



GALLAUDET UNIVERSITY 2022 CAMPUS MASTER PLAN

Transportation Impact Study

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INTRODUCTION

The following Transportation Impact Study (TIS) was prepared in conjunction with the 2022 Gallaudet University Campus Plan (Campus Plan). The TIS outlines transportation planning goals associated with the Campus Plan and also identifies transportation impacts associated with the Campus Plan elements. The Campus Plan is a ten-year update to Gallaudet's existing 2012 Facilities Master Plan. The 2022 Campus Plan - Executive Summary outlines the University's vision for the campus and provides guidance for the physical development of campus facilities.

Gallaudet University is located at 800 Florida Avenue in Northeast Washington, DC. The campus is surrounded by several distinctive neighborhoods including Ivy City, Trinidad, the historic DC Farmers Market and the North of Massachusetts Avenue (NoMA) area just west and south of the campus. Figure 1 shows the general site location and regional context. Land uses surrounding the campus are primarily residential (D/R-4) to the north, south and east, and commercial (C-M-1) immediately west of the campus.

Purpose of Campus Planning Process

The District of Columbia's zoning regulations require that universities go through the Zoning Commission application and approval process for a campus plan update. This process requires the university outline its proposal for the physical development of the campus and demonstrate that there would be no adverse impacts associated with the proposed plans.

Scope of Transportation Study

The following TIS provides the results of traffic conditions analyses for Existing (2012), Future Background (2022) without proposed campus plans, and Future Conditions (2022) including proposed population growth and physical development of campus facilities in the 2022 Campus Plan. The TIS includes an assessment of site access, pedestrian and bicycle facilities, transit, loading facilities and parking demand, and evaluates potential impacts to the transportation network and surrounding communities. This TIS also includes transportation goals and provides a Transportation Demand Management (TDM) Plan that outlines various commitments the University will employ to encourage use of green travel mode choices.

This study considers the two distinctive components of the campus including the University itself, which occupies the main section of the campus (situated south of Switzer Drive) and the Laurent Clerc National Deaf Education Center (Clerc Center). The Clerc Center includes the Model Secondary School for the Deaf (MSSD) and the Kendall Demonstration Elementary School (KDES) (both situated north of Switzer Drive). The TIS includes an assessment of the campus as a whole entity and in a number of sub-sections provides separate supporting information such as student enrollment and modal characteristics separately for each use.

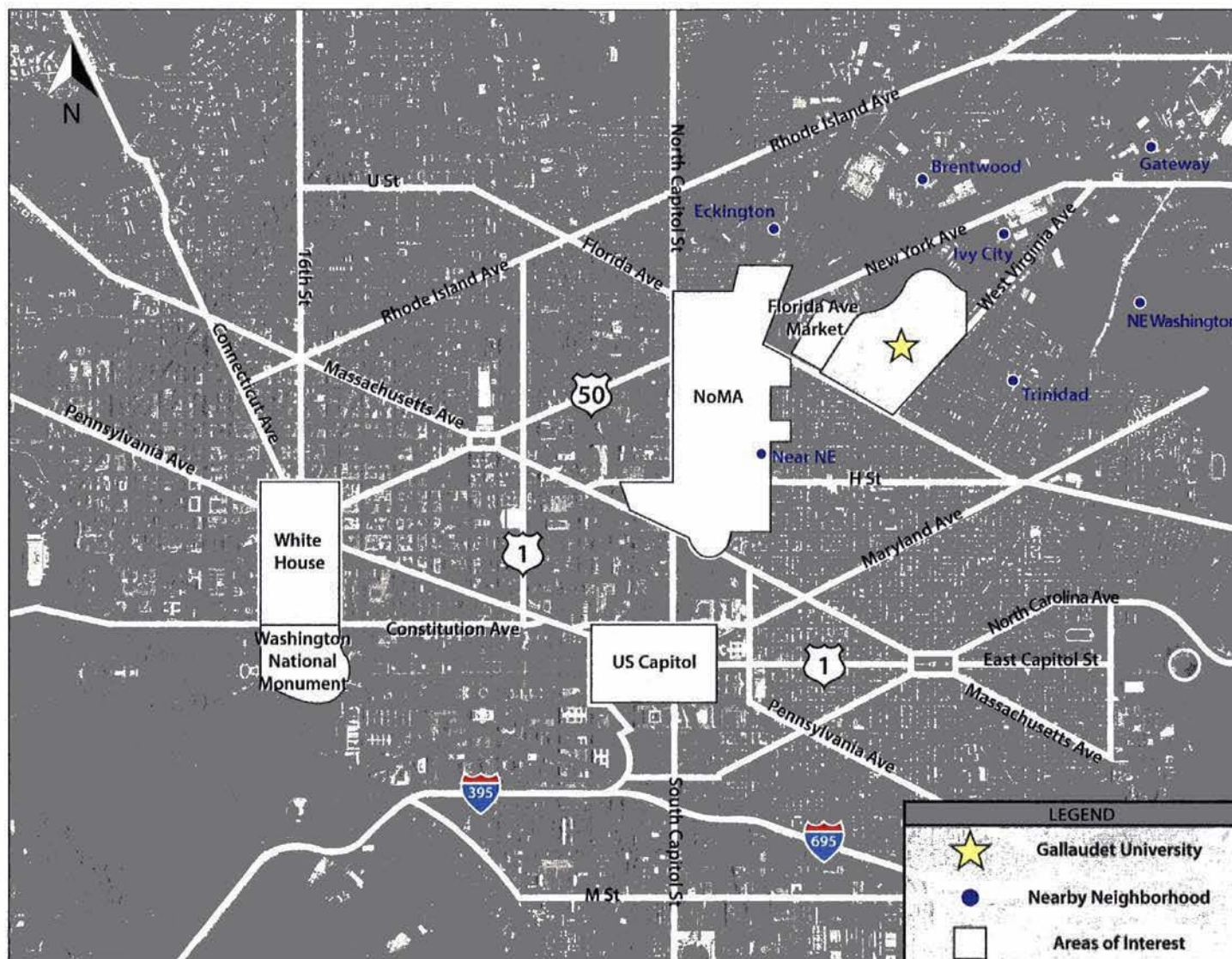


Figure 1: Site Location Map

Gallaudet University's 2022 Campus Plan sets forth guidance for the physical development of campus facilities over a ten year period. Planning principles that guided the elements yielded in the Campus Plan include:

- Accommodate enrollment growth and support Gallaudet Strategic Plan goals
- Increase and enhance on-campus housing
- Revitalize the heart of the campus and increase density
- Integrate physical accessibility and sustainability
- Build new connections with the local community

Four overarching transportation goals of the Campus Plan are as follows:

- Reduce parking demand
- Improve multi-modal access and circulation
- Open Campus to neighboring communities
- Enhance core campus pedestrian environment and direct vehicular circulation to the perimeter of the campus

Gallaudet anticipates filing a future Planned Unit Development (PUD) and Map Amendment application to include development of several parcels on both sides of 6th Street, N.E. Those parcels are identified as a part of the campus in the existing site plan. Although there are no detailed plans for the development of those parcels at the time this study was prepared, a range of potential development densities has been considered in the Future Background traffic projections.

BACKGROUND

Gallaudet Campus and Buildings

Gallaudet University, established in 1864, is a liberal arts institution primarily consisting of academic and student life activities dedicated to the education of deaf and hard of hearing individuals through American Sign Language and English programs offered from pre-school through Ph.D. levels. The 99-acre campus is identified as a Historic District on the National Register of Historic Places. Generally the campus is separated into the following five distinct quadrants:

- **Olmsted Green** is located on the western edge of the campus and contains many of the historical buildings including the Ballard House, which was first constructed in 1867 and Denison House, which was first constructed in 1875.
- **Gallaudet Mall** is the core of the campus and houses the academic, administrative and residential buildings surrounding a formal green space. The Gallaudet Mall is adjacent to the Olmsted Green
- **Hanson Plaza** is located between the Gallaudet Mall and the Clerc Center. This area is dedicated to student housing and dining and contains the Plaza Dining Hall, Ballard West and Ballard North residential complexes.
- **Laurent Clerc National Deaf Education Center** is located to the north of the Hanson Plaza and is divided from the rest of the University via Switzer Drive. The Clerc Center contains both the KDES and MSSD and its supporting recreational facilities.
- **Athletic and Recreational Facilities** are located on the east extent of the campus. Offered facilities include the Hotchkiss field, tennis courts, newly refurbished baseball and softball fields, the Field house (an indoor recreational facility) and Elstad Theater.

Figure 2 provides an illustration of the campus and each distinct quadrant and Figure 3 is an illustration of the Existing Campus Buildings.

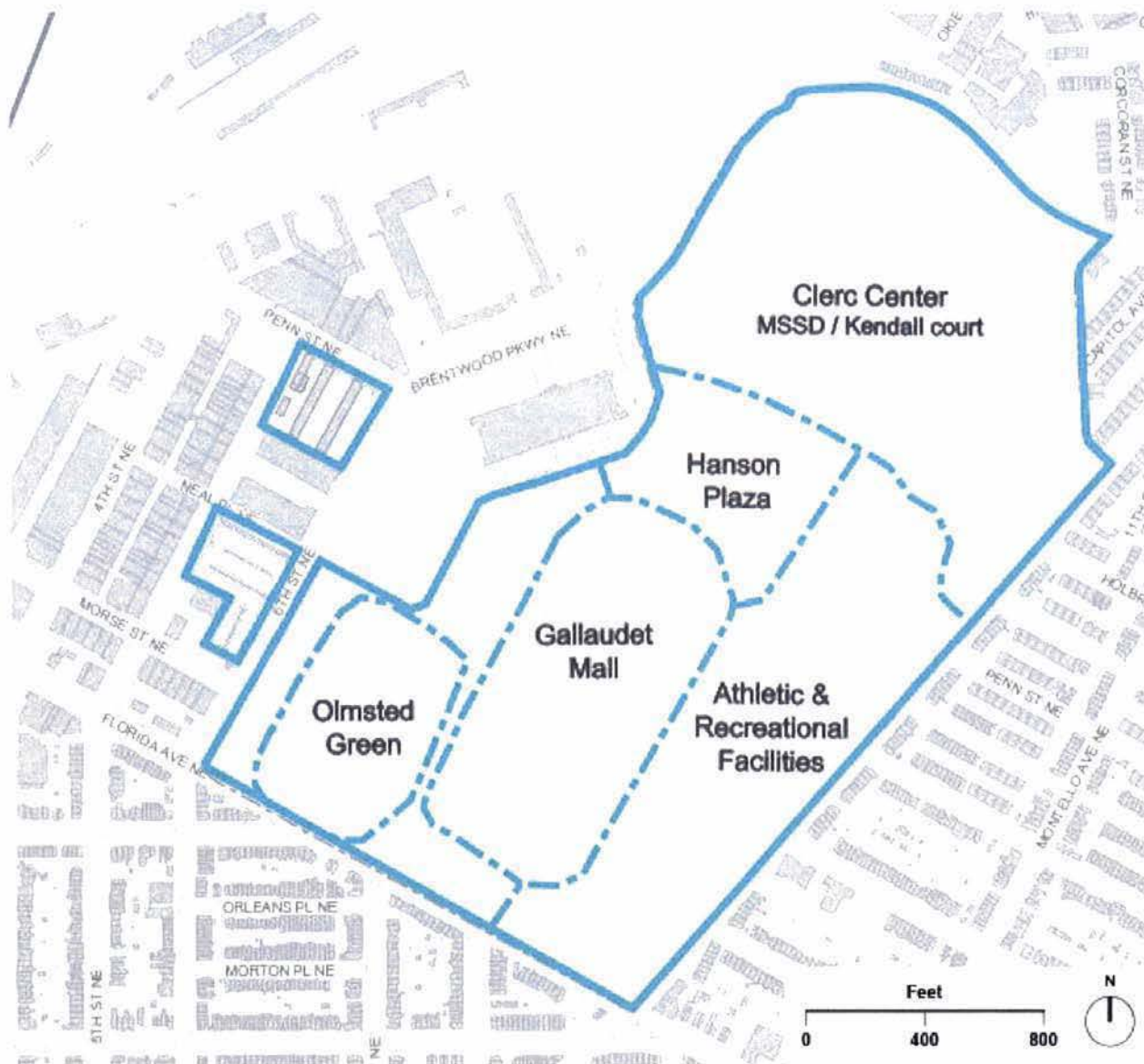


Figure 2: Campus Layout and Quadrants



Figure 3: Existing Campus Buildings

Current and future programs and services offered within the campus are described as follows:

Collegiate and Graduate Level Programs, Research and Support Services

Gallaudet University offers a full range of undergraduate and higher-level graduate programs and research programs geared towards education and human services. The University also provides several academic services to support students and faculty.

