



**WELLS + ASSOCIATES**

## **MEMORANDUM**

**TO:** District of Columbia Zoning Commission

**FROM:** Jami L. Milanovich, P.E.

**DATE:** December 21, 2010

**RE:** George Washington University  
Proposed School of Public Health and Health Services  
Square 39 – Washington, DC

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## **INTRODUCTION**

This report presents a transportation evaluation conducted for the proposed redevelopment of Square 39 on George Washington University's (GW's) Foggy Bottom Campus, in Washington, DC. The study was conducted in support of a Second-Stage Planned Unit Development (PUD) application for the proposed redevelopment.

The purposes of the evaluation was to identify existing transportation facilities and services available to users of the proposed School of Public Health and Health Services (SPHHS), identify the University's strategy for maintaining its minimum parking requirement, evaluate the effectiveness of the University's existing TMP and determine whether additional TMP measures are required to minimize the impact associated with the proposed redevelopment.

## **DESCRIPTION OF PROPOSED REDEVELOPMENT**

On February 5, 2007, the Zoning Commission of the District of Columbia approved two applications by George Washington University. The first application was for special exception approval of a new Campus Plan; the second application sought review and first-stage approval of a PUD and related amendments to the Zoning Map of the District of Columbia applicable to University-owned properties within the campus boundaries. The order was adopted on March 12, 2007 and became final and effective on October 26, 2007.

The approved Campus Plan identified Square 39 (generally bordered by K Street on the north, Washington Circle on the East, New Hampshire Avenue on the southeast, and 24<sup>th</sup> Street on the west) as one of the potential redevelopment sites on campus. The University is now moving forward with the Second-Stage PUD application for the Square 39 redevelopment. The site location map is shown on Figure I.



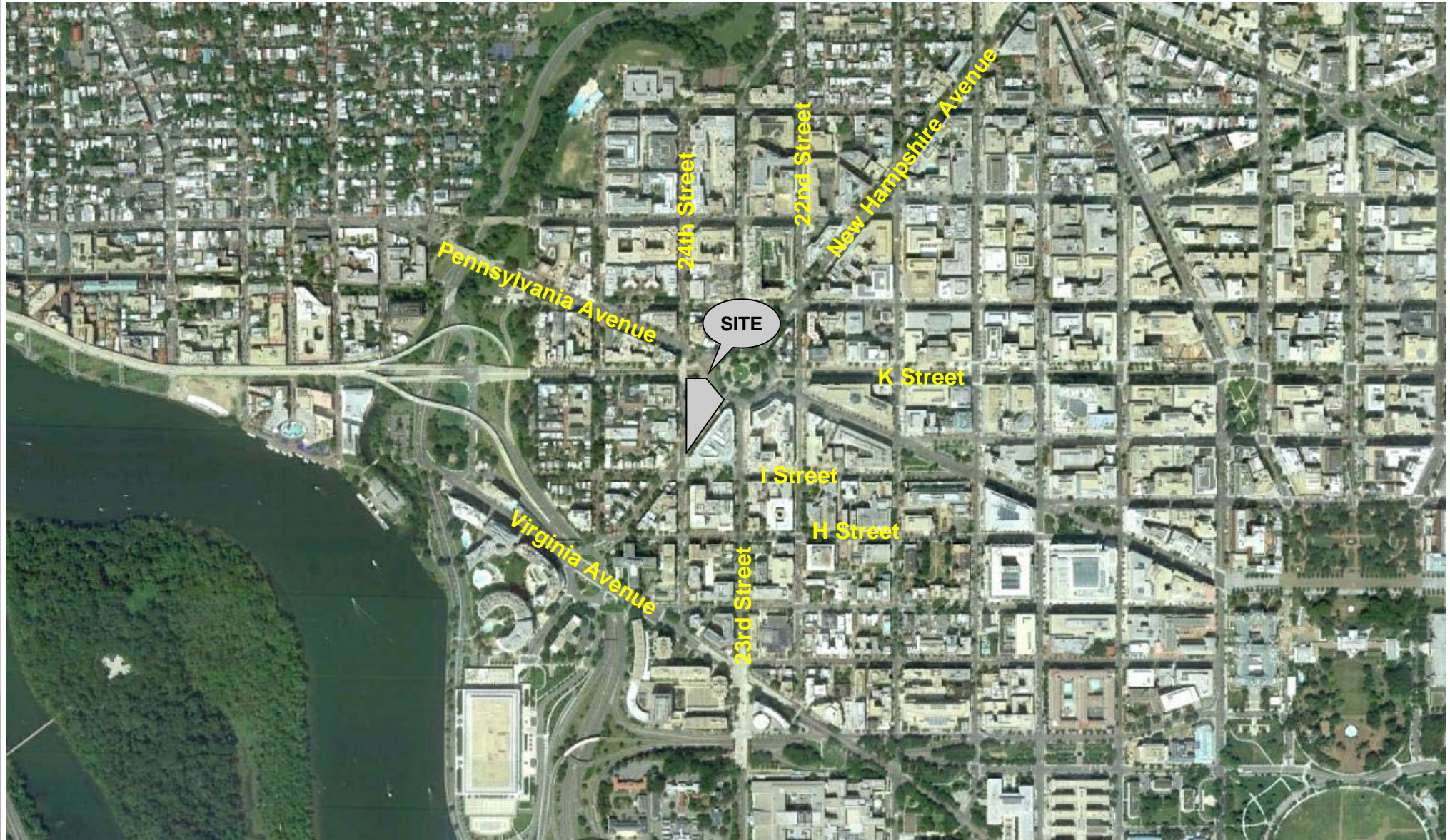


Figure I  
Site Location Map



The site currently is occupied by the three-story Warwick building, which houses the various clinical, academic, administrative, and medical programs of the School of Medicine and Health Sciences and the GW Hospital and a 24-space faculty/staff surface parking lot. Both of these facilities are proposed to be razed to accommodate the new SPHHS. The proposed SPHHS will consist of approximately 115,542 square feet of gross floor area (GFA). No parking is proposed in conjunction with the SPHHS. Figure 2 shows the proposed site plan. The uses currently housed in the Warwick building will be relocated to nearby Ross Hall or the George Washington University Hospital or leased space in the nearby Golden Triangle/K Street business corridor.

