CAMPUS DEVELOPMENT PLAN

(CONTINUED)

THE ROLE OF THE LANDSCAPE IN CREATING A SUSTAINABLE CAMPUS

The campus setting provides the opportunity for learning about, restoring and improving the environment. Creating an environmentally responsible campus and demonstrating better resource management provides the Howard University community with an opportunity to showcase progressive principles and to serve as a model for the community at large.

Implementing stormwater management techniques that infiltrate, store, capture, and reuse rainwater results in less runoff, which in turn reduces sewer pipe sizes, maintenance and energy costs, and will more likely comply with the current and more stringent regulations for stormwater management. In order to achieve this environmental mandate, the objectives and strategies outlined in the Master Plan will improve and sustain the hydrologic balance of the campus in order to:

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Low Impact Development Practices (LIDs) are structural or non-structural devices that store or treat stormwater runoff to improve water quality. Both structural and non-structural LID designs are considered effective and will be employed on the Campus.

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Areas of turf, especially on slopes over 6% can be decreased by increasing the areas of planting beds on the campus. Existing planting areas and new planting areas can be densely planted, leaving little exposed mulch with wildflowers, ferns, grasses and seedling size trees and shrubs to create a landscape that retards and decreases runoff and reduces pollutant loads.

Native plant species can be used in the planting designs as they are more suited to the local conditions and as such do not require irrigation and fertilization to maintain them. These species are better adapted to the local climate and many are deep rooted which allows them to tolerate drought situations.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

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This rate was estimated based on a comparison between existing and past annual average weekday volumes obtained from DDOT and applied to the through-traffic traveling along 4th Street, Florida Avenue, and Sherman Avenue. As stated previously, these future site-generated and inherent growth volumes were added to the existing traffic volumes in order to determine the future traffic volumes without the proposed Plan.

The lane configurations for the future conditions without

the proposed Plan were determined based on the existing lane configurations and the improvements outlined in the Lower Georgia Avenue Transportation and Streetscape Improvements Final Report, published by DDOT in December 2007.

The improvements included are based on the preferred alternative outlined in the report, which reduces the cross-section of Georgia Avenue and Sherman Avenue. In addition to the lane configuration changes outlined in the report, signal timing changes were also assumed. This includes retiming the existing traffic signals, which were optimized for progressive traffic movement through the corridors.

FUTURE CONDITIONS WITH THE CAMPUS MASTER PLAN

In order to determine the impact of the proposed changes to the Central Campus, vehicular trips were generated based on the removal and relocation of parking as outlined previously.

Although multiple development changes are proposed in the Master Plan, the majority of these sources are not expected to generate additional vehicle trips. Instead, any changes in vehicular trip generation will be due to the proposed parking changes. Additional trip generation sources include the Howard Town Center, the Recreation Center, the street-level retail located along Georgia Avenue, and the proposed workforce housing.

The proposed development included in the Master Plan, as outlined previously, also includes the construction of additional student housing, which will generate pedestrian trips between the housing and the central campus.

The traffic volumes for the future conditions with the Master Plan were calculated by subtracting the existing trips removed from the surrounding roadway network from the future without the Master Plan traffic volumes and adding the site-generated vehicular and pedestrian volumes.

The lane configurations for the future conditions with the proposed Master Plan were determined based on those assumed in the future conditions without the proposed Master Plan.

The Howard Town Center, which consists of a mix of residential and retail uses, is included in the Master Plan as it is located on Howard University property. The Recreation Center is expected to generate trips due to the memberships sold to the surrounding community, and the proposed street-level retail will generate trips from the neighborhood and from vehicles traveling through the study area. Additionally, the workforce housing will generate a small number of vehicular trips.

In addition to vehicular trips, the proposed Master Plan will generate additional pedestrian trips. The vehicular trip-generation sources will also generate pedestrian trips from the surrounding neighborhood.

As outlined previously, the Master Plan includes the extension of College Street between 6th Street and Georgia Avenue to connect to the existing intersection of Georgia Avenue and Barry Place. In addition to this roadway improvement, the Master Plan recommends that the signals along Georgia Avenue and 4th Street be retimed to include Leading Pedestrian Intervals (LPIs) to aid pedestrian crossing. The LPIs allow pedestrians to enter the intersection in advance of vehicles, increasing their visibility to conflicting vehicles.

The results of the capacity analysis for the future conditions without the proposed Master Plan show that all study intersections operate under acceptable conditions with the improvements outlined previously. The lane configuration and signal timing changes outlined in the Lower Georgia Avenue Transportation and Streetscape Improvements Final Report allow for all study intersections to operate under acceptable conditions, with the exception of the intersection of Florida Avenue and Georgia Avenue/7th Street.

However, the intersection of Florida Avenue and Georgia Avenue/7th Street may operate under acceptable conditions with the construction of a southbound left-turn lane on Georgia Avenue and the retiming of the intersection.

The results of the capacity analysis for the future conditions with the proposed Master Plan show that all study intersections operate under acceptable conditions with the following improvements:

- Howard Place and 4th Street/5th Street

Remove the north- and southbound split phase

- Barry Place and Georgia Avenue

Construct an eastbound left-turn lane due to the introduction of the westbound approach and the addition of pedestrian volumes crossing Georgia Avenue. Additionally, change the intersection configuration from actuated to pre-timed and add a protected/permissive left-turn phase on the eastbound approach.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

CAMPUS LANDSCAPE PLAN

The Campus landscape is a treasured amenity that is remembered, by students, faculty and alumnae, as a special quality of a university.

The design of the landscape at Howard University is equally as important as the design of it's buildings. The campus landscape plays many roles in academic life. People gather for a common educational pursuit, but the value and the pleasure of a college campus comes from the daily life of the place. The campus landscape should provide a rich variety of open spaces, and a counterpoint to the intensity of urban and academic life.

Significant landscape improvements are proposed in the Master Plan to raise the general quality and first impressions of the Campus.

The Landscape Plan reinforces the principal organizing elements of the Campus - the Main, Lower and Southern Quads - and is designed to extend the picturesque quality of the best landscape area - the Main Quad, known as 'The Yard' - out to the limits of the Campus.

The Campus is by definition a place to encourage and foster face-to-face meetings and discussion. There are few places to sit and meet on the Campus now and this will be addressed in the future design of paths and individual building sites. Special emphasis will be placed on creating sheltered seating areas that can extend the period of outdoor use on the Campus.

The fundamental pedestrian nature of the campus is to be reinforced by improving the existing system of walkways. These will include establishing better connections between Georgia and Sherman Avenues and the interior of the Campus.

Landscape improvements will present a unified impression of the Campus edges and it's principle entry routes. The Campus has used a number of different paving and site furnishings throughout the Campus. A goal will be to adopt a consistent campus-wide standard for these elements. A detailed study will enable the University to develop extensive landscape renovation work that can complement proposed building renovations and create design guidelines for:

- Paving for sidewalks and pedestrian walkways
- Curbs
- Roadway paving
- Furniture, including benches, trash bins, bollards, bicycle racks and traffic control devices.

Key Landscape Proposals include:

- The Main Quad Renovation
- The Lower Quad Renovation
- Howard Place Gateway
- Campus Streetscapes
- East-West Pedestrian Connection
- Undergraduate Library Rooftop
- New Residential Quad

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

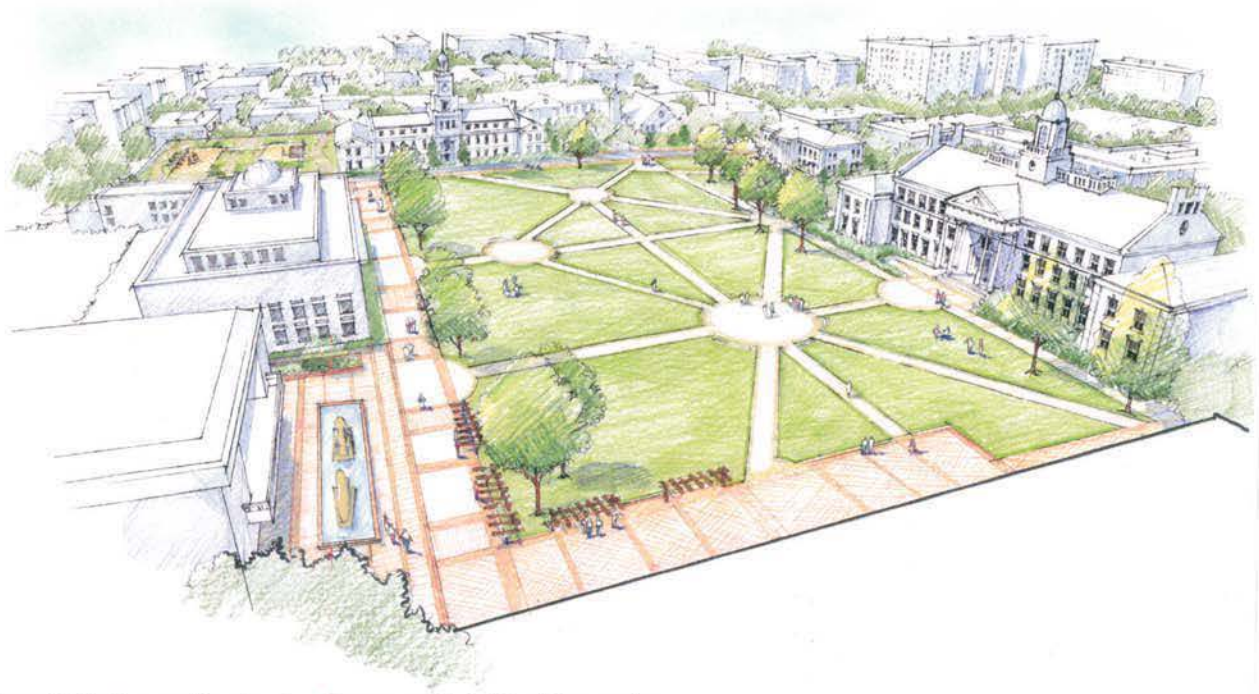

Figure 6-24: Perspective drawing of proposed Main Quad Renovation

THE MAIN QUAD RENOVATION

The Main Quad known as the 'Yard' is the most significant open space on the Campus and an important cultural landscape. The Yard is in need of renovation. The intent is not to change the historic character of this iconic landscape, but to bring it into better use as a visual and functional amenity; and set the stage for the next 100 years in the history of the Quad. This renovation could be scheduled in conjunction with the Blackburn University Center plans.

