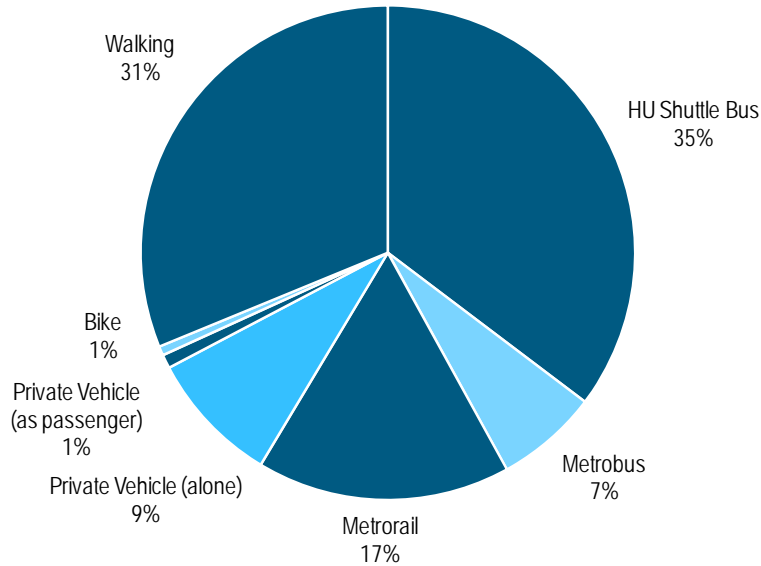


Figure 45 Student Mode Splits



Note: Totals may not exactly match the sum of each row, due to decimal rounding.

These findings are consistent with mode split conditions indicated by data on permit sales from 2010, which indicate that about 8% of students purchased an annual parking permit last year, while just over half of faculty and staff members did the same.⁷

Figure 46 2010 Parking Permit Sales Data

Population Category	Population	Permits Purchased (2010)	% of Population with Permit (2010)
Students	11,000	1,053	10%
Faculty & Staff	3,300	1,779	54%

Stated Parking Preferences

According to OPSO, the University has sufficient supply to offer a permit to every faculty/staff member and eligible student who requests one, although not always at the lot of their preference. In all, 1,779 faculty/staff permits were sold in 2010 — representing just over half of the Central Campus faculty/staff population. Survey findings indicate that about 1,960 faculty and staff members drive to work, so 90% of drivers received permits. That leaves roughly 180 driving commuters who chose not to obtain a University parking permit. Figure 47 provides a summary of survey responses indicating where these drivers are parking.

⁷ Permit sales data disaggregated between faculty and staff was not available at the time of this study.

Figure 47 Stated Faculty/Staff Auto Parking Locations

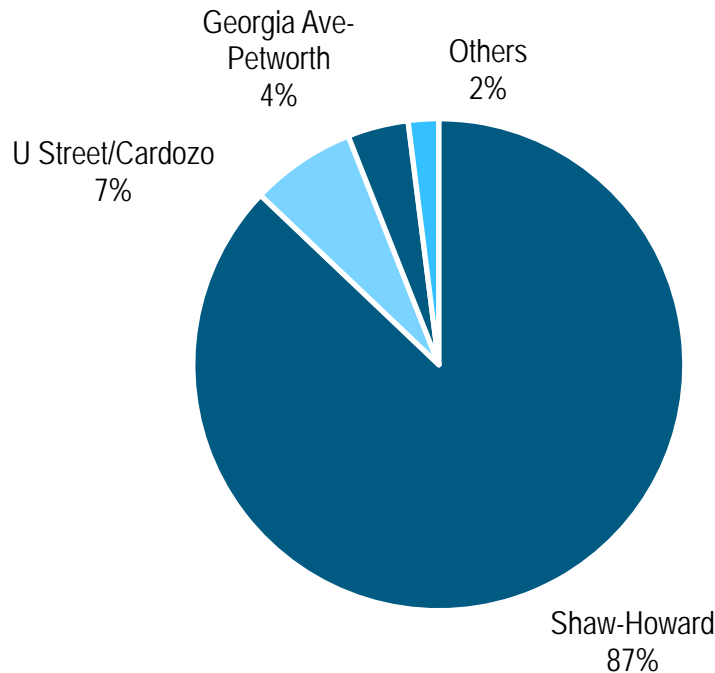
Where do you (driving commuters only) most frequently park?	Percent Response	Estimated Peak Daily Vehicle Count
A Howard University parking lot	91%	1,784
A non-Howard University parking lot or garage	1%	12
On-Street (metered)	7%	131
On-Street (non-metered, residential permit area)	1%	22
On-Street (non-metered, non-permit-area)	1%	12

From these survey responses, it can be estimated that around 160 employees are parking along local streets on most days, with the remaining 1% of non-permit drivers are parking in non-HU lots or garages. Among non-permit-holder University employees who do not drive to work, Metrorail and Walking predominate among the range of mode choices — see **Error! Reference source not found.** and **Error! Reference source not found.**.

Metrorail Station Use

When asked which stations they use to access the Central Campus, 87% of Metrorail riders identified Shaw-Howard as the one they use most frequently. About 7% use the U Street/Cardozo/Memorial station and about 4% use Georgia Ave-Petworth. Respondents also identified Brookland-CUA and Prince George's Plaza as their primary commute stations.

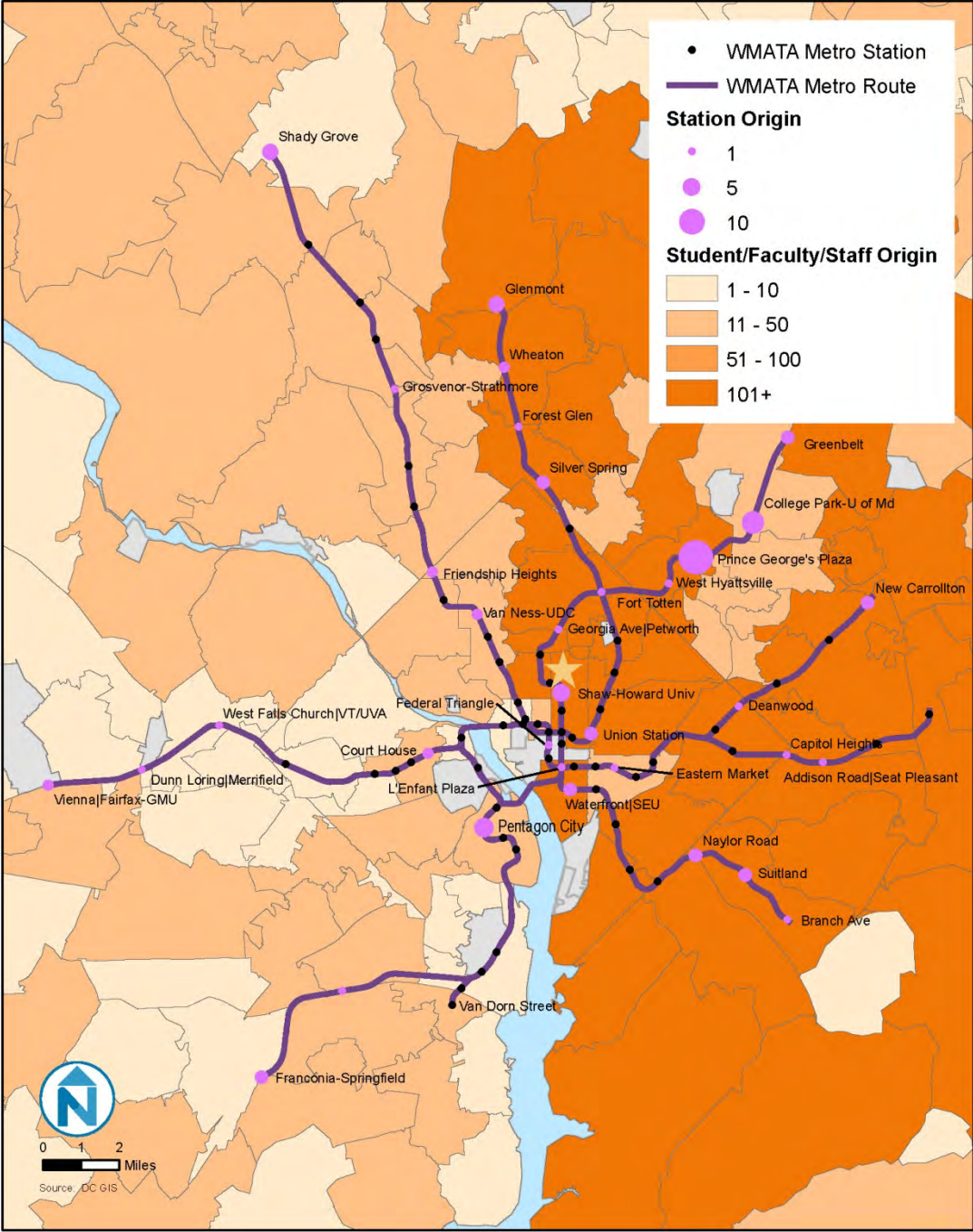
Figure 48 Commute-Destination Stations for WMATA Commuters



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Participants were also asked to identify the stations at which they begin their Central Campus commute. As expected, responses were widely varied. The map below presents a summary of locations, by the number of respondents who identified each.

Figure 49 Originating Stations for WMATA Commuters



Focus Group Input



A series of stakeholder focus group discussions was completed with Central Campus faculty, staff, and students to solicit input on existing Central Campus transportation and TDM conditions. All meetings were conducted on Friday, October 14th 2011, at the Cramton Auditorium. The following tables identify those who participated in these discussions.

Figure 50 Group 1 Attending Stakeholders

Name	Campus Population	Residency	Primary Mode to Campus
Caleb Davis	Student	Slowe	Shuttle
D. Hammond	Staff	DC	Metro Bus
Deborah Johnson	Staff	DC	Drive
Debra Boatwright	Staff	MD	Drive
Eva Polston	Faculty	MD	Drive
Jasmine Gary	Student	UTC	Shuttle
Jasmine Merritt	Student	Towers	Shuttle
Jasmine Robinson	Student	Slowe	Shuttle
Lucy McCullough	Staff	DC	Metro Bus
Miyisha Tribble	Student	UTC	Shuttle

Figure 51 Group 2 Attending Stakeholders

Name	Campus Population	Residency	Primary Mode to Campus
Alice Saydee	Student	Slowe	Shuttle
Cassandra Thompson	Staff	DC	Metro
Micah Johnson	Staff	DC	Metro
Nicole Adair	Student	MD	Bus
Raven Andrews	Student	MD	Shuttle
Chioma Njoku	Student	MD	Shuttle
Christina Johnson	Student	MD	Metro
Aqui Meeks	Staff	MD	Drive/shuttle
Sakinah Munir	Staff	MD	Drive
Tasha Delane	Staff	MD	Subway

Figure 52 Group 3 Attending Stakeholders

Name	Campus Population	Residency	Primary Mode to Campus
Alicia Person	Student	Quad	Shuttle
Ehren Vance	Student	MD	UTC/Metro
Stephanie Miller	Student	DC	Shuttle
Janet Jackson	Staff	MD	Drive
Brian Owen	Staff	MD	Drive
Shaniece Palmer	Student	DC	Shuttle

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Trudy Lindsay	Student	Bethune	Walk/shuttle
Angela Knox	Staff	DC	Walk
Elise Burwell	Staff	MD	Drive
Lisa Aliz	Student	Slowe	Shuttle
Derrick Thompson	Staff	DC	Drive

Figure 53 Group 4 Attending Stakeholders

Name	Campus Population	Residency	Primary Mode to Campus
Danielle Ruth	Faculty	DC	Drive
Earl King	Student	Cook	Shuttle
Beverly Clark	Staff	DC	Bus
Iryonna Scruggs	student	Slowe	Shuttle
Jumill Williams	Student	Slowe	Shuttle
Obi Emeagwali	Student	Cook	Shuttle
Bertha McBride	Staff	MD	Drive

Following is a summary of key input received during these discussions.

Campus Travel Patterns

The following images represent map markings indicating where attendees typically travel to on campus (blue markings indicate initial destinations, yellow marking indicate subsequent destinations), problem spots for pedestrian travel (red), and places to which they would like to see improved or better shuttle service (green).

Key for all images: Blue Dots = Where they begin their day; Yellow Dots = Subsequent destinations; Red Dots = Hazardous pedestrian crossings/ passages; Green Dots = Destinations to which they would like improved service.

