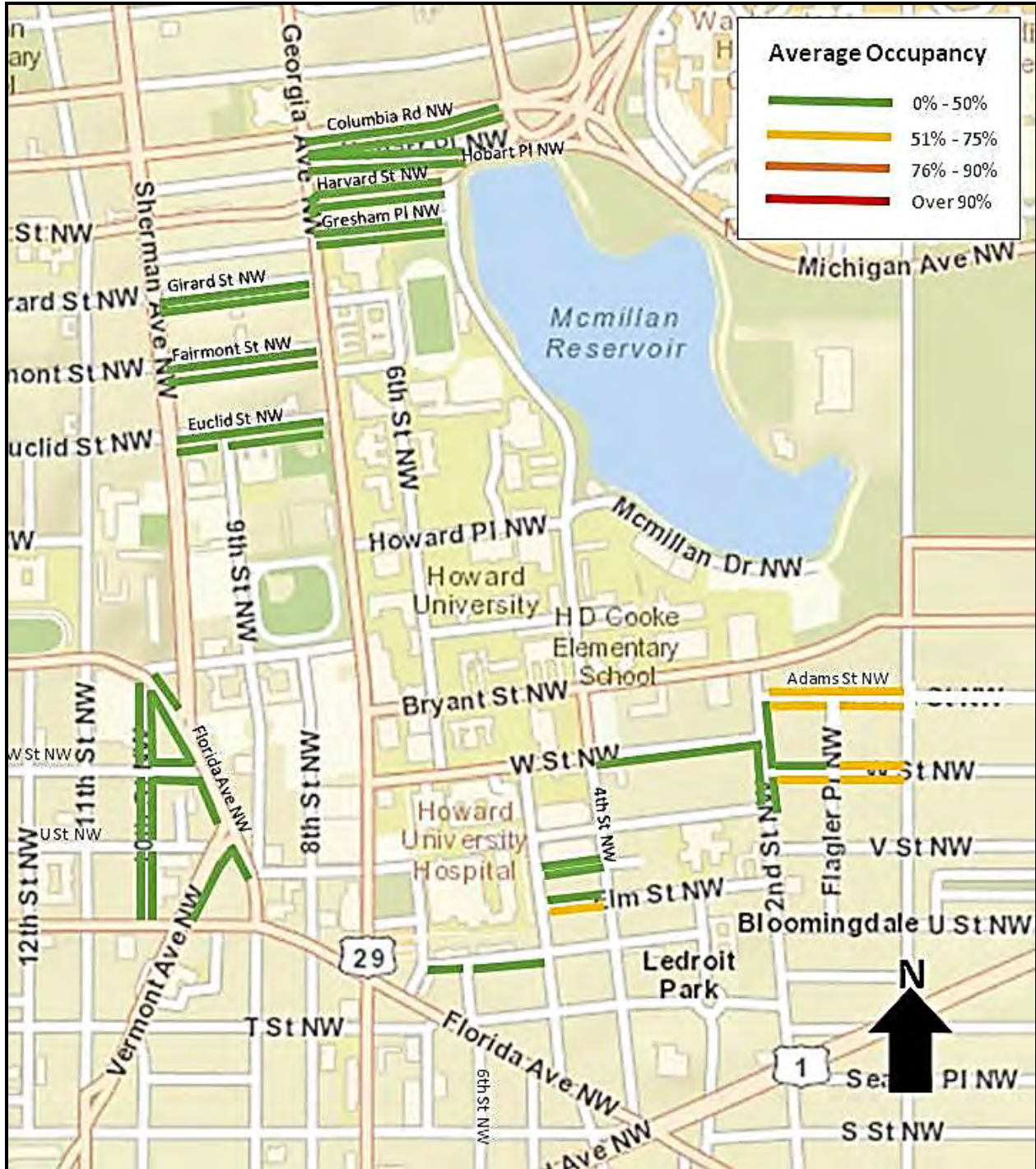


Figure 9: Average Parking Occupancy for a Typical Weekday at 1 PM for Non-Residents in surrounding neighborhood