The key concepts for the renovation include:

- Removal of the service road in front of Blackburn University Center. The renovation and expansion project for Blackburn University Center will allow for a new service entrance to the building and eliminate the need for the service road on the historic Yard;
- Selection of a consistent palette of high quality ,durable materials for paving and curbing;
- Creation of permanent seating areas;
- Reconciliation of the path system and elimination of redundant paths;
- Incorporation of a shade arbor on the northeast corner of the Yard in front of Blackburn to create a shaded gathering space;
- Incorporation of an underground infiltration bed for stormwater management purposes and direct roof runoff from the surrounding buildings to this new underground structure;
- Incorporation of a cistern component to the infiltration system so that stormwater can be captured and reused for irrigation purposes;
- Planting of native deciduous canopy trees like Oaks , Ash and Beech trees that are adapted to local conditions. Concentrate the tree plantings around the perimeter of the Yard to avoid conflict with commencement activities; and
- Involvement of students in tree planting activities.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

Photo 6-1: Example of a campus setting designed with rain gardens and outdoor seating areas.

THE LOWER QUAD RENOVATION

The Lower Quad is located south of the Yard and is surrounded by the back doors of Founders and the Undergraduate Library with entrances to Physics, Chemistry, Biology and the Pharmacy Buildings on the lower portion of the quad.

The renovation of this quad should exploit the opportunities created by the topography, while recognizing the importance of the connections it provides.

This quad would benefit from the removal of non-essential turf and installing a series of rain gardens to improve campus drainage and create a distinct and beautiful character for this under utilized campus space.

The renovated space would be an ideal location for an outdoor classroom with the incorporation of seating and meeting areas to create a more vibrant setting for interaction at this key location. Renovations would include new paving materials and an appropriate palette of trees, shrubs, perennials and grasses.

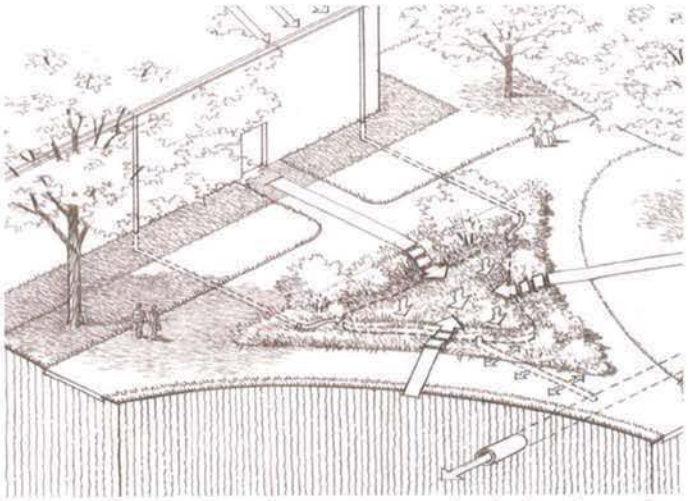

Figure 6-25: Illustration of a typical rain garden designed to capture runoff from adjacent buildings and paved areas.

Figure 6-26: Perspective drawing of the proposed new gateway at Howard Place and Georgia Avenue

HOWARD PLACE GATEWAY

The intersection of Howard Place and Georgia Avenue will mark the ceremonial front door to the University. This new gateway will reinforce the University's presence on Georgia Avenue and provide a safe waiting area for public transportation users. The improvements to this intersection of Howard Place will lead the visitor directly to the Main Quad and the heart of the Campus.

An improved cross walk will extend across the Georgia Avenue in this location to an improved connection to Banneker Park on the opposite side of the street.

The planned development of the large surface parking lots on Sherman Avenue into new housing will make this an important pedestrian connection in the future. An improved walkway is planned that extends from the west side of Georgia Avenue west to Sherman Avenue. This project will be planned in collaboration with D.C. Department of Parks and Recreation and will include an appropriate design to address: security, accessibility, and operational and maintenance needs.

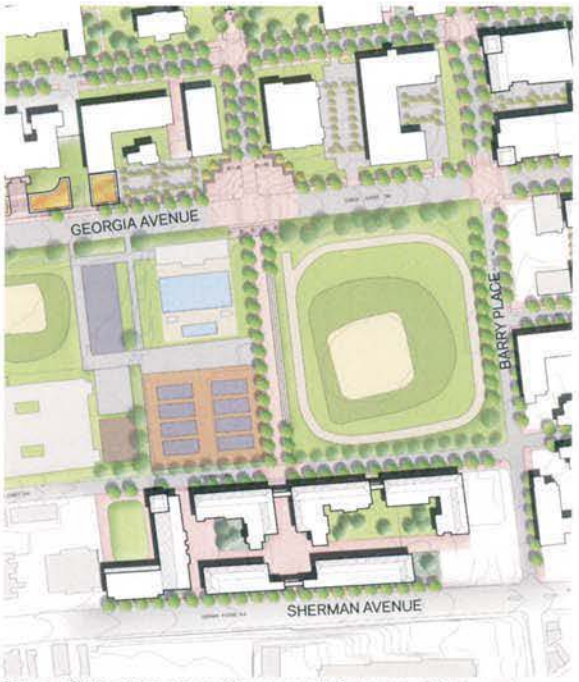

Figure 6-27: Plan view of proposed Gateway at Howard Place and Georgia Avenue

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

CAMPUS STREETSCAPES

As the development plans proceed, the University will widen the sidewalks, define crosswalks and ramps with a consistent palette of materials and plant a variety of native shade trees that will thrive in the District.

Internal Campus streets and new entries will be designed as extensions of the open space system, with a consistent vocabulary and treatment of sidewalks, curbs and street trees. The University will incorporate these upgrades as new facilities and renovations take place, including streetscape and signage improvements.

As part of the open space system, wherever possible, the sidewalks will be widened to 20" to allow space for both pedestrians, street trees and other uses, such as sidewalk cafes.

"For a planting cost of $250-600 (includes first 3 years of maintenance) a single street tree returns over $90,000 of direct benefits (not including aesthetic, social and natural) in the lifetime of the tree. Street trees (generally planted from 4 feet to 8 feet from curbs) provide many benefits to those streets they occupy. " (Source: 22 Benefits of Urban Street Trees, May, 2006)

Trees absorb the first 30% of most precipitation through their leaf system, allowing evaporation back into the atmosphere. Another percentage (up to 30%) of precipitation is absorbed back into the ground and taken in and held onto by the root structure, then absorbed and then transpired back to the air. Some of this water also naturally percolates into the ground water and aquifer. Storm water runoff and flooding potential to urban properties is therefore reduced.

Photo 6-2: Example of a streetscape with adequate soil volume for trees.

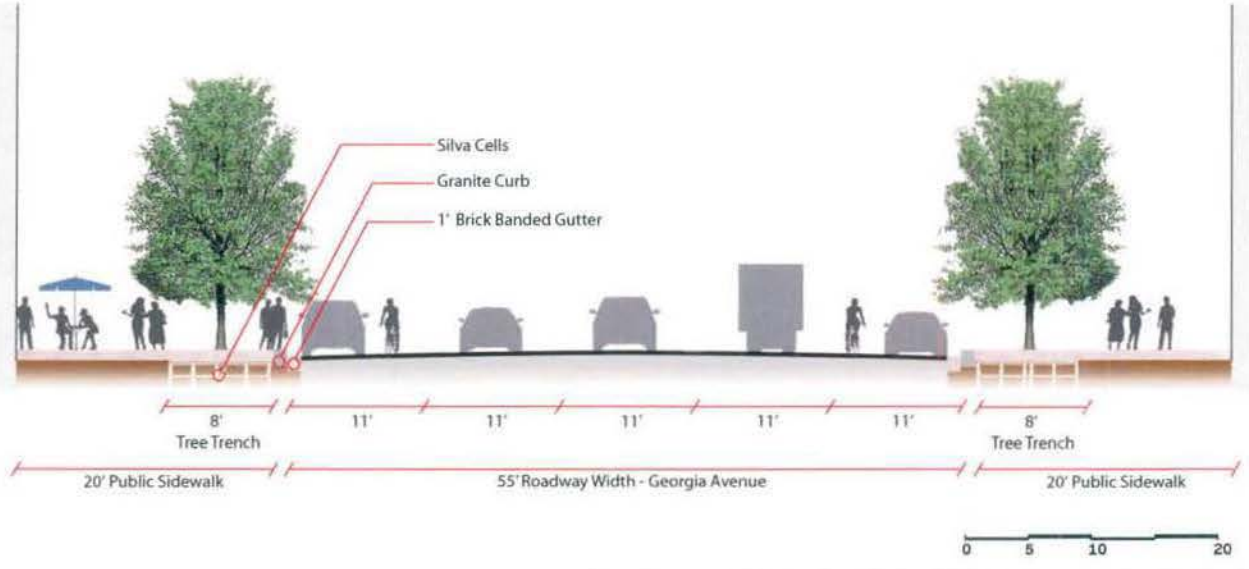

Figure 6-28: Typical Cross Section of Georgia Avenue at Howard University

Other benefits include:

- Businesses on treescaped streets show 20% higher income streams;
- Temperature differentials of 5-15 degrees are felt when walking under tree canopies; and
- Trees in street proximity absorb 9 times more pollutants than more distant trees, converting harmful gasses back into oxygen and other useful and natural gasses.

If properly designed and built, the tree trenches on the campus streets can make a significant contribution to the stormwater management goals.

All proposed tree trenches will include Low Impact Development (LIDs) techniques to capture and infiltrate stormwater runoff. The most significant obstacle to reaching maturity that urban trees face is the scarce quantity of soil useable for root growth. A large volume of uncompacted soil, with adequate drainage, aeration and fertility, is the key to the healthy growth of large urban trees.

Research demonstrates that trees need 2 cubic feet of soil volume for every square foot of canopy area (Urban, 2008). Most urban trees have less than 1/10th the rooting volume they need to thrive. Using innovative techniques, such as suspended pavement, to extend rooting volume under HS-20 load bearing surfaces and create favorable tree growing conditions in urban areas, enables trees to grow to their mature size and provide the stormwater and ecological benefits commensurate with mature trees.