Figure 54 Group 1 Travel Patterns

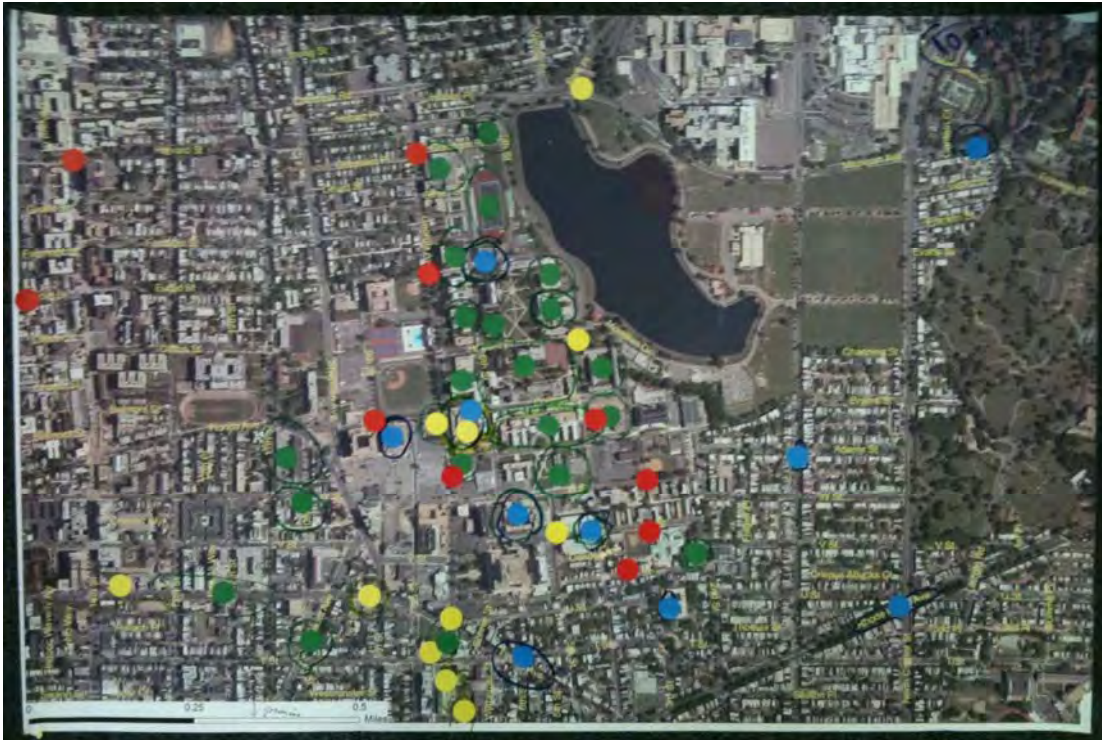


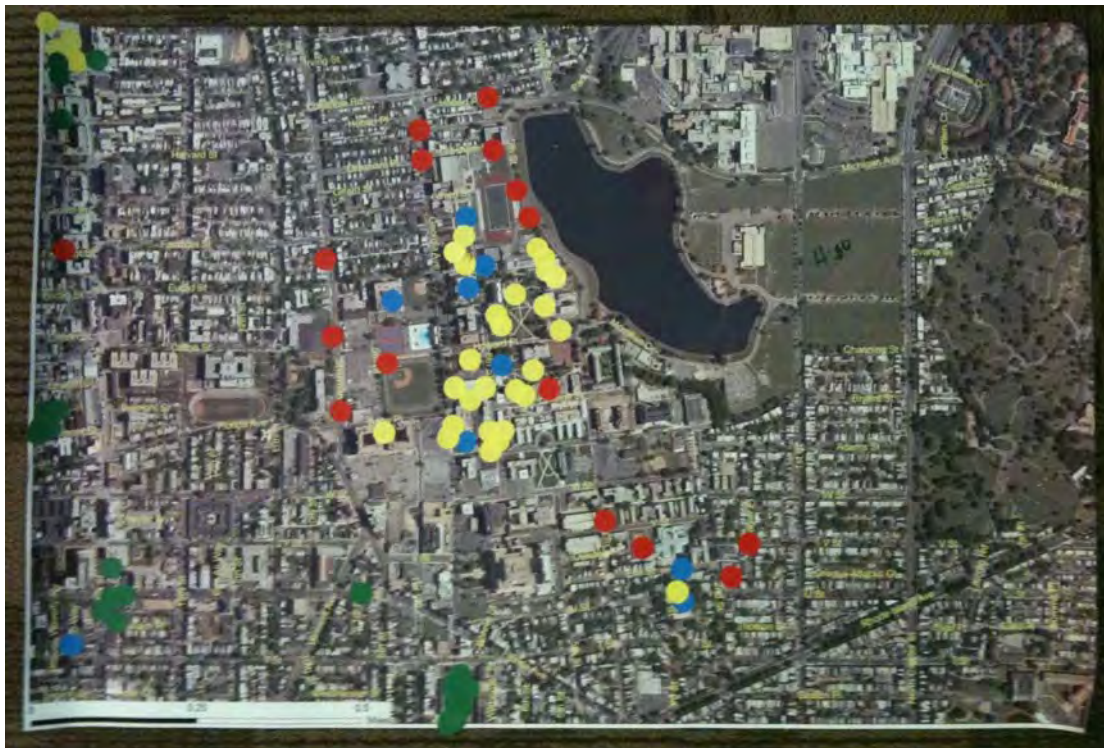
Figure 55 Group 2 Travel Patterns



Figure 56 Group 3 Travel Patterns



Figure 57 Group 4 Travel Patterns



Reasons for Attending

When asked their primary motivation for attending the focus group, attendees noted the following:

- As a student representative, one sophomore is concerned about the experiences he has been hearing about the shuttles (late arrivals, crowded vehicles, rude drivers).
- One student residing in the University Town Center (UTC) in Hyattsville, Maryland, noted her frustrations with the shuttle services (crowded buses, limited hours of service, lack of weekend service).
- Another student UTC resident came to seek improvements to the shuttle service.
- One staff member came out of concern for the lack of parking options beyond the University Lots — "If you do not have a permit, there's nowhere else to park."
- One staff member came because she is frustrated with the poor quality of shuttle service connection at the Howard Metrorail station.
- Another staff member said that she (and most other maintenance staff) arrive for work well before shuttle services begin and she is concerned for the safety of those walking from remote lots at this time of day.

Commute Options

Responses to questions and discussions regarding the commute options available for Central Campus locations included the following:

- Many attendees, especially staff and faculty, noted that they drive because they have to travel to multiple places during, before, or after the workday.
- One graduate student at the College of Medicine recently moved to Maryland, close to UTC. Would like to use shuttles but, because of their schedules and crowding conditions, drives.
- One staff member who works at the University Hospital purchases an annual parking permit, even though she only drives during bad weather.
- Several faculty attendees noted that they would prefer a non-driving commute, but that transit options are too complicated and time-consuming (many noted that they would have to take three trains, then a shuttle bus to get to Howard) for regular commuting.
- Nonetheless, many attendees noted taking transit, riding multiple trains and/or buses, and a few others noted that they will take transit when it is raining or snowing or when the traffic report is bad.
- Many students spend a lot of time on campus during weekends, either volunteering on social committees (homecoming) or studying. Those living at UTC lack shuttle access at these times.
- Many students stated that any travel costs are a burden. Many do not own cars and view Metrorail as too expensive (particularly for those living at UTC).
- No attending undergraduate students drive to campus.
- Most attendees noted that they walk between campus destinations and use shuttles if it's raining.
- For intra-campus trips, faculty/staff member are more inclined to drive if they have a car on campus and they know they can park where they are going.
- Most staff were unaware that they are eligible to ride campus shuttles free of charge.
- There appears to be room to improve the awareness/understanding of the benefits of the SmartBenefits and commuter-connections-based (carpooling and guaranteed-ride-home) programs.

- Most students were unaware that anybody can park in University lots during off-hours (after 5:30 on weekdays and anytime on weekends).
- Asked to identify locations that do not have, but should have, bicycle racks, a number of attendees noted Blackburn Hall, which does have bike racks.
- Some students expressed interest in using Capital BikeShare if it were free.
- Available ZipCar options do not seem of significant interest to students: *Too expensive*.
- One student, who grew up using transit, takes two buses from Silver Spring because she can't stand to drive in DC traffic.
- One faculty attendee noted that she had tried carpooling and that it worked well, until she moved. Some expressed "liability" concerns regarding carpooling.
- Many students noted interest in expanded escort service options at night.
- There is strong interest in lunchtime shuttles to Chinatown and/or Union Station, plus commute hour shuttles to Union Station.
- There was consistent interest in:
 - Paying more for better transportation options;
 - Using less convenient parking lots to save money; and
 - Carpooling as it meant more convenient or less expensive parking options.

The Howard University Shuttle Service

Many attendees attested to problems with the level of service provided by the University's shuttle service. The most common complaints are listed below.

- Infrequent service, particularly during midday and on weekends.
- A few stated that the University's Campus Escort Service — free, request-based rides to students concerned about safety of available transportation options when shuttles are not running — is unreliable.
- Some students noted that the "next-bus" information, as provided via phone texting was unreliable. Others had better experiences.
- By contrast, most felt that the new, online (phone app) bus locator maps were much more reliable.
- UTC buses, in particular, are over-crowded. Buses with 45-person official capacity are carrying up to 60 students. And even then, more students are often left to wait for the next bus. This creates an unpleasant situation among students vying to be one of the 60 who make it on, and within the bus during the long ride to campus.
- Many students noted that bus routes are unreliable, with drivers changing which route they are taking, or deviating from their designated routes, without notice.
- Many students noted rudeness among certain shuttle drivers, particularly when asked for information.
- One student suggested that buses be marked by their end destination, rather than the name of the route they are on — stating that, often, buses running the same route will have different end destinations, a fact that students only learn upon asking.
- A few students suggested that buses have route/destination signs on the back as well as the front, so students know what bus is at a stop ahead of them, or what bus has just left their stop.
- Wait times at off-campus locations, such as Meridian shopping center, were noted as particularly inconsistent, with some buses not showing up at all.

- The earliest UTC buses do not get students to campus in time for 8:00 classes, while some classes start much early.
- The library is open much later than shuttles run, leaving students to decide between research and a ride home.
- Some faculty and staff travel during the day, increasing the appeal of having a car on campus during work hours.
- "There should be better communication between OPSO and Res Life (student housing services)."

Safety and Security

Concerns regarding safety and personal security appear to impact certain mobility options among Central Campus stakeholders, particularly students. The most notable comments received are presented below.

- Many students noted that they are concerned for their personal security while walking between campus locations, particularly, but not exclusively, at night and during large school events such as homecoming. Due to these concerns, students who live within a reasonable walk of classes are essentially dependent upon shuttle buses to get to class.
- Some students noted that the escort service works well, with some noting regular use. Others felt it did not work — that they have to wait too long, or that the escort never shows up.
- Many faculty and staff also noted concern for student safety/ security as one of their primary concerns, mostly related to students walking late at night or early in the morning.
- Early morning security concerns also included staff who begin well before shuttle service starts, and park in remote parking lots.
- Animosity toward Howard students from "DC residents" limits student comfort on/use of Metrobus and even Metrorail options.
- There was a consistent sense that area traffic was dangerous, particularly with drivers failing to yield to either traffic control devices or pedestrians in crosswalks.

Public Access to University Shuttles

Attendees were surveyed on their reaction to a potential strategy to allow fare-based, public access to University shuttle services, in exchange for fare-funded improvements. The response was universally, and emphatically negative. Some were slightly open to it if public riders had to show ID, or pre-register, to ride.

Impact of Vehicle Traffic Conditions

Attendees were asked to identify locations where traffic conditions and/or pedestrian infrastructure conditions threaten safety while walking. The most commonly noted locations were along Georgia, Sherman, and Florida Avenues.

Option of Creating a Transportation Services Fee in Return for Improved Services

Attendees were asked if they would be willing to pay an annual services fee in return for transportation services/benefits improvements that would be directly funded from the resulting revenue. Responses were mostly positive, with some reservations. Responses included:

- Would need to see which improvements would be funded;

- Would need to see noticeable improvements on Day 1; and
- Would like to see improvements prioritized.

One faculty member suggested that a "Howard Access Card", provided to those who paid the fee, could be used to control access to campus shuttles — eliminating the current reliance upon driver diligence in checking IDs to keep public riders off.

New Service Suggestions

The most popular suggestions for added shuttle destinations were to the Columbia Heights Target store and the general Columbia Heights area.

Students expressed interest in airport shuttles before and after breaks. They noted that the Metro does not accommodate luggage well, while the cost (\$15) of commercial airport shuttles was too high. Students indicated willingness to pay, though it would have to be cheaper than existing options. When it was noted that current shuttle vehicles lack luggage accommodation, it was suggested that these shuttles could use different vehicles.

2 CONDITIONS ASSESSMENT

SWOT ANALYSIS

To assess the implications of the above summarized findings, these findings were organized into Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. This analysis delineates the existing conditions, in terms of both advantages and disadvantages, and identifies opportunities for improving the University's existing transportation systems.

Figure 58 SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
Well-Established shuttle system that is fully integrated into the Central Campus transportation culture	Shuttles are under-utilized by faculty and staff, particularly those with on-campus parking	Unmet demand for shuttle services, particularly among students	Costs of maintaining, improving level of shuttle service.
Walkable campus size	High-volume, high-speed roadways (Georgia Avenue) and personal security issues (crime) limit walking for many travelling short distances	More walkers = safer walkers, safer walking -> more walkers. TDM Plan partners at DDOT can help address impact of roadways.	Crime is a long-standing issue in many District neighborhoods, limited resources for University to address effectively
Walking access to multiple Metrorail stations	Grade issues reduce appeal of walking to/ from most stations.	Planned Circulator service would enhance access to District-wide transit systems. Continued investments in Shuttle services can improve sense of connection to Metrorail	Shuttle costs are high. Shuttle buses stuck in same traffic as cars - makes on-time-performance a challenge
Dense-neighborhood setting presents walking-distance housing opportunities.	High housing costs. Area is perceived as unsafe, particularly by students unaccustomed to urban living.	The housing components of the HUCMP - more student housing, and introducing Workforce/ Graduate Student housing	Cost of providing housing, ensuring safe living environment.