Laurent Clerc National Deaf Education Center (Clerc Center)

The Laurent Clerc National Deaf Education Center houses two schools within the campus, the Kendall Demonstration Elementary School (KDES) and the Model Secondary School for the Deaf (MSSD). KDES is a primary day school that serves students from birth through grade 8. MSSD is a residential four-year high school for deaf and hard of hearing students. Housing dormitories are provided on campus for MSSD students.

Kellogg Conference Center

The Kellogg Conference Center is a convention center and hotel that has been in operation on campus since 1995. The Center is easily accessed via the 6th Street campus entrance. Visitors park at the 6th Street parking garage which is within close proximity to the conference center entrance. Visitors whom park in the parking garage are charged a fee.

The Kellogg Conference Center is open year-round with various hours of operation dependent on the specific event/organization requirements. The Center hosts approximately 347 events per year with average annual attendance at approximately 40,000 visitors. The average daily attendance is 111 visitors.

The Center hosts approximately six events per year where the attendance reaches maximum levels at 750 visitors. During these infrequent occasions the University population is notified in advance by e-mail as parking conditions may be impacted.

The Kellogg Conference Center is used by local, regional and national organizations and institutions. The Center has 93 guest rooms for overnight guests. In the future the Kellogg Conference Center will accommodate an additional 42 guest rooms for a total of 135 rooms.

Approximately 40% of conference center events are multi-day events

Figure 4 below provides a summary of total monthly visitor activity from July 2011 to June 2012. The figure also indicates the number of daily visitors compared to guests using overnight accommodations.

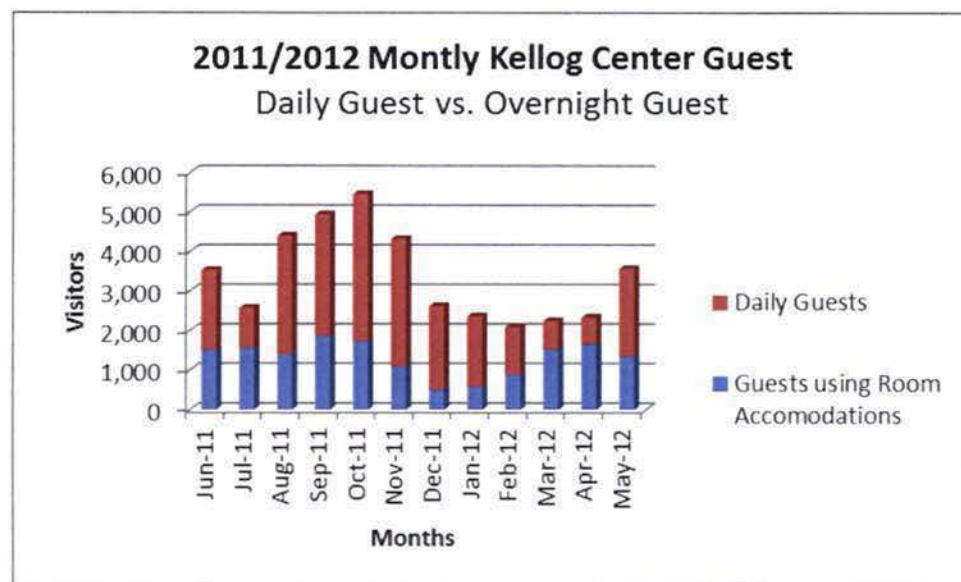


Figure 4: Kellogg Center Hotel Guest using Hotel Accommodations

As shown in Figure 4, the Kellogg Center experienced the highest attendance levels between August 2011 and November 2011. Approximately 39% of conference center visitors stayed overnight at the hotel. Per the conference center representatives, an event with 400 conference participants would bring about 260 vehicle trips to the campus. This represents 0.65 trip rate per person. Table 1 provides a summary of the Kellogg Conference Center data and characteristics.

Table 1: Summary of Kellogg Conference Center Data and Characteristics

Size	
Number of Hotel Rooms	93
Operating Hours	7:00am-11:00pm*
Annual Attendance	40,122
Daily Average Attendance	111
Maximum Typical Attendance	~176 a day
Average Number of Daily Events	1

**These are general business hours. The conference center hours of operation can be extended on a conference by conference basis*

Population Statistics

The university had a total enrollment of 1,873 students in the 2011 academic school year. This includes 1,611 students enrolled in graduate and undergraduate coursework and 262 students enrolled in the Clerc Center. The breakdown of students enrolled by program is outlined in Table 2.

Table 2: Gallaudet University Student Population

University	Students
Full-time	1329
Part-time	282
University Total	1611
Clerc Center	Students
KDES	97
MSSD	165
Clerc Center Total	262
University and Clerc Center Total	1873

Gallaudet's current faculty/staff county (by type) is outlined in Table 3.

Table 3: Gallaudet University Faculty and Staff count (by type)

	No. of Employees
Administrators	112
Faculty	185
Clerc Center Teachers	46
Professional Staff Academic/Student Support	201
Professional Staff Administrative	144
Secretarial/Clerical	49
Technical	76
Service	129
Maintenance	38
Total	980

As shown in Table 3, there are 980 employees at Gallaudet University. Of which 800 work in some capacity for the general University and a total of 180 are employed at the Clerc Center.

Student Housing Capacity

Gallaudet University has a maximum housing capacity of approximately 1,300 beds. Approximately 81% of the total University student enrollment (1,611 students) can be accommodated with the existing housing supply.

Transportation Characteristics

The University conducted a transportation survey in fall of 2012 to determine existing travel patterns of resident and commuter students, faculty and staff. The survey was conducted in late September 2012 and included an adequate sample size of University population (12% of the student population and 17% of the faculty/staff population). The survey is included in the appendix. Tables 4 and 5 and summarize key survey results.

Table 4: Student Transportation Modal Split

Mode Choice	Survey Respondents	Students Percentage
Resident	159	80%
Walk/Bike	17	9%
Commuter Bus	1	<1% ¹
Carpool	3	1%
Metrobus	2	1%
Metrorail then Metrobus	6	3%
Metrorail then walk	5	2%
Personal Vehicle	7	4%
Total	200	100%

As shown in Table 5, close to 90% of respondents currently walk or bike to campus (including resident students). An additional 3% of the student population walks from the Metrorail station. Approximately 4% of students utilize their personal automobile as transportation to/from the campus.

Table 5: Faculty/Staff Transportation Modal Split

Mode Choice	Survey Respondents	Faculty & Staff Percentage
Resident	2	1%
Walk/Bike	19	12%
Commuter Bus	1	1%
Carpool	4	2%
MARC Train then Shuttle	7	4%
Metrobus	3	2%
Metrorail then Shuttle	4	2%
Metrorail then Walk	10	6%
VRE to Shuttle	1	1%
Personal Vehicle	116	69%
Total	167	100%

¹ Less than 1% of respondents use the commuter bus, so it was not included in the total calculation

As shown in Table 5, travel by personal vehicle was the primary travel mode and represented travel behavior for 69% of the survey population. Walk/bike was the second highest mode choice with a total of 17% walking and/or biking to campus. This included mode choices with walking as a secondary mode or transfer mode (i.e. Metrorail then walk). Shuttle ridership was a secondary mode choice for several modes and included approximately 7% of the faculty/staff survey respondents.

Clerc Center Transportation Modal Split

The MSSD has overnight housing for all students. Vehicle trips to the campus are only associated with faculty/staff. For KDES, almost all students (close to 100%) arrive and depart the campus via the yellow school bus. By Federal Special Education law, KDES is required to pick-up all students whom require a ride to school. Students live within a 15 mile radius of the campus and bus routes are determined based on the residential distribution of the students. Buses typically arrive to the campus in the morning by 8:20 AM and leave the campus at 3:15 PM.

KDES maintain a fleet of 12 school buses and have eight bus routes. The buses enter/ exit the campus via Brentwood and/or West Virginia Avenue dependent on their respective routes.

Table 6: University (Student and Staff Faculty/Staff) Transportation Modal Split

Mode Choice	Survey Respondents	Faculty & Staff Percentage
Resident	161	44%
Walk/Bike	36	10%
Commuter Bus	2	1%
Carpool	7	2%
MARC then Shuttle	7	2%
Metrobus	5	1%
Metrorail then Metrobus	6	2%
Metrorail then Shuttle	4	1%
Metrorail then Walk	15	4%
VRE to Shuttle	1	0%
Personal Vehicle	123	34%
Total	367	100%

Combined student and faculty/staff survey results were evaluated to model travel patterns for the University. As shown in Table 6, 44% of the total survey respondents reside on campus followed by 34% currently utilizing personal automobile as primary mode of transportation to and from the campus. It is noted 10% of survey respondents walk and or bike to the campus and another 10% utilize transit.

Tables 7 and 8 provide a summary of student and faculty/staff residential location (obtained from zip code data collected as part of the transportation survey).

Table 7: Student Residential Location

State	Residential County	# of Students	% of Students
MD	Prince Georges County	2	5%
	Montgomery County	5	13%
	Howard County	2	5%
	Frederick County	1	3%
	Anne Arundel County	1	3%
VA	Fairfax County	1	3%
	Arlington County	1	3%
DC	District of Columbia	25	66%
Total		38	100%

As shown in Table 7, the majority (66%) of students reside in the District of Columbia. Students also reported residing in various counties in the state of Maryland (29%). A small number of survey respondents (6%) reside in Virginia.

Table 8: Faculty/ Staff Residential Location

State	Residential County	# of Faculty/Staff	% of Faculty/Staff
MD	Anne Arundel County	6	4%
	Carroll County	2	1%
	Charles County	3	2%
	Frederick County	3	2%
	Howard County	2	1%
	Montgomery County	24	15%
	Prince Georges County	44	27%
	St. Mary's County	1	1%
	Stafford County	2	1%
VA	Alexandria County	8	5%
	Arlington County	2	1%
	Fairfax County	8	5%
	Fauquier County	1	1%
	Prince William County	3	2%
DC	District of Columbia	53	33%
PA	York County	1	1%
Total		163	100%

As shown in Table 8, 53% of faculty/staff members live in Maryland, 33% the District of Columbia and 13% in Virginia.

Existing Transportation Demand Management

The University currently institutes a number of transportation programs to help facilitate convenient access for the University population, including the Clerc Center, and to help manage traffic and parking demand. Most notable is the University's shuttle bus program that accommodates approximately 701 daily riders.

In addition to the shuttle bus program the University also has the following transportation programs in place:

- **Carshare** – The University has one Zipcar parking spot located near the main entrance to the campus.
- **Capitol Bikeshare station** – A Capital Bikeshare station, located at 8th Street, NE and Florida Avenue, NE, provides 19 bicycle parking spaces
- **Staff Offices/Lockers/Storage/ Shower Facilities** – There are 48 (24 men and 24 women) showers located in Field House. Lockers and storage facilities are available at a cost of \$20 per year. There are also shower facilities for transportation staff in the Appleby building.
- **Conference Center Shuttle-** The Conference center has a 15 passenger shuttle which transports groups of hotel guest to off-site attractions. The shuttle is operated on an as needed basis.
- **Faculty/Staff Live Near Your Work Program** – The University in partnership with the Office of Planning has a pilot program which provides down payment assistant to faculty/staff if they purchase a home within a mile of the Gallaudet Campus. The fund currently has \$120K, half of which proffered by the University and the other half by the Office of Planning. An additional \$60K has been added to the fund for a total of 180K.
- **SmarTrip Fare Card Event-**The University held a SmarTrip Fare Card event to promote use of public transit by distributing SmarTrip fare cards on campus.
- **Gallaudet University Operational Assessment & Programmatic Analysis Study-** Gallaudet University retained a transportation consultant to conduct

this study. The study specifically addressed transportation issues including shuttle and bus utilization and logistics of on-campus staging locations.