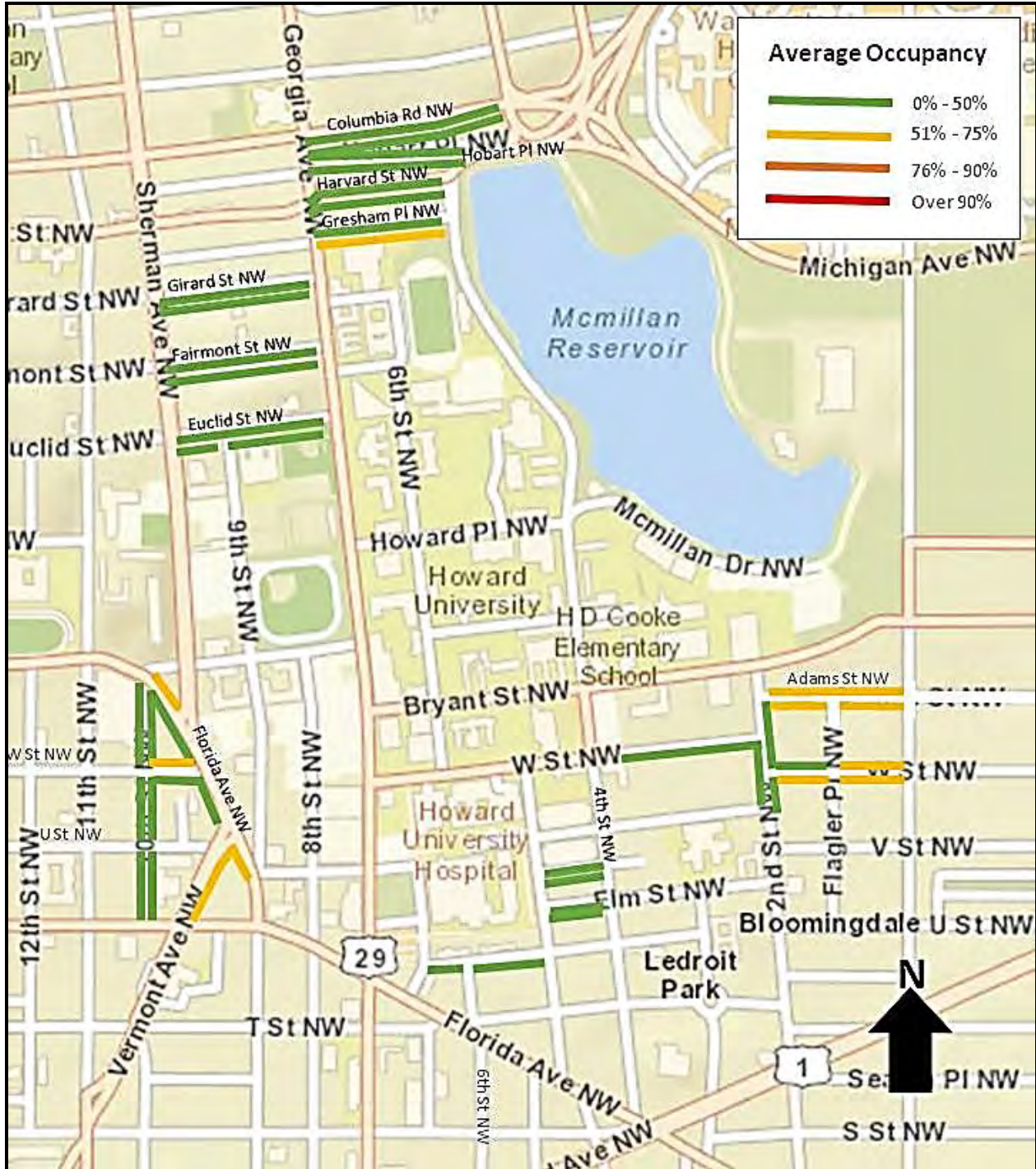


Figure 10: Average Parking Occupancy for a Typical Weekday at 3 pm for Non-Residents in surrounding neighborhood

3 SUMMARY OF SURVEY RESULTS

An online survey was conducted for the purpose to assess current mode split conditions of student, faculty, and staff members at the Central Campus. These survey-included questions designed to gain a comprehensive understanding of the current modal choices and the preferences and perspectives underlying those choices. A total of 995 students, faculty and staff responded to the survey. Figure 11 provides a breakdown of the number of surveys completed by members of each of these groups.

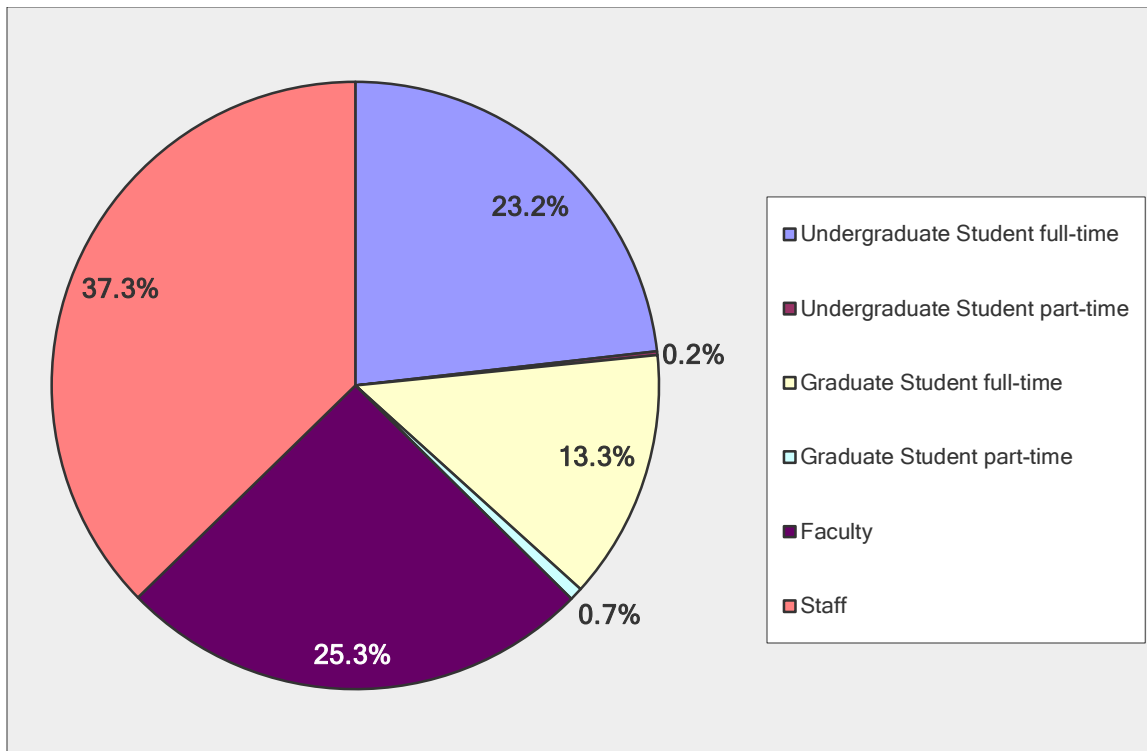


Figure 11: Breakdown of those who participated in the Survey

The following provides a summary of the responses to the questions posed to the members of the Howard University Community.

3.1 General: Number of Trips to Central Campus

The respondents were asked to provide the approximate number of trips they make to the Central Campus in a typical week. A trip is defined as transporting from home or any other origin to the Central Campus, including the travel from an on-campus

dormitory to another on-campus building. This trip excludes trips made once the person arrived on campus. The summary of the results is presented in Figure 12. From the results, approximately 33% of the respondents travel to campus more than 5 times a week.

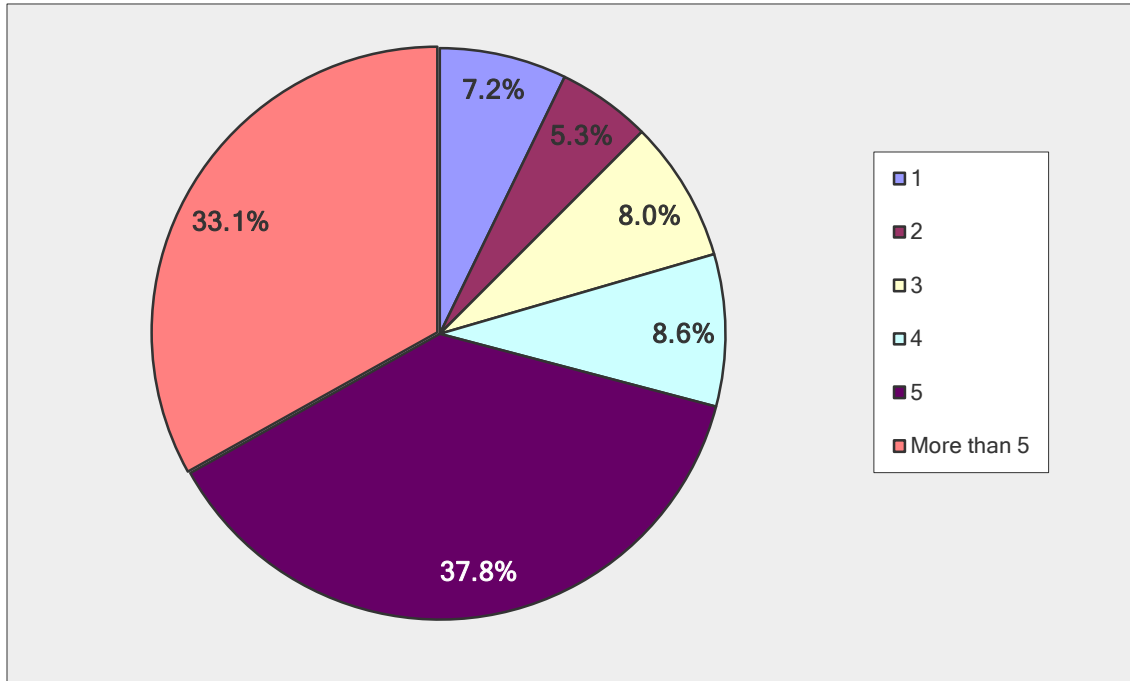


Figure 12: Number of Trips Made to the Central Campus per Week

3.2 Mode of Travel to Central Campus

The summary of the responses obtained for mode of travel to the Central Campus are summarized in Table 1 and Figure 13. From the results, approximately 59.8% of the Howard University community travels to Campus alone in their private vehicles while 11% use the HU Shuttle Bus. Less than 2% of the respondents travel to Campus using a combination of the Metrorail with the MARC, UTC shuttle and VRE.