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Strengths	Weaknesses	Opportunities	Threats
Plan recommends limiting parking replacement as the Central Campus is redeveloped. While primarily a cost-savings strategy, based on the vision for all subsurface facilities, limiting parking supply is also one of the most effective TDM strategies.	Cost of parking is currently well below market, with few benefits offered to incentivize alternative modes. Transitioning to a reduced supply will require quickly ramping up TDM investments.	The parking components of the HUCMP - subsurface parking replacing current lots at a less-than-one-for-one ratio.	Transitioning from subsidized parking to using parking to subsidize alternative modes will be challenging from a political and cultural perspective.
Dense-neighborhood setting presents potential Live Where You Work opportunities	High housing costs. Area is perceived as unsafe, particularly by students unaccustomed to urban living.	Successful precedents for expanding faculty, staff, and student housing options. Increased faculty, staff, and student populations can help increase safety.	Cost of providing housing, ensuring safe living environment.
ZipCar Presence	Low interest in/ use by faculty/ staff or students	Raising awareness of this benefit, particularly regarding special arrangement for students 20-25 (an age group typically restricted from commercial car rental services)	Once a faculty/ staff member or student purchases an annual parking permit, the benefit of ZipCar access is greatly diminished.
Low driving-mode commute share among students	Even Central Campus resident students are highly dependent upon shuttle services and escort programs due to security concerns	Expanding campus housing, improving UTC shuttles, improving campus security	Costs of maintaining, improving level of shuttle service. Crime is a long-standing issue in many District neighborhoods, limited resources for University to address effectively
Access to UTC housing — significant housing capacity within Metrorail catchment	Lack of WMATA pass programs, makes Metrorail commuting cost-prohibitive to most students.	Keep working with WMATA on transit discount options. Improve shuttle services.	Costs of maintaining, improving level of shuttle service.
Campus Escort Services - extends transit service into evening and early morning hours.	Would be difficult to offer services at a capacity to meet demand. Faculty and staff are not eligible. Crime is a long-standing issue in many District neighborhoods, limited resources for University to address effectively	Expand services. Improve lot lighting. Expand presence of campus security at key times.	Lack of capacity exposes commuters who must get to Central Campus before the shuttles begin operating, and students travelling at night.

TDM Plan for the Howard University Campus Master Plan
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Strengths	Weaknesses	Opportunities	Threats
OPSO staff, coordinating with Security staff, currently monitor lot utilization levels to assess capacity to offer limited amount of daily permits.	Annual permit is only reliable means of parking access	Add periodic, monthly, and daily options.	Adding more options will complicate parking management oversight.
	Demand for shuttle services exists much earlier and later than current hours of operation	Expanding service could improve sense of security among off-hours travelers, and could improve appeal of more remote parking lots.	Costs of maintaining, improving level of shuttle service.
Most newer pedestrian network components are fully ADA compliant.	Overall pedestrian infrastructure networks lack consistent ADA accommodations - ramps, tactile warning strips, sidewalk widths and conditions, etc.	The HUCMP presents an ideal opportunity to ensure all new sidewalk installations are fully ADA compliant — and prioritize the comfort and safety of pedestrians rather than reinforce the dominance of auto traffic.	Cost. Implementation timeline.
Traffic-calming needs on high-volume, high-speed roadways are aligned with DDOT sustainable transportation objectives.	Limited University control over street regulations and design.	The HUCMP and TDM Plan present a new opportunity to work with DDOT staff to coordinate University TDM investments with DDOT traffic calming investments to promote walking as primary local mode.	High-volume, high-speed roadways disrupt the Central Campus's walking environment.
Capital BikeShare presence	3rd party control, limited current cycling activity	Increasing ridership indicates that expanding access to this service is a promising TDM strategy	Cost - most students that are interested balk at the membership/ deposit costs.
Expanding bicycle infrastructure around the Central Campus	3rd party control, limited current cycling activity	Minimal local bike investments can tap into inertia created by regional investments.	Gap between external and internal bike infrastructure consists of problematic roads, such as Georgia and Florida Avenues.

TDM Plan for the Howard University Campus Master Plan
Howard University

Strengths	Weaknesses	Opportunities	Threats
HUCMP emphasizes the importance of TDM measures, such as increasing the cost of parking to realizing its Central Campus vision. This will provide important complementary support for the TDM Plan	Current parking pricing puts alternative modes at a disadvantage	The HUCMP presents an ideal opportunity to coordinate parking price increases with investments in physical campus improvements.	Transitioning from subsidized parking to using parking to subsidize alternative modes will be challenging from a political and cultural perspective.
Excess capacity in many parking lots	Perception that there is a lack of supply.	Can start offering more monthly/ daily passes. Provides clear justification for tiered pricing.	More parking options will make parking management more complicated
Effective RPP in surrounding neighborhoods	Modifications to RPP regulations can be difficult to implement.	DDOT can help support demand-management strategies in the TDM plan by improving RPP regulations to mitigate spillover.	Some streets are nonetheless being negatively affected by campus-based parking
Freshman Parking Restrictions		A Campus TDM best practice that could be expanded to all new, and second-year students.	Expanding emphasis on auto-mobility in most areas of the country may make such restrictions seem anathema to arriving students.
Campus parking facilities are shared at night and on weekends	Very few know about this opportunity, particularly students.	Coupling this with expanded carshare (ZipCar) benefits could relieve pressure to expand weekend and evening shuttle service — allowing HU to focus investments on peak-hour TDM.	Expanded awareness of these opportunities may incentivize car ownership in locations such as UTC.
Next Bus technology investments	Some appear to be operating below expectations	This is a rapidly evolving technology whose costs consistently trend downward.	Focusing on expanding access to what is working best (real-time, web-based, bus-locator maps) should not come at the expense of maintaining optimal conventional information infrastructure (maps and time-tables at bus stops)
Transit is well-integrated into the larger District transportation culture.	Current economic conditions may be slowing implementation of new services.	Expanding area transit options include planned BRT, streetcar, and Circulator bus service	A variety of providers and services may create rider confusion, may make bulk-discount fare purchases more difficult to negotiate.

TDM Plan for the Howard University Campus Master Plan
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Strengths	Weaknesses	Opportunities	Threats
Campus Housing - Residence Life system current capable of housing 45% of all students.	Expansion is limited by housing costs, neighborhood security concerns.	More faculty, staff, and students living on campus could have positive impact of neighborhood security.	Recent efforts to expand via remote locations has under-scored challenges created by this approach (i.e. limited accessibility to Central Campus, cost of providing adequate shuttle service)
Parking Charges - The University provides no free parking.	Charges remain below-market	A history of charging for parking reduces the transition to market-based rates.	Many faculty, staff, and students who come from non-urban environments
Moderate level of current TDM investment beyond the shuttle program	Moderate level of current TDM investment beyond the shuttle program	Should set up new, expanded investments for success.	May create staffing, management challenges for the University
High level of rapid and regional rail services with commuter catchment	Hub-and-spoke configuration means most commutes require at least on transfer (at least two for all who begin on regional rail).	Providing better connections to hubs like Union Station may make rail commutes more feasible/ appealing	Connecting to any major hub will be complicated and expensive.
Many commutes begin within five miles of campus	Poor connections between regional bike infrastructure and the Central Campus, as well as limited bike parking on campus, limit capacity for bike commutes to reduce travel and parking demand	Minimal local bike investments can tap into inertia created by regional investments. District weather expands the bike-commute season compared to many campus locations across the country.	Central Campus has a near-complete lack of bike-commute culture.
Modest driving mode share among faculty and staff	A significant amount of driving is, nonetheless, likely generated by below-market parking rates, focus on annual parking permits, and minimum benefits offered to incentivize alternative mode commutes.	TDM benefits that directly benefit non-drivers should have a significant, support base.	As central District housing costs go up, more and more commuters will be arriving from homes located further away from the Central Campus - creating challenges to keep alternatives competitive with driving.

BEST PRACTICE CASE STUDIES

The University of Washington (Seattle)

Background

The main campus of the University of Washington (UW) is located within the City of Seattle, in the densely populated University District neighborhood. Student enrollment at the main campus is over 40,000, with about 6,000 of those students living on campus. The campus population also includes over 6,500 faculty members and 16,500 staff members. Over 50,000 people travel to the campus on a typical class day. Managing the transportation choices offered to the campus community is critical to meeting the academic and quality of life goals of the University. Equally important to the University, managing the implications of these choices is critical to being a good neighbor to the surrounding city.

TDM Program

UW's Transportation Management Plan (TMP) "identifies strategies that enhance access to campus by all transportation modes", with a focus on "limiting the number of vehicle trips made to the University" and, in doing so, "being a good neighbor to the surrounding city."⁸ The school's Commuter Services Department began the U-PASS benefit to put many of these strategies into action. Initiated in 1991 primarily as an unlimited-use transit benefit, the U-PASS remains the cornerstone of the University's TDM efforts. Original objectives included reducing traffic impacts in the surrounding neighborhoods and complying with the Washington State Commute Trip Reduction Act. The program's current goal is to reduce the percentage of commuters driving alone to 20% or less. The program is on target to meet their goal; in 2010 this rate was at 21%.

Since the program began, the transit benefits of the original U-PASS program have been enhanced with complementary and supplementary benefits, described below.

Transit Benefits

The U-PASS program is a voluntary, membership program that utilizes a participation sticker, placed on the back of a student, faculty, or staff ID cards (called Husky Cards), to provide unlimited, free access to regional transit services including King County Metro, Community Transit, and Sound Transit. Students are automatically sent a U-PASS sticker at the beginning of each quarter, along with a business reply envelope that they can use to return the sticker if they choose not to participate. Unless a sticker is returned, the student is enrolled in the benefit, and charged a U-PASS fee along with his or her tuition. Faculty and staff must sign up for the program, either online or at the University's Commuter Services office. Current quarterly U-PASS fees are \$76 for students and \$132 for faculty and staff.

U-PASS holders simply show the driver/operator on a participating system their valid U-PASS sticker⁹. For faculty and staff, the U-PASS fee amounts to about one-third of the cost of independently purchasing the least expensive peak-period retail pass product. This discount is even greater for students. The discount is deepest for those travelling longer distances. For example, those using Sound Transit's

⁸ Celeste Gilman, Transportation Systems Manager, Commuter Services, University of Washington. *TDM Review*, pg. 22.

⁹ Transit pass programs within the Seattle region are moving toward a universal transit pass, using "tap-and-go" technology, called ORCA. In step with this advancement, UW has partnered with ORCA to incorporate this technology into its Husky Cards to provide U-PASS participation benefits digitally. See: orcacard.com/ERG-Seattle/p1_001.do

commuter rail service, the U-PASS covers the cost of trips than can otherwise cost as much as \$9.25 roundtrip.

Ridesharing

The University promotes Rideshare Online, the regional ride-matching system that matches drivers and riders within their tri-county region. The University also contracts with Zimride to provide ride-matching to football games as well as an additional ride-matching service for campus commuters.

Carpooling

Commuter Services supports two types of carpools: permit carpools and impromptu carpools. Only faculty and staff are eligible to purchase carpool permits, although students can participate in a faculty/staff permit carpool. The minimum for carpool benefit eligibility is three participants for higher-demand lots, and two participants for lower-demand lots. Carpoolers must commit to carpooling at least three days per week in order to be eligible for a permit. Up to three faculty/staff participants in a permit carpool are eligible for a free U-PASS.

Impromptu carpools can be composed of any combination of students, faculty, and staff. Impromptu carpoolers can carpool as frequently or as infrequently as they like. Upon arriving on campus, an impromptu carpool stops at a gatehouse to get a daily permit for \$3, rather than the standard daily rate of \$15. To be eligible for this rate:

- at least two valid faculty/staff U-PASS holders; or
- at least one faculty/staff and two (2) students all U-PASS holders; or
- at least one faculty/staff or one (1) student U-PASS holder with a disability; or
- at least three valid student U-PASS holders, must be present in the same vehicle.

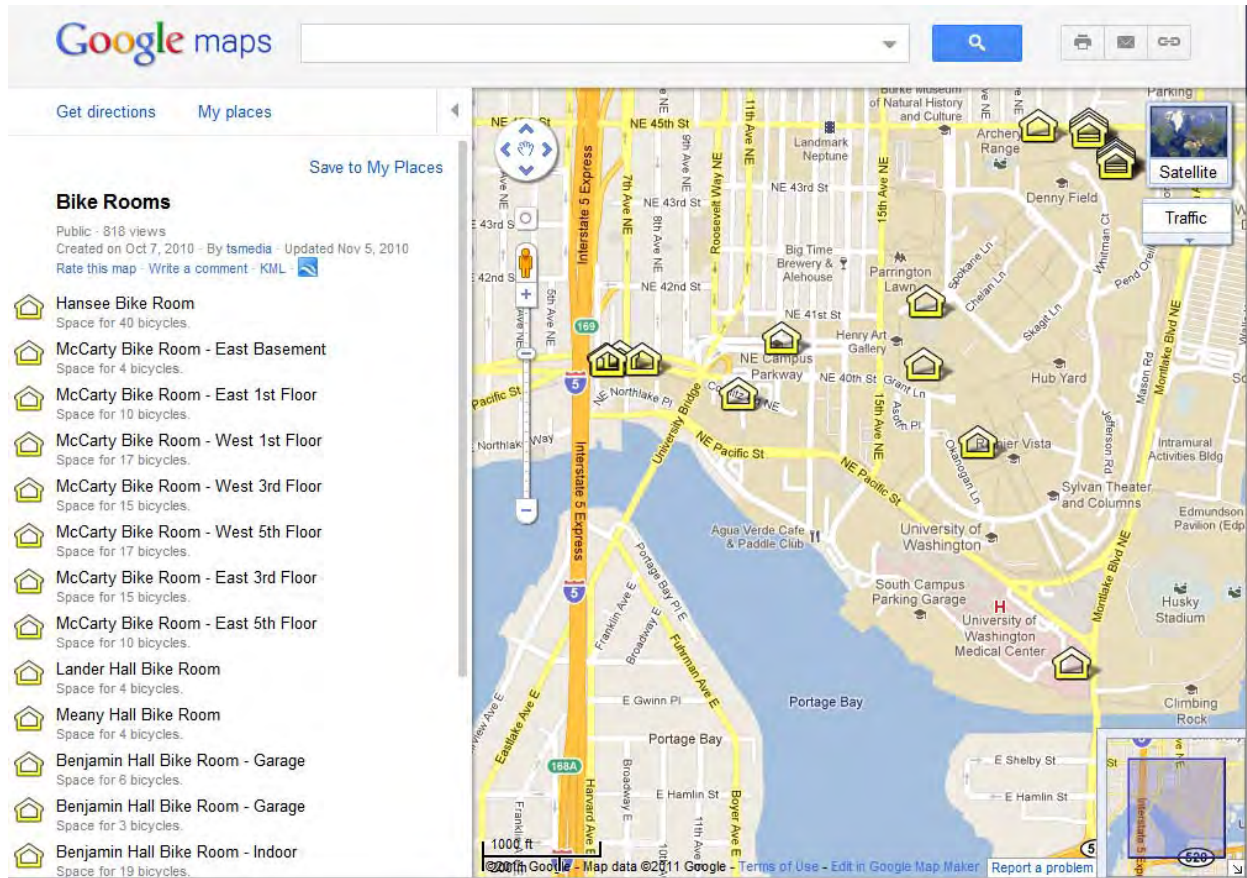
Vanpools

UW commuters have access to various vanpool services managed by a half-dozen or so area transit providers. Most vans are equipped with bicycle racks to support on-campus mobility for participants. Vanpools may park without charge in any University permit parking lot. U-PASS holders receive reimbursements for their participation costs. Reimbursements range from up to \$70.00 per month for full-time participants (3+ days per week) to up to \$35.00 per month for part-time participants (2 days per week). In addition, the primary driver receives a free U-PASS.