- **Sustainability Initiative** - Gallaudet's University is a part of the Mayor's city wide sustainability initiative with Universities located in the District of Columbia. As part of this effort, Gallaudet will task its internal Sustainability committee with managing efforts to encourage use of green travel modes.

It should be noted that close to 90% of University student population is able to walk to the University from on-campus or off-campus housing locations. The supply of on-campus housing has the greatest impact of reducing student-related vehicular traffic impacts.

Since only 4% of University students currently drive to the campus, the greatest opportunity for transportation demand management is targeting the 69% of faculty/staff that currently drive alone to campus.

PREVIOUS PLANNING STUDIES

Urban Land Institute Advisory Services Panel Report

With the interest in Gallaudet University to reinvent itself and broaden its connection with the community, the Urban Land Institute (ULI) was brought in to address the University's aspirations in September 2011. The ULI panel of real estate experts documented their week-long appraisal of the University and surroundings and recommended a five part strategy:

1. Pull the campus closer to its heart, reorienting activities around the historic centers of the campus;
2. Build bridge to neighborhood and city, opening entrances to visitors and improving pedestrian and transit connections to the Metro and to H Street;
3. Create a great new place on Sixth Street and beyond, a place that would function as a new "college town" for Gallaudet;
4. Forge new partnerships to advance the University, with a variety of programs and initiatives and improved physical links to the city; and
5. Create the capacity to get it all done, moving quickly to establish a real estate foundation or similar entity.

During the panel a number of references were made to changing and improving accessibility including:

1. Increase pedestrian access and wayfinding on campus;
2. Transform 6th Street to pedestrian orientation by reducing lanes (suggesting a road diet), retaining on-street parking and encouraging traffic calming improvements (e.g., road table);
3. Improve Florida Avenue at Railroad underpass (by widening sidewalks and improving lighting), reduce number of vehicular lanes and improve pedestrian and bicycle safety and throughput; widen sidewalk widths and add bike lanes;
4. Consider eastern access to New York Avenue/ Gallaudet Metro station at corner of Third and N Street, NE

5. Expand shuttle service to H Street, NE and to non-students; and coordination with DC on the planning of future streetcar service.

Florida Avenue Market Study – Small Area Plan

In 2007 the District of Columbia Office of Planning initiated an effort to evaluate the existing infrastructure, economic vitality and potential and the historic significance of the District historic Farmers Market. The Florida Avenue Market site is approximately 40 acres and is bounded by New York Avenue, NE, 6th Street, NE, and Florida Avenue, NE (see Figure 1). The plan provided a framework for the redevelopment and revitalization of the Florida Avenue Market given its unique blend of industrial, commercial and retail uses and proposed mixed-use land opportunities.

The Gallaudet Campus Plan elements are in keeping with the urban design and conceptual framework outlined in the Florida Avenue Market Study which outlined several goals including creating a pedestrian-friendly environment with safe linkages to Metro and neighborhoods south of Florida Avenue, NE.

North of Massachusetts Avenue (NoMA)

The NoMA, North of Massachusetts Avenue, plan and development strategy was prepared by the District of Columbia Office of Planning. The plan outlined approximately 35 million square feet of redevelopment to include office, retail, residential and hospitality uses. The proposed recommendations also included transportation and infrastructure, public realm and open space, identity and building design, existing neighborhoods, environment, and sustainability.

The 2012 NoMA development update notes 40% of the development planned has been delivered and an additional 60% (9% currently under construction and 51% planned) will be delivered in the future.

Gallaudet University Operational Assessment and Programmatic Analysis

Gallaudet retained a transportation consultant in May 2010 to conduct a review of the Universities financial and operational deficiencies including an evaluation of the potential to relocate transportation facilities to another location on-campus.

EXISTING CONDITIONS ASSESSMENT

Site Access

The University is generally bounded by Florida Avenue, NE (Florida Avenue) to the south, West Virginia Avenue, NE (West Virginia Avenue) to the east, Mount Olivet Road, NE (Mount Olivet Road) and Corcoran Street, NE (Corcoran Street) to the north, and Brentwood Parkway, NE, 5th Street, NE and 6th Street, NE (5th Street and 6th Street) to the west. Local access to the Campus is provided via Florida Avenue, NE, West Virginia Avenue, NE, 6th Street, NE and Brentwood Parkway, NE. The key roadways providing access to the campus are discussed below:

- Florida Avenue, NE is classified as a principal arterial on the DDOT's Functional Classification Map. Within the study limits, the roadway has a 66-foot cross section between 5th and 6th Streets and narrows to a 56-foot cross section between 8th Street, NE and West Virginia Avenue, NE. The arterial generally runs southeast to northwest through the study area with a five to six lane divided cross-section. The main entrance to the campus is provided off of Florida Avenue on the north side of the intersection of Florida Avenue and 8th Street. Florida Avenue serves as a commuter and bus route with four bus stops located within close proximity of the Campus. According to DDOT's 2009 Traffic Volumes Map, Florida Avenue serves approximately 28,000 vehicles per average weekday in the vicinity of the University. The posted speed limit is 25 miles per hour (MPH).
- Sixth Street, NE This roadway is classified as a Minor Arterial by the City and runs north-south through the study area. North of Florida Avenue, this arterial provides for two travel lanes with curbside parking up to Penn Street. An entrance to the campus' 6th Street Parking Garage is provided along this roadway on the east side of the intersection of 6th Street and Neal Place. This facility carries approximately 10,400 vehicles per average weekday between Penn Street and Florida Avenue.
- Brentwood Parkway, NE This roadway corridor runs diagonally from southwest to northeast through the study area and is classified as a Minor Arterial by the City. North of Penn Street, Brentwood Parkway provides a 4-lane divided cross-section with no curbside parking permitted. An entrance to Clerc Center quadrant of the campus is provided along the east

side of this roadway corridor before the Mount Olivet intersection. This facility carries approximately 13,300 vehicles per average weekday along Brentwood Parkway between Penn Street and Mount Olivet Road.

- Mount Olivet Road, NE is classified as a Minor Arterial on the City's Classification Map. It runs generally southeast to northwest through the study area, within a four-lane divided cross-section. This roadway provides access for vehicles coming from New York Avenue, NE through a recently constructed ramp.
- West Virginia Avenue, NE is classified as a Minor Arterial on the DDOTs Functional Classification Map. It runs generally southwest to northeast through the study area, within a two to four lane divided cross-section. Curbside parking is permitted along most of roadway on both sides. This roadway provides direct access to the northern side of the campus through a campus gate. This facility carries approximately 13,000 vehicles per average weekday in the vicinity of the University.

Figure 5 provides an illustration of the Gallaudet Campus and surrounding roadway network.

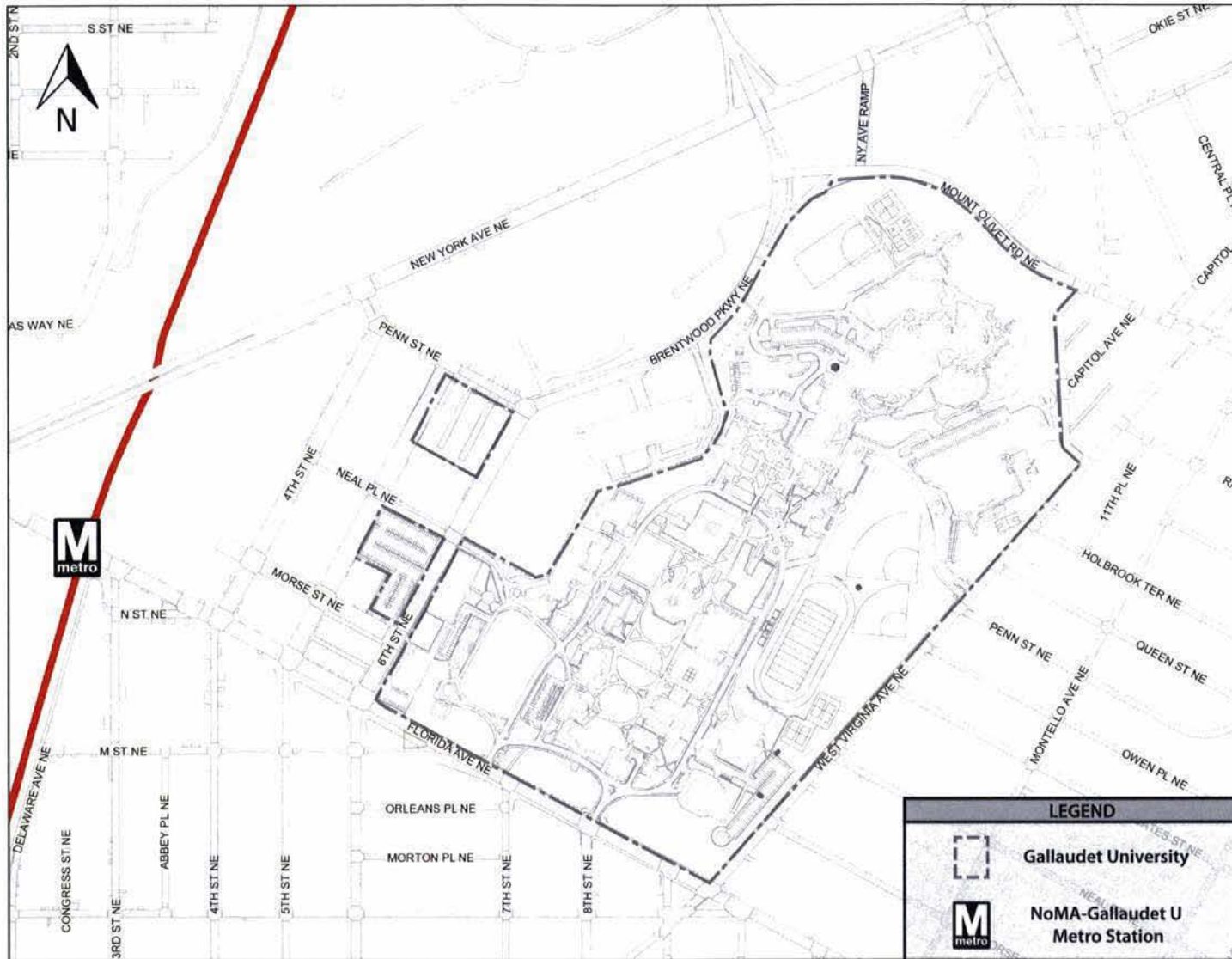


Figure 5: Gallaudet Campus and Surrounding Roadway Network

Vehicular Gates

There are four vehicular entrances to the Gallaudet Campus. Those entrances are situated at the following locations as described below:

- **Florida Avenue, NE and 8th Street, NE** - The entrance at Florida Avenue, NE and 8th Street, NE is located along the southern border of the campus and serves as the main entryway. This entrance supports both vehicular and pedestrian access and is accessible 24 hours a day.
- **6th Street, NE and Neal Place NE** - The 6th Street, NE entrance is located on the west side of the campus and is open daily from 6:00 AM to 6:00 PM. This entrance may be accessed by both vehicles and pedestrians although pedestrian usage from 6th Street into the campus is limited. This entrance provides primary access to the 6th Street garage and the Kellogg Conference Center.
- **West Virginia Avenue, NE** - The West Virginia Avenue, NE entrance is situated within the northern section of the campus (north of Switzer Drive). This entrance provides convenient direct access to the University's athletic and recreational facilities and the Clerc Center. The West Virginia Avenue campus entrance is closed daily after 6:00 PM.
- **Brentwood Parkway, NE** - The Brentwood NE entrance is situated within the northern section of the campus (north of Switzer Drive). This entrance provides primary access to the Clerc Center however can also provide access to the southern portion of the campus (or campus core) via a circuitous route of internal roadways. The Brentwood Parkway campus entrance is closed daily after 6:00 PM.