The new SPHHS will partially consolidate educational departments and administrative functions currently housed in Ross Hall; Building K; 2021, 2121, and 2175 K Street; 2100 Pennsylvania Avenue; and 2100 M Street. Figure 3 shows the locations of these buildings with respect to the new SPHHS. Due to the close proximity of the existing facilities to the proposed site, the redevelopment is not expected to substantially alter traffic patterns in the area. That is, faculty, staff, students, and visitors of the new building are not expected to alter their mode of transportation, nor are they anticipated to substantially alter their route.

The programming of the proposed SPHHS contemplates an additional 30 faculty and staff upon build out of the new facility.

Construction of the new facility is anticipated to begin in January 2012 with anticipated completion by the end of 2013. The new facility is expected to be occupied by late 2013 or early 2014.

Upon completion of the redevelopment, the number of curb cuts on the entire square will be reduced from two to one. The curb cut on New Hampshire Avenue that currently provides access to the surface parking lot will be removed. A single curb cut on 24<sup>th</sup> Street will provide access to the loading docks. The 24-foot wide curb cut will be located a few feet north of the existing curb cut.

Delivery trucks will access the loading area by backing in from 24<sup>th</sup> Street; they then would leave front first. Trash trucks would enter the loading area front first and exit by backing onto 24<sup>th</sup> Street. The truck turning diagrams are shown on Figures 4A through 4H. All vendors, suppliers, and service providers will be instructed that deliveries will not be permitted between 7:00 and 9:00 AM and between 5:00 and 7:00 PM, Monday through Friday. Certain deliveries cannot be controlled, however (including but not limited to FedEx and UPS).

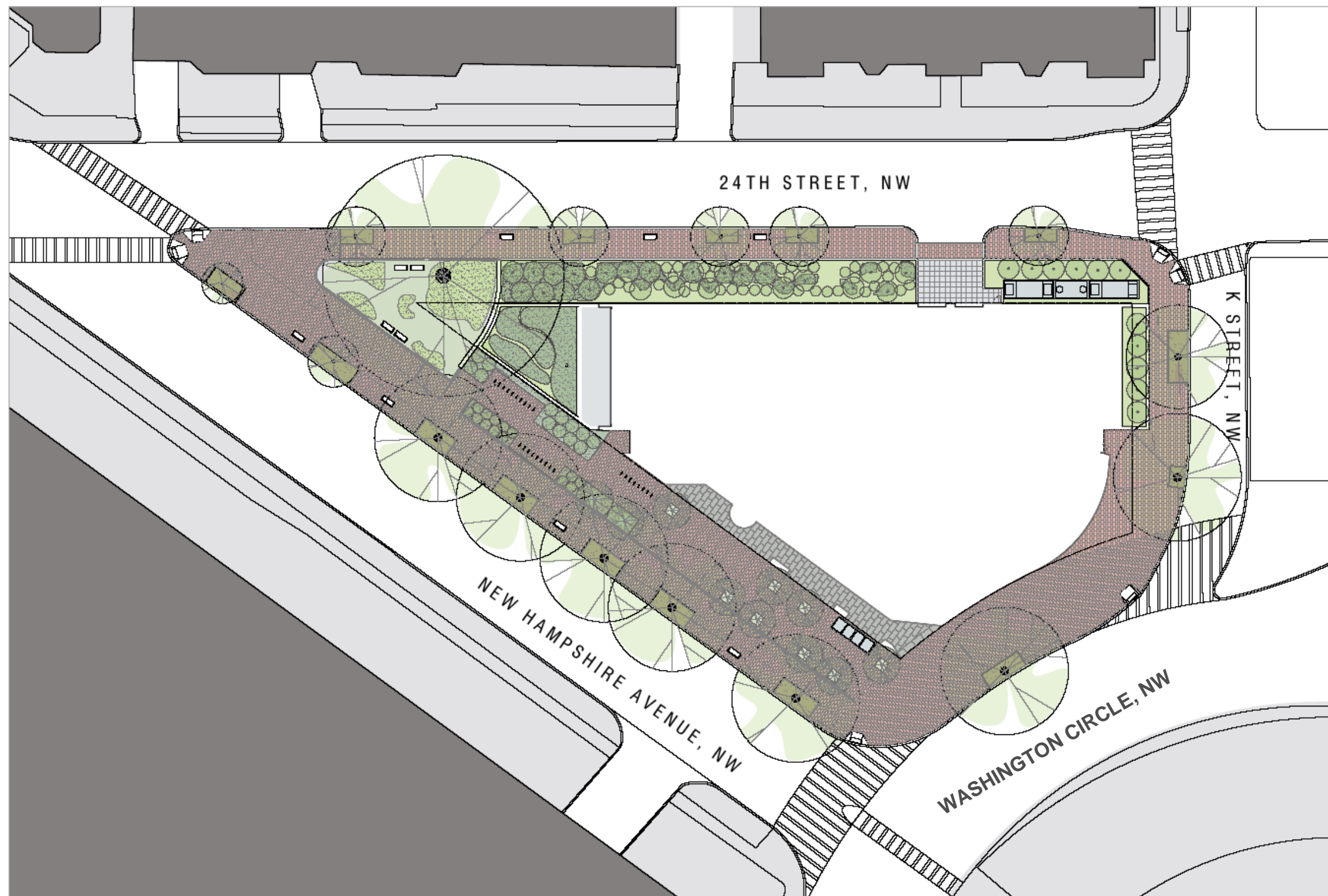
The main pedestrian access to the SPHHS is proposed on New Hampshire Avenue. Emergency exits will be provided via two additional doors on New Hampshire Avenue and a door on K Street. The service entrance is proposed on 24<sup>th</sup> Street. Figure 5 shows the locations of these pedestrian entrances.