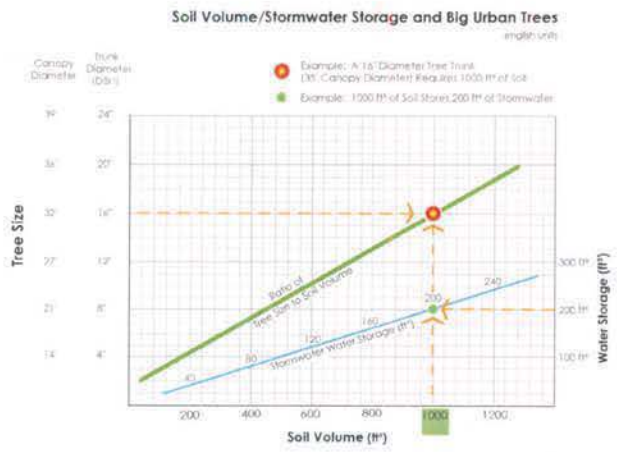

Figure 6-29: Graph showing the relationship of stormwater management and soil volume ratios

EAST-WEST PEDESTRIAN CONNECTIONS

Howard Place, running east to west through the heart of the Central Campus, is an ideal place for streetscape renovations and implementing changes that reflect the history and character of Howard University. Along with the proposed Gateway at Howard Place and Georgia Avenue, Howard Place will become a strong connection between the historic heart of the campus and the proposed graduate/workforce housing on Sherman Avenue.

A new streetscape design along Howard Place will tie the vehicular section of the roadway east of Georgia Avenue into the pedestrian/bike section proposed to the west. Through Banneker Park, the Howard Place becomes a pedestrian and bicycle throughway that connects students, faculty and staff to the recreational fields and to the proposed middle school and graduate workforce zone on Sherman Avenue. New paving materials and tree plantings will accompany this pedestrian corridor.

Figure 6-30: Plan view of Howard Place

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

Photo 6-3: View of existing roof of Undergraduate Library

UNDERGRADUATE LIBRARY ROOFTOP

The rooftop of the Undergraduate Library is currently an empty brick paved space that the University might examine as a first demonstration project of green roof technology. with a new green roof garden, arbor and seating area.

The bricks can be recycled in the new design and incorporated into a palette of native plants that will thrive in this environment. The ASLA Headquarters roof is an excellent local example of a roof garden in the D.C. area, that shows how a relatively small space can be retrofitted to create a new open space area for the Campus.

The green roof has retained thousands of gallons of stormwater, reduced building energy costs by hundreds of dollars a month, and significantly lowered outdoor air temperature according to a report issued by the ASLA. The green roof lowered air temperature by as much as 32 degrees in the summer when compared to a neighboring tarred roof, helping mitigate the urban heat island effect.

The roof also reduced the building's energy costs—especially in the winter. Engineering analysis showed that the green roof's extra insulation lowered energy usage in the winter by 10 percent with a potential of two to three percent in the summer." (Source: http://www.asla.org/press/2007/release091907.html)

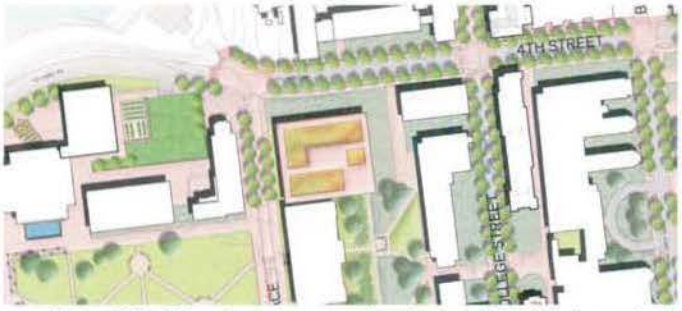

Figure 6-31: Plan view of proposed roof renovation of Undergraduate Library on Howard Place

Photo 6-4: View of Green Roof at ASLA Headquarters in Washington, D.C.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

Figure 6-32: Perspective drawing of the proposed new Residential Quad located at Bryant Street and 8th Street

NEW RESIDENTIAL QUAD

The proposed new Residential Quad is located at Bryant Street and 8th Street on the western side of Georgia Avenue. The site is currently a large parking lot that serves the University, as well as, the Howard Tower buildings. This location is an amenity and open space resource for the new student residential buildings proposed on the western side of Georgia and the increased pedestrian circulation encouraged throughout the Lower Georgia Avenue zone.

The new Residential Quad terminates Bryant Street on the west, and creates a new pedestrian and bicycle link between the academic core and the western residential zone.

The addition of a green space adds better passive recreation area for students, faculty, staff and visitors. It creates a protected setting that is safe and provides a place for social gatherings, events and student activities. Proposed elements would include new pedestrian paved paths and an appropriate palette of trees and shrubs.

Figure 6-33: Plan view of proposed new Residential Quad located at Bryant Street and 8th Street

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

THE ROLE OF THE LANDSCAPE IN CREATING A SUSTAINABLE CAMPUS

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CAMPUS DEVELOPMENT PLAN

(CONTINUED)

Figure 6-34: Stormwater Plan Diagram

Table 6-6 : LID Figures

PROPOSED LOW IMPACT DEVELOPMENT STRATEGIES

Vegetated Roof	79,125 SF
Rain Gardens	11,580 SF
Infiltration Beds	52,500 SF
Tree Trenches	48,098 SF

The LIDs identified in this diagram were identified and quantified to better understand the impact that can be made. Although the areas seem small in the adjacent chart, the scale of the campus setting is large and the cumulative impacts are therefore, significant. All combined, the LID measures can mitigate over 1 million gallons of stormwater for the 2-year storm.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

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The lane configurations for the future conditions without

the proposed Plan were determined based on the existing lane configurations and the improvements outlined in the Lower Georgia Avenue Transportation and Streetscape Improvements Final Report, published by DDOT in December 2007.

The improvements included are based on the preferred alternative outlined in the report, which reduces the cross-section of Georgia Avenue and Sherman Avenue. In addition to the lane configuration changes outlined in the report, signal timing changes were also assumed. This includes retiming the existing traffic signals, which were optimized for progressive traffic movement through the corridors.

FUTURE CONDITIONS WITH THE CAMPUS MASTER PLAN

In order to determine the impact of the proposed changes to the Central Campus, vehicular trips were generated based on the removal and relocation of parking as outlined previously.

Although multiple development changes are proposed in the Master Plan, the majority of these sources are not expected to generate additional vehicle trips. Instead, any changes in vehicular trip generation will be due to the proposed parking changes. Additional trip generation sources include the Howard Town Center, the Recreation Center, the street-level retail located along Georgia Avenue, and the proposed workforce housing.

The proposed development included in the Master Plan, as outlined previously, also includes the construction of additional student housing, which will generate pedestrian trips between the housing and the central campus.

The traffic volumes for the future conditions with the Master Plan were calculated by subtracting the existing trips removed from the surrounding roadway network from the future without the Master Plan traffic volumes and adding the site-generated vehicular and pedestrian volumes.

The lane configurations for the future conditions with the proposed Master Plan were determined based on those assumed in the future conditions without the proposed Master Plan.

The Howard Town Center, which consists of a mix of residential and retail uses, is included in the Master Plan as it is located on Howard University property. The Recreation Center is expected to generate trips due to the memberships sold to the surrounding community, and the proposed street-level retail will generate trips from the neighborhood and from vehicles traveling through the study area. Additionally, the workforce housing will generate a small number of vehicular trips.

In addition to vehicular trips, the proposed Master Plan will generate additional pedestrian trips. The vehicular trip-generation sources will also generate pedestrian trips from the surrounding neighborhood.

As outlined previously, the Master Plan includes the extension of College Street between 6th Street and Georgia Avenue to connect to the existing intersection of Georgia Avenue and Barry Place. In addition to this roadway improvement, the Master Plan recommends that the signals along Georgia Avenue and 4th Street be retimed to include Leading Pedestrian Intervals (LPIs) to aid pedestrian crossing. The LPIs allow pedestrians to enter the intersection in advance of vehicles, increasing their visibility to conflicting vehicles.

The results of the capacity analysis for the future conditions without the proposed Master Plan show that all study intersections operate under acceptable conditions with the improvements outlined previously. The lane configuration and signal timing changes outlined in the Lower Georgia Avenue Transportation and Streetscape Improvements Final Report allow for all study intersections to operate under acceptable conditions, with the exception of the intersection of Florida Avenue and Georgia Avenue/7th Street.

However, the intersection of Florida Avenue and Georgia Avenue/7th Street may operate under acceptable conditions with the construction of a southbound left-turn lane on Georgia Avenue and the retiming of the intersection.

The results of the capacity analysis for the future conditions with the proposed Master Plan show that all study intersections operate under acceptable conditions with the following improvements:

- Howard Place and 4th Street/5th Street

Remove the north- and southbound split phase

- Barry Place and Georgia Avenue

Construct an eastbound left-turn lane due to the introduction of the westbound approach and the addition of pedestrian volumes crossing Georgia Avenue. Additionally, change the intersection configuration from actuated to pre-timed and add a protected/permissive left-turn phase on the eastbound approach.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

- College Street and 4th Street

A traffic signal is needed to aid vehicles and pedestrians crossing 4th Street due to the additional vehicular volumes traveling along 4th and 5th Streets towards the proposed parking garages.

With the improvements outlined above, all study intersections are projected to operate under acceptable conditions. However, a few approaches may operate under unacceptable conditions. This includes the southbound approach of Barry Place and Sherman Avenue, though no improvements are recommended.

This is because the traffic volumes are based on the existing configuration of a six-lane cross-section on Sherman Avenue, which were not reduced following the reduction to a two-lane cross-section as recommended in the Lower Georgia Avenue Transportation and Streetscape Improvements Final Report.

Additionally, the eastbound approach of Howard Place at 6th Street is projected to operate under unacceptable conditions due to the pedestrian trips generated by the Master Plan. No improvements are recommended to mitigate this impact because it is central to the campus roadway network. However, the removal of on-street parking or replacing the metered parking with performance-based parking may reduce the number of vehicles circulating through the campus roadway network, therefore improving the operation of this approach.

Photos 6-5 + 6-6 above : Howard University Main Quad

Photos 6-7 + 6-8: (from left to right) Georgia Avenue at Howard Place; and Georgia Avenue at Barry Place

TRANSPORTATION SYSTEMS

This section of the report summarizes the transportation elements included in the Master Plan, including changes in land uses and population.

POPULATION CHANGES

The following table summarizes the major population changes occurring over the course of the Master Plan development period.

Table 6-7: Campus Plan Population Changes

CAMPUS PLAN POPULATION

Existing	Campus Plan	
Students	11,000	12,000
Undergraduate	7,400	8,400
Graduate	3,600	3,600
Number of Campus Plan residence hall beds	3,800	5,000
Campus Plan plan boundaries)		
Faculty/Staff (non-Hospital)	3,300	3,300

By the end of the Campus Plan Master period the total population on the Central Campus is not expected to change significantly. The number of students is projected to increase, and notably the amount of students living within the Campus Plan boundaries is expected to increase significantly. The number of faculty and staff employed by the University (in non-Hospital roles) is expected to remain constant.