Figure 6 provides an illustration of the campus entrance and internal vehicular circulation.

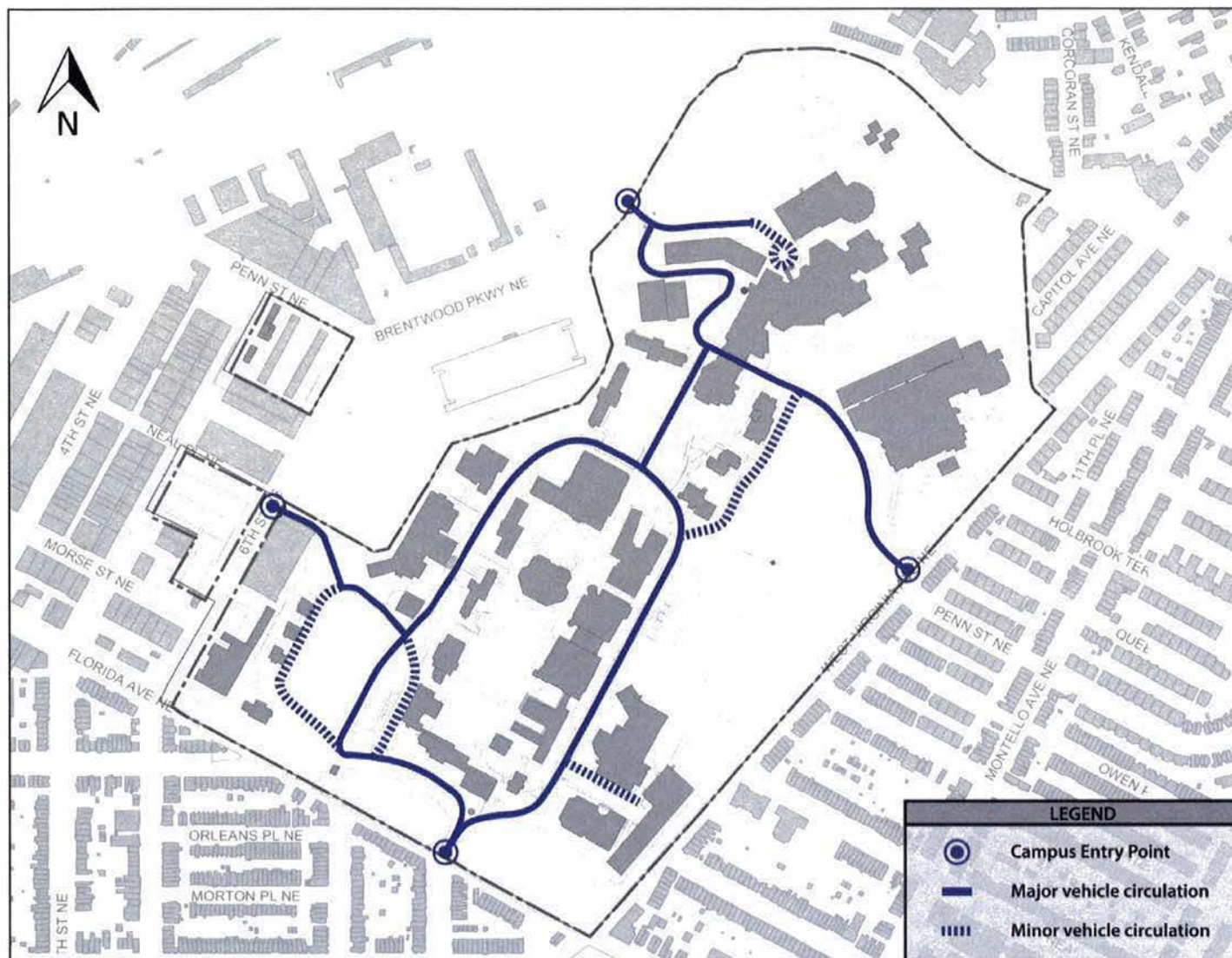


Figure 6: Gallaudet University Vehicular Access and Circulation

Pedestrian Access and Conditions

A detailed inventory of sidewalks, crosswalks and pedestrian signals adjacent at the campus entrances are detailed in Figure 7.

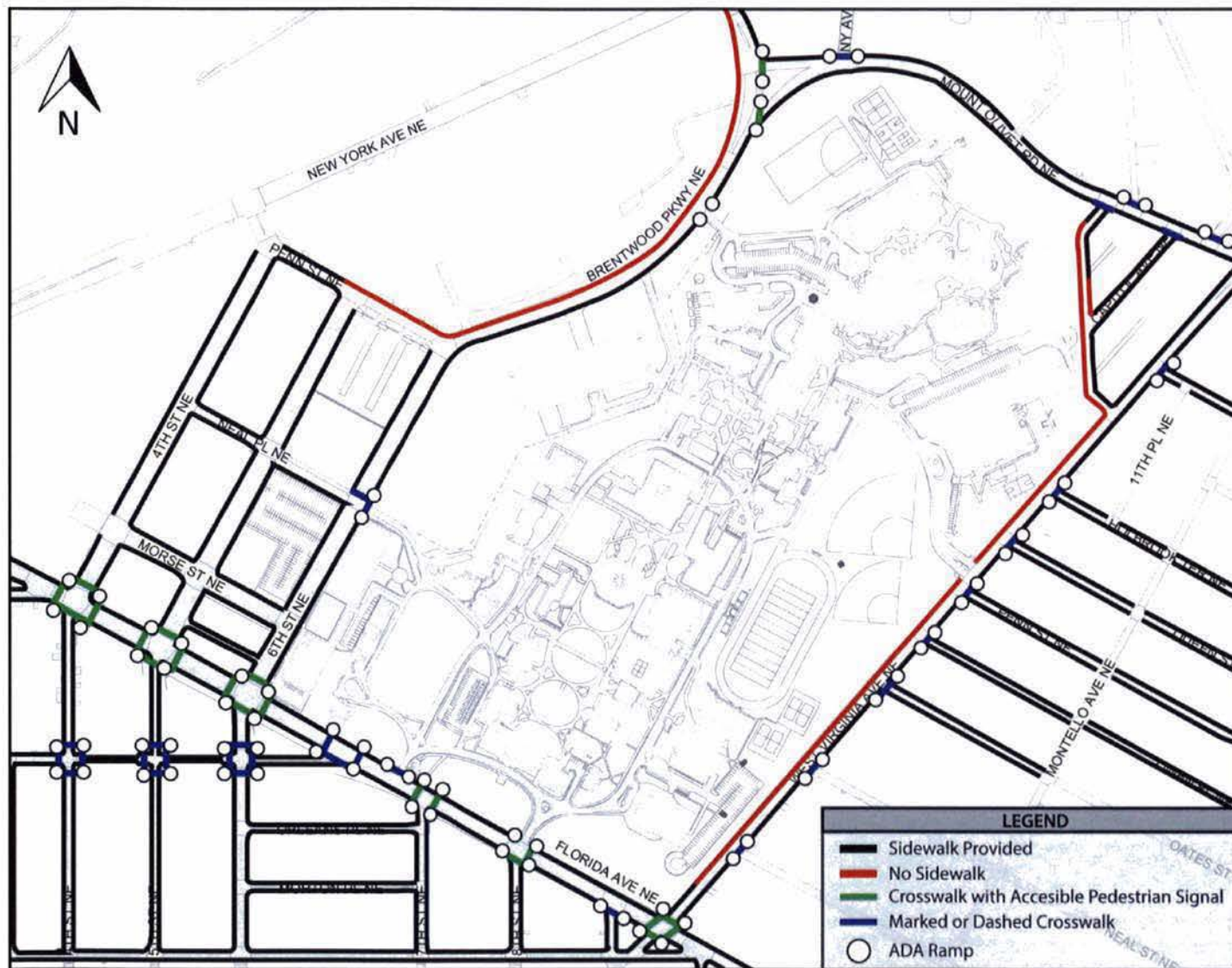


Figure 7: Pedestrian Access

At the Historic Campus Gate, there is a white crosswalk that facilitates pedestrian crossing the campus driveway walking along the north-side of Florida Avenue. Immediately east of the Historic Campus gate is the 7th Street, NE intersection with Florida Avenue, where there are ladder style crosswalks along the three approaches of the intersection including east and westbound approaches along Florida Avenue, NE and along the northbound approach of 7th Street, NE. At the main campus gate, high visibility ladder-style crosswalks are provided along the westbound approach of Florida Avenue, NE and along the northbound approach of 8th Street, NE. No sidewalk is provided for pedestrians walking along the north-side of Florida Avenue, NE however there is a concrete apron where pedestrians can walk to cross the campus driveway.

As shown on Figure 7, there is no sidewalk in the public space along the west-side of West Virginia Avenue, adjacent to the campus (from just north of Florida Avenue to Mt. Olivet Road).

While there is some pedestrian use of the west side of West Virginia Avenue as indicated by a narrow quasi-pedestrian path that has been created, pedestrians primarily use the east side of West Virginia Avenue where there is a sidewalk.

There are no destinations on the west side of West Virginia Avenue as the University fence limits access to the campus to only one gate. Further, mature trees on West Virginia Avenue constrain pedestrian conditions in a number of locations on the west side of the street, including visible roots that are two feet to five feet away from the fence.

The University has plans to improve pedestrian access as part of its Campus Plan by developing a new campus access point at the corner of West Virginia and Florida Avenue. This plan is outlined in greater detail in the Future Site Access and Circulation section of this report.

The historic campus gate located at Florida Avenue and 7th Street supports pedestrian access only. Peak hour pedestrian volumes at the study area intersections including the pedestrian gate are shown in Table 9. Figure 8 provides an illustration of pedestrian traffic at the campus entrances.

Table 9: Peak Hour² Pedestrian Volume

Study Area Intersections	Approach			
	NB/SB		EB/WB	
	AM	PM	AM	PM
Campus Entrances				
8 th St (Main Campus Gate) & Florida Ave.	26	63	32	66
West Virginia Ave. & Campus Gate	16	28	33	52
Florida Ave. & Historic Campus Gate	24	35	66	82
6 th St. and Neal Pl.	11	10	6	5
Brentwood Pkwy & Campus Gate	0	0	0	0
Other Study Area Intersections				
5 th St & Florida Ave.	29	19	67	44
6 th St. & Florida Ave.	17	7	53	39
West Virginia Ave. & Florida Ave	26	49	49	19
West Virginia Ave. & Mount Olivet Rd.	20	59	53	57
Mt. Olivet & NY Ave Ramp	0	0	1	0
Mt. Olivet & Brentwood Pkwy - 9 th Street	0	0	0	0
Penn St. & Brentwood Pkwy	5	10	23	20

During the AM and PM peak hours, peak pedestrian activity was observed at the campus entrances along Florida Avenue, NE at the main entrance and the historic

² The AM and PM peak hour varied for each study area intersection. Detailed worksheets showing the observed peak hour for each study area intersection is provided in the Appendix of this document.

campus gates. Pedestrian traffic traversing the West Virginia Avenue gate was also comparable to that observed at the Florida Avenue main campus entrance.



Figure 8: Pedestrian Traffic at Gallaudet Campus Gates

Internal to the campus, pedestrians primarily utilize a network of walkways that provide a connection to/from the campus buildings, as well as minor campus roadways. A schematic of pedestrian circulation within the campus is shown in Figure 9.