Bicycling

The University provides parking spaces for more than 5,500 bikes. Bicycle parking can be found near every UW building and facility, including uncovered and covered racks, bicycle rooms in buildings, secure enclosures, and bicycle lockers. Commuter Services uses Google Maps to provide maps identifying racks, rooms, and lockers/enclosures across the campus.

Figure 59 Bike Room Map Provided on Commuter Services Website



Commuter Services also partners with the Hall Health Center to offer a selection of discounted bicycle lights and helmets to U-PASS holders. U-PASS holders can also receive discounts on bicycle parts and accessories at four area bike shops. Commuter Services also sponsors the annual *Ride in the Rain* bicycle challenge, a campaign to encourage faculty, staff, and students to continue bicycle commuting through the month of January. At an awards luncheon, prizes are given to teams of cyclists reporting the most trips, most miles, and most new bicycle commuters. A special “Soaked to the Gills” trophy is awarded to the team reporting the most trips made in the rain. Participation in the last challenge topped 1,000. Commuter Services also sponsors a number of promotions in May in support of national Bike to Work Month.

Walking

To promote walking, Commuter Services holds an annual *Walk In* campaign. The challenge rewards hundreds of participants for making walks of 10 minutes or more by walking to work, walking to meetings, taking a walk at lunch, and walking to errands. The event includes noontime activities for walkers and seminars on the benefits of walking.

Other Benefits

- **Emergency Ride Home** - 90% fare reimbursements to faculty and staff U-PASS participants who use a taxi to respond to an emergency or unexpected change of schedule when they did not

have access to a personal vehicle. The program averages about seven reimbursements per month, about one for every 2,000 eligible participants.

- **Nite Ride Shuttles** - An evening van service that picks up riders at five locations on campus and drops them off at destinations in nearby neighborhoods. The service is provided during fall, winter, and spring quarters from 8:00 PM to 12:15 AM, Sunday through Thursday.
- **Flexible Work Arrangements** - Opportunities for faculty/staff and students to work remotely are promoted by the school's Work/Life Office in the Human Resources department.
- **Car-sharing** - U-PASS holders pay a discounted, \$25 annual membership fee and receive discounted weekday driving rates from Zipcar, which currently has over a dozen cars on campus, including a dedicated on-campus fleet accessible to 18-20-year-olds, who are normally ineligible for membership. Zipcar will also set up accounts with individual academic departments.
- **Merchant Discounts** - Dozens of campus-area businesses provide discounts to U-PASS holders in exchange for free publicity in U-PASS marketing materials, including the U-PASS website and seasonal promotions. Cost savings from these discounts alone can recoup the cost of U-PASS fees. Promoting local shopping and dining also helps maintain vibrant, diverse concentrations of goods and services within walking distance of campus, reducing the value of having a car on campus.

Parking Pricing

Like Howard University, UW charges faculty/staff and students for on-campus parking. UW parking rates for the 2011/12 school year include:

- Single Occupancy Vehicle Permit - \$423 per quarter (\$1,269 per nine-month school year);
- Carpool Permit - \$423 per quarter;
- Motorcycle Permit - \$141 per quarter;
- Individual Commuter Ticket¹⁰- \$5 per day;
- Short Term SOV Permit (Daily Permit) - \$7.05 per day; and
- Pay Per Use Permit - \$5 per day if used four times or less in one pay period (two weeks), \$7.05 per day if used more often.

Flexible Parking Options

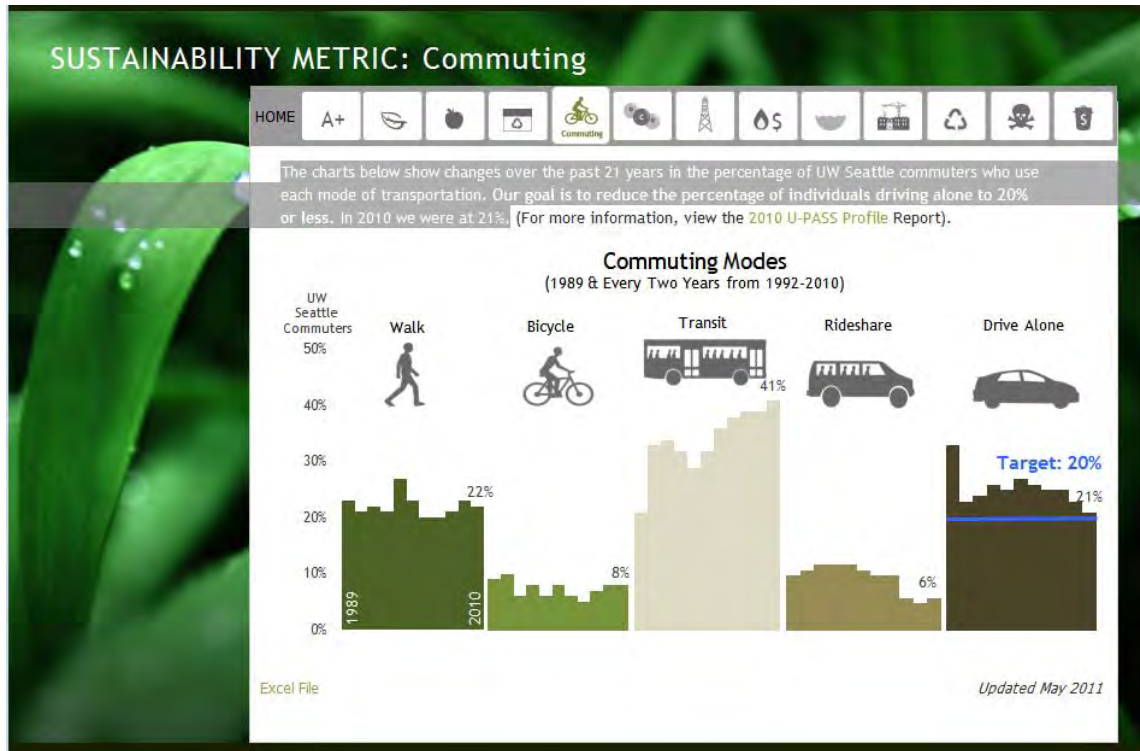
One of the strategies of the University's TMP is to increase the percentage of commuters who pay to park each time they drive to campus, rather than provide a bulk discount for unlimited parking using a permit. A variety of programs encourage commuters to turn in their SOV parking permits for at least part-term or trial use of commuter alternatives, including the following.

- **Hold That Lot** - Faculty/staff SOV permit holders who give up their permit may request Commuter Services to hold their permit for 6 months while trying out an alternative commute method.
- **Pay-Per-Use Parking** - The Pay-Per-Use-Parking program is designed to provide regular parking options for those who use other modes at least some of the time. Drivers are charged for parking, through payroll deduction, each time they park. Participants receive data on their parking use each pay period. On average, participants park 7.6 days per month.
- **Individual Commuter Tickets** - Individual Commuter Tickets (ICTs) allow faculty and staff to park on campus at a discounted rate if they drive on average two days per week or less. ICTs are available at a discount to U-PASS participants.

¹⁰ Only available to those who drive to campus twice per week or less, see description below.

- **Remote Parking** - A version of pay-per-use parking is available at a discount at a large parking lot at the edge of campus, expanding the options for alternative mode commuters who occasionally need to drive to campus.

Performance



Source: <http://f2.washington.edu/oess/profile/SustainabilityMetrics>

Since 1991, the U-PASS program has been "creating a culture of transit use and low-impact commuting within the UW community".¹¹ In 2009, there were fewer daily vehicle trips to campus than in any of the previous 27 years — despite a 28% increase in the campus population. The University of Washington was recently awarded the international Association for Commuter Transportation's (ACT) prestigious Leadership Award for the U-PASS program. Detailed measures attesting to the program's impact include the following from the program's 2010 performance review (U-Pass Profile) report¹²:

As a result of ten years with a U-PASS, I became accustomed to taking mass transit every day. As an alumnus, I now take the bus or walk to work each day, even though I no longer have a U-PASS.

- Erin Lennon, Seattle attorney, UW Alumnus
2002, 2008, and former employee

- 39% of campus trips conducted on public transit, nearly twice the drive-alone rate (21%);
- 83% of students and 59% of faculty were program participants;
- 92% of U-PASS members used their cards to ride transit;
- Driving commutes (driving alone + carpool + vanpool) accounted for just over 25% of all campus trips;
- 9,600 daily transit trips that would not have been made without the program;
- 7,840 fewer metric tons of CO₂ emissions from UW commuters by; and
- CO₂ emission rates among campus commuters were 30% lower than the regional average.

Princeton University

Background

Located in the state of New Jersey, about mid-way between New York City and Philadelphia, the Princeton campus combines the isolation of a mid-state small town with the connectedness of its location along the Northeast transit corridor — the busiest and best-served regional rail network in the country — and proximity to two large, transit-rich cities. The University has a student population of just over 5,000 undergraduates and about 2,500 post-graduate students, a faculty population of about 1,200, and about 1,100 administrative staff members.

TDM Program

Princeton University's Transportation and Parking Services (TPS) offers a spectrum of incentive programs designed to help the school meet its 2008 Sustainability Plan goal of decreasing the number of cars commuting to campus each day by 10% (or 500 cars, roughly) by 2020. "Employees are excited that there are incentives to take alternative modes of transportation," said Andrea DeRose, TDM Manager.

Benefit-incentives provided to faculty/staff members and graduate students living off campus¹³ include:

- A Rideshare Carpool Service - a free, secure online ride-matching service that provides applicants with a list of other University community members who live and work near them and want to carpool;
- A \$25 gas card every three months when registered carpool participants carpool at least 50% of the time each month;

¹¹ The 2010 U-PASS Profile Report, accessed via: http://www.washington.edu/facilities/transportation/commuterservices/files/reports/U-PASS_Profile2010.pdf

¹² Ibid.

¹³ Princeton has an unusually high rate of graduate students living on campus; around 85%.

- Dedicated carpool parking spaces in six campus parking lots;
- Vanpool vans provided when five or more employees who live in the same general area and share similar work schedules are identified — one member is designated as the van driver, with others sharing the fuel costs;
- A Mass Transit benefit - a 50% reimbursement on transit-commuting costs for faculty, staff, and students, as well as the option for faculty and staff to pay for the remainder of their transit cost with pre-tax dollars; and
- Guaranteed Ride Home services that provide reimbursements for taxi fares when unexpected circumstances make carpooling or riding transit home impossible — when, for instance, a carpooler has to work late on a non-driving day, or if one's carpool driver had to leave early, or if a transit-rider has to pick up a sick child from school.

Benefit-incentives offered to all faculty/staff and students include:

- A 25% discount on monthly New Jersey Transit passes for full-time students;
- An additional 50% discount is offered to graduate students who commute to campus via mass transit;
- A Summer bicycle pickup and storage services for students;
- A one-year membership-fee waiver for the WeCar car-sharing service with five campus-located cars for faculty/staff;
- The free TigerTransit campus shuttle, which provides free rides to those with University IDs; and
- Eligibility for the student-run U-Bikes rental and bike-share program.

Parking

Parking at all campus parking facilities requires a valid permit. Driving commuters must obtain a permit from TPS. All parking permit holders are assigned a “parking zone” that sometimes includes multiple parking lots. Permits are provided free of charge to faculty/staff members and graduate students living off campus. Undergraduate students are not eligible for parking permits until their Junior year. The annual parking permit fee for eligible undergraduates is \$200. For graduate students living on campus, annual permits are available for \$190.

The University uses a parking management and permitting software/database system¹⁴ to track eligibility for parking permits. Participants in the Mass Transit, Vanpool, Carpool, and/or Guaranteed Ride Home programs must surrender or forego their parking permit. Permit-holders must surrender their hang tags before their registration for TDM benefit programs can go into effect. Similarly, once a registration for these major TDM benefits is activated, the system changes the customer profile to remove their eligibility for a parking permit.

Marketing

TPS also markets these programs extensively, providing updated information on available benefits and their connection to meeting University sustainability targets. Marketing efforts include:

- "Going Places - A car-free guide to Princeton University"¹⁵ - A downloadable, 4-page brochure providing information on getting around campus and accessing regional destinations without a car, including campus shuttles, local bus service, carpooling and car-sharing options, and bicycle rental and repair services;

¹⁴ <http://www.t2systems.com/>

¹⁵ <http://www.princeton.edu/transportation/goingplaces.pdf>

- A real-time, online bus-locator map¹⁶ and smart phone app for the TigerTransit shuttle;
- An online bike map¹⁷; and
- Princeton In Motion¹⁸ - A quarterly TDM newsletter providing up-to-date program and benefit information (including Vanpool vacancies), as well as updates on progress toward Princeton's sustainability targets.