INFRASTRUCTURE CHANGES

The Master Plan includes several changes to the Campus Plan infrastructure that will affect transportation within and adjacent to Campus Plan.

BUILDINGS

The Master Plan includes 17 development sites for new buildings or major renovations. The development sites are primarily University-based uses, including academic, research, student services, and administrative spaces.

Four of the development sites are residence hall buildings. The other two buildings are a proposed recreation center and a workforce housing building. Also located on adjacent property owned by Howard University is the Howard University Town Center, a mixed-use residential and retail development.

Several of the proposed new developments will bring non-University related populations to Campus. The buildings along Georgia Avenue will include ground floor retail, which over the course of the Master Plan will add a net increase of 130,750 square feet of retail space to Campus. The new recreation center will be open to the community, which will bring more people to Campus. In addition, the proposed market rate and workforce housing will bring some transportation demand currently located off-campus to Campus.

PARKING

The Howard University campus currently has approximately 2,300 parking spaces, not counting spaces at the Hospital. The majority of these spaces are located on surface parking lots on future development sites. Over the course of the Master Plan, the surface parking spaces will be removed and their supply replaced in new underground parking facilities. The Master Plan team has identified multiple potential locations for underground facilities.

The goal of the Master Plan is to build the minimal amount of parking needed to accommodate the plan, which is likely to consist of three to five of the potential parking facilities. In order to achieve this goal, the University has begun to implement a strong Transportation Demand Management TMD) program to reduce the overall campus parking demand. The changes in parking demand on Campus will be measured and decisions on which parking facilities to construct will be based on the on-going monitoring of supply and demand.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

SUMMARY OF IMPACTS OF THE CAMPUS PLAN

ON TRANSPORTATION SYSTEMS

From a transportation standpoint, impacts of the Campus Plan are generated by changes to population and infrastructure that lead to an increase in traffic and parking demand that in turn lead to an increase in vehicular delays on surrounding streets. A goal of the Campus Plan is to not generate additional parking demand at the end of the Campus Plan compared to the demand today, for its core University and Academic uses. The overall number of cars on campus and thus the number of vehicular trips travelling to and from campus is expected to decrease. This should then, limit the potential impact to nearby streets.

The addition of the recreation center and retail uses to the Campus will help reduce the overall amount of trips, or shorten existing trips made by the campus population and nearby community, as more land uses will be brought to the area. Similarly, the addition of workforce housing will bring a portion of the Campus population that currently commutes, on Campus within walking distance of their employment.

Impacts of the Campus Plan should be limited in two major areas. First, although the overall amount of traffic to and from the campus, will stay the same, the locations where drivers park will change. Thus, there may be impacts to streets localized around each of the proposed parking facilities. Second, the amount of pedestrian crossings at streets and intersections that are through and adjacent to Campus will increase significantly due to the additional on-campus housing, recreation center, ground floor retail, and location of the development sites.

These new pedestrians have the potential to create delays for vehicular traffic through these additional crossings, and will likely necessitate changes to traffic signal operations to provide ample crossing times to accommodate their movements.

PEDESTRIAN EXPERIENCE

Howard University is a compact campus with good pedestrian walkways throughout. Within campus, walking is the primary mode for moving between uses. Campus housing, transit stops and stations, and neighborhood commercial and recreational uses located on the periphery of the central campus are the primary sources of pedestrian traffic. There are pedestrian deficiencies that reduce the quality of walking conditions and may impact the attractiveness of walking between campus and off-campus destinations, including transit stations and stops. As components of the Campus Plan are implemented, existing pedestrian issues and impacts may increase due to location of new buildings. Addressing pedestrian issues will help mitigate potential pedestrian impacts that may result.

The remainder of this section discusses future pedestrian conditions and mitigation measures to minimize impacts.

- Development east of 4th Street and west of Georgia Avenue will result in increased east-west pedestrian traffic on College Street, Barry Place, Bryant Street, and W Street. These streets are the primary east-west access routes to the campus quad.
- Pedestrian volumes are likely to increase along north-south streets such as 4th Street, 6th Street, Georgia Avenue, and 8th Street because these link commercial and residential uses south of Howard Place with academic uses located north of Howard Place and commercial and residential uses north of Fairmont Street on Georgia Avenue and beyond.
- Increased volumes along east-west and north-south streets may impact pedestrian conditions along sidewalks and at intersections where pedestrian crossings are concentrated. Sidewalk impacts may include crowding at locations where sidewalks are narrow or contain obstructions. Intersection impacts may occur along primary east-west routes where they cross Georgia Avenue, 6th Street, and 4th Street. These impacts could be to both pedestrian and vehicle traffic; pedestrians may be impacted where there is limited queuing area on sidewalks at intersections, and vehicles may be impacted where crossing volumes and the amount of time required to accommodate crossings increase, which reduces the amount of time reserved for through traffic.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

- Increased pedestrian demand within campus may warrant removing or reducing on-street parking located inside the campus core because the parking generates vehicle demand and results in traffic circulation along major pedestrian corridors, which may result in increased pedestrian-vehicle conflicts if volumes increase. Minimizing pedestrian-vehicle conflicts is a priority of the Campus Plan.
- Development along Georgia Avenue between Barry Place and Florida Avenue will attract additional pedestrian traffic to this area. This will increase the number of pedestrian crossings north-south and east-west at several intersections along Georgia Avenue and Florida Avenue.
- Increased pedestrian activity along sidewalks and at intersections may warrant upgrades or changes to existing facilities to mitigate impacts. These changes may include expanding sidewalks, removing obstructions on sidewalks, increasing crossing times, and adding controlled crossings at intersections that may experience increased demand or that are located along preferred walking routes.
- Increased campus, recreation, and commercial activity may lead to increased pedestrian volumes between the campus and primary transit stops and the nearest Metrorail station portals. Bus stops are located along Georgia Avenue and Florida Avenue and Metrorail portals are located near the intersection of 7th Street and S Street and 10th Street and U Street. The 7th Street portal is located 1,600 feet from the intersection of Georgia Avenue and W Street and the 10th Street portal is 1,800 feet from the same intersection. The 7th Street portal is the more direct route and has better walking conditions. The route to the 10th Street portal is indirect and the shortest route includes the intersection of Florida Avenue, 9th Street and V Street, which can be a challenging intersection for pedestrians to navigate. Providing good stop and station access routes is critical to maintaining mode share and attracting new riders in the future because most transit users are also pedestrians.
- The Wellness and Recreation Center planned for W Street and Georgia Avenue and the privately developed Howard Town Center planned for V Street and Georgia Avenue are likely to increase the number of neighborhood pedestrian trips made between Georgia Avenue and residential and transit stops and stations located within walking distance. This will increase pedestrian demand along campus access routes and at intersections located along those routes.

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

BICYCLE USE

There are good cycling facilities throughout the study area, including on-street bike lanes, signed bike routes, and several Capitol Bikeshare stations, but there are gaps between these bicycle facilities and campus and limited or missing amenities on-campus. These conditions reduce the attractiveness of cycling. The remainder of this section discusses future bicycle conditions and mitigation measures to minimize impacts.

- Increased cycling demand is likely to occur in conjunction with the growing visibility and awareness of cycling as an attractive travel option, in particular for trips to the south, southwest and west. This will increase bicycle activity along Georgia Avenue, W Street, V Street and 11th Street. Currently, these routes have several issues that reduce the attractiveness of cycling, such as a limited connectivity between the campus and bike lanes west of Florida Avenue, traffic volumes and speeds along Georgia Avenue, and limited connectivity between existing facilities and campus residential and academic uses.
- Increased demand is likely to occur to the northeast along Warder Street and Park Place if commuting by campus employees and students living off campus increases who live to the north and east.
- Bicycle parking and storage demands will increase in conjunction with the growing number of bicycle trips. Existing parking is limited and the parking that is available does not comply with DDOT standards. Demand for parking, storage and changing facilities will increase as facilities are improved and more trips are made by bicycle.
- Increase in Bikeshare usage and the development of new activity centers and residential nodes will increase demand for Bikeshare bicycles and docks.

SHUTTLE SERVICE

An increase in TDM measures, including transit incentives and increasing parking fees will lead to an increase in HU Shuttle demand to and from the Metrorail system. The increase in on-Campus student housing will decrease the need for HU shuttles to travel to and from off-Campus housing locations. Thus, there will be a decrease in HU Shuttle demand for these routes.

TRANSPORTATION DEMAND MEASURES

An increase in TDM measures, including transit incentives and increasing parking fees will lead to an increase in both Metrorail and Metrobus demand. The development sites in the Master Plan along Georgia Avenue provide opportunities to enhance transit stations on Georgia Avenue with more queuing room and space for shelters.

PARKING DEMAND

The Master Plan does not propose significantly increasing the campus population levels. From a parking demand standpoint, the increase in students is off-set by the increase in students living on-campus, since on-campus students are less likely to purchase parking passes compared to off-campus students.

In addition to University use, there will be additional parking demand generated from several sources, including:

- The Howard University Town Center
- Non-campus population use of the Recreation Center and Ground Floor Retail
- The workforce housing parcel

The Master Plan has identified multiple locations for potential parking facilities.