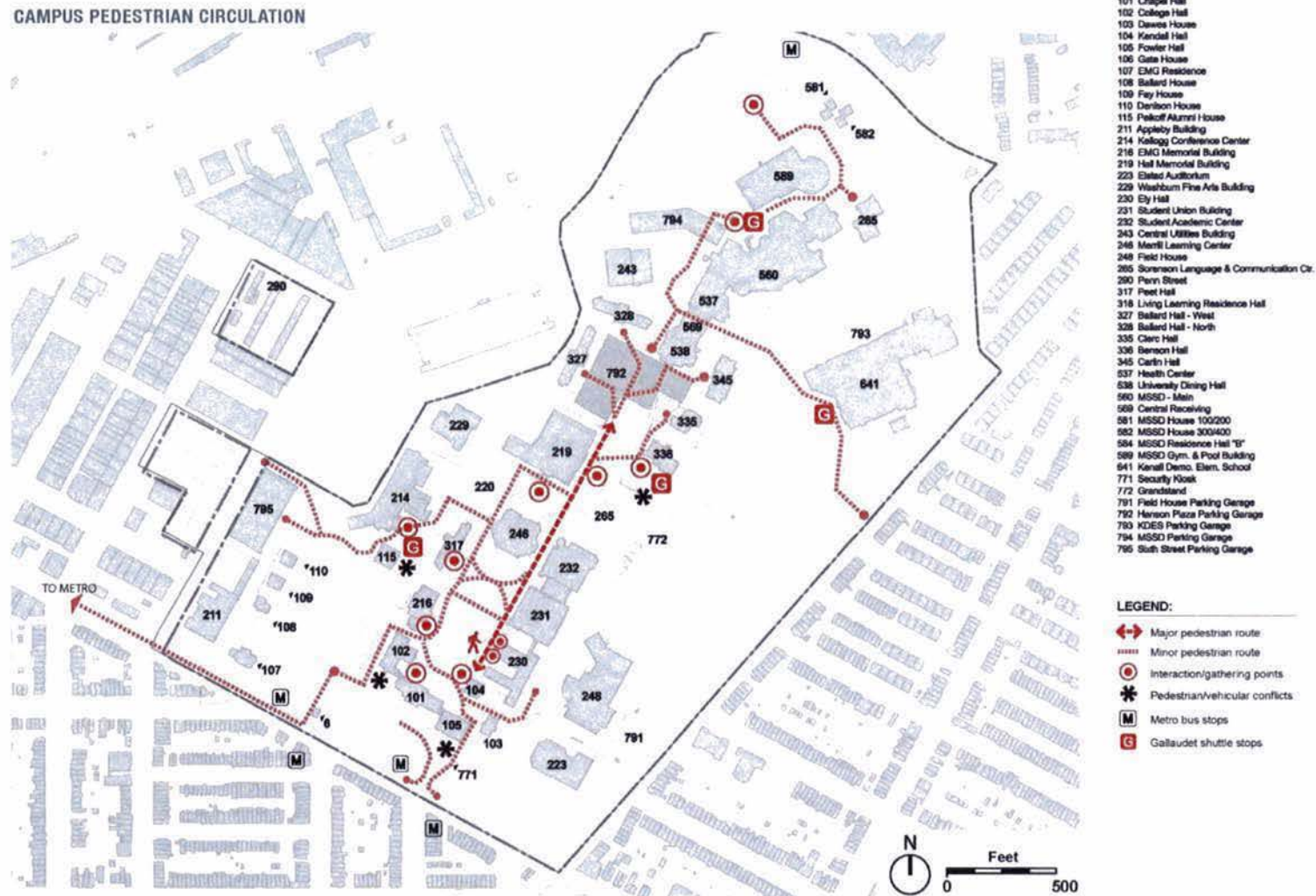


Figure 9: Gallaudet Campus Internal Pedestrian Circulation

Bicycle Facilities and Conditions

The District of Columbia Bicycle Map indicates the following bicycle facilities within a half (1/2) mile radius of the campus:

- Signed bike routes along West Virginia Avenue, from K Street, NE to New York Avenue, NE
- Bike Lanes along 4th Street, NE and 6th Street, NE from C Street, NE to Florida Avenue, NE
- The Metropolitan Branch Trail provides an off-street bike trail along the Metro Red line from Union Station north continuing past the NoMA-Gallaudet Metro Station, with several trail access points near the metro station.

An illustration of the bicycle facilities in the study area is shown in Figure 10.

The Bicycle map also rates traffic conditions for bicycling. As noted on the DC Bicycle Map, traffic conditions for bicycling, along Florida Avenue, NE is considered poor. Along 6th Street, NE, Brentwood Parkway, NE Mount Olivet Road, NE traffic conditions for bicycling are considered to be fair.

Bicycle counts collected at the study area intersections are provided in the Appendix of the report.

On-Campus Bicycle Facilities

There are a number of bike racks provided on the campus. The bike racks are primarily stationed near and/or adjacent to campus buildings and dormitories as shown in Figure 10.

Figure 11 provides an illustration of each bike rack location on campus and Table 11 provides a summary of bicycle locations, the type of bicycle racks and the storage capacity for each location. The DDOT Bicycle Facility Design guide was also utilized to determine if the existing bicycle racks are in-line with the agencies preferred bicycle facility guidelines.



Figure 10: On-Campus Bicycle Rack near Academic Building

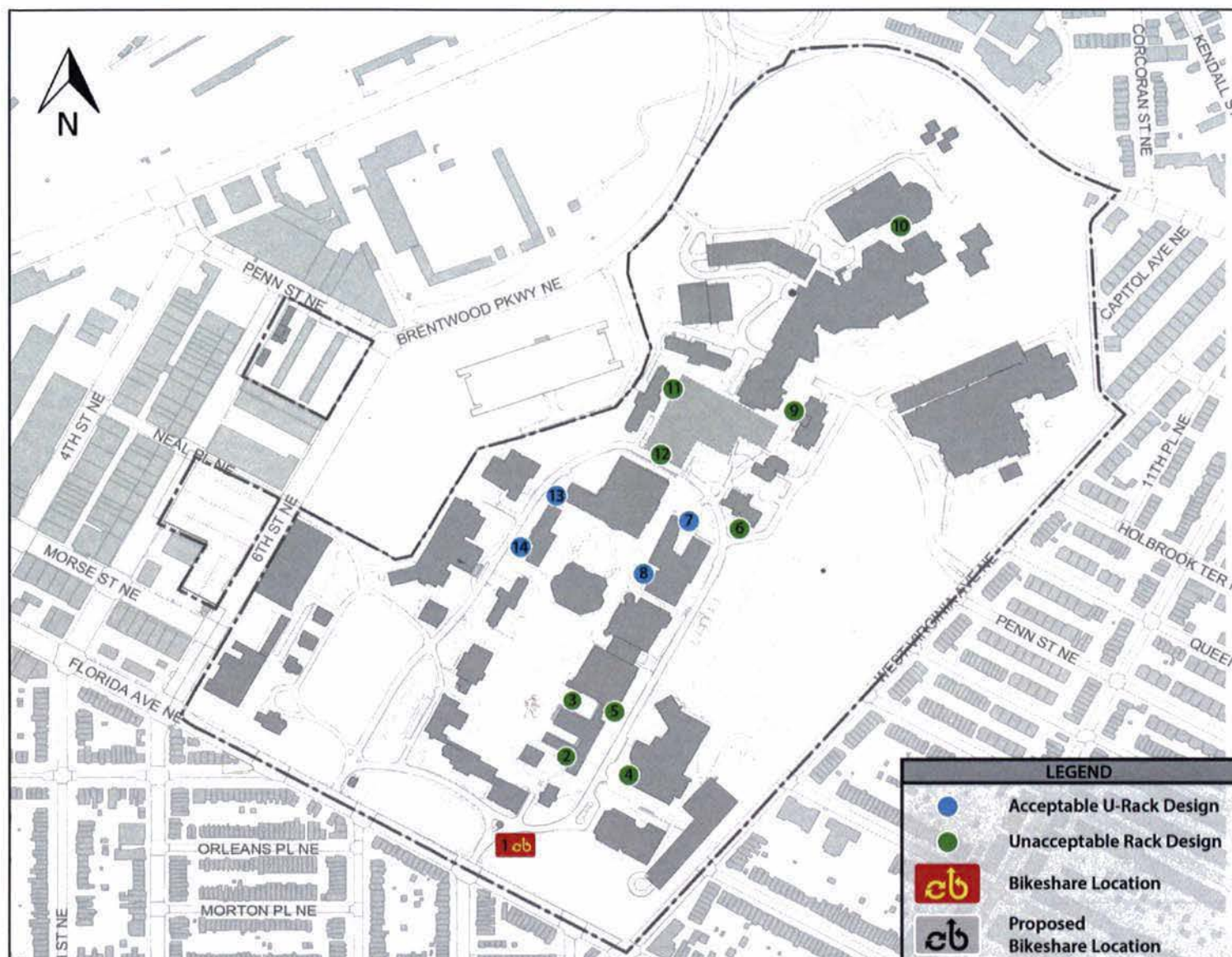


Figure 11: On-Campus Bicycle Facilities and Circulation

Table 10: Summary of On-Campus Bicycle Racks

	Location	Number of Stations	Number Occupied	Type ³
1	Main Gate	19	14	Bike share
2	Ely Center SE Side	30	1	Grid Style
3	Ely Center NW Side	13	7	Wave/Serpentine
4	Field House	16	2	Grid Style
5	I. King Jordan Student Academic Center	9	7	Wave/Serpentine
6	Benson Hall	31	1	Grid Style
7	Sorenson Language and Communication Center NE side	4	5*	U Rack
8	Sorenson Language and Communication Center SW side	7	9*	U Rack
9	Carlin Hall	37	3	Grid Style
10	MSSD Gym & Pool	15	0	Grid Style
11	Ballard West	29	2	Grid Style
12	Hanson Plaza Parking Garage	11	1	Grid Style
13	Living Learning Residence Hall NW Side	21	1	U Rack
14	Living Learning Residence Hall SE Side	9	2	U Rack
Total		251	41	

**During observations a single rack was used with two bikes secured to one individual station*

³ Examples of each type of bicycle rack has been provided in the Appendix

As outlined in Table 10, there are a total of 251 bicycle stations on campus. Field observations indicated that 16% of on-campus bicycle stations were occupied during mid-day peak (11:00 AM to 1:30 PM). There are no bike racks provided at the Kellogg Center. Although during observations there were two bikes secured to a pole near the entrance. The University plans to install new bicycle racks in underserved areas. Additionally, the university will phase in replacement of existing grid style and wave/serpentine racks with a type that is preferred by DDOT.

There is a Capital Bikeshare station located within the Gallaudet Campus that furnishes 19 bicycles, located just east of the main campus entrance. Bike usage data indicated there were a total of 520 rentals during the month of September (2012).