Performance

Last year, 186 faculty/staff members participated in the Mass Transit benefit — an 18% increase over the previous year. The program also attracted 140 Carpool and 36 Vanpool participants. The U-Bikes program has a waitlist of 350 students, faculty, and staff in its first season of campus-wide service. Five hybrid vehicles are provided on campus by WeCar and over 300 students, faculty, and staff are now registered for the program. Program administrators estimate that they receive between eight and ten Guaranteed-Ride-Home claims per year, about one for every 30-40 eligible participants.

When participants register with the TPS for TDM benefits, they must complete an application which helps the TPS estimate the impact of the program on parking demand at Princeton. For example, of those applying for the Mass Transit benefit, about one-third indicate that they used transit to commute to campus already. For those participants, the program simply reduces the cost of the mode they have been using. For two-thirds of applicants, however, exchanging a parking permit for the Mass Transit benefit indicates a change of mode for their commute.

Last year, all programs were thus estimated to have reduced daily parking demand by 320 cars. This year, TPS is expecting that number to be around 400. Program participation and impacts are projected to allow the TPS to achieve the Sustainability Plan goal of reducing parking demand by 500 cars well ahead of the 2016 target.

By far, the Mass Transit benefit has attracted the most participants. The benefit has proven attractive to a wide range of campus constituents. Application information indicates that many lower-wage workers were already taking transit anyway, and so enjoy significant cost savings without having to change how they get to work. At the same time, many visiting faculty members tend not to bring their cars with them for the year or two they plan to be at Princeton. These faculty members tend to stay in transit-rich neighborhoods of larger cities and access the campus by train. For this reason, the Mass Transit benefit has become a common component of recruitment packages, and helped the University compete with other institutions located within larger cities such as New York and Philadelphia.

Other achievements of the program include the following.

- The school received a New Jersey Smart Workplaces Award from the New Jersey Department of Transportation in 2009.
- Participation records and participant application information are shared with the University Office of Sustainability to assist their efforts in measuring and tracking the University's carbon emissions and other environmental impacts.
- TPS recently completed a comprehensive series of surveys regarding biking and walking on campus. The office felt its programs had neglected these modes by focusing on faculty/staff commuters. It is now in the process of developing a campus bike master plan, to include plans for new bike parking facilities, bike lanes, lighting, and an incentive program. The plan is due for release next spring.

¹⁶ <http://princeton.transloc.com/>

¹⁷ <http://www.princeton.edu/transportation/bikemap.html>

¹⁸ <http://www.princeton.edu/transportation/princetoninmotion/TDMSP2011-P.pdf>

Despite these successes, aggregate parking demand on campus has grown, with new parking demand generated by faculty/staff and student population growth erasing the gains of the TPS programs. As a result of this growth, there remains pressure to construct new parking facilities. Suitable on-campus sites for new facilities, however, have not emerged. Alternatives being considered include building parking off-campus and providing shuttle buses to campus, and increasing the annual TDM budget.

With annualized costs of new parking construction estimated at over \$2,000 per space¹⁹ (for a very basic, "off the shelf" parking structure) annual, deferred-construction savings created by TDM investments (reducing daily parking demand by 320 spaces) top \$600,000. That buys a lot of transit passes, and makes increasing the TDM budget a wise investment, at least in the short-term. Rates of mode-shift achievements from TDM investments, however, tend to diminish over time as more and more of the remaining parking consumers are those most resistant to driving alternatives. At some point the University is thus likely to be faced with the choice of building a new parking garage (and thus giving up its parking-related Sustainability Plan goals) or charging for parking.

University of Chicago

Background

The University of Chicago is a private research university located on the south side of Chicago, in the urban, lakefront neighborhood of Hyde Park (local population: 43,000). Founded in 1890, the campus covers 215 acres of land seven miles south of the Loop. The current campus population consists of about 2,200 faculty members, a little less than 15,000 staff (including medical center staff), about 5,000 undergraduate students, and roughly 10,500 graduate students. According to the University, over 60% of its faculty resides within the Hyde Park neighborhood.

The TDM Program

In 2006, the University of Chicago's Transportation and Parking Services Office (TPSO) began to offer alternative transportation programs as part of its commitment to reducing "the impact of single occupancy vehicle (SOV) travel upon the institution, its surrounding neighborhoods, and the region at large." The current program consists of parking pricing, transit benefits, ridesharing benefits, bicycling support, student transit passes, campus-based transit services, a guaranteed-ride-home program, and limited, daily parking passes for registered non-drivers who occasionally need to drive to campus.

Transit

The University provides free campus shuttle buses, as well as a real-time bus locator webpage and mobile phone app that also tracks campus-serving Chicago Transit Authority (CTA) buses. Faculty, staff, and students are eligible to ride three campus-serving CTA bus routes free of charge with valid University ID. Faculty and staff are also eligible for pre-tax transit benefits through the University's Qualified Transportation Program, overseen by the school's HR Services office.

The University also offers a Qualified Transportation Program, through which full-time faculty and staff can purchase transit fare media via pre-tax wages.

¹⁹ www.vtpi.org/parking.xls

Carpooling/Vanpooling

The University provides discounted parking to rideshare participants, and directs interested commuters to a third-party²⁰, web-based ride-matching service that can make forming a carpool or vanpool easy and secure. Two-person carpools receive a 50% discount on parking permits, while vanpools and carpools with three or more people are eligible for free parking on campus. To be eligible, participants must live outside the free bus area - see Transit above.

Carpools with five or more participants can upgrade to a Vanpool. Chicago's suburban transit service (Pace Bus) supplies the vehicle and covers all costs including fuel, maintenance, insurance, tolls, and roadside assistance. Each rider pays a monthly, distance-based fare. Drivers pay no fare, and get up to 300 miles of personal use each month.

Occasional Parking

Faculty staff and students who usually take transit, walk, or cycle, are eligible for 24 daily parking passes per year, free of charge, to be used at their discretion.

Car-sharing

The University is served by three different car-sharing providers: I-GO, ZipCar, and Connect by Hertz. It also provides promotional and informational material on the benefits of these services.

Cycling

The University provides a campus bicycling brochure, containing information on University policies, safety guidelines and a map marking bicycle parking locations. Bicycle commuters who register with the University's Transportation & Parking division are eligible for a 50% gym-membership discount at the University's Field House facility, providing affordable access to showering and locker facilities near classes.

To expand the appeal cycling around campus the University initiated a campus-based bike-share program – Recycles – in the fall of 2009. The program is managed by the University's Office of Sustainability, which has partnered with a local non-profit bike repair/ youth education organization, Blackstone Bicycle Works, to provide refurbished bicycles to the program.

The program is open to any University student, staff, or faculty member with a valid University ID. A short online registration process must be completed prior to checking out a bike. This includes "signing" a waiver, agreeing to the usage policy, and reviewing rules of the road for cycling in Chicago. Bikes are available free-of-charge at four locations across the campus. Bikes are available for single-day use only, and all bikes must be returned to their original location by the designated closing time of that facility.

The program goes on hiatus during the winter to avoid safety and maintenance issues related to Chicago's harsh winters, but remains open the other eight to nine months of the year, depending on weather and surface conditions. During the hiatus, Blackstone Bicycle Works takes possession of the bikes to perform annual maintenance and repairs before putting the bikes back into circulation at the beginning of the school's spring quarter.

²⁰ Pace Bus, Chicago's suburban transit authority. www.pacebus.com

Parking Pricing

Parking permits are offered on a monthly basis only. Fees range from \$80 to \$175 depending on the location. By reducing the amount of parking that can be purchased at one time, the TPSO provides opportunities for campus commuters to limit bulk parking purchases to specific months. This allows those interested in fair weather bicycle or transit commutes, for instance, to secure parking during Chicago's bitterly cold winter months, without having to pay for a permit that also covers September and May.

Performance

Through these efforts, the University has reduced parking permit sales by 10%, conserved funds by delaying plans for a new parking garage, and converted surface parking facilities into university buildings.

DEVELOPMENT APPROVALS REQUIREMENTS

In 2009, DDOT completed a study of ways to better incorporate TDM into the development review process.²¹ One of the outcomes of that study was a matrix of required and optional TDM actions for new development. Which actions would be required versus optional would vary based on the number of net new peak-hour vehicle trips projected for the development.

Listed below are the general TDM commitments which would be required of development projected to generate between 50 and 200 net, new, peak-hour auto trips (the HUCMP includes a projection of 149 net, new, peak-hour auto trips at full build-out).²² Those actions already undertaken by the University are presented in italics.

- *During construction, maintain or coordinate relocation of any existing bus stops at the developer's expense.*
- Comply with Zoning requirements to provide bicycle parking/storage facilities.
- Require all parking costs be unbundled from the cost of lease or purchase. Parking costs must be set at no less than the charges of the lowest fee garage, located within ¼ mile.
- Post all TDM commitments on-line, publicize availability, and allow the public to see what commitments have been promised.
- Identify a project's TDM Leader (for planning, construction, and operations). Provide DDOT/Zoning Enforcement with annual TDM Leader contact updates.
- Install a Transportation Information Center Display (kiosk) containing printed materials related to local transportation alternatives and maintain a stock of materials at all times.
- Provide website links to CommuterConnections.com and goDCgo.co on developer and property management websites.

The last two actions in the list are identified as required, but eligible for substitution by commitments to one or more optional TDM actions. The optional actions identified in the matrix that are applicable to the HUCMP are listed below — those actions already undertaken by the University are presented in italics.

- At no cost, dedicate spaces in the garage for car sharing services to use with right of first refusal. Locate spaces that are convenient to the garage entrance, available to the members of the car sharing service, twenty-four hours a day, seven days a week, without restrictions.
- Provide reserved spaces for carpools and vanpools that are conveniently located with respect to the elevators serving the buildings. Oversee a program to provide carpools and vanpools with a parking subsidy.
- Provide secured bicycle parking/storage facilities (lockers, bicycle valet parking, etc.).
- Contribute funding to available, non-exclusive Shuttle Service to Metro or DC Circulator (based on total number of trips generated). Only applies to developments not considered Transit Oriented Developments by DDOT.
- *Provide location for Bike-share Program Station/Kiosk.*
- Provide Ongoing Funding for on-site Bike-share Program.
- Provide each new resident with 1-year subscription to DC Bike-sharing program.

²¹ "Incorporation of Transportation Demand Management (TDM) into the Development Review Process".

²² The DDOT Report was written for the private development review process. In the context of assessing the HUCMP, references to Developer should be read as referring to the University.

TDM Plan for the Howard University Campus Master Plan
Howard University

- Provide residents with \$75 mail-in refund on bicycle purchases.
- Provide SmarTrip cards plus \$100.00 Metro fare media per person, for free, one time, per employee, to each of the tenants' employees and each on-site employee of the property management company and/or building operator.
- Provide SmarTrip cards plus \$100.00 Metro fare media per person, for free, one time, per resident.
- Provide a one-time membership fee subsidy in a car sharing program for each residential unit.
- Locate and furnish an on-site Transit Store free of charge.
- 30 year commitment to operate an on-site Transit Store.
- *Operate a Shuttle service to metro (or other appropriate destinations) specific to the site/development.*
- Install and maintain new bus stop infrastructure.

3 RECOMMENDED TDM PLAN

Following is a summary of the final, recommended TDM Plan. This plan responds directly to the SWOT analysis and a Best Practices summary presented above, and has been accepted as sufficient to meet the HUCMP's TDM-commitment requirements for development approval.

Following is a summary of TDM and Parking Management actions recommended for Howard University, including a brief description of each action (detailed descriptions can be found in Section 3: Strategy Development) and an overview of key implementation considerations, including, at a minimum:

- **Timing** - When the University should plan to deploy each action, based on the three phases identified for the HUCMP (I: 1-3 years, II: 3-5 years, and III: 5-7 years);
- **Funding and Staffing** - Assessments of direct cost and staffing requirements for each strategy, as well as strategies for meeting them; and
- **Measuring Performance** - Behavior, such as mode splits or parking demand, to monitor to measure the impact of each strategy.

The strategies have been sorted into primary TDM categories, as follows:

- Parking;
- Transportation Fee/Benefits;
- Transit;
- Pedestrian and Bicycle;
- Communication; and
- Support Programs.

Within each group, strategies are sorted into **Committed Actions** —TDM commitments identified in the zoning approvals for the HUCMP — and **Discretionary Actions** — measures that the University intends to implement in pursuit of its own transportation, development, and sustainability objectives. Finally, this information is summarized within an implementation matrix in Figure 63.