## **TRANSPORTATION FACILITIES AND SERVICES**

### **OVERVIEW**

The proposed site of the new SPHHS is well served by a multi-modal transportation system, including prevalent public transportation services, University transportation services, a connected network of arterial, collector, and local streets, pedestrian facilities, and bicycle facilities.





Source: Payette Associates Inc.

Figure 2  
Site Plan





Figure 3  
Location of Existing School of Public Health Facilities



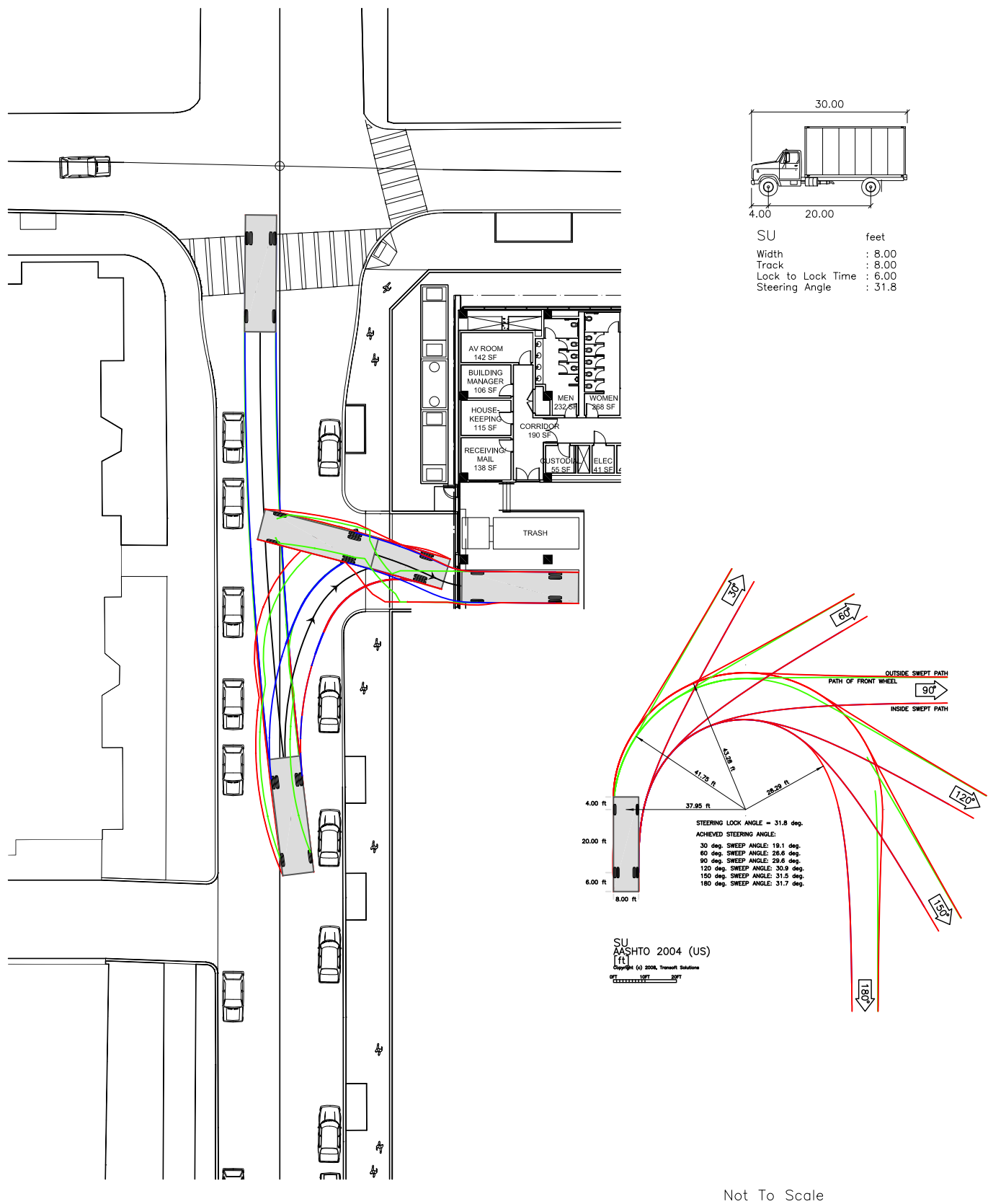


Figure 4A  
Sweep Area Diagram for SU-30 North Back-In

- Vehicle Body
- Front Tire Tread
- Rear Tire Tread
- Directional Path
- Vehicle Path