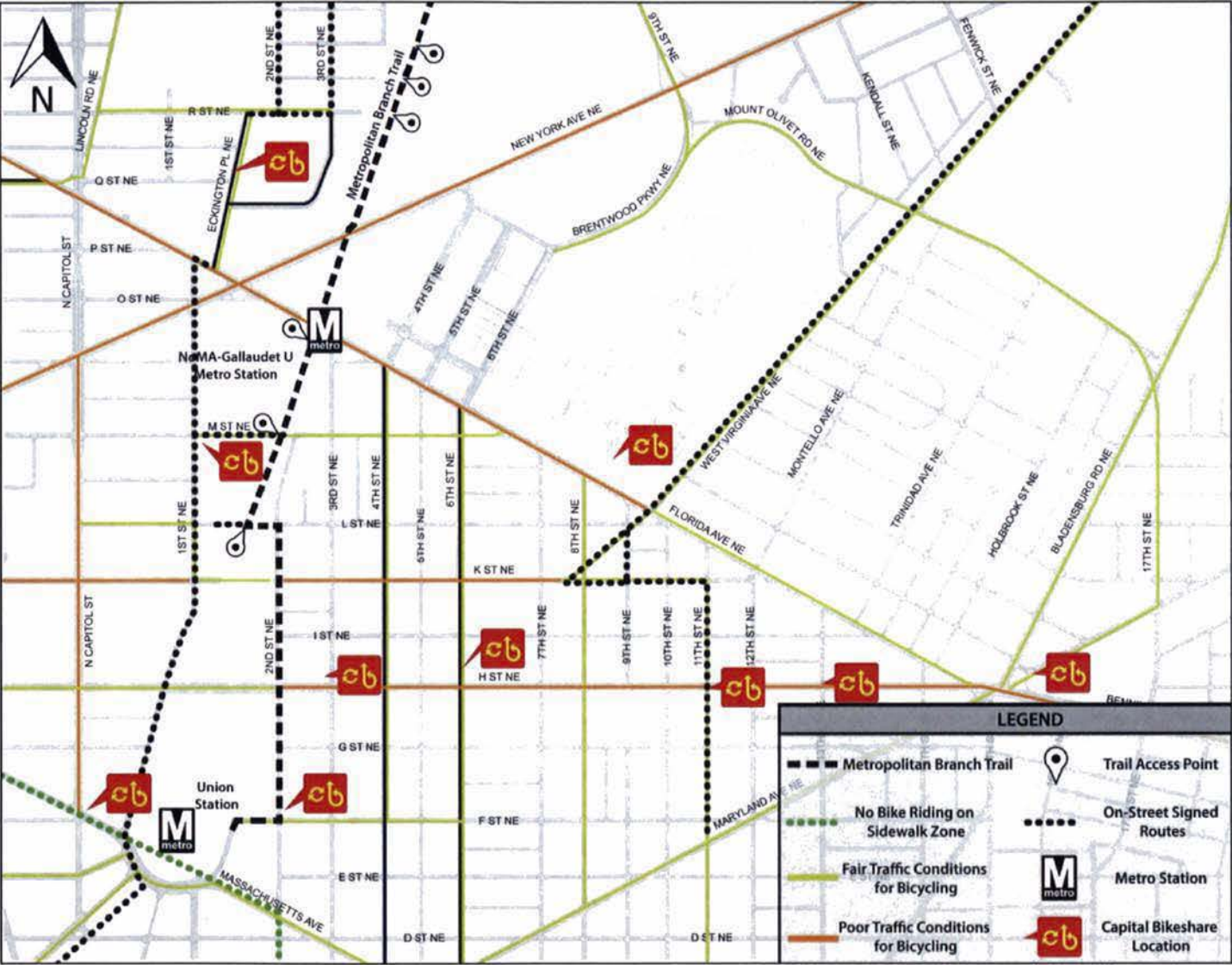


Figure 12: Capital Bikeshare Locations

On-Campus Parking

There are a total 1,588 parking spaces on the campus. The parking spaces are distributed among the parking garage facilities and surface parking lots including an off-campus overflow parking lot accessed from 6th Street, NE. Parking garages and surface lots are accessed via the four school campus gates. Figure 18 illustrates the location of each parking garage and surface lot. The 6th Street overflow parking lot currently provides spaces for construction staging and parking for special events (i.e. graduation).

In the fall 2011 academic year, there were 500 fall/spring, 300 fall only permits and 200 spring permits issues, for a total of 1,000 parking permits. Faculty staff permits are offered at a fee of \$160 per year and students permits are \$128 per year. Transportation survey results indicate approximately 47% of the existing parking demand is related to resident student and daily student parkers.

Parking surveys were conducted on Tuesday April 24, 2012 and Wednesday April 25, 2012 at 11:00 AM and 2:00 PM, respectively. A list of the parking facilities, available supply, and utilization results (for both survey times) is shown in Table 11.

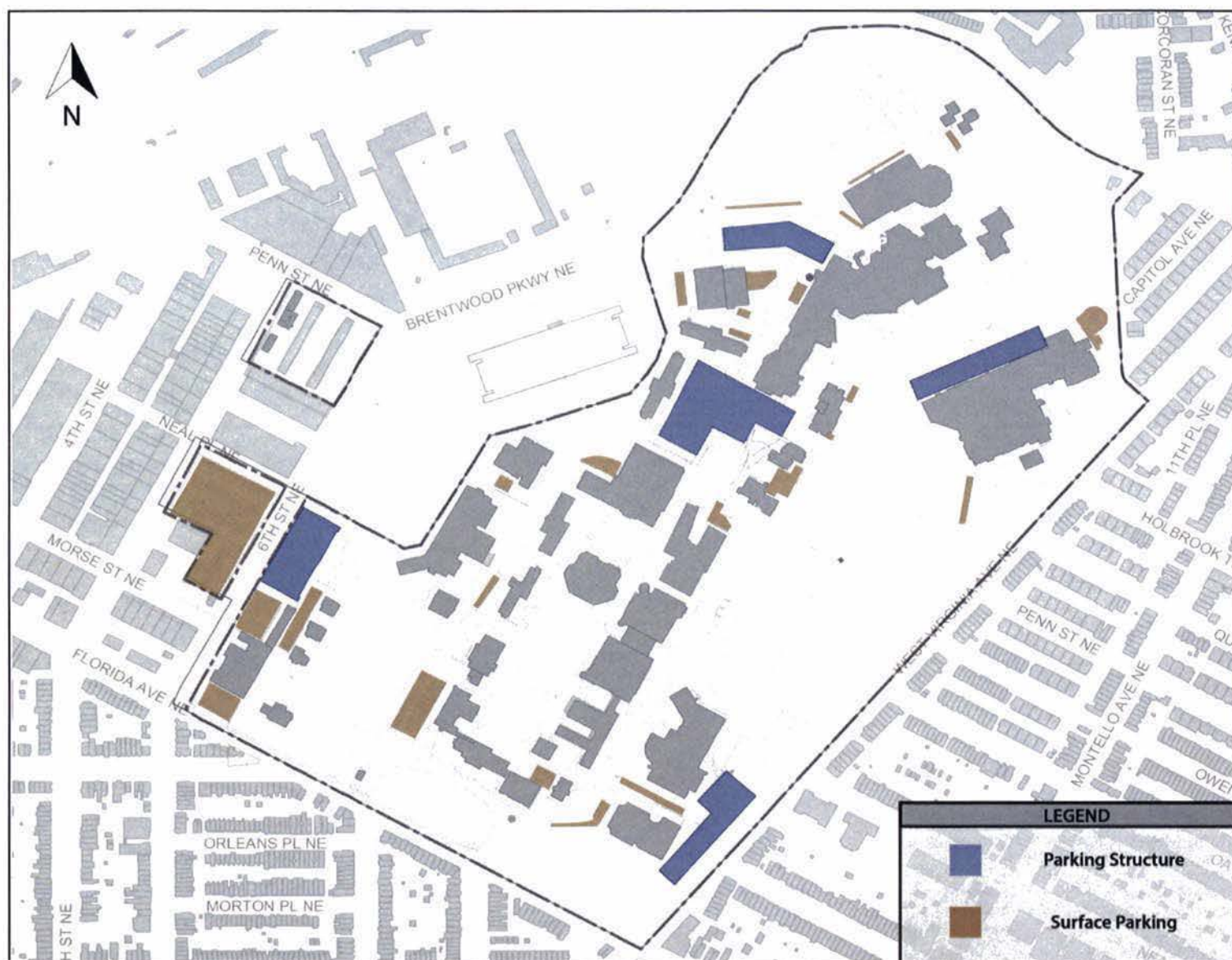


Figure 13: Campus Parking Facilities

Table 11: Parking Supply and Utilization

Facility	Supply	April 24 (11AM)		April 25 (2PM)	
		Occupied	% Occupied	Occupied	% Occupied
Field House Parking Garage	259	193	75%	207	80%
Hanson Plaza Parking Garage	202	193	96%	183	91%
MSSD Parking Garage	196	112	57%	96	49%
KDES Parking Garage	175	101	58%	83	47%
6th Street Parking Garage	271	122	45%	234	86%
Parking Garage Total	1103	721	65%	803	73%
Surface Lot Total	278	278	100%	247	89%
Total	1381	999	72%	1050	76%
6 th Street Overflow Parking Lot	207	0	0%	10	5%
Total Spaces (including overflow parking)	1588	999	63%	1060	67%

Occupancy levels outlined in Table 11 indicate on a typical weekday the campus was 72% to 76% occupied. Conference center events were in session on both survey days. There is a noteworthy difference of 112 parked cars in the 6th Street Garage on April 25 versus the previous survey day/period. This is likely attributable to higher parking demand for one of the various Kellogg Center events held during that particular survey time period. The 6th Street overflow lot is located on the west side of 6th Street and is available to visitors and Kellogg Conference Center guests. Occupancy surveys indicated this lot was under-utilized during both survey periods.

Neighborhood Parking

On-street parking surveys were also conducted on the same dates and times as the on-campus parking surveys to assess if there is any existing excess demand displaced to the community. Roadways with available curb parking within close proximity to the campus were surveyed. Florida Avenue, NE and Brentwood Parkway, NE were excluded from the survey as curb parking is prohibited along those roadways at all times.

Table 12 further summarizes on-street parking restrictions such as residential permit parking, loading zones, and street cleanings along roadways close to the campus. It should be noted that no metered spaces were found at the study roadways near the campus, though a large majority of the available spaces had two-hour restrictions and no-parking permitted due to street sweeping during morning hours ranging from 9:30AM to 11:30AM.

Table 12: On-Street Parking Restrictions summary

Street	Side	Restriction Types
West Virginia Ave (Florida Avenue to Mount Olivet)	Eastside	- Sweeping: No Parking Wed. from 9:30AM-11:30AM - Loading Zone (2 spaces): No Parking Mon-Sat. from 10AM-9PM
	Westside	Sweeping: No Parking Thur. from 9:30-11:30AM
6 th St (Florida Ave to K St)	Eastside	Sweeping: No Parking Wed/Thur. from 9:30AM-11:30AM
	Westside	RPP: 2-Hour Parking Zoned 6
K St (6 th Street to 7 th St)	North-side	- School Zone: No Parking Mon-Fri from 9:30AM-3PM - RPP: 2-Hour Parking Zoned 6
	Southside	- RPP: 2-Hour Parking Zoned 6 - Evening Restriction: No Standing/Parking Mon-Fri from 4PM-6:30 PM
7 th St. (Florida Ave to K St.	Eastside	- Sweeping: No Parking Wed. from 9:30AM-11:30AM - RPP: 2-Hour Parking Zoned 6
	Westside	- RPP: 2-Hour Parking Zoned 5 & 6 - Sweeping: No Parking Thur. from 9:30AM-11:30AM
8 th St. (Florida Ave to K St)	Eastside	- RPP: 2-Hour Parking Zoned 6 - Sweeping: No Parking Wed. from 9:30AM-11:30AM
	Westside	RPP: 2 Hour Parking Zoned 5 & 6
9 th St (Florida Ave to K St)	Eastside	- No Parking/Standing Near Driveways - Sweeping: No Parking Wed. from 9:30AM-11:30AM
	Westside	- No Parking/Standing Near Driveways - RPP: 2-Hour Parking
L St (6 th St. to 10 th St.)	North-side	- RPP: 2-Hour Parking Zoned 5 & 6 - Sweeping: No Parking Thur. from 9:30AM-11:30AM
	Southside	- RPP: 2-Hour Parking Zoned 5 & 6 - Sweeping: No Parking Wed. from 9:30AM-11:30AM
Kent Place (bw. 9 th St. and 10 th St)	North-side	RPP: 2-Hour Parking Zoned 2 & 6
	Southside	RPP: 2-Hour Parking Zoned 2 & 6

In general, the University is gated off from the community and the closed campus makes use of on-street parking less desirable particularly given the lengthy distance required to access each individual campus gate from Streets where neighborhood parking is available. Table 13 summarizes the on-street parking survey including available parking spaces and occupancy during the survey periods.