Table 1: Mode of Travel to Central Campus

Options	Response Percent
HU Shuttle Bus	11.0%
Other Transit Bus (Metrorail, DC Circulator, etc.)	1.8%
Metrorail	7.2%
Private Vehicle (alone)	59.8%
Private Vehicle (as passenger)	3.7%
Private Vehicle (with passenger/s)	5.4%
Bike	0.3%
Walking	10.6%
Motorcycle/ Scooter	0.2%

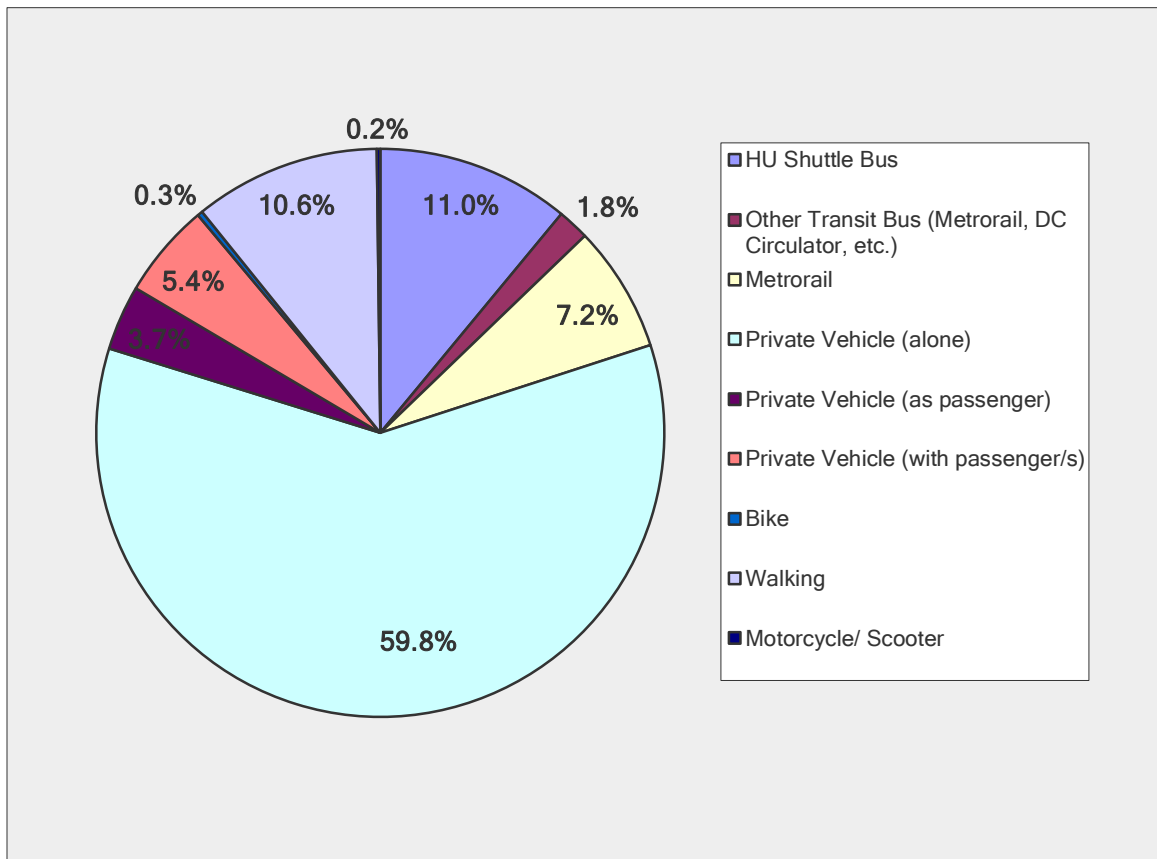


Figure 13: Modal Splits for travel to the Central Campus

3.3 Issues for those who Walk to Central Campus

For those who walk to campus, the survey sought to identify any problems associated with their mode of travel. The summary of the results are presented in Table 2 and Figure 14.

Table 2: Problems with Walking to Central Campus

Options	Response Percent
Cost of housing within walking distance of campus	29.9%
Distance to campus	56.2%
Physically difficult	13.9%