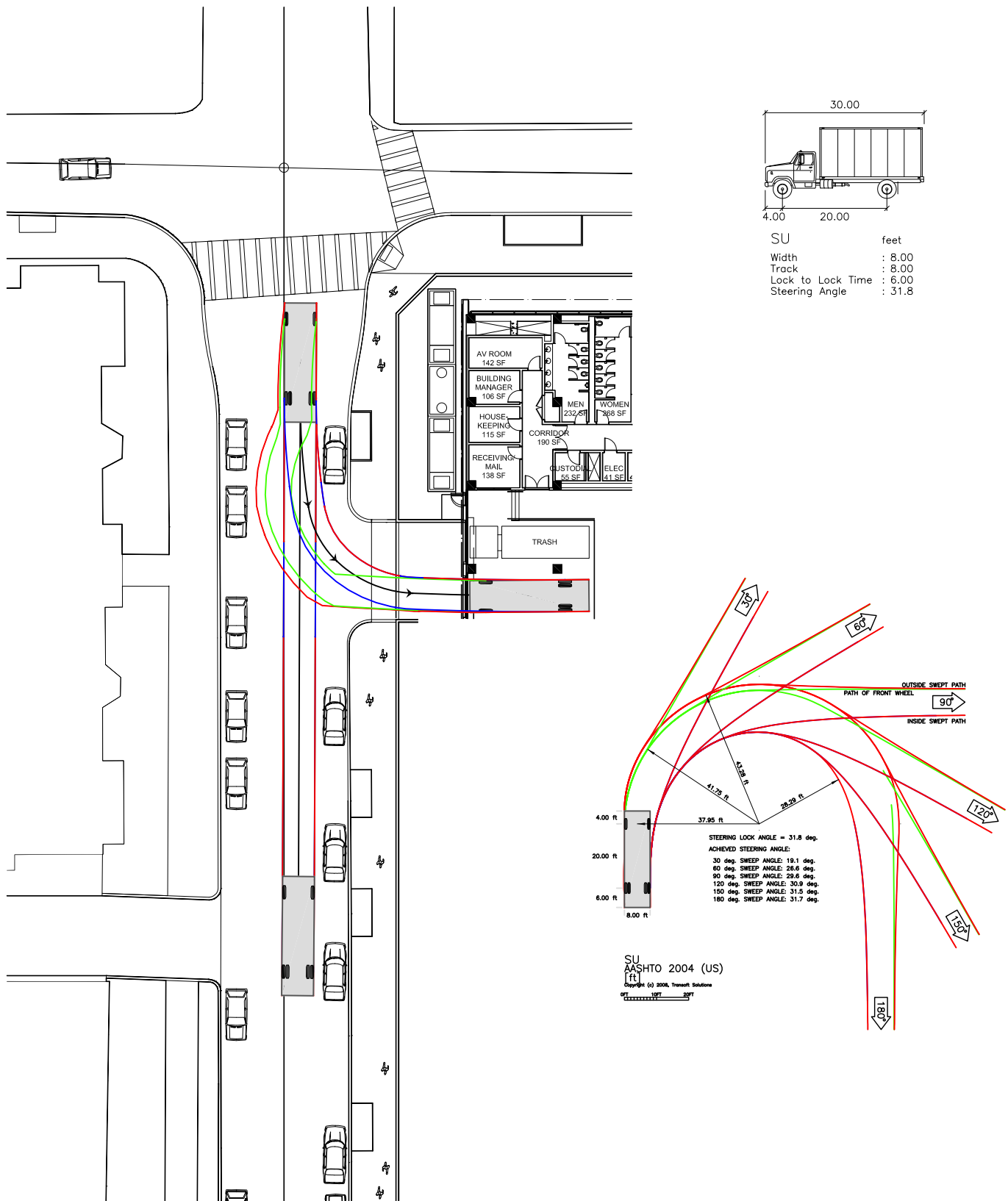


Figure 4C  
Sweep Area Diagram for SU-30 South Back-In

- Vehicle Body
- Front Tire Tread
- Rear Tire Tread
- Directional Path
- Vehicle Path