Table 13: On-Street Parking Utilization

Street	Side	Supply	24-April (11AM)		25-April (2PM)	
			Occupied	% Occupied	Occupied	% Occupied
West Virginia Ave (Florida Avenue to Mount Olivet)	Eastside	92	32	35%	26	28%
	Westside	108	18	17%	36	33%
6 th St (Florida Ave to K St)	Eastside	33	17	52%	14	42%
	Westside	38	16	42%	17	45%
K St (6 th Street to 7 th St)	Northside	66	23	35%	50	76%
	Southside	61	28	46%	8	13%
7 th St. (Florida Ave to K St.)	Eastside	42	22	52%	28	67%
	Westside	29	20	29%	20	69%
8 th St. (Florida Ave to K St)	Eastside	20	13	65%	17	85%
	Westside	23	15	65%	12	52%
9 th St (Florida Ave to K St)	Eastside	16	12	75%	9	56%
	Westside	15	11	73%	12	80%
L St (6 th St. to 10 th St.)	Northside	48	32	67%	28	48%
	Southside	52	28	54%	33	63%
Kent Place (bw. 9 th St. and 10 th St)	Northside	6	5	83%	6	100%
	Southside	7	4	57%	4	57%
Total		656	296	45%	320	49%

As shown in Table 13, there were ample available curb spaces on both survey dates with the maximum occupancy of 49%. The parking survey results indicate

existing usage of neighborhood parking by Gallaudet University is limited and/or negligible.

Public Transportation

The Gallaudet University is well served by the Washington Metropolitan Area Transit Authority (WMATA) Metrorail and Metrobus services. The NoMA-Gallaudet University Metrorail station and Union Station, on WMATA's red line, provide transit access to the Gallaudet campus. Metrobus routes servicing the study area are identified in Table 14. Table 14 also provides route name, key destinations, and headway frequency for each Metro route.

Table 14: WMATA Metrorail Bus Routes, Frequency and Key Destinations

Metrobus Routes	Route Name	Key Destinations	Frequency (AM – PM Peak)	Weekday Average Ridership⁴
90,92,93	U Street-Garfield Line	Congress Heights Anacostia Navy Yard Eastern Market, NoMa-Gallaudet U Reeves Center Adams Morgan, Duke Ellington	9 – 14 minutes ⁵	12,616
X1, X3	Benning Road Line	Hechinger Mall H St. N.E. Federal Triangle State Dept. Foggy Bottom-GWU- NoMa-Gallaudet U, Reeves Center Adams Morgan Woodley Park, Tenleytown-AU	17- 25 minutes	1,024
D3	Ivy City-DuPont Circle Line	Ivy City Trinidad Union Station Mount Vernon Square Metro Center Franklin Square Farragut North Farragut West Georgetown	23 – 26 minutes	520
D4	Ivy City-Franklin Square Line	Ivy City Trinidad Union Station Mount Vernon Square Metro Center Franklin Square Farragut West Georgetown	16 – 17 minutes	999

⁴ WMATA Fiscal Year 2011 Metrobus Weekday Average Ridership Data for the entire route and not specific to locations near Gallaudet University

⁵The morning route ends before 7:00 AM and would not likely support students, faculty and/or staff accessing the campus as typically arrive time is after 7:00 AM.

Metrobus Routes	Route Name	Key Destinations	Frequency (AM – PM Peak)	Weekday Average Ridership⁶
D8	Hospital Center Line	Veterans Affairs Medical Center National Rehabilitation Hospital, Washington Hospital Center Edgewood Rhode Island Shopping Center, Trinidad, Union Station	13 – 10 minutes	4,423

The Georgetown-Union Station circulation routes services H Street, NE and Union Station both located to the south of Gallaudet University. Figure 14 illustrates the WMATA Metrobus routes and Metrorail Station in relation to the Gallaudet Campus.

The WMATA Metrobus studies website offers the following draft recommendations for the 90, 92, and 93 U Street-Garfield Metrobus line:

- Increased supervision in bus operator training
- New limited stop service
- Traffic Operation Measures

⁶ WMATA Fiscal Year 2011 Metrobus Weekday Average Ridership Data for the entire route and not specific to locations near Gallaudet University

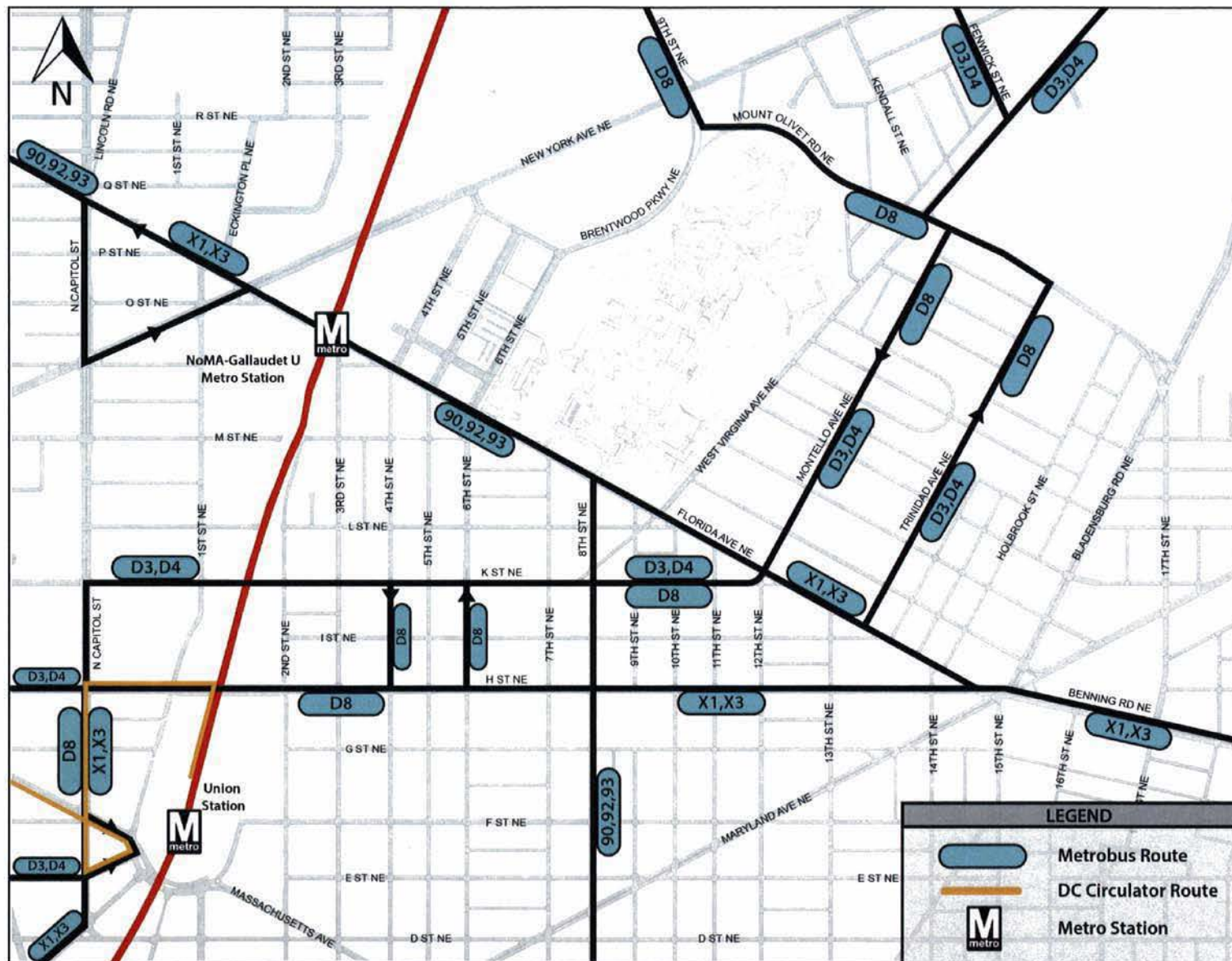


Figure 14: WMATA Metrorail Stations and Metrobus Routes

There are several bus stops adjacent to Gallaudet University along Florida Avenue, NE and, Mount Olivet Road, NE West and Virginia Avenue, NE. Bus stops locations are illustrated in Figure 15.

From the corner of 6th Street, NE and Florida Avenue, NE the NoMA-Gallaudet Metrorail station is approximately 1800 feet (or 0.34 miles) west of the campus and is about a 10 minute walk⁷. Pedestrian experience walking this route is unpleasant as the sidewalks are fairly narrow and pedestrians must walk under the dimly lit railroad underpass.

It is noted that there is a significant police presence in the area, which should help pedestrians to feel safer while walking this route.

⁷ Based on a field observation at a moderate walking pace

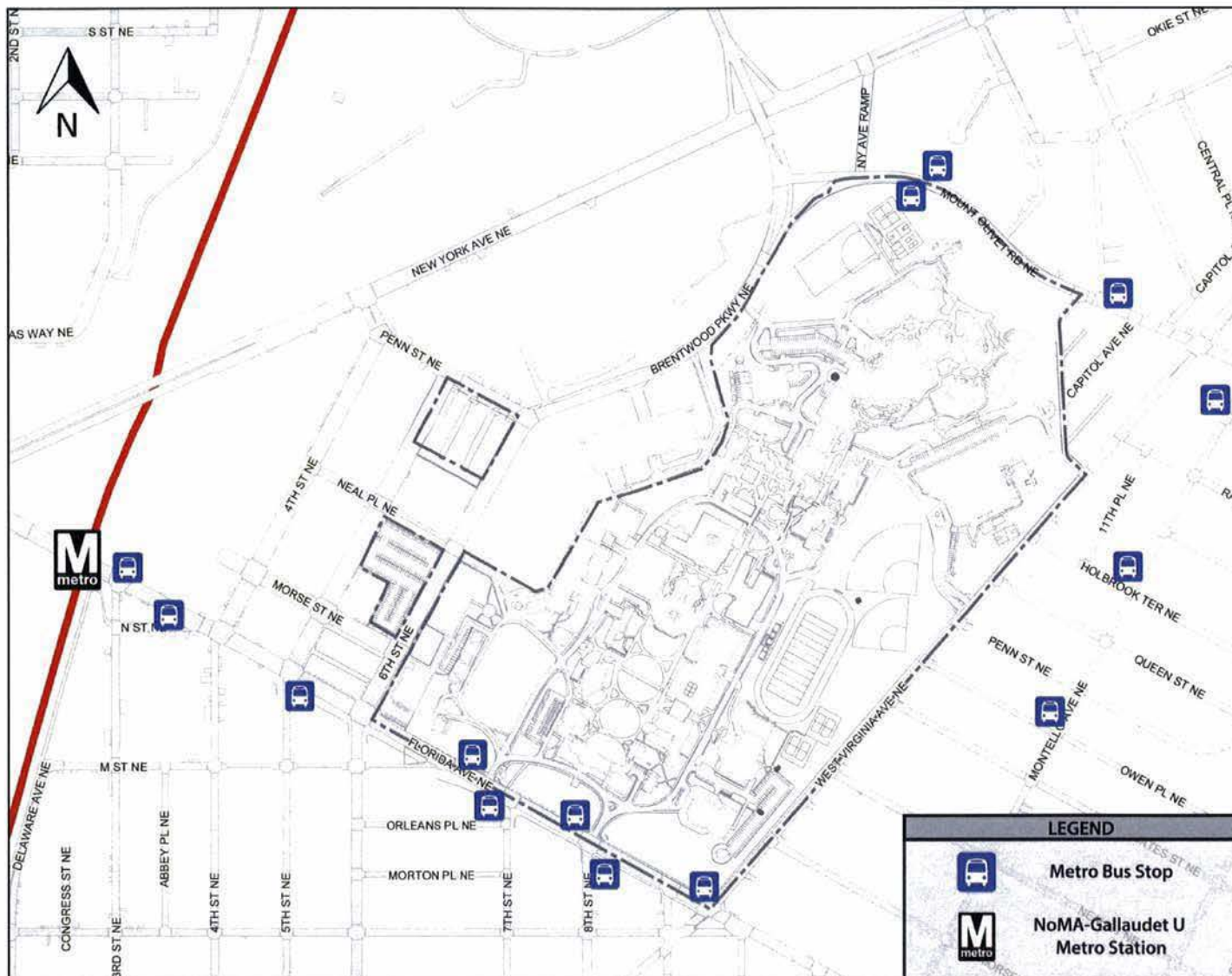


Figure 15: WMATA Metrobus Stops

University Shuttle System

Gallaudet provides a shuttle bus service students, faculty, teachers, and staff at no cost to patrons. The University maintains its own fleet consisting of two shuttle buses that run continuously Weekdays from 6:22 AM to 9:45 PM. The shuttle make stops at the following locations:

- MSSD Circle
- KDES Circle
- Benson Circle
- Gallaudet University Kellogg Conference Hotel
- NoMA Gallaudet University Metro Station
- Union Station

On Weekends, there is one express shuttle which operates at modified hours⁸ and limited internal campus stops. Figure 16 highlights the shuttle route and shuttle stops.