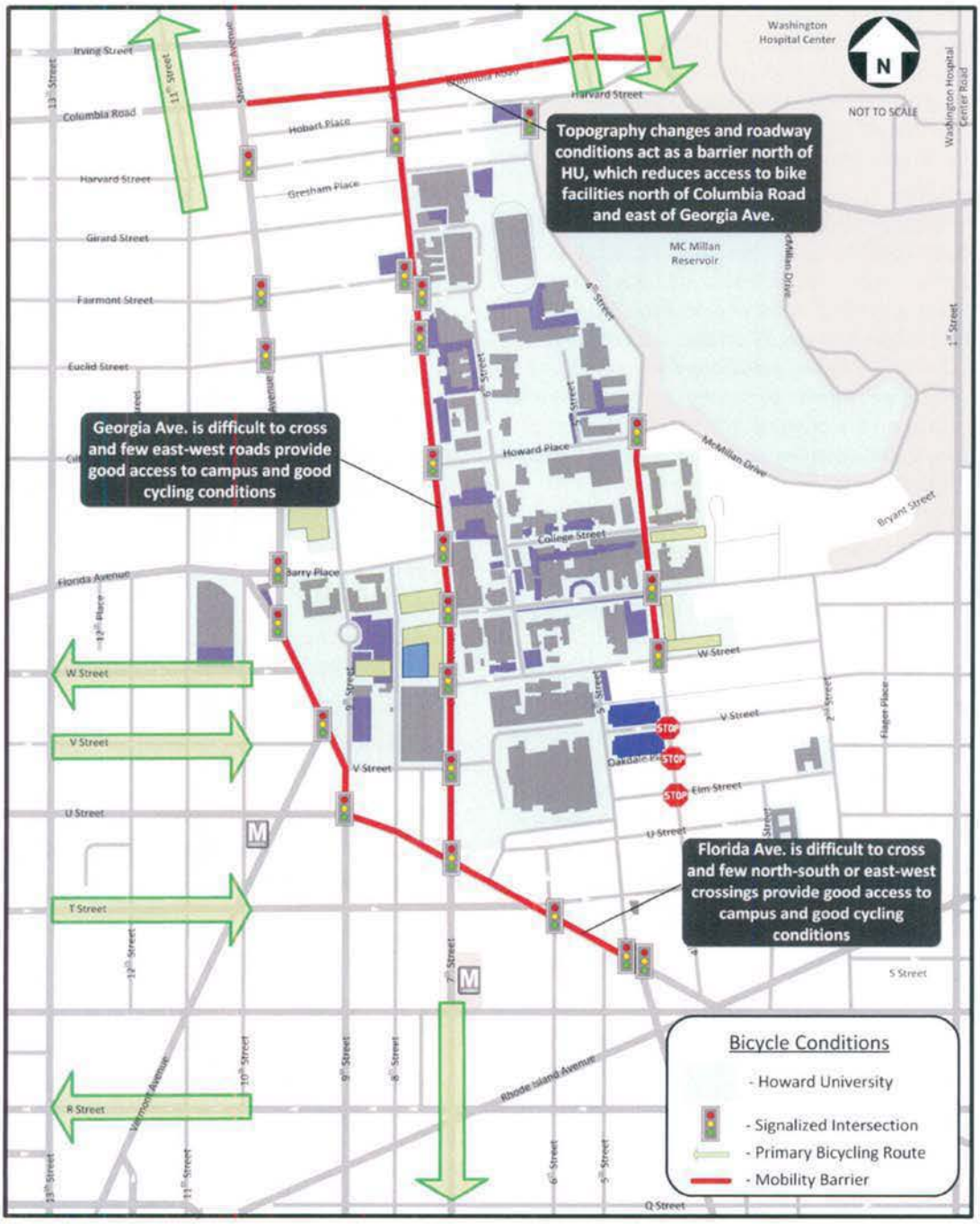

Figure 6-35: Bicycle Conditions and Concerns (Gorove Slade Associates, Inc.)

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

EAST-WEST CONNECTIVITY

During conversations with District agencies over the course of developing the plan, the Master Plan team was tasked with incorporating east-west connections within the plan. The following summarizes the connections made within the Master Plan:

- Howard Place: The plan proposes extending Howard Place between Georgia Avenue and Sherman Avenue as a pedestrian-oriented east-west connection.

HOWARD PLACE

Advantages	Disadvantages
Improve existing pedestrian connections from Georgia Avenue to Sherman Avenue	Does not allow for vehicular connection from Georgia Avenue to Sherman Avenue
Provides connection between Future Phase Work Force Housing and Middle School with Central Campus	

Figure 6-36: Howard Place Connection

- Barry Place/College Street: The plan proposes constructing a section of College Street between Georgia Avenue and 6th Street when the current building occupying the potential street right-of-way is demolished as part of the Campus Plan. This would allow for the Barry Place/College Street corridor to connect as a two-way street though campus, from Sherman Avenue to 4th Street.

BARRY PLACE

Advantages	Disadvantages
Creates good pedestrian connections from College Avenue to Sherman Avenue	Requires the demolition of Downing Hall/Chemical Engineering in a Future Phase
Provides a new street crossing at high density mixed use area of Georgia Avenue	Loss of 5,000 SF building footprint on this block for HU; 40 – 50 ft. in height (20,000 sf)

Figure 6-37: Barry Pace Connection

CAMPUS DEVELOPMENT PLAN

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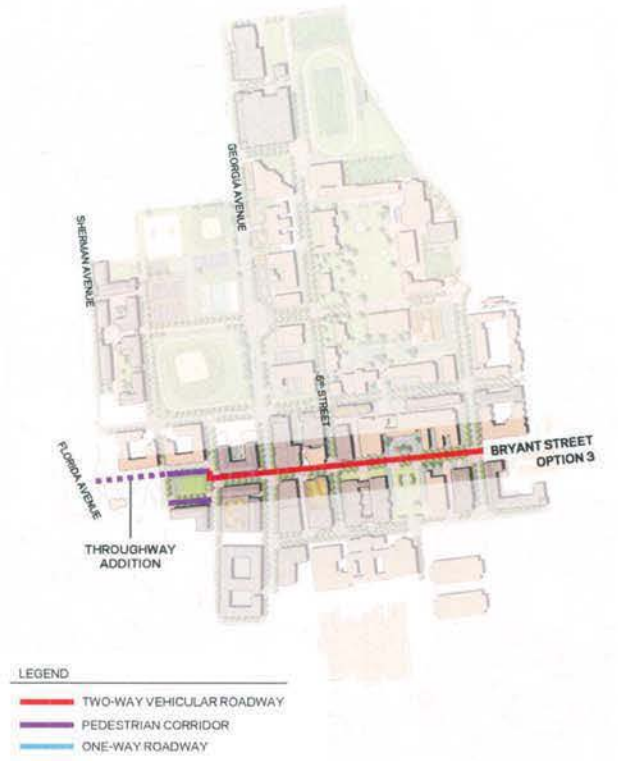

Figure 6-38: Bryant Street Connection

- Bryant Street: The plan proposes that Bryant Street connect between Georgia Avenue and Sherman Avenue as a pedestrian-oriented street. This connection enhances the upperclassman community envisioned here and is not conducive to through vehicular traffic. (Since Howard University does not control the parcels adjacent to Sherman Avenue needed to complete this extension, it is not assumed constructed and open in the Transportation Report of the Master Plan).

BRYANT STREET – OPTION THREE

Advantages	Disadvantages
Allows for two-way vehicular connection from Georgia Avenue to 9th Street on the north side of the proposed residential quad	HU does not own parcels from 9th Street to Sherman Avenue
Creates neighborhood scale 250' x 300' blocks and more intersections	
Allows for larger residential quad (+20,000 SF)	

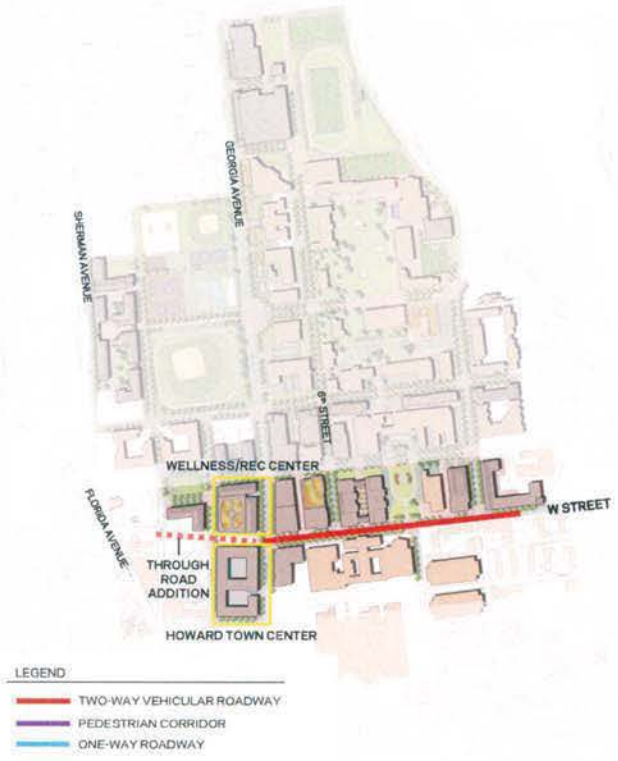

Figure 6-39: W Street Connection

- W Street: The plan proposes that W Street be extended to connect W Street west of Florida Avenue to W Street east of Georgia Avenue. This proposed connection would be a two-way street, with a potential traffic signal at its intersection with Florida Avenue to facilitate turns and pedestrian/bicycle crossings. Since Howard University does not control all of the parcels needed to complete this extension, it is not assumed constructed and open in the Transportation Report of the Master Plan.

W STREET

Advantages	Disadvantages
Potential vehicular and pedestrian connection from Georgia Avenue to Sherman Avenue.	Property not owned by HU
	Loss of square footage from both proposed Howard Town Center and Wellness/Rec Center, 20,000 SF and 12,600 SF respectively .

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

PROPOSED PEDESTRIAN IMPROVEMENTS

Campus Plan recommendations were developed to address existing issues and mitigate impacts that may arise with the implementation of the Campus Plan or the completion of other developments in the study area. The goal of these recommendations is to maximize the attractiveness of walking and to minimize potential negative impacts of pedestrian activity. The remainder of this section describes the Campus Plan pedestrian recommendations.