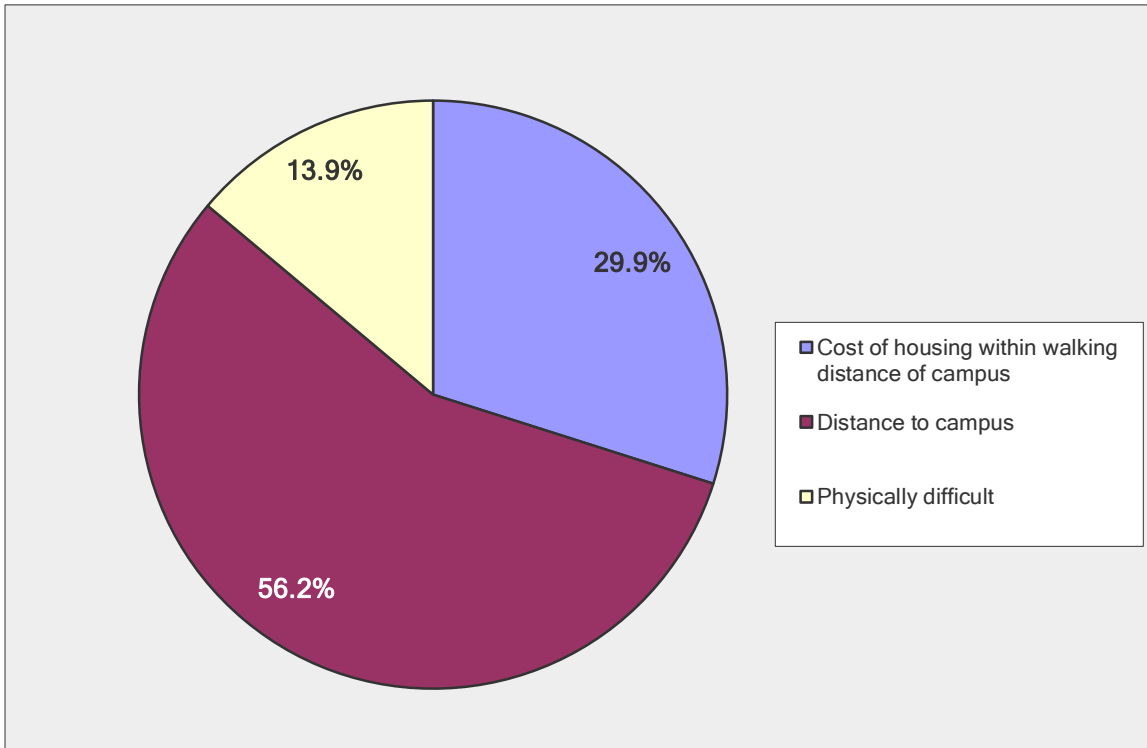


Figure 14: Problems with Walking to the Central Campus

In addition to the predefined responses, respondents were given the opportunity to provide additional information regarding any other issues they contend with while walking to campus. The majority (about 55%) identified safety and weather as the most important problems they deal with while walking to campus.

3.4 Motorcycles/Scooters

The survey sought to identify any problems associated with those who use motorcycles or scooters as their preferred mode of travel to campus. The summary of the results are presented in Table 3 and Figure 15. Only 10.6% of the respondents use this mode of transportation. The majority (50%) of those who use this mode of transportation indicated that there is a lack of suitable parking near or on campus.

Table 3: Problems with Riding Motorcycles/Scooter to Central Campus

Options	Response Percent
Vehicle cost	20.4%
Fuel costs	22.2%
Lack of suitable parking near campus destination	50.0%
Lack of suitable parking at place of 87 residence	7.4%

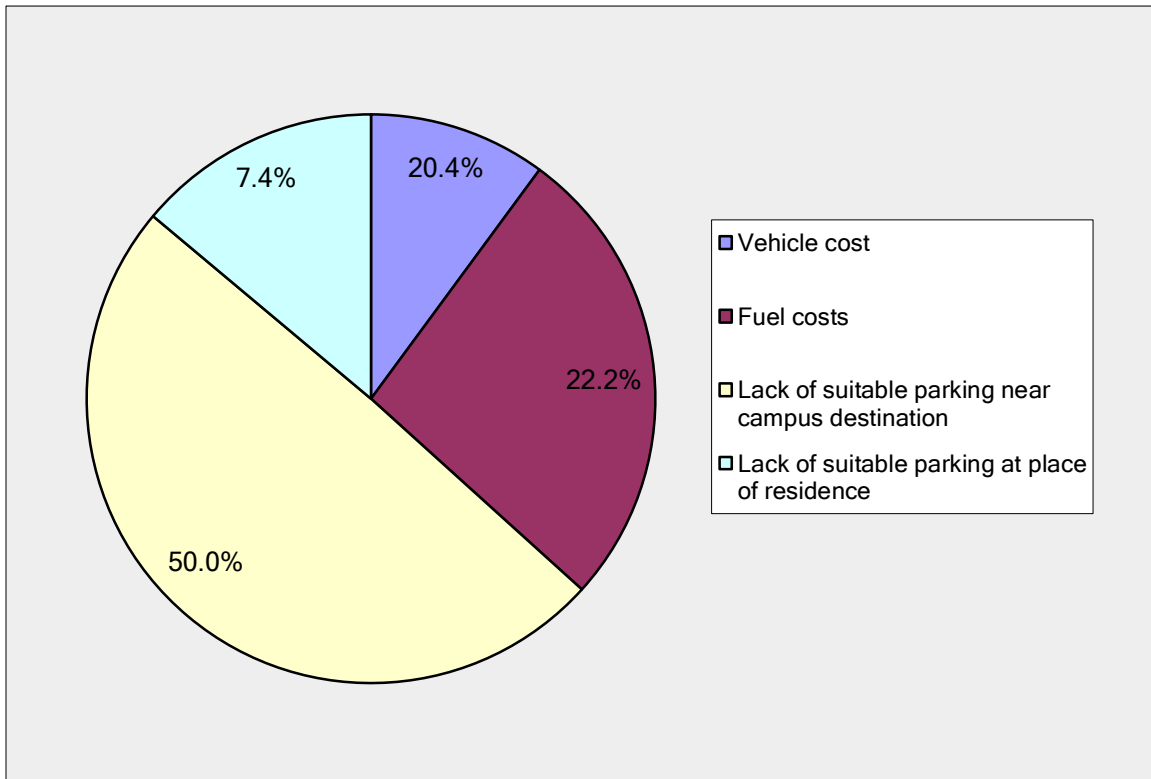


Figure 15: Issues with Riding Motorcycles/Scooter to the Central Campus

3.5 Travel Cost to Central Campus

A survey regarding monthly travel costs to the Central Campus for all modes of transportation was conducted. A summary of the responses are presented on Table 5 and Figure 16. Approximately 29% of the respondents indicated that they spend less than \$100 on a monthly basis.

Table 4: Monthly Travel Costs to Central Campus for all modes

Options	Response Percent
Less than \$100	28.8%
\$100 to \$200	26.2 %
\$201 to \$300	17.8%
\$301 to \$450	9.4%
\$451 to \$600	12.0%
\$601 to \$800	2.1%
More than \$800	3.7%