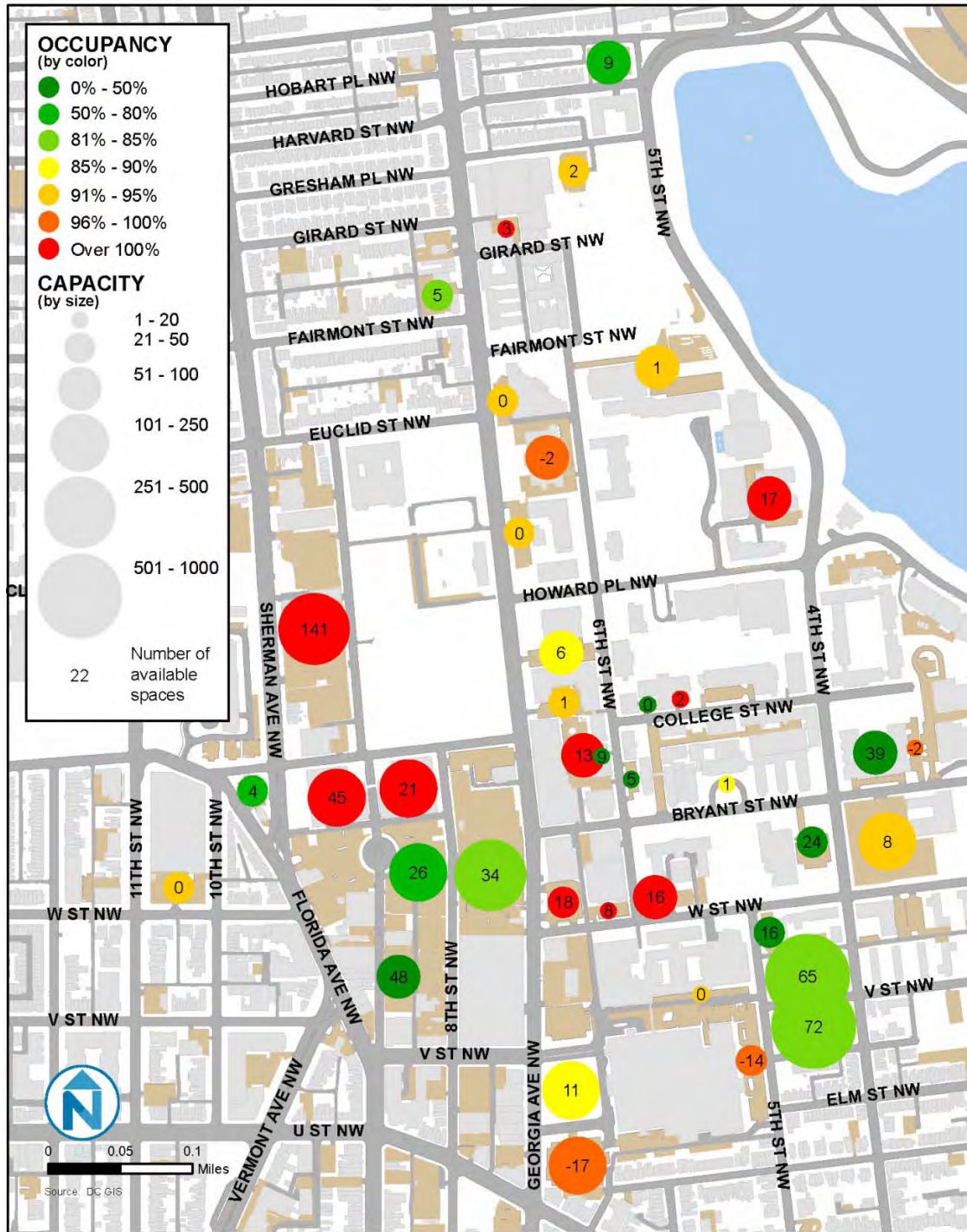
PARKING

Committed Actions

Increase Parking Rates

The University will double its annual parking rates for all users (faculty, staff, and students) for its most in-demand lots (those with peak occupancy measures of 80% or higher, as noted in the 2011 HUCMP Transportation Plan; see Figure 60) for the academic year 2012/13.

Figure 60 University Parking Facilities - Supply and Peak Occupancy by Location



Howard University will use the incremental revenue gains from this increase to fund additional TDM actions and alternative-mode benefits to help current drive-commuters adjust to reduced parking options and increased parking costs — while also benefiting the majority of commuters who rely primarily on non-driving modes.

Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This TDM action is a revenue-positive action and will not require any additional staffing. Existing staff should expect an increase in time required for communication of the new rates and on-going customer service to address negative user response to increased rates.

Measuring Performance

Parking rates should become the primary strategy for achieving multiple performance measures, including:

- Mode Share - Reduce faculty and staff drive-commute rates below 50%; and
- Parking demand - Reduce aggregate off-street parking demand (weekly peak occupancy across all Central Campus facilities) by 1,000 cars by completion of the HUCMP with no significant impact on on-street parking in residential areas (see on-street survey results in the Existing Conditions section).

These will be tracked via annual TDM surveys and Neighborhood Street Occupancy surveys, as described below.

Unbundled Tenant Parking

The University already charges its non-University tenants for access to University parking facilities. However, to qualify as "unbundled" according to DDOT's impending TDM standards, tenant parking rates will need to increase significantly until they at least equal the lowest monthly rate offered by a commercial parking facility within one quarter-mile of the campus. Based on a recent survey of nearby parking rates, the lowest monthly rate is \$145, compared to the current tenant charge of less than \$60 per month.

Timing

The University will increase its tenant parking rates each year, charging existing and future tenants the same amount each year. By the end of Phase II of the HUCMP, these rates will at least equal the lowest monthly rate offered by a commercial parking facility within one quarter-mile of the campus. The survey of nearby parking rates will be conducted each year to confirm the target rate for the end of Phase II.

Funding and Staffing

This TDM action is a revenue-positive action and will not require any additional staffing. Existing staff should expect an increase in time required for communication of the increasing rates and on-going customer service to address negative user response to increased rates.

Measuring Performance

By the end of HUCMP Phase I, the University will begin tracking commute mode shares among its tenants and tenant-employees, as part of its annual TDM Performance Surveys (based on the online surveys completed for this study). If drive-alone rates among these Central Campus commuters remain above 50%, the University will consider further increases in tenant parking rates.

Discretionary Actions

Reserved Rideshare Parking

The University will explore strategies for reserving preferentially-located parking spaces for registered rideshare vehicles. This will require developing distinct parking permits for carpool and vanpool parking, including defining qualification criteria, and designating spaces at specific parking facilities. Common criteria and implementation strategies include:

- Requiring three committed carpool participants for higher demand lots, and two committed carpool participants for lower demand lots (University of Washington);
- Offering discounted daily permits for "impromptu" carpools — non-registered, high-occupancy vehicles (University of Washington);
- Providing carpools with pre-paid gas cards (Princeton - \$25 every three months);
- Providing discounted rates for carpools and/or free parking for vanpools (University of Chicago - free vanpool parking); and
- Excluding registered rideshare participants from acquiring additional conventional parking permits, while providing them with 20-30 daily parking permits for when participants cannot carpool (Princeton and University of Chicago).

Timing

The University will seek to implement a rideshare parking benefit during Phase II of the HUCMP.

Funding and Staffing

This action will require no new funding. Revenue lost from providing discounted parking rates and increasing the parking customer to permit ratio will be more than offset by increased standard parking permit rates.

This action will require additional staff time to establish the new rate or permit type, plus time for communication of the program. Minor capital costs will be required for physically designating spaces for car/vanpool use only.

Measuring Performance

The estimated current ratio of carpoolers to drive-alone commuters is roughly 1 in 10 among faculty and staff (5.9% carpool, 59.4% drive alone). A successful carpool benefit program, complemented by increased standard parking rates and other TDM measures, should produce a ratio that is closer to 1 in 5.

Reduced Supply

Implementation of the development program set in place by the HUCMP has already begun, with a reduction of the existing parking supply expected before the Fall 2012 semester begins. At that

time, Central Campus commuters will have approximately 275 fewer parking spaces available to them.

This, in itself, will be expected to significantly influence commute mode choices. To this end, the University is committed to allowing the reduction in supply to help support a shift in commute-benefit priorities — away from subsidized driving commutes and toward increasing subsidies of more sustainable modes.

Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding. Existing staff should expect an increase in time required for on-going customer service to address negative user response to the reduced parking supply and discussing other commute options.

Measuring Performance

Combined with increased parking rates, this action should generate significant progress toward meeting the following performance targets:

- Mode Share - Reduce faculty and staff drive-commute rates below 50%; and
- Parking demand - Reduce aggregate off-street parking demand (weekly peak occupancy across all Central Campus facilities) by 1,000 cars by completion of the HUCMP with no significant impact on on-street parking in residential areas (see on-street survey results in the Existing Conditions section).

These will be tracked via annual TDM surveys and Neighborhood Street Occupancy surveys, as described below.

Phase Out Annual Permits

As the HUCMP is implemented, and most parking is provided within structured, access-controlled facilities, the University will explore gradually phasing out annual parking permits in favor of monthly permits and daily parking (including pay-per-use permits, as described below under University of Washington practices). The monthly permit, as offered at the University of Chicago, is a much more flexible level of bulk parking purchase, providing an opportunity to opt out of a driving based on the temperature and climate. It also provides an opportunity for campus commuters to temporarily reduce their commuting costs without having to forgo parking access for the entire year. Anyone uninterested in this flexibility can continue to purchase permits every month at no penalty.

Timing

The replacement of surface parking lots with structured parking should frame the timing for implementing a shift away from annual permits. This will ease some of the logistical challenges, primarily by introducing new permit media at facilities with controlled access. An optimal timeframe for this might be:

- HUCMP Phase I: Use capacities created by increased annual parking rates to begin to offer more daily parking permits.
- HUCMP Phase II: Phase out annual permits at new parking facilities, replacing with monthly and pay-per-use permit options.

- HUCMP Phase III: Eliminate all annual permits.

Funding and Staffing

The capital cost of implementing this action should be incorporated into the already-planned infrastructure elements of the new structured, access-controlled facilities.

Additional staff time will be required to manage monthly, daily, and pay-per-use permit sales, though existing on-line payment systems are available to simplify these efforts. In addition to current staff, an additional 0.5 of a Full Time Equivalent staff member is anticipated to be needed to manage this program, though this estimate should be revisited at the end of Phase I.

Measuring Performance

Annual TDM surveys will provide an ideal opportunity to solicit pre-implementation input on which permit options are most appealing, and post-implementation customer satisfaction feedback from early adopters. If this strategy performs as intended, there should be discernible demand peaks for monthly parking in winter months, and for pay-per-use parking on inclement days.

TRANSIT

Committed Actions

Maintain and Improve HU Shuttles

The University will continue to invest in improving its shuttle services. Input received from the HU Focus Groups identified earlier weekday shuttle service around the Central Campus and midday shuttle service to the University Town Center as desired improvements.

Timing

This is an ongoing action that the University has been engaged in, most recently in its expansion of shuttle services to the University Town Center in Hyattsville, Maryland. This action will continue through all HUCMP phases and vary based on input received during future surveys.

Funding and Staffing

This strategy will require additional funding for shuttle operations and potentially additional vehicles. Specific costs will be determined based on the specific improvements implemented.

New funding opportunities to support these improvements include: increased parking rates and the proposed Transportation Services Fee.

Measuring Performance

Customer utilization and satisfaction with shuttle services should be tracked as part of the University's annual TDM surveys.

Increase Marketing of WMATA's SmartBenefits Program

The University will increase marketing of these benefits in employee "welcome" packages, and as part of its revamped Parking and Shuttles webpage — see Communications strategies below.

Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding or staffing investments. Minimal capital costs will be incurred for printing of additional “welcome package” material. Design of the new material should be coordinated with HU’s academic design programs.

Measuring Performance

The University should seek to achieve participation rates in this program equal to at least 90% of the estimated faculty and staff mode split for Metrobus and Metrorail. For example, the target for 2011/12 participation would be 90% of an estimated 18% mode split, or 16% of all faculty and staff participating (the actual existing rate is estimated at 5.8%).

Maintain Existing Bus Routes/Stops

Maintaining these resources during any and all University construction events is a current practice that is viewed as, not only an important practice for supporting campus access to transit, but also a “good neighbor” policy to avoid disruptions for transit service for the Howard and surrounding communities.

Timing

This is already an action that is taken by the University whenever it is required.

Funding and Staffing

This strategy will require no new funding or staffing commitments. However, the earlier that anticipated impacts can be identified by existing University planning staff, the easier the Action will be to implement. Therefore, it is recommended that a point-person be identified who will be tasked with anticipating route/stop impacts as the HUCMP is implemented. The cost of implementation will vary on a case by case basis, depending on which bus routes or stops will be affected, to what degree, and for how long.

Measuring Performance

This action will be measured by the percentage of bus stops or routes disturbed and relocated. Based on Howard University’s history and intention, a 100% relocation rate is anticipated.

Discretionary Actions

Transportation Services Fee + Pass

The University will explore options for developing a multi-modal Transportation Services Fee (TSF) + pass program that would work similar to the U-PASS program described in the University of Washington case study. The essentials of such a program are:

- The establishment of a TSF that generates revenue exclusively to fund improved campus transportation;
- The use of fee revenue to enhance transportation options, including bulk purchasing access to carshare, bikeshare, and transit services; and

- The provision of a single pass to access multiple transportation benefits that accompany TSF participation.

Timing

- HUCMP Phase I:
 - Initiate a modest TSF focused on improving existing benefits; primarily the HU Shuttle service in response to feedback received from student focus groups.
 - Begin bulk-membership rate negotiations with carshare and bikeshare providers.
 - Begin coordinating with the Consortium of Universities of the Washington Metropolitan Area to collectively negotiate bulk transit pass purchase options with WMATA.
 - Begin discussions with DDOT regarding potential future DC Circulator bus service to Central Campus, including bulk-purchase unlimited pass options.
- HUCMP Phase II: Increase the TSF, or create tiers of TSF options, as benefits are expanded to include carshare and bikeshare memberships and transit discounts/passes.
- HUCMP Phase III and beyond: Continue to seek opportunities to enhance the TSF and its associated benefits.

Funding and Staffing

This action will be self-funding and should require no new staffing investments.

Additional staff time will be required to first investigate and then manage the TSF. In addition to current staff, an additional 0.5 of a Full Time Equivalent staff member is anticipated to be needed to manage this program. Additional senior staff time will also be needed to support the effort and coordinate with the Consortium of Universities and operating agencies.

Measuring Performance

Annual TDM surveys will provide an ideal opportunity to solicit input from program participants on the benefits and services they use most often, and with which they are most and least satisfied. As benefits extend to services such as carshare, bikeshare, and transit, subsequent TDM surveys should also reflect an increased reliance upon non-driving modes among Central Campus commuters.