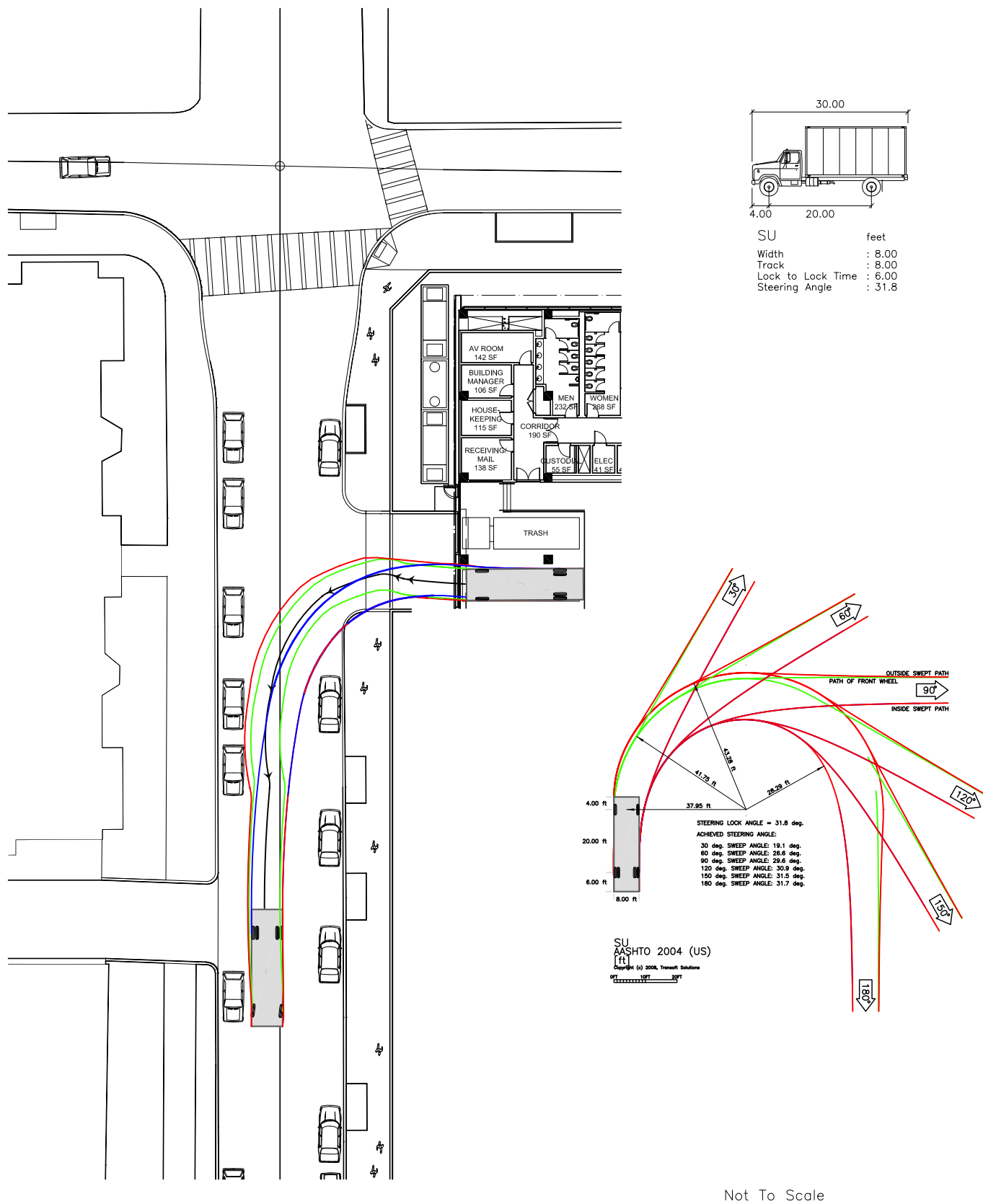


Figure 4D  
Sweep Area Diagram for SU-30 Exit South

- Vehicle Body
- Front Tire Tread
- Rear Tire Tread
- Directional Path
- Vehicle Path



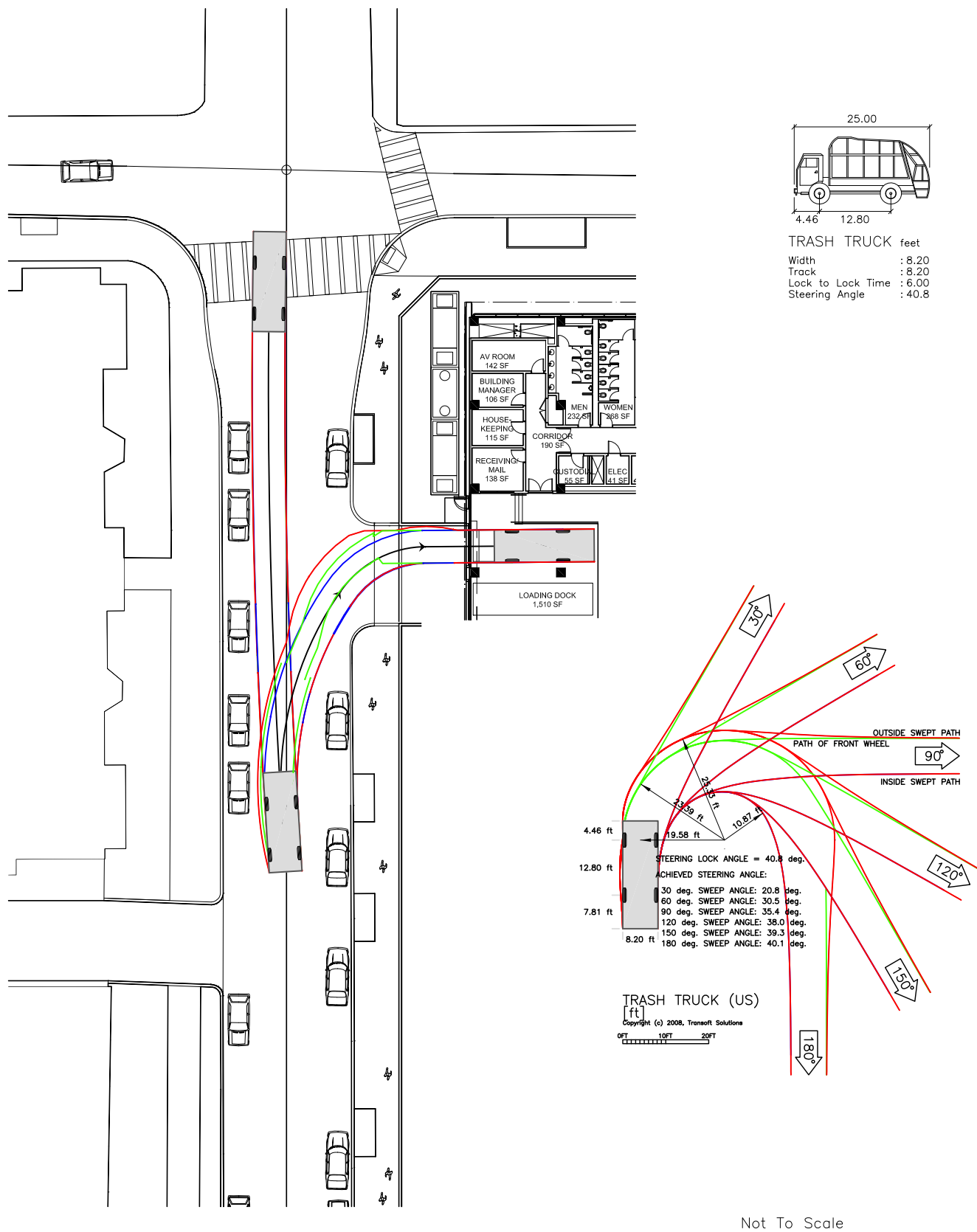


Figure 4E  
Sweep Area Diagram for Trash Truck North Back-In

- Vehicle Body
- Front Tire Tread
- Rear Tire Tread
- Directional Path
- Vehicle Path