- Improve pedestrian conditions along east-west and north-south pedestrian routes. Recommended improvements include expanding sidewalk widths, removing obstructions, installing and upgrading crosswalks at intersections, and installing traffic calming measures, such as speed tables, decorative pavers, bulb outs at intersections and mid-block crossings, etc.
- Minimize on-street parking impacts within the campus core by implementing performance parking on metered streets to reduce traffic circulation, minimize visitor parking within the campus core by locating it on the periphery along pedestrian access routes, and remove on-street parking at major pedestrian crossing locations to provide additional space for pedestrian amenities, such as bulb-outs and buffers.
- Calm traffic on 4th Street beginning at Howard Place until W Street. There are currently speed tables located south of W Street at each intersection until Florida Avenue. Speed tables could be installed at intersections to calm traffic and enhance walking conditions. Generally, conditions on east-west routes west of 4th Street and south of W Street are good and volumes are not expected to increase significantly.
- Add a traffic control device in the form of a traffic signal or stop sign at 4th Street and College Street to accommodate increased pedestrian activity anticipated between the campus quad and planned campus housing east of 4th Street. Traffic controls would minimize pedestrian-vehicle conflicts at this location and provide similar facilities and traffic controls as those located at intersections to the north and south.
- Work with DDOT to implement Lower Georgia Avenue recommendations that improve pedestrian conditions along the Georgia Avenue corridor. These improvements include adding a bulb-out on southbound Georgia Avenue at Howard Place and making other improvements to sidewalks, including new and wider planted buffers between the cartway and sidewalk and enhanced pedestrian crossing facilities.
- Install Leading Pedestrian Intervals (LPIs) at signalized crossings along Georgia Avenue and 4th Street to assist east-west pedestrian crossings.
- Add east-west pedestrian connections between Georgia Avenue and Florida Avenue along W Street and Bryant Street in the form of new streets or pedestrian only pathways. These connections will provide better access and routing between campus, new uses planned for this area, and destinations located west of Florida Avenue, such as the Metrorail portal at 10th and U Street and commercial uses located along the U Street corridor. New routing options and crossing locations will help disperse pedestrian traffic along various routes, which will mitigate the impact of increased pedestrian volumes to any one intersection or sidewalk segment. It will also reduce the need to make significant changes to intersections that would attract additional pedestrian volumes warranting new traffic control devices or changes to intersection geometry, such as the intersection of W Street, Vermont Avenue and V Street.
- Improve intersection facilities for pedestrians along Florida Avenue at W Street, Vermont Avenue and V Street to accommodate increased activity through this area. This includes traffic controls, marked crosswalks and traffic calming features where warranted.
- Improve sidewalk conditions on Florida Avenue between Sherman Avenue and V Street to accommodate increased demand along this route. Improvements to consider include widening sidewalks, installing or increasing buffers between the sidewalk and cartway, and removing barriers locate on or immediately adjacent to sidewalks.

Figure 6-40 on opposite page identifies several of the pedestrian recommendations that will reduce barriers and mitigate issues identified in the Campus Plan.

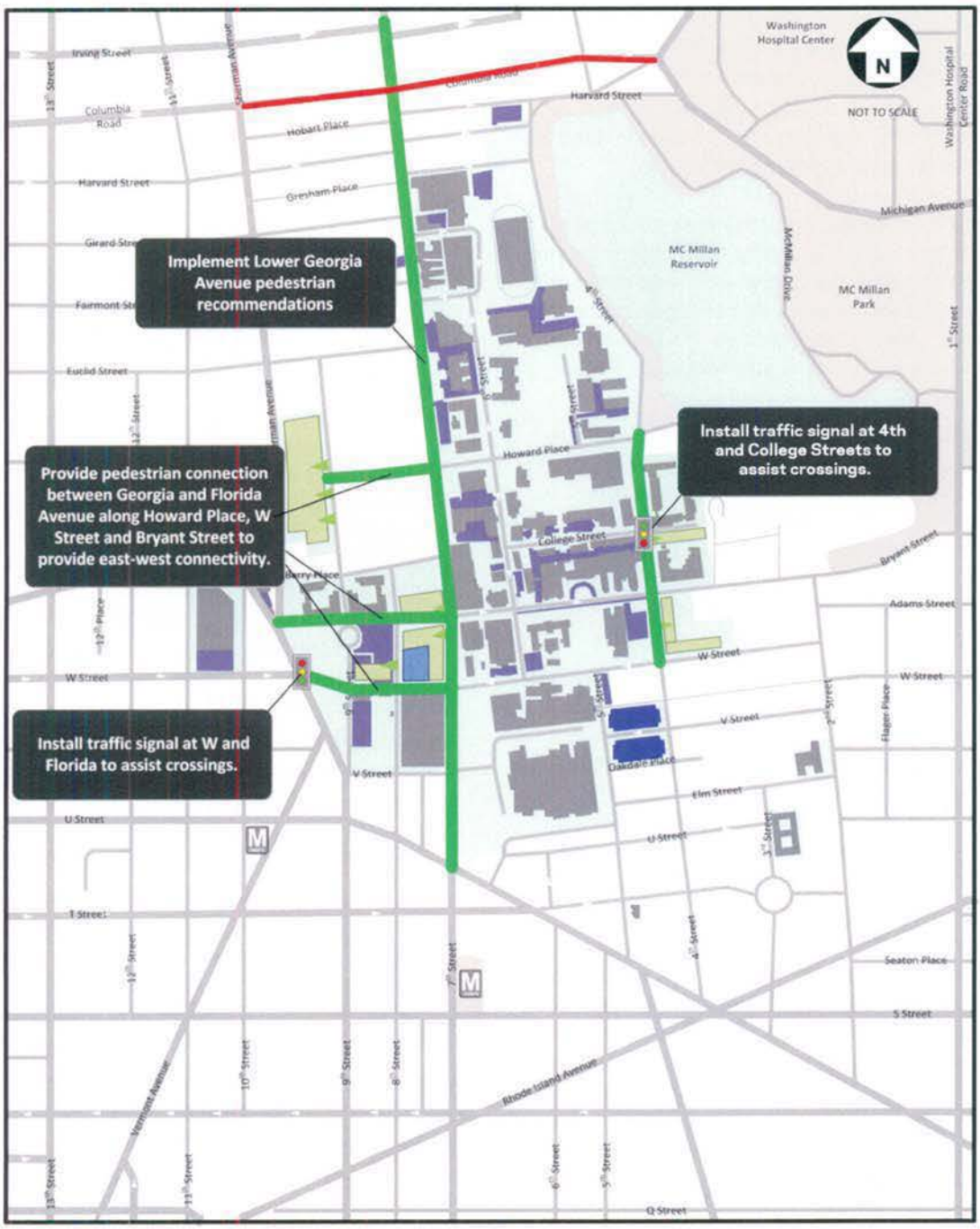

Figure 6-40: Pedestrian Recommendations

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

PROPOSED BICYCLE RIDERSHIP ADVOCACY AND SAFETY

A goal of the Campus Plan is to improve bicycle conditions on campus and work with DDOT to improve cycling conditions between campus and off-campus facilities.

- Recommend bicycle facilities be extended by the District to the Campus edge
- Use 10th Street & Barry Place to connect bike lanes on W and V Streets with campus. The intersection of 10th/ Barry/Florida is an all-way stop, which makes it one of the few quality places for bicycles to access on east-west connections across Georgia Avenue and the Central Campus.
- Create a bicycle facility on 8th Street between R Street and Barry Place, which would require a bicycle-actuated traffic signal to cross Florida Avenue. This would connect the 7th Street bike lanes and the T and R Streets bike lanes to the south
- Alternatively, re-construct Georgia Avenue to include bicycle facilities by implementing the Georgia Avenue Great Streets plan. This plan includes a shared bus and bike lane for north and southbound traffic between Florida Avenue and Howard Place. Connection at Howard Place provides good connectivity to the campus because of the direct access it provides to 6th Street, which has north and south access at this location, and to the campus quad.
- Locate an enclosed and secure bicycle parking facility on campus (possibly in a parking garage in the first phase), targeted to commuters (faculty/staff and off-campus student). Make shower facilities available to commuters. The proposed Recreation Center building will have shower facilities, and is a potential location for an underground parking facility. If a parking facility were constructed at this parcel, it would provide an excellent opportunity to create a centralized long-term, commuter-based bicycle parking facility on campus that can accommodate most commuters with direct access to shower facilities.
- Consider installing a cycle track along 6th Street to provide for north-south connection within campus if demand warrants additional facilities.
- Add Capital Bikeshare station to the southern side of campus aligned with the new bicycle routes. Three locations for additional Bikeshare stations are identified in Figure 6-41 and are near the intersection of W Street and Georgia Avenue, the intersection of Bryant Street and 4th Street, and the intersection of Howard Place and 6th Street. These locations were recommended because of their proximity to major activity centers, residential halls and proximity to the campus academic core on the south side of campus. Providing Bikeshare stations on both the north and south sides of campus minimizes the need to bicycle through campus, which helps mitigate pedestrian bicycle conflicts and the limitations created by one-way streets.
- Add bike racks outside of major campus buildings, focusing on those closest to bike routes and residence halls. Figure 6-41 identifies recommended locations for short-term bicycle parking racks that meet DDOT standards.
- Provide the bicycle commuter benefit to faculty/staff.
- Include details on short and long term bicycle parking in all further processing applications, especially those for residence halls to accommodate a significant amount of long-tern storage for students who wish to bring bicycles to campus.

Figure 6-41 identifies bicycle recommendations that will reduce barriers and mitigate issues identified in the Campus Plan.