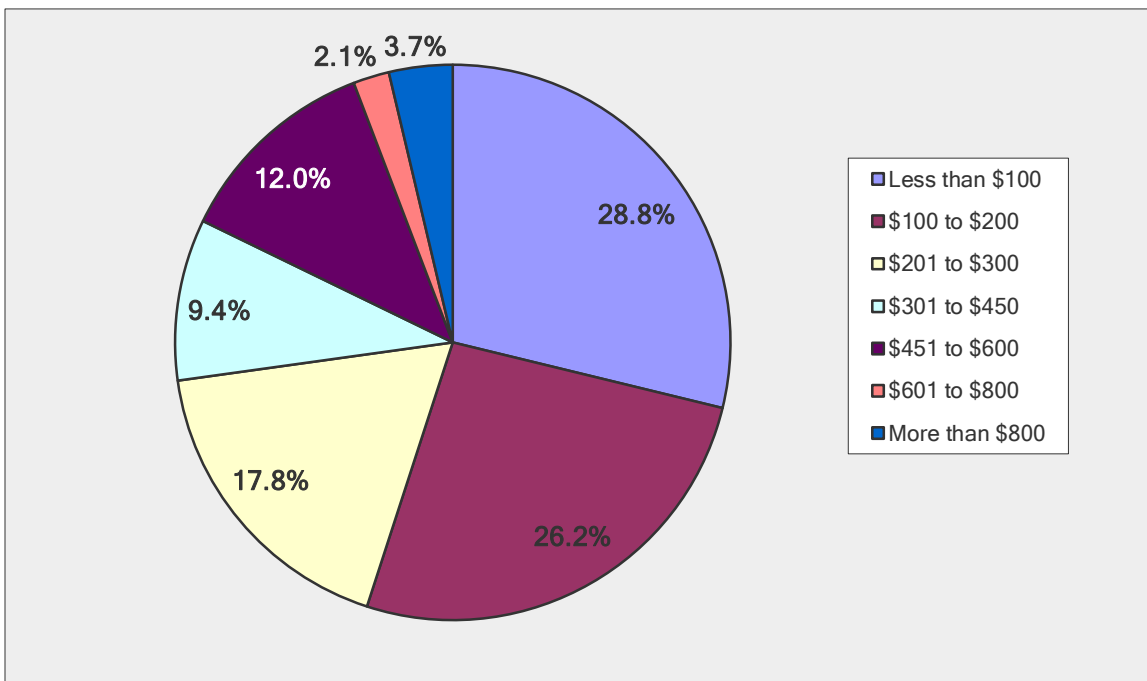


Figure 16: Monthly Cost of Travel to the Central Campus for all Modes

4 RESPONSES FROM HOWARD UNIVERSITY (HU) SHUTTLE BUS USERS

The summary of the patronage of the Howard University Shuttle Bus service is presented in Table 5 and depicted graphically in Figure 17. About 25% of the respondents indicated that they use the shuttle bus a few times on a weekly basis while approximately 36% of them do not use the shuttle at all.

Table 5: Frequency of Travel to Campus

Options	Response Percent
Multiple times a day	4.6%
A few times a day	7.2%
A few times per week	25.1%
Weekly or less	26.7%
Not at all	36.4%

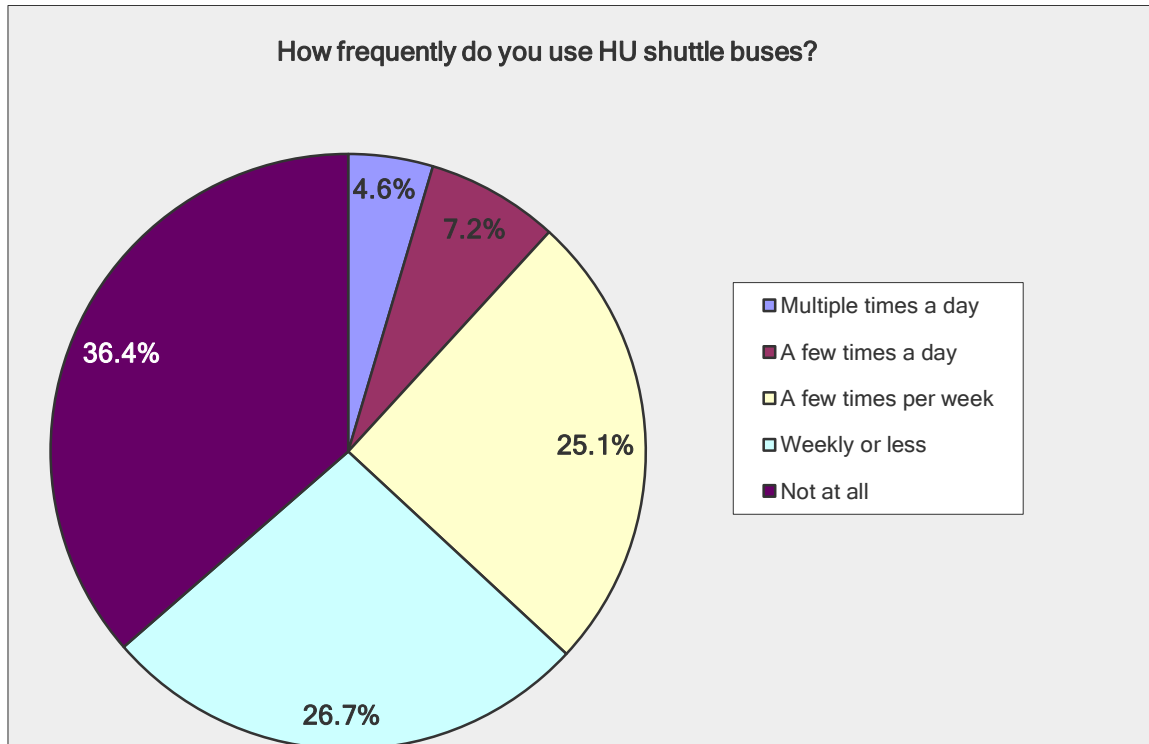


Figure 17: Patronage of HU Shuttle Bus per Week

Twenty six percent (26%) of the survey respondents indicated that they use the HU Shuttle to avoid walking/cycling in bad weather (see Table 6 and Figure 18). Other reasons for the patronage of the HU shuttle bus are provided in the Appendix.

Table 6: Description of the use of HU Shuttle

Options	Response Percent
They are many primary means of accessing Central Campus destinations	8.2%
To reach Central Campus destinations which are too far to walk to when I don't want to move my car.	4.4%
To reach Central Campus destinations that are too far to walk to and offer limited or no parking nearby.	7.7%
To reach Central Campus destinations that are too far to walk to when I don't have a car or bicycle on campus.	18.1%
To travel between the Central Campus and the Divinity or Law School campuses	2.2%
To avoid walking/ cycling in bad weather	26.4%
I do not ride the Howard University Shuttles	33.0%