⁸ The express shuttle operates Saturdays and Sundays from 10:00 AM to 6:58 PM

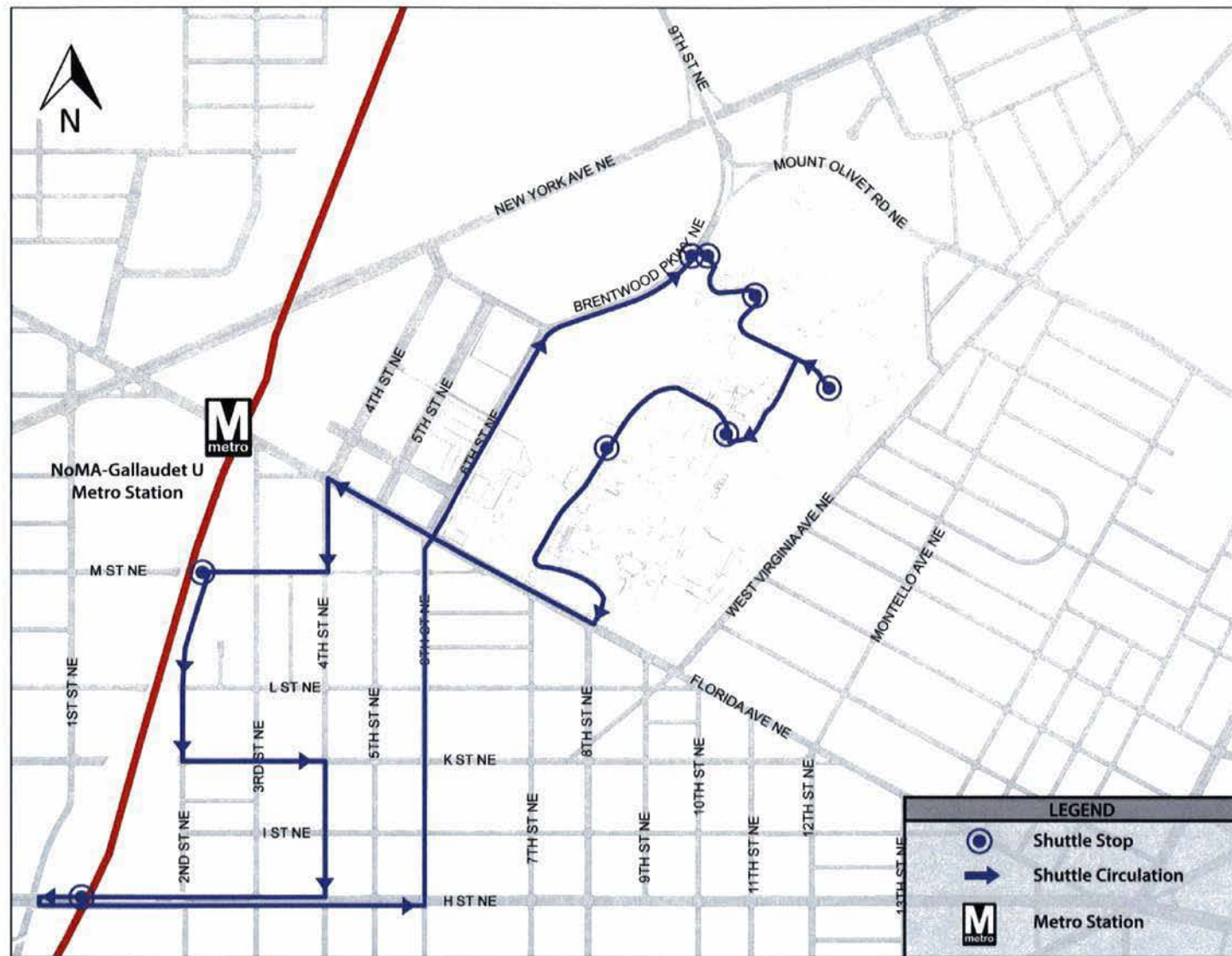


Figure 16: Shuttle Stops and Routes

As shown in Figure 16, the shuttle bus enters the campus via the Brentwood Parkway entrance and exits the campus at the main entrance at 8th Street, NE and Florida Avenue, NE. Gallaudet University shuttle surveys during the month of September 2011. Ridership data collected from the survey is summarized in Table 15.

Table 15: Gallaudet Shuttle Ridership Summary (September 2011)

Bus	Ridership (No. of passengers)
Average Daily AM	288
Average Daily PM	486
Average Daily Total (does not include Friday late night)	773
Average Weekend	1030
Average Late Night Service (Friday/Saturday)	96
Monthly Ridership	21,026

Approximately 21,100 patrons rode the Gallaudet shuttle during the month of September 2011. Each Gallaudet shuttle has a 40 seat capacity. The shuttle bus service has 15 minute headways during the peak times from 6:30 AM to 9:30 AM and from 3:00 PM to 6:15 PM and about 30 minute headways all other times. There is adequate capacity on the shuttle throughout the day and the University will continue to monitor operations to confirm adequate headways and service.

Car Sharing

There is an existing Zipcar station that provides two vehicles within the campus. The second vehicle was recently added to accommodate demand for the initial Zipcar. The Zipcar is located near the main entrance to the campus adjacent to the Elstad Auditorium.

Loading

The loading areas on campus support various types of loading activities such as trash and waste oil pick-up⁹, food and service deliveries and residential move-ins. Key loading areas include the Kellogg Conference Center, the Student Union and Student Academic Center, Central Receiving and Central Utilities Building and the MSSD main building. Those locations are shown on Figure 17. A brief description of each loading area/facility is as follows:

- The Kellogg Conference Center loading area is accessed from the 6th Street campus entrance and exclusively supports deliveries for the conference center and hotel use including food service, equipment, trash and waste oil removal.
- The Student Activity Center (SAC) loading area provides truck spaces for trash and waste oil removal for the Market Place, UPS and FedEx deliveries for the bookstore and the post office and food service deliveries. The loading dock provides a raised platform and with three truck spaces. Peak usage of the SAC loading facility occurs during the months of July, August, December and January. Access to the loading dock is provided via the main campus gate.
- The central receiving loading area is a below grade loading facility that serves as the main location on campus for all food service, supplies and equipment deliveries for the Gallaudet dining Hall. The Gallaudet dining hall has a shared kitchen facility with the MSSD dining Hall. Larger trucks typically utilize the central receiving loading area. The Central Utilities Building receives smaller deliveries on occasion.

⁹Waste oil collection is required by law where there is a kitchen. There are three campus locations which serve as collection locations including the Kellogg Conference Center, the Market Place and Plaza Dining. Waste Oil pick-up occurs monthly however can occur as often as every week or twice per week, if necessary.

- The MSSD loading area is utilized at most once or twice a year. MSSD deliveries are typically sent to central receiving. On occasion some deliveries are sent from central receiving to the MSSD loading area.

There are a number of other buildings on campus that provide smaller loading areas including the Hall Memorial Building, the Field House, Elstad Auditorium, Sorensen Language & Communication Center, College Hall, Peet Hall, Fowler Hall and the Washburn Fine Arts Building.

Trucks primarily enter the campus from the main gate at Florida Avenue, NE and 8th Street, NE. It is however noted trucks ingress varies dependent on the destination building and/or loading area on campus. Trucks accessing the Kellogg Center enter the campus from 6th Street and proceed to the loading area in the rear of the building. Larger trucks are typically destined to central receiving and likely access the campus from West Virginia Avenue.

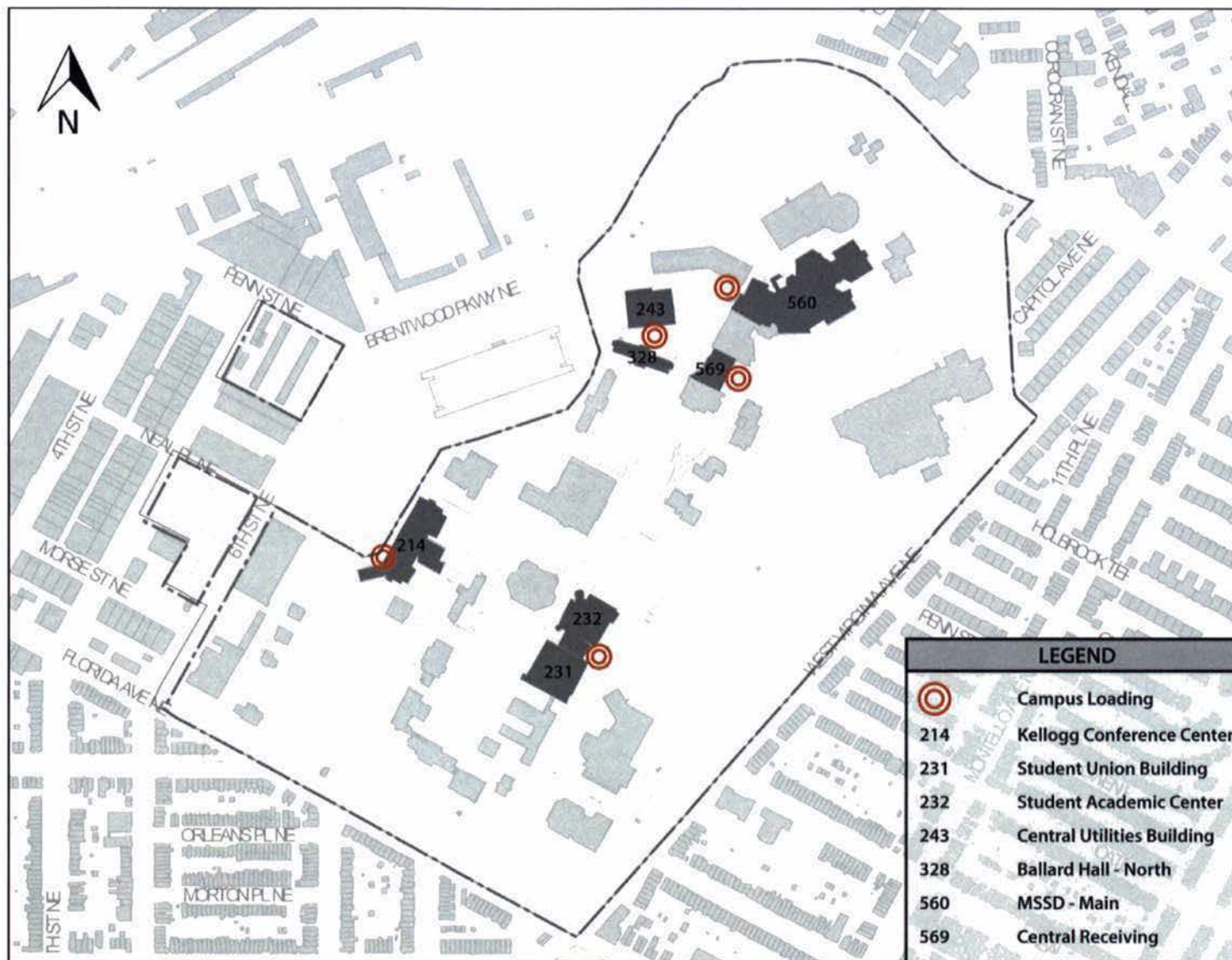


Figure 17: On-campus Loading Area

The largest delivery vehicle that makes deliveries to the campus is a 55-foot semi-trailer. The maneuverability at the main campus gate was examined for this type of vehicle. It is however noted that the majority of truck deliveries to the campus are made by 30-foot trucks.

Maneuvering diagrams showing the inbound (left and right turn-in) and outbound (left and right turn-out) path of a 55-foot is shown in Figures 18, 19, 20 and 21.