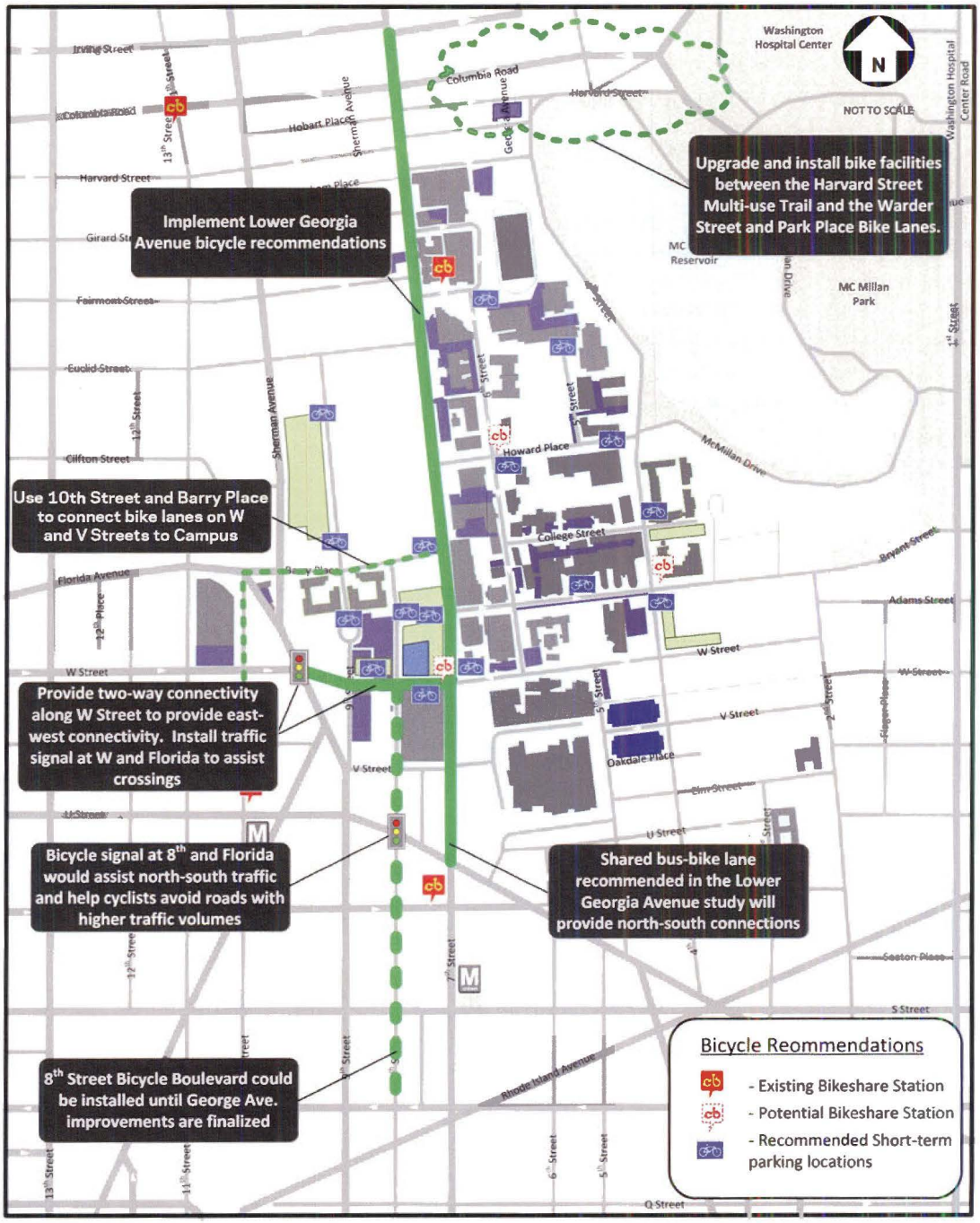

Figure 6-41: Bicycle Recommendations

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

PROPOSED ENHANCEMENTS

HU SHUTTLE SERVICE OPERATIONS

This Transportation Report makes the following recommendations to the HU Shuttle service:

- Increase the marketing of the HU Shuttle service, including creating maps and timetables of routes to be placed at Shuttle stops and on a website.
- Examine the spot removal of on-street parking on campus to assist in HU Shuttle operations
- Perform a detailed operational and financial study of the HU Shuttle system to increase efficiency of operations with the goal of simplifying the routes and changing them to reflect the shift in demand from between campus and off-campus housing to servicing campus population using the Metrorail system.

PROPOSED TRANSIT USAGE INCENTIVES

This Transportation Report makes the following recommendations to increase transit usage:

- Maintain the existing SmartBenefits program, and investigate implementing transit subsidies to encourage ridership, possibly funded through an increase in parking fees on campus
- Work with DDOT to implement the Lower Georgia Avenue Great Streets recommendations to increase Metrobus efficiency and quality in the corridor
- Work with DDOT on future streetcar and other long-term transit improvements
- During Further Processing of development parcels along Georgia Avenue, review transit stations for potential improvements and consolidation.

PROPOSED PARKING DEMAND

REDUCTION MEASURES

The current supply of 2,295 spaces is several hundred more spaces than the measured parking demand of 1,750 spaces. The University will adopt the recommendations outlined in the Transportation Report by implementing an aggressive TDM program to preclude the need for a net increase in parking supply. Based on comments and observations, it appears that common perception of the campus parking problem is due to lots not being in immediate proximity of the desired campus destinations. The Campus Master Plan will explore methods to improve the perception of the several block walk from parking lot locations to Central Campus.

Since an extensive TDM program can greatly reduce parking supply, the University will begin reviewing policies and operations to implement new TDM programs even before the campus plan is approved.

Other District universities have significantly reduced demand through TDM programs. Between 1999 and 2010, American University has reduced parking demand on campus by 30%, a decrease of a little over 3% per year. Table 6-8 shows the demand and resulting supply needed to serve it for Howard University, assuming a similar 3% per year reduction in demand can be achieved, and if there is no significant population change on Campus.

Specific Parking Program Actions include:

- The Campus Plan should have the goal of reducing demand to approximately 1,400 spaces in 2021. This goal excludes the demand associated with the Howard University Town Center, residents of the workforce housing, and non-campus use of the recreation center and ground floor retail spaces. The demand associated with these developments can be analyzed in detail during the Further Processing applications for their individual parcels.

In order to meet this demand, HU will implement parking demand related TDM measures immediately, including:

- Significantly increasing the price of parking. Currently, faculty/staff parking at Howard University costs 28%, 25%, and 15% of the faculty/staff parking at American University, Georgetown University, and George Washington University, respectively. Combining an increase in parking pricing, with providing benefits for other modes can help to markedly reduce demand.
- Marketing the Guaranteed Ride Home Program to all alternate mode users.
- Expanding car-sharing on campus by adding more ZipCar spaces.

Table 6-8: Recommended Parking Supply with 3% per year Reduction in Demand due to TDM Measures

Year	Demand	Recommended Supply
2011	1,750	1,925
2012	1,698	1,868
2013	1,647	1,812
2014	1,597	1,757
2015	1,549	1,704
2016	1,503	1,653
2017	1,458	1,604
2018	1,414	1,555
2019	1,372	1,509
2020	1,330	1,463
2021	1,291	1,420

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

- Starting a car-pooling program including web-based ride matching services, parking discounts and preferred parking locations on Campus
- Regularly monitoring parking demand by year or semester to track progress of reducing demand.
- Monitoring of parking demand to determine if the potential parking facilities identified in the Campus Plan need to be constructed. When individual parcels are up for development on campus, they will undergo a Further Processing design and approval process.
- Identifying Lots 1, 3, and 9 as preferred for development due to their location on the periphery of campus, and at different points within the campus. The Transportation Report performed for the Campus Plan assumes that these lots are constructed.
- Targeting Lots 6 & 8 as secondary choices due to their location and potential access points. The analysis performed of the Campus Plan assumes that these lots are constructed.
- Holding Lots 2, 4, 5, and 7, located along the eastern side of Georgia Avenue in abeyance and assuming they should only be constructed if the other potential lot locations are infeasible for construction. Due to their location within the roadway network they do not have as quality access locations as the other lots, and they are located more centrally within campus. This may create unnecessary pedestrian/vehicle conflicts. The Transportation Report performed for the Campus Plan does not assume that these lots are constructed.
- Locating a primary visitor parking facility somewhere on campus. One potential lot is Lot 1 located underneath the proposed recreation center which could be designated as a public, cash parking facility sited on one of the parking levels of the garage. It would serve visitors, retail patrons, and community recreation center users. On this lot prices would be set to market rate or higher so as to not encourage parking and traffic demand within Campus.

Table 6-9: Potential Parking Structure Locations

PARKING OPPORTUNITY

Location Key	Building Name/Function	Existing Surface Parking # of spaces removed	Proposed Parking Structures # of levels	# of spaces
Phase One (1-3 years)				
1	Campus Wellness and Recreation Center / Upper Classmen Res. + Retail		3	345
2	Computational Science (CS) / Biomedical Science (BioS) + Retail		3	150
	Sub Total	**584**		**495**
Phase Two (3-5 years)				
3	Blackburn Center Renovation		3	255
4	School of Communications + Retail		2 - 3	285
5	Academic / Support Facilities / Public Safety Building		2 - 3	225
6	Upperclassmen Residence Hall #1 + Retail		3	155
	Sub Total	**232**		**920**
Phase Three (5-7 years)				
7	Future Healthcare Sciences / Medical Arts + Retail		2 - 3	360
8 + 9	Intercollegiate Athletics Complex + Retail		3	510
	Sub Total	**578**		**870**
Future Phase Capacity				
10	Academic / Research		2	190
	Sub Total	**1394**		**190**

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

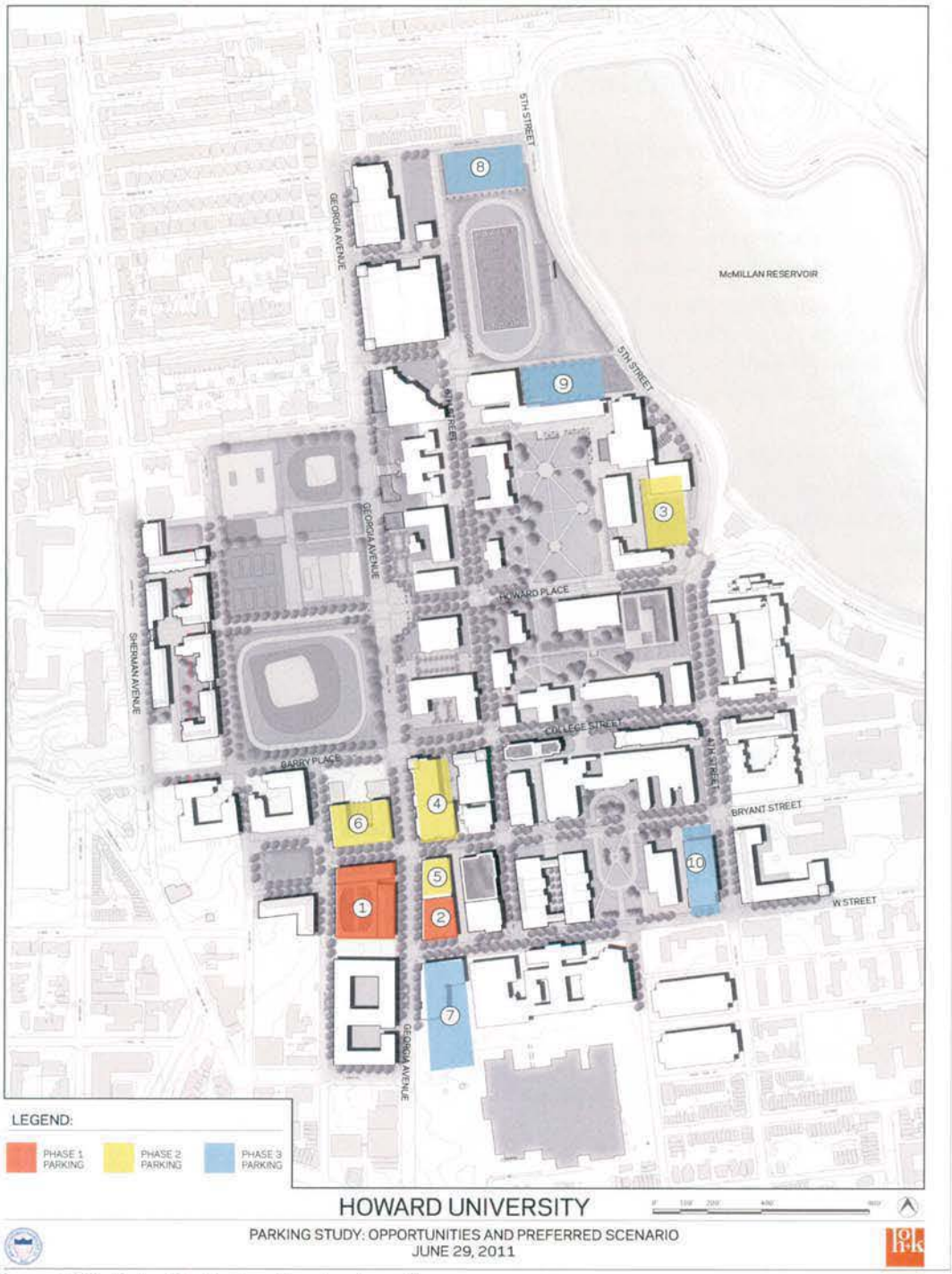

Figure 6-42: Potential Parking Structure Locations

CAMPUS DEVELOPMENT PLAN

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PROPOSED TDM MEASURES

MONITORING

TDM monitoring programs will allow the University to evaluate campus travel habits and the effectiveness of TDM strategies. The University will implement a monitoring program with features that might include research and measurements of traffic/parking/transportation use, such as traffic counts at lots and garages, parking occupancy counts, survey responses from campus user groups, participation/enrollment in TDM programs and discussions on the relative effectiveness of each program to budget/ resources allocated. A monitoring program can be an effective resource for evaluating TDM strategies and insuring an efficient allocation of resources.