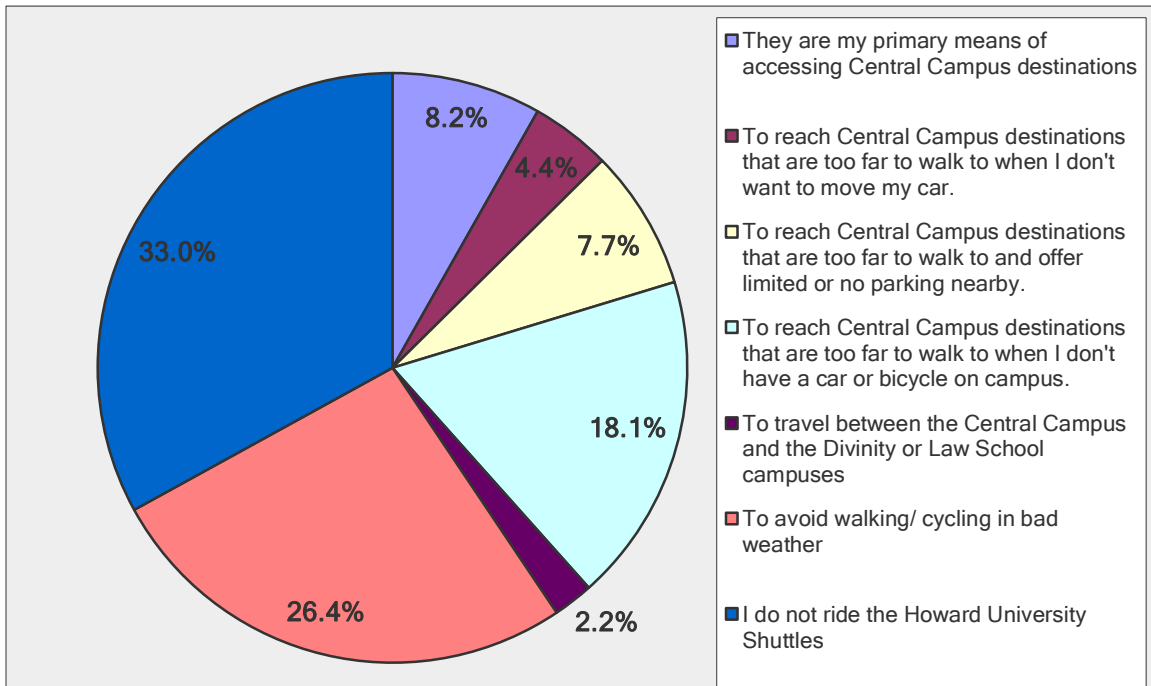


Figure 18: Reason for use of HU Shuttle Bus

It was concluded from the survey responses that about 43% percent of those who use the HU Shuttle Bus use the North Route/North Express shuttle. Approximately 25% of the respondents use the South Route. The summary of the results of their responses are presented in Table 7 and Figure 19. It was also determined from the survey that about 80%% of the patrons of the HU Shuttle transfer between shuttle routes (see Figure 20).

Table 7: Breakdown of HU Shuttle Patronage by Route

Options	Response Percent
South Route	25.4%
South Express	9.0%
North Route/North Express	42.5%
UTC	9.7%
Divinity	7.5%
Law	6.0%

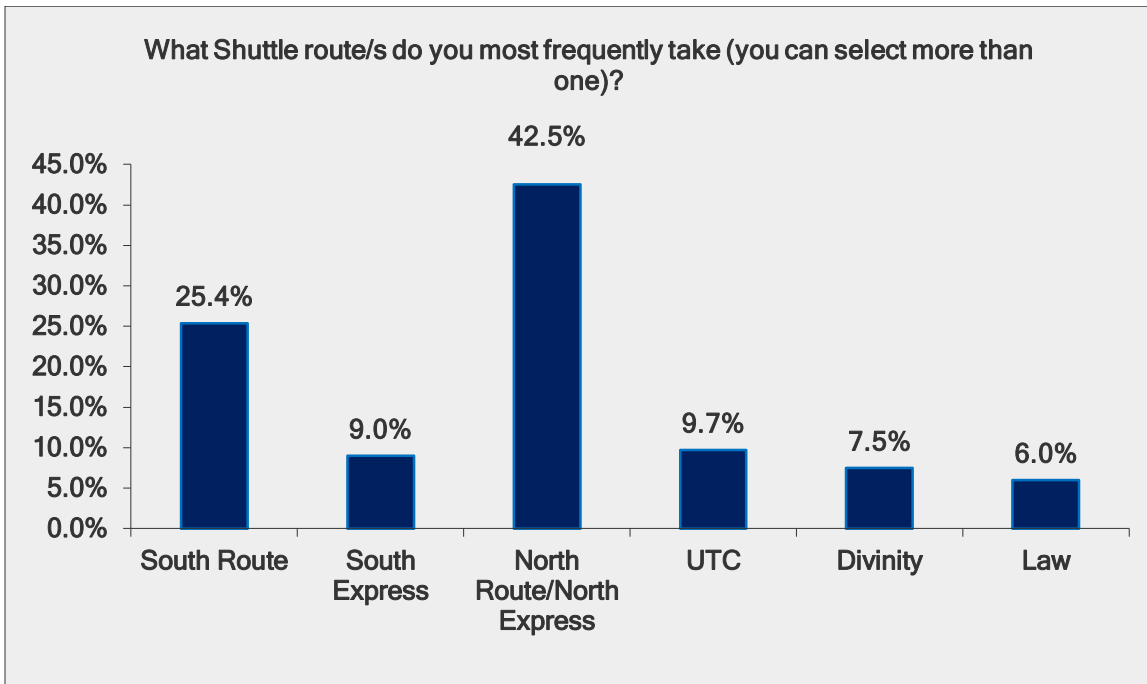


Figure 19: Breakdown of HU Shuttle Patronage by Route

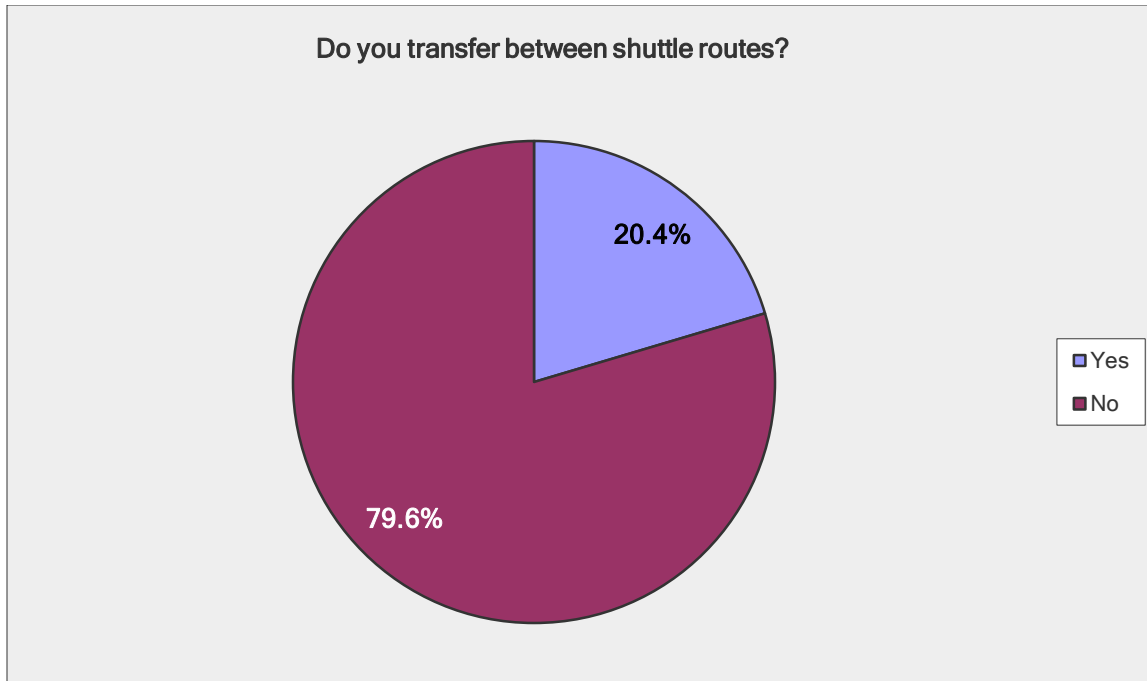


Figure 20: Percentages of those who transfer between HU Shuttle Routes

About 87% of the patrons cited service frequency as the main issue with the Bus Shuttle. Several comments regarding the service frequency were made by the respondents and were presented in the Appendix.