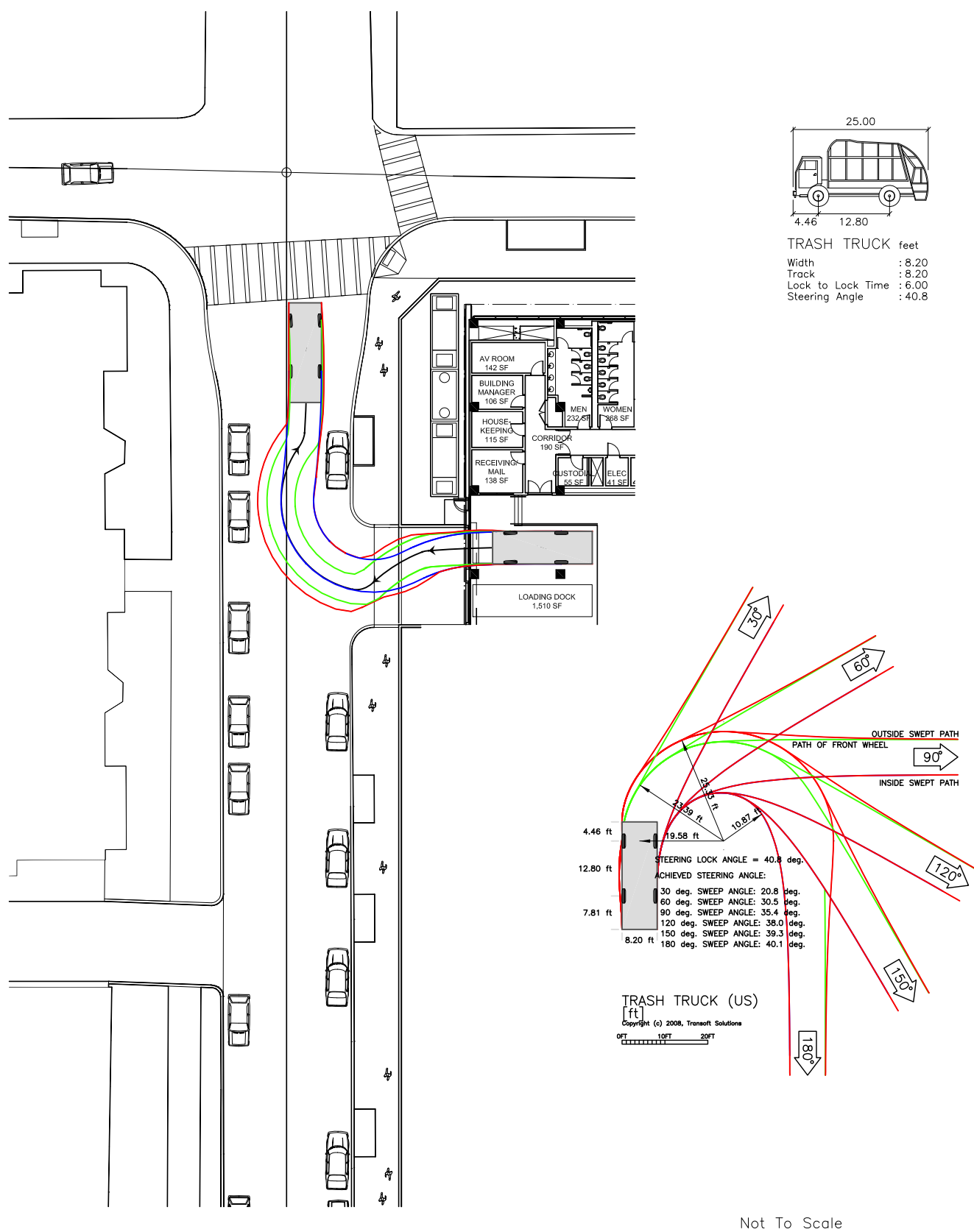


Figure 4F  
Swept Area Diagram for Trash Truck Exit North

- Vehicle Body
- Front Tire Tread
- Rear Tire Tread
- Directional Path
- Vehicle Path







- Vehicle Body
- Front Tire Tread
- Rear Tire Tread
- $\longleftrightarrow$  Directional Path
- Vehicle Path