MARKETING

Creating a TDM marketing program that provides detailed transportation information to the campus community can maximize the effectiveness of TDM strategies. In 2006, the University's Office of Parking and Shuttle Operations began a marketing program with guidance from UrbanTrans Consultants.

A renewed marketing strategy may consist of : an access guide that provides comprehensive transportation information for the entire HU community: an enhanced transportation web site accessible from HU's home page; and additional information, such as transit maps that identify WMATA routes and stops, vehicle routing and parking maps, bicycle maps and other transportation information and policies. The web could capture personalized information depending on the needs and interests of an individual user, making it a good medium to disseminate.

Another option that would complement a web site would be to produce a multi-modal access brochure, handed out to all new students and employees along with their orientation information and placed in information kiosks. This could help with develop good travel habits early on in their tenure at HU. Visitors to the Campus would also benefit from this promotion. Awareness promotion campaigns can introduce new initiatives to alter travel habits during the year.

PROGRAMS

Other than management, marketing and monitoring of the TDM programs, other recommendations include:

- Significantly increasing the price of parking.
- Marketing the Guaranteed Ride Home Program to all alternate mode users.
- Expanding car-sharing on campus through adding more ZipCar spaces.
- Starting a car-pooling program including web-based ride matching services, parking discounts and preferred parking locations on campus.
- Maintaining the existing SmartBenefits program, and investigating the implementation of transit subsidies to encourage ridership, possibly funded through an increase in parking fees on campus.
- Performing a detailed operational and financial study of the HU Shuttle system to increase efficiency of operations with the goal of simplifying the routes and changing them to reflect the shift in demand from servicing the campus population traveling between campus and the campus housing to servicing the campus population using the Metrorail system.
- Locating an enclosed and secure bicycle parking facility on campus (possibly in a parking garage in the first phase), targeted to commuters (faculty/staff and off-campus students). Making shower facilities available to commuters.
- Adding Capital Bikeshare stations to the southern side of campus aligned with the new bicycle routes
- Adding bike racks outside of major campus buildings, focusing on those closest to bike routes and residence halls.
- Providing a bicycle commuter benefit to faculty/staff.

EMBRACING SUSTAINABILITY

The University proposed to integrate sustainability strategies in every aspect of campus management, site selection, site design and architecture as the development plan is implemented.

The benefits of green buildings are now widely supported by scientific research and the LEED (Leadership in Energy and Environmental Design) certification process is now more understood and much more attainable than in the past.

LEED is an internationally recognized green building certification system which provides third-party verification that a building or community was designed and built using strategies aimed at increasing performance, reducing waste, and improving quality of life.

SUSTAINABILITY TRACKING, ASSESSMENT AND RATING SYSTEM (STARS)

It is widely recognized that in order to fix a problem it must first be measured. This master plan update is one tool in an on-going process to continually update and improving data as conditions of the campus change and continues to evolve over time.

Howard University will explore the possibility of participating in the Sustainability Tracking, Assessment and Rating System or STARS Program that was recently released in January 2010 by the Association for the Advancement of Sustainability in Higher Education (AASHE). This innovative tool is an excellent way to focus on important issues of sustainability using a voluntary self-reporting framework to gauge progress and be recognized for sustainability leadership. It was developed specifically for universities and recognizes the unique missions and challenges that are faced by institutions of higher learning.

The benefit of the program to Howard is that it would help the University to meet goals and foster information sharing about practices and performance among the community of peer participants.

The Goals of the STARS program are:

- Provide a guide for advancing sustainability in all sectors of higher education, from education and research to operations and administration.
- Enable meaningful comparisons over time and across institutions by establishing a common standard of measurement for sustainability in higher education.
- Create incentives for continual improvement toward sustainability.
- Facilitate information sharing about higher education sustainability practices and performance.
- Build a stronger, more diverse campus sustainability community and promote a comprehensive understanding of sustainability that includes its social, economic and environmental dimensions.

Institutions earn points in three main categories: Education & Research; Operations; and Planning, Administration & Engagement. Each of these categories includes subcategories such as Purchasing, Curriculum, Energy, and Human Resources. There is also an "Innovation" category to recognize pioneering practices that aren't covered by other STARS credits."

(Source: http://www.aashe.org/files/documents/STARS/STARS_1.0_Technical_Manual.pdf)

CAMPUS DEVELOPMENT PLAN

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COMMUNITY RELATIONS

Since the approval of the 1998 Campus Master Plan, Howard University has complied with Condition #10 of BZA Order No. 16330 where the University was required to: "establish a Howard University Advisory Council composed of representatives of the University, affected Advisory Neighborhood Commissions (including but not limited to ANC 1-B and ANC -5C), representatives selected by civic associations surrounding the campus (including, but not limited to Pleasant Plains, Bloomingdale and LeDroit Park), interested student organizations and other interested community groups. "The Howard University Advisory Council shall meet on a regular basis, or a minimum of four times annually, to discuss the effects of University activities on the surrounding community and other issues of mutual concern."

The University named its advisory body the Community Advisory Committee (CAC), and has met with this group on a regular basis as required by the order. More importantly, these meetings have been complemented by a strengthening of relationships with and an enhanced engagement of the community by Howard community relations and community service staff . This staff makes up the Howard University Community Association (see a detailed description in the Chapter entitled Howard University: A Capital Asset of this plan). The Community Association is conveniently located on Georgia Avenue to accommodate easy access by community members to University personnel who can readily address day-to-day issues that may arise, provide information and referral services, and respond to requests for community service assistance.

In preparation for the development of the campus master plan, a Community Campus Master Plan Task Force (CCMPTF) was organized in May of 2010, and has met monthly through March of 2011. Frequently these meetings have been in combination with meetings of the Community Advisory Committee. A description of the meetings and the topics covered follows:

1) June 2, 2010: Executive Summary of the Existing Conditions Report; Regional Context; Neighborhood context; Zoning and Land Use

2) June 30, 2010: Housing, Recreation and Athletics

3) July 21, 2010: Transportation, Traffic and Parking

4) August 11, 2010: Physical Campus Setting and Historical Development

5) September 8, 2010: Georgia Avenue Development Task Force Findings

6) September 23, 2010: Expanding Community Involvement in Campus Plan discussions

7) October 7, 2010: Meeting with Dr. Sidney Ribeau, President, Howard University

8) November 17, 2010: Campus Strategic Asset Value (SAV) Story

9) December 1, 2010: Health Sciences Relationship to Walter Reed Campus

10) December 15, 2010: Meeting with Howard Town Center Developer, Howard University Chief Operating Officer and Director of Capital Asset Development

11) January 26, 2010: (Rescheduled due to snow storm)
February 10, 2010: Blackburn Student Center

12) March 24, 2010: Draft Campus Master Plan Concept Presentation

13) June 23, 2010: Full Written Master Plan Review and Discussion of Summer Detailed Document Examination

The meetings of the CAC and CCMPTF that the University convened were supplemented by three rounds of visits to ANCs , Civic Association meetings and the Georgia Avenue Community Development Task Force meetings (see the Appendix G for this listing.)

CAMPUS DEVELOPMENT PLAN

(CONTINUED)

In general, up through mid-June, 2011, the response of community stakeholders to Howard's plan has been cautious, positive and supportive. Neighbors are eager for the Howard Town Center to be developed, since most of them have been hearing about the development and hoping for its immediate implementation for a number of years. They have remarked upon the ambitious nature of the plan and are interested in learning when the building program will begin. The earliest of the projects, i.e. the underclassman student housing, has been well-received, and there has been relief in learning that outlying student housing that is de-commissioned for that purpose, will likely be re-purposed for other residential uses by the University.

Concerns that have arisen include questions regarding what the University plans to do with buildings that are currently vacant, and are likely to remain vacant or near-vacant until their redevelopment in later phases of the plan (e.g. Effingham and Howard Manor, which are scheduled to be redeveloped in Phase 3 for the construction of the Intercollegiate Athletic Complex). Neighbors have offered ideas for the University to upgrade the treatment of its edges where they interface with the community (e.g. the fencing along Sherman Avenue), particularly where other improvements are taking place that will enhance the neighborhood (such as the Sherman Avenue streetscape improvements). They have also invited the University and other owners of vacant retail spaces to work with artists in the area to place artwork in the windows of these spaces until those spaces are fully tenanted.

In addition, the community would like to see this ambitious program result in business and job opportunities for local businesses and area residents. Ample parking has come up as a recurring concern by neighbors and the Georgia Avenue Business Association, who recognize the current lack of parking and the constraint that places on existing businesses and seniors who have to park further and further away form their homes when their on-street parking spaces are taken.

Community members welcomed the University's interest in using its facilities for community events (Capital Cause Festival, summer of 2010; Florida Avenue Baptist Church's Easter celebration on the grounds of the Howard University Hospital-HUH) and for affordable retail (Funky Fabulous Flea Market, beginning June, 2011). They look forward to a continuation of this same kind of cooperation as the implementation of the plan takes place (e.g. the use of HUH grounds to launch the Georgia Avenue Heritage Trail in October 2011).

Throughout the summer of 2011, discussions with community stakeholders will continue as they review in detail the campus plan application as filed with the Zoning Commission, and as the University's conversations with OP and DDOT continue.