HU Shuttle users' responses of their monthly cost are presented in Table 10 and Figure 21. Approximately 60% of HU Shuttle users spend less than \$100 per month on transportation costs to the Central Campus.

Table 10: Monthly Costs of Transportation Using HU Shuttle

Options	Response Percent
Less than \$100	59.6%
\$100 to \$200	19.2%
\$201 to \$300	9.6%
\$301 to \$450	2.9%
\$451 to \$600	2.9%
\$601 to \$800	1.9%
More than \$800	3.8%

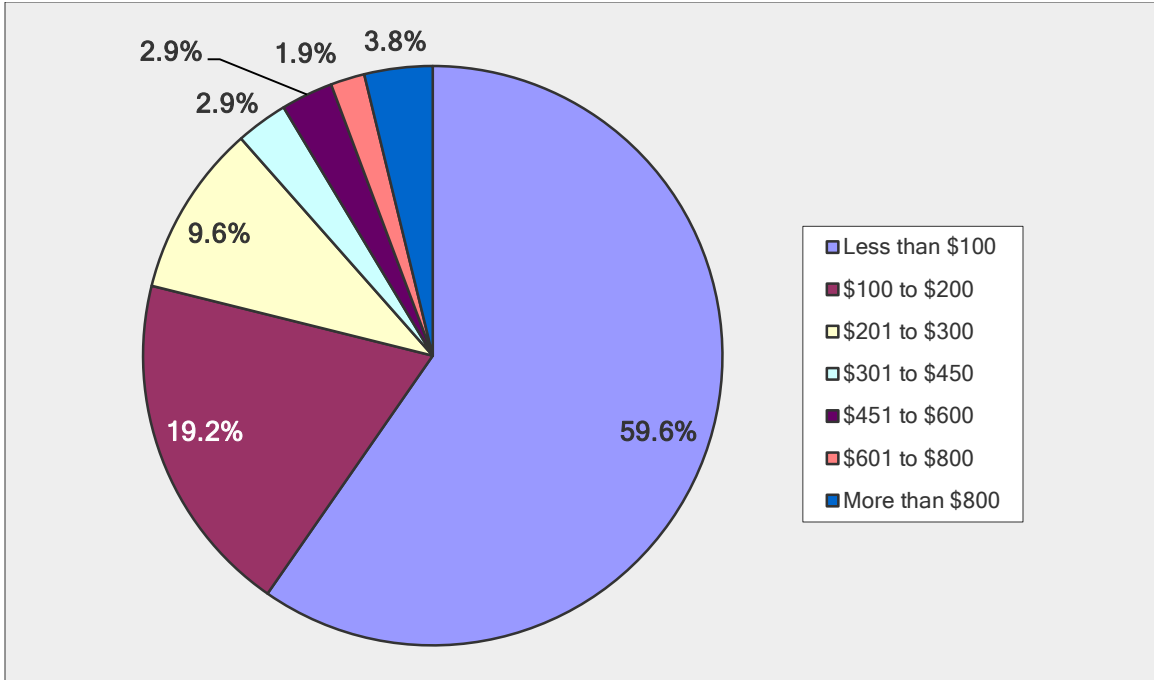


Figure 21: Monthly Cost of Travel to the Central Campus for HU Shuttle Users

The summary of the frequency of the HU Shuttle is presented in Table 11 and depicted in Figure 22. From the results, approximately 60% of the respondents use the shuttle multiple times a day.

Table 11: Frequency of Using the HU Shuttle

Options	Response Percent
Multiple times a day	60.2%
A few times a day	15.5%
A few times per week	15.5%
Weekly or less	7.8%
Not at all	1.0%

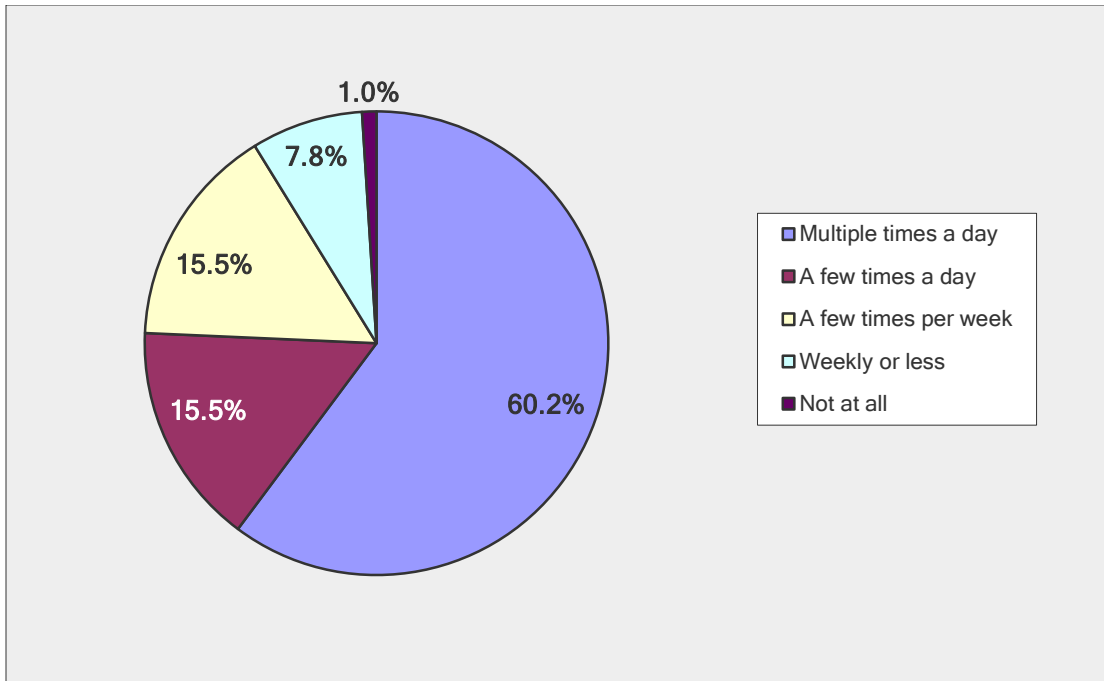


Figure 22: Frequency of Using the HU Shuttle

The summary of the reason(s) for the use of the Shuttle is presented in Table 12 and shown in Figure 23. According to the summary, approximately 72% of the respondents use the shuttle as the primary means of traveling to the Central Campus.