PEDESTRIAN/BICYCLE

Committed Actions

Fund Capital BikeShare Station

The University will provide space for and fund the installation of at least one Capital BikeShare station on the Central Campus.

Timing

This action will be implemented within Phase I of the HUCMP.

Funding and Staffing

It is estimated that total funding costs for this action will approximate \$50,000. This action should not require any new staffing investments.

Measuring Performance

Utilization rates at each Capital BikeShare station can be tracked via the Capital BikeShare website: www.capitalbikeshare.com/dashboard. Steadily increasing use rates, as have been documented at the existing Central Campus station, will be a good indicator that the new installation is contributing to the expansion of bike mobility on the campus.

Expand Bicycle Parking

Howard University will significantly expand the quantity and quality of bike parking facilities on the Central Campus, as part of the overall implementation of land use development identified in the HUCMP.

Timing

The university will pursue development of new bike parking facilities, in coordination with the phases proposed in the HUCMP. The new-capacity targets for each phase are as follows:

- Phase I - 84 long-term and 123 short-term spaces to be developed within three years;
- Phase II - an additional 87 long-term and 301 short-term spaces to be developed within three to five years; and
- Phase III - an additional 91 long-term and 113 short-term spaces to be developed within five to seven years.

For the purposes of achieving these targets, the University will count every installed Capital BikeShare space as three short-term spaces.

If surveys indicate that new facilities fail to regularly reach 50% occupancy, bike parking for similar new uses will be built to 50% of the standard ratio.

Funding and Staffing

Direct costs for providing new bike parking facilities will vary, particularly for indoor bike parking. The following guidelines²³, however, provide rough estimates of the costs for various facility types:

- Bike racks, including purchase and installation: \$75 - 150 per bike;
- Bike lockers, including purchase and installation: \$500 to \$2,000 per bike;
- Indoor bike storage: The cost of indoor bike storage facilities varies depending on how much building space is available for the desired level of capacity. Generally, horizontal parking will require 2 feet by 6 feet of floor space per bicycle, while vertical parking will require 4 feet by 2 feet of floor space and a vertical clearance of 6 feet per bicycle. In addition, there should be a five-foot wide aisle of to allow room for maneuvering bikes into and out from their parking spaces. With a securable point of entry, the room can be outfitted with racks without need to anchor racks to the ground. This significantly reduces installation costs. The following are examples of unit costs for a variety of indoor racks:

²³ <http://www.bicyclinginfo.org/engineering/parking.cfm>

- A single-bike floor stand: \$20
- A basic, three-bike stand: \$45
- A 6-bike floor rack: \$160
- A 2-bike, stacked rack: \$60-140
- A 4-bike, stacked rack: \$100
- A single-bike, vertical hook: \$20
- A 2-bike, vertical rack: \$240
- A 3-bike, vertical rack: \$270

These actions require no new dedicated staffing. Building interior spaces for bike parking facilities should be identified early in the design/build phases of new HUCMP building construction. Initial outdoor facility locations have been identified in the HUCMP Transportation Report.

Measuring Performance

Annual TDM surveys should indicate a measurable increase in the bike-commute mode share among Central Campus commuters following completion of any of these types of facilities.

Peak hour utilization surveys will be conducted to identify bicycle utilization and help quantify any supply constraints/surpluses.

Discretionary Actions

Streetscape and Pedestrian Enhancements

The HUCMP identifies a series of specific, physical improvements to the Central Campus pedestrian network designed to improve the appeal, safety, and effectiveness of pedestrian circulation.

Timing

As per final HUCMP.

Funding and Staffing

As per final HUCMP.

Measuring Performance

When asked in the study's online survey, how they most frequently traveled between Central Campus locations, 14.3% of faculty and staff respondents indicated that they used a private vehicle. While the choice to walk is influenced by many factors, HUCMP improvements to campus walking conditions should be expected to accompany a drop in this rate to below 10%.

Bike Paths and In-Road Facilities

The HUCMP identifies roadway segments in which the addition of bike facilities would help connect the Central Campus to the regional, in-road bike network. Further, it recommends considering construction of a Cycle Track (physically separated bike lane) along 6th Street on campus.

The TDM Coordinator will take the lead in approaching DDOT with these suggestions and in maintaining an ongoing dialogue with DDOT Bicycle Program staff to identify additional opportunities to connect the Central Campus with the District's expanding bike infrastructure networks.

Timing

This TDM action will be initiated during Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding or staffing investments.

Measuring Performance

A measurable increase in the bike-commute mode share among Central Campus commuters should be expected following completion of any of these types of facilities.

Promote Area Bicycle Services

The University will distribute information on nearby bicycle vendors and servicers via, at a minimum, new-student informational materials, campus bicycle maps, and web links on its transportation services webpage

Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding or significant staffing investments.

Measuring Performance

There are no performance measures proposed for this action.

Departmental Bikeshare

The University will explore options for setting up a pilot program in which an academic or staff department "adopts" and manages shared access to a bicycle. Stored at strategic, secure locations, bicycles (with helmet and lock) would be reserved and signed-out for by eligible faculty/staff, similar to traditional employee vehicle fleets. This would reduce the need to provide car parking at each Central Campus building, and provide faculty/staff with more flexibility when they need to travel between Central Campus locations.

Timing

During Phase II of the HUCMP, the University will seek expressions of interest from departments, and provide up to five bicycles to qualified applicants.

Funding and Staffing

Good, used bicycles can cost as little as \$200 and new bikes can be purchased for less than \$500. A basic bike helmet costs around \$30 and a quality bike lock can be acquired for less than \$20. In total, this would bring the cost of implementing a 5-department pilot program to no more than \$3,000 (including new bikes), and as little as \$1,250 (if purchasing used bikes).

A limited amount of staff time will be required to communicate the program, review applications, and purchase and provide the equipment.

Measuring Performance

If the pilot program is successful, the program should continue until interest (measured by number of applying departments) is depleted.

Showers and Changing Facilities

The Recreation Center building proposed in the HUCMP will incorporate significant, sheltered bicycle parking facilities to take advantage of this site's shower and locker amenities. Similarly, the University will seek to include changing and showering facilities where feasible and where concentrations of faculty and staff are expected.

Timing

The Recreation Center building is proposed for development in Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding or significant staffing investments beyond final HUCMP commitments.

Measuring Performance

Annual TDM surveys should show steady awareness and use of these facilities in each of the first five years after they are completed.

Bike Repair and Maintenance Education Program

Howard University is well positioned to develop a successful program along the lines of the Blackstone Bicycle Works program at the University of Chicago. Like UC, Howard is surrounded by low-income communities that can benefit from programs that train youth in viable job skills. Like Chicago's, DC's bicycling market is rapidly growing which will increase demand for the repair and maintenance skills that such a program can help develop among those growing up near the Central Campus.

Timing

During Phase II of the HUCMP, the University will reach out to Blackstone Bicycle Works to identify implementation opportunities and barriers for a Central Campus program in more detail.

Funding and Staffing

Such a program may be eligible for local and federal job-development grants. Discussions with the administrators of the University of Chicago program should include information on its funding requirements and strategies.

Measuring Performance

No performance measures are proposed for this action.

Bike Parking Map

As Central Campus bike parking opportunities are expanded, the University will develop an online map to promote and direct cyclists to these facilities. Examples from other campuses will be explored to determine the best implementation options for Howard.

Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new staffing investments. Howard University's academic design departments provide an opportunity for in-house development of this map. A minimal cost for reproducing hard copies of this map will be required.

Measuring Performance

Utilization should go up measurably, especially at previously under-utilized locations, following successful deployment of this map.

Summer Bike Storage

The development of long-term, indoor bike parking as part of the HUCMP will create an opportunity to use these spaces to store student bicycles during the summer, which, in turn can encourage student bike purchases.

Timing

This action will be implemented as suitable indoor bike parking, or other long-term storage, locations are identified.

Funding and Staffing

This action will require no new funding investments. Limited staff time will be required to communicate and coordinate the program, with the majority of time spent at the beginning and end of the academic year.

Measuring Performance

This strategy should be continued and expanded according to utilization levels.

COMMUNICATION

Committed Actions

Post and Publicize TDM Commitments

Howard University will post a downloadable copy of the final TDM Plan on its Parking and Shuttle home page. The commuter benefits it identifies, and the timeline for implementation, will also be provided to all faculty, staff, and students via the website and other University media.

Timing

This action will be implemented within Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding or staffing investments.

Measuring Performance

Annual TDM surveys should reflect steadily increasing awareness of basic commuter benefits such as ride-matching services, Guaranteed Ride Home, WMATA SmartBenefits, and special deals on ZipCar memberships.

Identify a HU TDM Leader

Howard University will identify a TDM Coordinator, who will oversee the implementation of the TDM Plan, including its specific TDM action commitments, and serve as the University's TDM contact for DDOT/Zoning enforcement. Contact information for this position will be updated at least annually and subsequent to any changes.

Timing

This action will be implemented within Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding or staffing investments.

Measuring Performance

There are no performance measures proposed for this action.

Install Information Kiosks

The University will install at least one Information Kiosk during each of the first five years of HUCMP implementation. These will be installed at strategic locations across the campus, such as the entrances to bookstores, dining halls, dormitory buildings, and administrative buildings. Information will be regularly restocked and updated.

Timing

This action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new staffing investments, beyond the time to regularly restock the kiosks.

Costs for information kiosks range from around \$100 to over \$1,000. Figure 61 presents examples of kiosks priced at between \$250 (left) and \$990 (right).

Figure 61 Kiosk Examples



Image sources: www.genite.com (left) and www.usbanksupply.com (right)

Measuring Performance

Annual TDM surveys should reflect steadily increasing awareness of basic commuter benefits such as ride-matching services, Guaranteed Ride Home, WMATA SmartBenefits, and special deals on ZipCar memberships.

Links to Commuter Support Websites

Links to commuter support websites will be prominently displayed on appropriate University webpages. In addition to those services currently linked on its webpages, the University will add the links to the following:

- CommuterConnections.com;
- [DDOT's Washington, DC Bicycle Map](#);
- [Washington Walks](#);
- [Nearby bicycle vendors and service providers](#);
- goDCgo.com; and
- [Washington Metropolitan Area Transit Authority](#).

Timing

This action will be implemented within Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding or staffing investments.

Measuring Performance

Annual TDM surveys should reflect steadily increasing awareness of commuter benefits advertised on these websites, such as CommuterConnections' ride-matching and Guaranteed Ride Home services and WMATA's SmartBenefits program.

Annual TDM and Parking Surveys

The University will continue to conduct annual TDM and Parking surveys, similar to the surveys completed for this study. At a minimum, the TDM survey will identify:

- Central Campus commute mode split estimates for students, faculty, staff, and non-University tenants (retailers);
- Estimated levels of awareness of, and participation in, various commuter benefits;
- Feedback on recent changes;
- Input on potential future changes; and
- Customer satisfaction with HU Shuttle services.

The introduction to each survey is also a prime opportunity to highlight recent TDM and commuter benefit investments.

The parking survey will identify on-street parking utilization of the blocks within and around the Central Campus.

Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding. To reduce staff costs, it is recommended that the University seek the participation of students in drafting survey materials, collecting and organizing survey data, and developing survey-response analysis and findings, with oversight provided by the University's planning department faculty and TDM Coordinator.

Measuring Performance

There are no performance measures proposed for this action.

Annual Reporting

The University will prepare an annual TDM and Parking report to be submitted to DDOT. These reports will focus, first and foremost, on documenting progress toward the TDM Plan performance targets that the University has agreed to for HUCMP:

By the end of Phase II of the HUCMP:

- Estimated faculty and staff drive-alone rates should each be below 50% (currently 64.2% and 57.2%, respectively); or
- The cumulative, student, faculty, and staff drive-alone rate should be no more than 18% (currently, 36.3%).

By the end of Phase III of the HUCMP:

- The faculty and staff drive-alone rates to should each be no more than 40%; or
- The cumulative, student, faculty, and staff drive-alone rate should be no more 15%.

Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding. A limited amount of additional staff time will be required to prepare the report and communicate with DDOT.

Measuring Performance

There are no performance measures proposed for this action.

Discretionary Actions

Dedicated TDM Webpage

The University will create a dedicated webpage to identify and promote its transportation benefits and resources. For the purposes of this plan, this will be referred to as the future Transportation Services webpage when describing related TDM actions. This page will be the home for all information on:

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

Figure 62 Dedicated Webpage Best Practice (Princeton)



Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding. A limited amount of staff time will be required to develop the new webpage, though this may be an opportunity for HU students to participate.

Measuring Performance

Successful development and promotion of this site should be expected to result in a measurable increase in awareness of programs such as WMTATA's SmartBenefits and CommuterConnections' rideshare and Guaranteed Ride Home services, as monitored via annual TDM surveys. A more direct measure would be to track the number of "hits" that each linked page receives from the TDM homepage.

Marketing Materials

The University will explore developing new TDM-marketing materials, such as a Car-Free guide — a downloadable brochure with information on getting to and around the Central Campus, and accessing city and regional destinations, without a car. Such materials will be distributed in New Hire (faculty and staff) and Welcome packages, at information kiosks, and via the Transportation Services website.

Timing

This TDM action will be implemented during Phase II of the HUCMP, if not sooner.

Funding and Staffing

This action will require no new funding beyond the capital cost of printing the material. A limited amount of staff time will be required to develop this material. Students should be involved in developing the design and content of these materials, with best-practice guidance provided by the TDM Coordinator.

Measuring Performance

Monitoring annual measures of awareness of various TDM and Commuter Benefits programs will be the most effective way to track the impacts of these types of efforts.