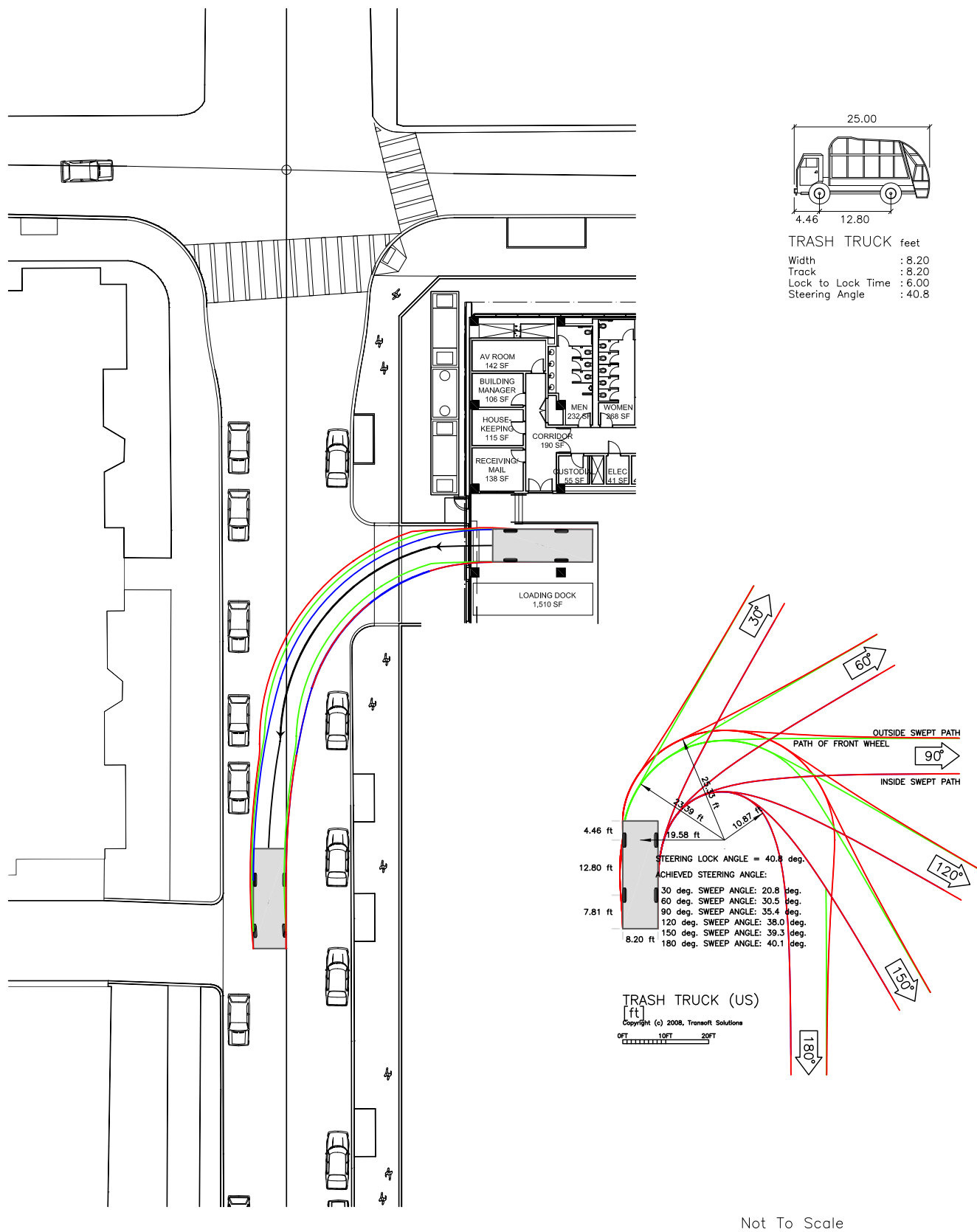
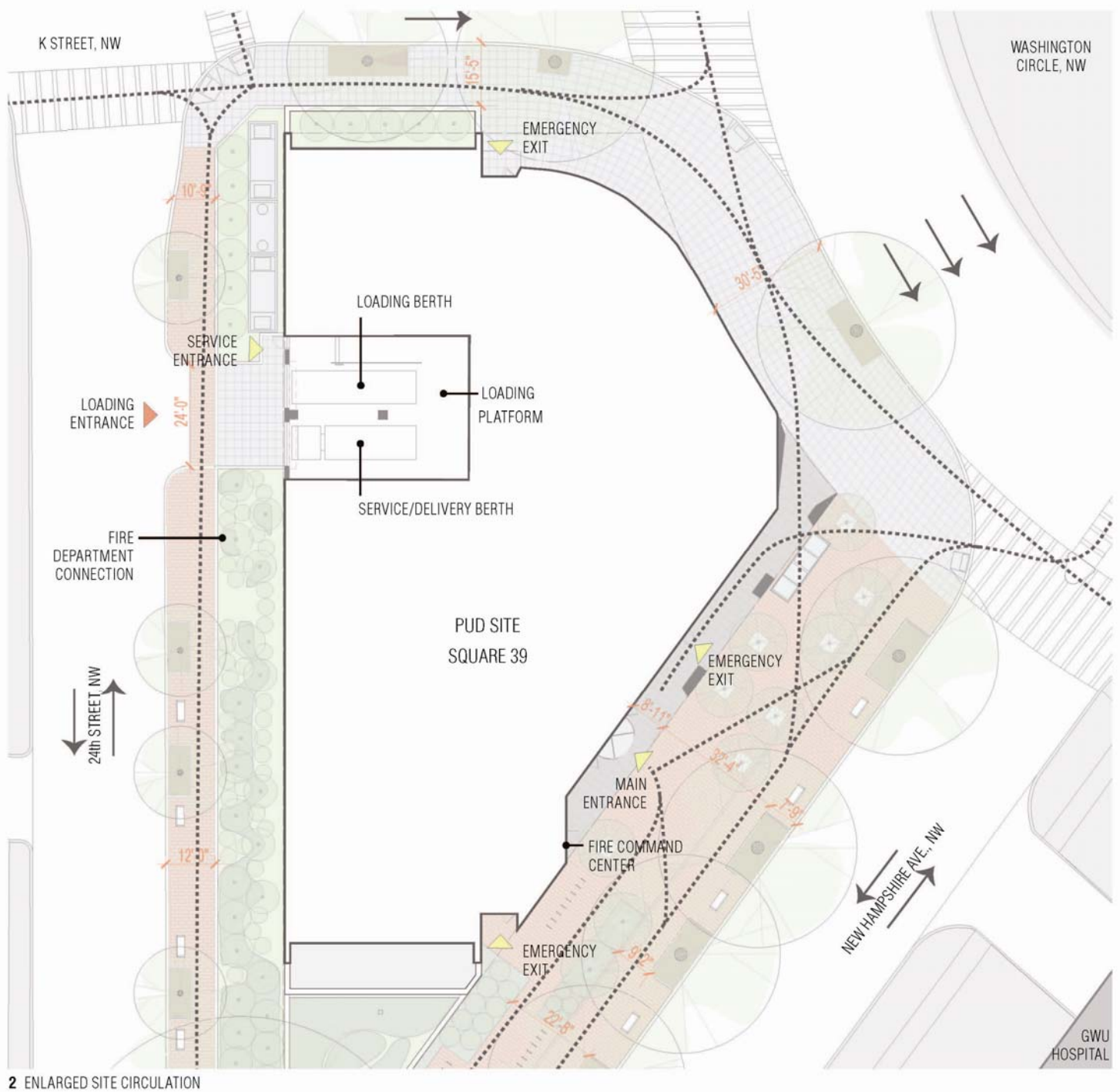