Table 12: Reason for Using the HU Shuttle

Options	Response Percent
They are my primary means of accessing Central Campus destinations.	71.2%
To reach Central Campus destinations that are too far to walk to when I don't want to move my car.	4.8%
To reach Central Campus destinations that are too far to walk to and offer limited or no parking nearby.	3.8%
To reach Central Campus destinations that are too far to walk to when I don't have a car or bicycle on campus.	6.7%
To travel between the Central Campus and the Divinity or Law School campuses	6.7%
To avoid walking/ cycling in bad weather	3.8%
I do not ride the Howard University Shuttles	0.0%

Others (please specify)	2.9%
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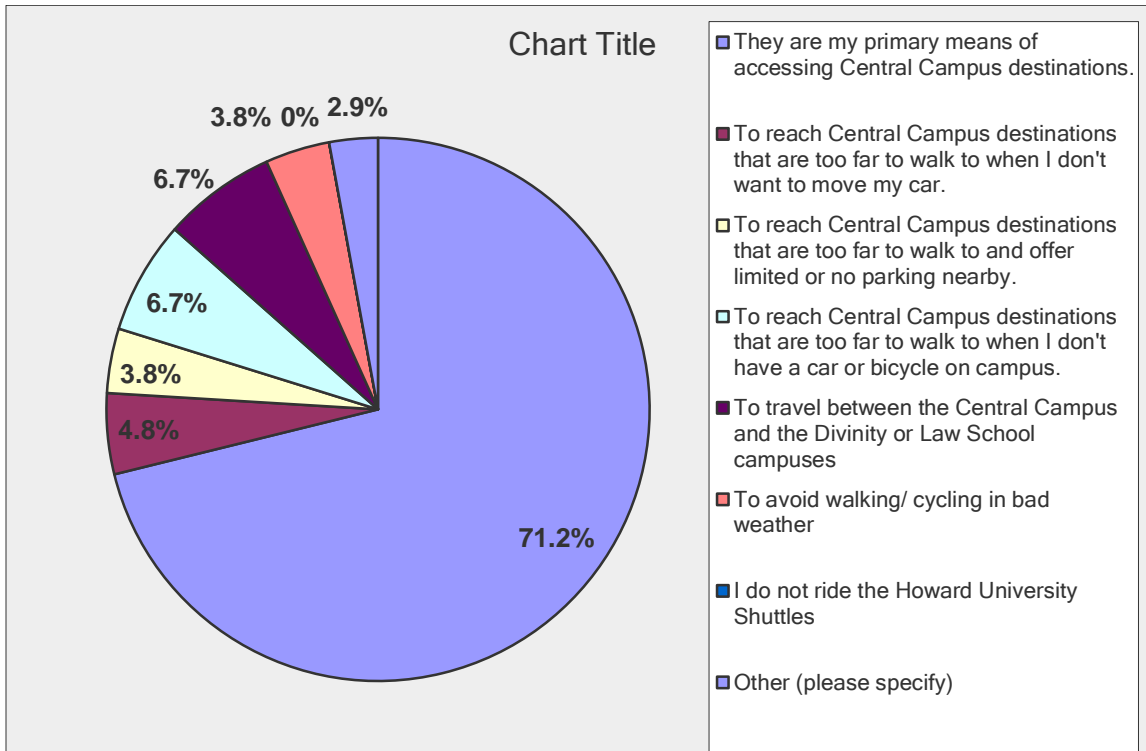


Figure 23: Reason for using the HU Shuttle

5 OTHER TRANSIT BUSES

The summary of the reason(s) for the use of the Shuttle is presented in Table 13 and shown in Figure 24. From the summary, 50% of the respondents cited cost as their main barriers for using other transit services to travel to the Central campus.

Table 13: Barriers facing Community Other Transit Users

Options	Response Percent
Cost	50.0%
Service Frequency	30.8%
Limited service (no route close to home, service hours don't fit with campus schedule, etc.)	11.5%
Physically difficult	3.8%

Other (please specify)	3.8%
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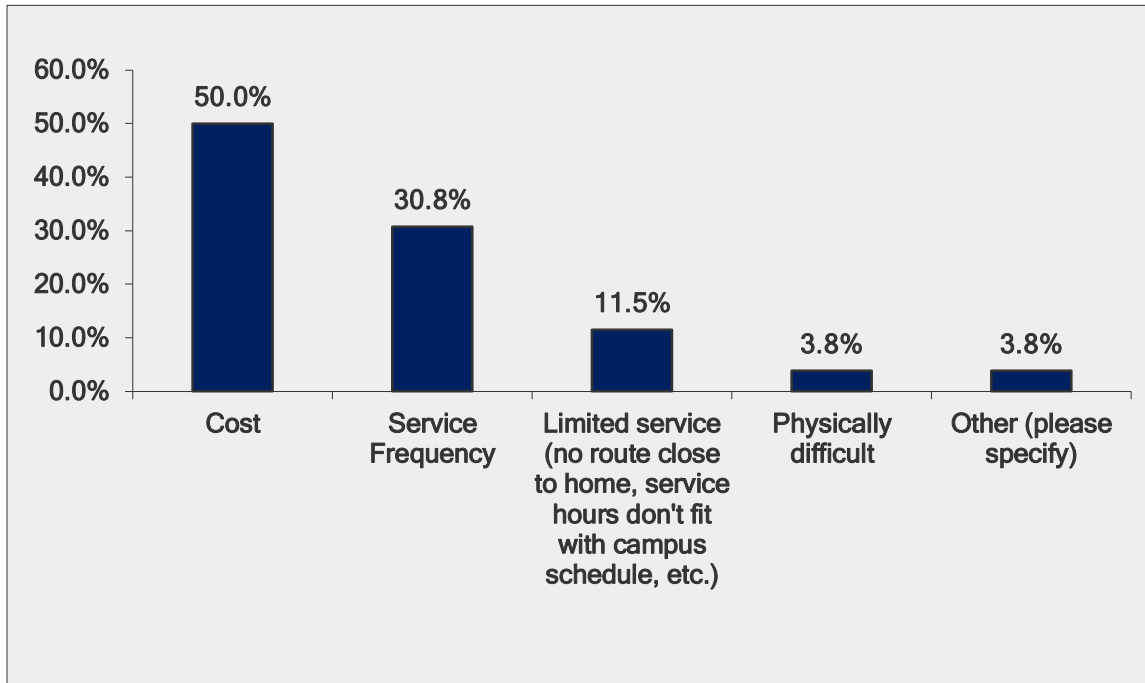


Figure 24: Barriers facing Other Transit Users

From Table 14 (and shown in Figure 25), about 53% of those who use other transit modes to travel to Central Campus indicated that they spend between \$100 and \$200 per month.

Table 14: Cost of Travel using Other Transit Mode

Options	Response Percent
Less than \$100	17.6%
\$100 to \$200	52.9%
\$201 to \$300	17.6%
\$301 to \$450	11.8%
\$451 to \$600	0.0%
\$601 to \$800	0.0%
More than \$800	0.0%