SUPPORT PROGRAMS

Committed Actions

Telecommute and Flextime Benefits

The University is in the process of developing formal "Alternative Work Schedules" guidelines, which will define opportunities for telecommuting as well as maintaining non-traditional weekly work schedules. University staff charged with implementing the TDM Plan will ensure that the TDM benefits of various policy options — reducing peak-hour travel and parking demand — are considered when developing and implementing these guidelines.

Timing

This TDM action will be implemented during Phase I of the HUCMP.

Funding and Staffing

This action will require no new funding or staffing investments.

Measuring Performance

The action can be measured by both increased participation rates and changes to travel documented in the annual TDM survey.

Discretionary Actions

Expand On-Campus Housing

The HUCMP proposes an expansion of on-campus housing by 1,200 beds, via a combination of new undergraduate dormitories as well as graduate-student/workforce housing facilities.

Timing

Most of the undergraduate housing is planned for Phase I (within 3 years), while the graduate-student/workforce housing is planned for development in Phase III (5-7 years out).

Funding and Staffing

As per final HUCMP.

Measuring Performance

Expanded on-campus housing should significantly increase walking and/or HU Shuttle commute mode shares among Central Campus commuters.

Live Where You Work Programs

The University will explore the potential to utilize existing “Live Where You Work” programs to boost the proportion of faculty/staff and students living near campus. These programs provide low-interest mortgage loans or a cash payment to be applied at closing to those purchasing a home within a designated distance of where they work.

In partnership with selected DC employers, DC’s Office of Planning will match employer contributions (up to \$6,000 per participating employee for down payment and closing cost assistance) to attract and retain DC residents, with the primary purpose of encouraging employees to live close to their place of employment and/or transit²⁴.

Timing

This TDM action will be implemented during Phase I of the HUCMP. If the programs fail to create new housing opportunities, the University will explore options for creating its own program by the completion of Phase III of the HUCMP.

Funding and Staffing

Taking advantage of existing programs will require \$6,000 per participating employee and additional staff time to help employees coordinate their applications

An in-house program will require an additional 0.5 Full Time Equivalent staff member. An in-house program developed by Yale University in 1994 recently passed the 1,000-participant mark (currently standing at 1,013 participants).²⁵ At a \$30,000 maximum benefit per participant, the total cost of this success could be as high as \$30,000,000. This figure could also serve as a conservative cost estimate for a single, subsurface parking space; meaning that, if each participant represented one drive-alone commuter who now walks to campus, such a program (currently the most generous in the country among university-based programs) could actually be self-funding.

Measuring Performance

Expanded on-campus housing should significantly increase walking and/or HU Shuttle commute mode shares among Central Campus commuters.

²⁴<http://planning.dc.gov/DC/Planning/About+Planning/News+Room/Press+Releases/OP+Releases+Request+for+Ap+lications+for+a+Live+Near+Your+Work+Pilot+Program>

²⁵ <http://news.yale.edu/2011/12/13/yale-homebuyer-program-tops-1000-purchase-mark-2011-university-trustees-renew-employee-be>

Stakeholder Outreach Summary
Howard University

Figure 63: TDM Plan Implementation Summary Matrix (by HUCMP Phase)

Action	Committed or Discretionary	Funding Requirements	New Staffing Requirements*	Behavior to Measure
PHASE I				
Increased Parking Rates	Committed	Revenue-Positive	Limited (communications & customer service)	Parking Demand, Drive-Along Mode Share
Unbundled Tenant Parking	Committed	Revenue-Positive	Limited (communications & customer service)	Tenant Drive-Along Mode Share
Improve HU Shuttles	Committed	High, but varies based on changes to shuttle service	Varies based on changes to shuttle service	Utilization Rates, Customer Satisfaction
Maintain Bus Routes/Stops	Committed	Limited based on construction needs	None	100% Compliance
Increase SmartBenefits Marketing	Committed	Minimal	None	Participation Rate
Fund Capital BikeShare Station	Committed	±\$50,000	None	Utilization
Post TDM Plan	Committed	None	None	Commuter Benefits Awareness
Identify TDM Leader	Committed	None	None	None proposed
Install Information Kiosks	Committed	\$100 - \$1,000 each	Limited (restocking materials)	Commuter Benefits Awareness
Links to Commuter Support Websites	Committed	None	None	Commuter Benefits Awareness
Annual TDM and Parking Surveys	Committed	None	Limited (student time and staff oversight)	None Proposed
Annual Reporting	Committed	None	Limited (reporting and DDOT communications)	None Proposed
Telecommute and Flextime	Committed	None	None	Participation Rates
Reduced Parking Supply	Discretionary	Revenue-positive (deferred construction costs)	Limited (communications & customer service)	Faculty and Staff Drive-Along Mode Share
Bike Paths and In-Road Facilities (coordination with DDOT)	Discretionary	None	None	None Proposed

TDM Plan for the Howard University Campus Master Plan
Howard University

Action	Committed or Discretionary	Funding Requirements	New Staffing Requirements*	Behavior to Measure
Promote Area Bicycle Services	Discretionary	None	None	None Proposed
Bike Parking Map	Discretionary	Minimal (printing)	Limited	Utilization
Dedicated TDM Webpage	Discretionary	None	Limited (webpage development)	Commuter Benefits Awareness
Live Where You Work Programs (Phase III if in-house)	Discretionary	\$6,000 per participating employee if using existing programs. High to execute in-house program (potentially \$30,000 per participating employee).	0.5 FTE	Walk and HU Shuttle Mode Shares
INCREMENTAL BEGINNING IN PHASE I				
Expand Bicycle Parking	Committed	Moderate to High depending upon bicycle racks selected	None	Utilization, Bike-Commuter Mode Share
Phase Out Annual Permits	Discretionary	None	0.5 FTE	Seasonal and Weather-Related Parking-Demand Variability
Transportation Services Fee + Pass	Discretionary	Self-funding	0.5 FTE plus senior staff support & coordination	HU Shuttles Customer Satisfaction, Drive-Along Mode Share
Expand On-Campus Housing	Discretionary	Per HUCMP	None	Walk and HU Shuttle Mode Shares
PHASE II				
Marketing Material	Committed	Limited (printing)	Limited (material development)	Program Awareness
Reserved Rideshare Parking	Discretionary	Minimal (space designation)	Limited (program development & communications)	Rideshare to Drive-Along Mode Splits
Bike Repair and Maintenance Education Program	Discretionary	To be accessed via outreach to peer program	To be accessed via outreach to peer program	None Proposed
Departmental Bikeshare	Discretionary	\$1,250 - \$3,000	Limited	Applications to Participate

TDM Plan for the Howard University Campus Master Plan
Howard University

Action	Committed or Discretionary	Funding Requirements	New Staffing Requirements*	Behavior to Measure
COORDINATED WITH HUCMP				
Showers and Changing Facilities	Discretionary	Per HUCMP	None	Awareness of Facilities
Streetscape and Pedestrian Enhancements	Discretionary	Per HUCMP	Per HUCMP	Private Vehicle Use for Intra-campus Trips
Summer Bike Storage	Discretionary	None	Limited (communications)	Utilization

*Note: The cumulative staffing requirements total 1.5 FTE. However, many individual actions require limited staff support that when combined should be considered 0.5 FTE. In total, 2.0 FTE's are recommended to implement the TDM Plan.

E. 2013, 2014, 2016, and 2019 Annual Transportation Demand Management (TDM) Assessments

2013 HOWARD UNIVERSITY PARKING AND TRAVEL DEMAND CONDITIONS ASSESSMENT



Submitted to:



April 30, 2013

Prepared by:

Howard University Transportation Research Center

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1 SUMMARY

Howard University is located in Washington DC's Ward 1, and within five miles of the Nation's Capitol. The Central Campus is on a 118-acre property (see Figure 1) which forms the setting for most of the University's academic and administrative buildings and activities.

The 2011 Howard University Central Campus Master Plan (HUCMP) submitted to the District Department of Transportation (DDOT) for approval contains a strategic tool and guide for the physical development of the campus over the next ten years. The plan presented details of enhancements of the physical conditions of the campus which is geared toward creating new opportunities for excellence in the future development of new facilities. The plan also provided the physical framework within which the University can achieve its academic mission.

The TDM provided detailed assessment of opportunities that could be used to mitigate adverse transportation impacts — primarily by enhancing multi-modal Central Campus access and

mobility for the extended Howard University community.



Figure 1: Howard University Campus

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

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

The results of the parking studies showed that the average occupancy rate for on-street parking was determined to be 65% for streets on the Central Campus while that for the surrounding community was 64%. Non-resident vehicles occupied, on average, approximately 22% of the parking spaces within the residential neighborhoods.

Of the 1,124 respondents of the survey (staff, faculty and students), the following table presents the breakdown of the various modes of transportation used to travel to the Central Campus:

Travel Modes	Response Percent
Private Vehicle (alone)	34.50%
HU Shuttle Bus	26.30%
Walking	21.00%
Metrorail	9.30%
Other Transit Bus (Metrorail, DC Circulator, etc.)	3.20%
Private Vehicle (with passenger/s)	3.00%
Private Vehicle (as passenger)	2.20%
Bike	0.30%
Motorcycle/ Scooter	0.20%

2 ON-STREET PARKING SURVEY

The University provides parking at the HU Central Campus and the Hospital through surface lots. In all, there are approximately 2,300 parking spaces available within these lots of which about 40% are reserved for student parking and the remaining reserved for faculty/staff parking. The Howard University Central Campus area does not have any significant commercial public parking providers.

On street parking occupancy surveys were conducted as part of this assessment to determine on-street parking utilization or occupancy within the Central campus as well as the surrounding community. The management of on-street parking within and surrounding the Central Campus is not intended to accommodate typical commuter parking demand patterns, except for a few locations. On street parking is typically not a viable option for students since the time-limits create a barrier while attending classes. On the other hand, some of the spaces provide four-hours of parking which provides convenience for students attending one or two classes at a time. To assess the capacities and availability of these resources for Central Campus commuters, a series of occupancy surveys of all on-street spaces within the Central Campus were conducted during peak-demand times in Fall 2012/Spring 2013.

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

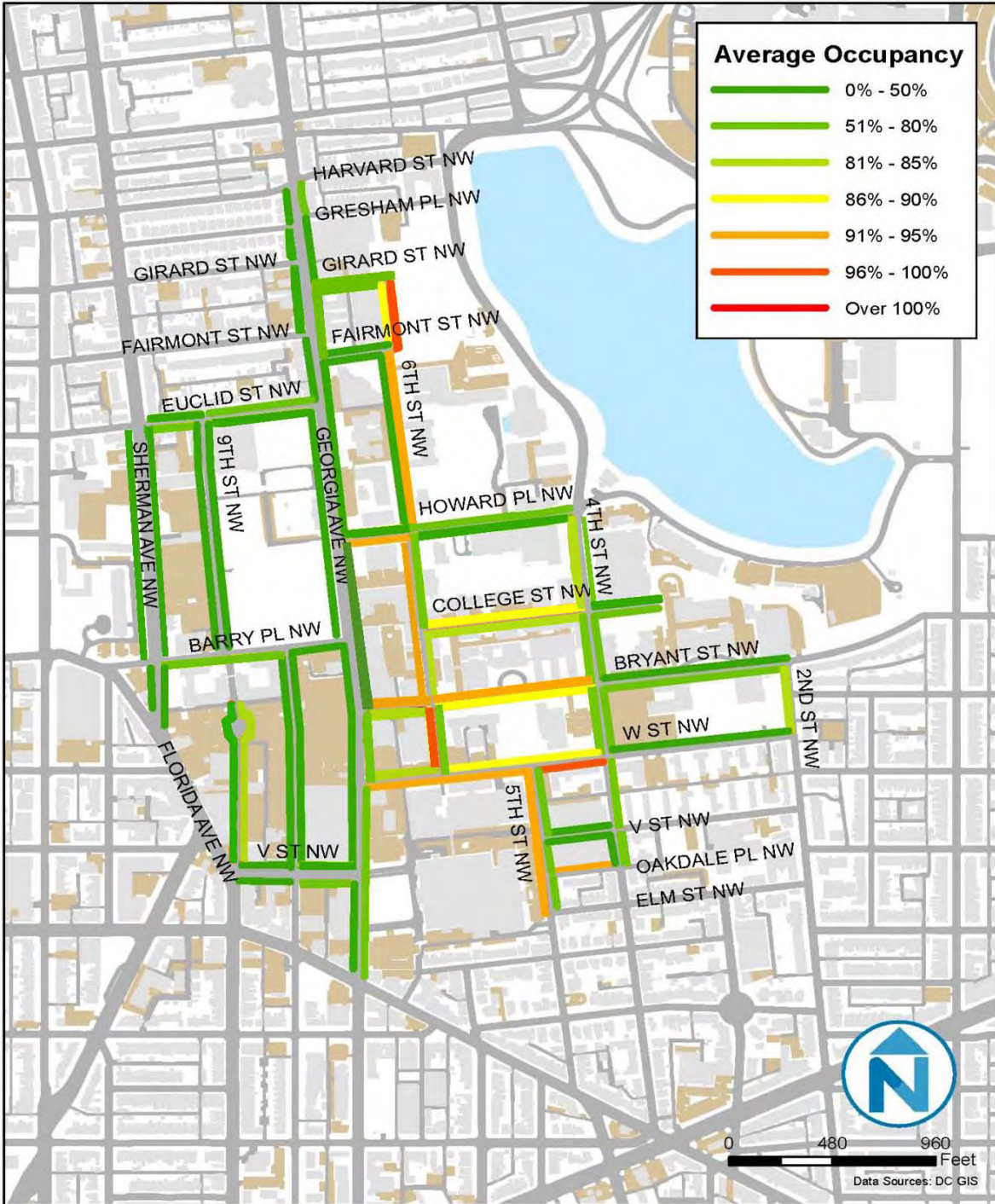


Figure 1: Average Parking Occupancy for a Typical Weekday at 11 am on Campus