Figure 4H  
Sweep Area Diagram for Trash Truck Exit South

- Vehicle Body
- Front Tire Tread
- Rear Tire Tread
- Directional Path
- Vehicle Path





Source: Payette Associates Inc.

Figure 5  
Pedestrian Entrances

 Pedestrian Service Entrances/  
Emergency Exits

 North



Because vehicular parking will not be provided in conjunction with the proposed redevelopment (a net loss of 24 parking spaces), vehicular traffic to/from the subject site actually will be reduced. As such, this memo focuses on other modes of transportation.

## **METRORAIL**

The Foggy Bottom-GWU Metrorail Station is located on the northwest quadrant of the 23<sup>rd</sup> Street/ I Street intersection, approximately one block from the subject site. This station is the eighth busiest station in the Metrorail system, with an average weekday ridership of nearly 41,000 passengers (based on 2006 data).<sup>i</sup> The peak hour boardings and alightings at the Foggy Bottom-GWU Metro station are summarized in Table 1.

Table 1  
Foggy Bottom-GW Metrorail Station Passenger  
Boardings and Alightings

Time of Day	Boarding	Alighting	Total
AM Peak	910	4,220	5,130
PM Peak Hour	3,666	1,307	4,973

The majority of passengers (74 to 89 percent) walk to and from the station; less than 10 percent drive or are driven to the station, as shown in Table 2.<sup>ii</sup>

Table 2  
Foggy Bottom-GW Metrorail Station  
Passenger Access Modes

Mode	Percent	
	AM Peak	PM Peak
Metrobus	13.3	2.8
Other Bus	1.7	6.7
Park &	3.3	1.0
Carpool	1.0	0.0
Kiss &	6.6	0.9
Bike	0.0	0.0
Walk	74.1	88.6
Taxi	0.0	0.0
Total	100	100

## **PUBLIC BUS SERVICE**

WMATA and the DC Circulator currently provide public bus service convenient to the proposed SPHHS. Specifically, bus stops are located on the northeast and southwest corners of the 24<sup>th</sup> Street/Pennsylvania Avenue intersection.

WMATA's Wisconsin Avenue (Route 31), Pennsylvania Avenue (Routes 32 and 36), Ballston - Farragut Square (Route 38B), and MacArthur Boulevard - Georgetown (Route D5) provide service to the 24<sup>th</sup>

Street/Pennsylvania Avenue intersection bus stops. On these lines, a total of 263 bus-trips on a typical weekday, 150 bus-trips on a typical Saturday, and 127 bus-trips on a typical Sunday are operated, as shown in Table 3.

The DC Circulator's Georgetown - Union Station Line also provides service at the 24<sup>th</sup> Street/Pennsylvania Avenue intersection bus stops. Service is provided on Sunday through Thursday from 7:00 AM to midnight and on Friday and Saturday from 7:00 AM to 2:00 AM.

Table 3  
Metrobus Trips

LINE			WEEKDAY SERVICE			SATURDAY SERVICE			SUNDAY SERVICE		
NAME	NUMBER	DIRECTION									
			AM	PM	After Midnight	AM	PM	After Midnight	AM	PM	After Midnight
Wisconsin Avenue	31	NB	18	31	-	11	24	1	9	17	-
		SB	19	32	-	12	24	-	10	16	-
Pennsylvania Avenue	32	EB	-	8	-	-	-	-	-	-	-
		WB	9	-	-	-	-	-	-	-	-
	36	EB	-	6	-	-	-	-	-	-	-
		WB	4	-	-	-	-	-	-	-	-
Ballston - Farragut Square	38B	EB	24	35	3	12	24	3	13	24	1
		WB	22	35	3	13	23	3	12	25	-
MacArthur Boulevard - Georgetown	D5	EB	7	-	-	-	-	-	-	-	-
		WB	-	7	-	-	-	-	-	-	-
TOTALS			103	154	6	48	95	7	44	82	1
			263			150			127		

## GW CAMPUS TRANSPORTATION

The University provides four forms of campus transportation: the Vern Express, the Colonial Express, the Virginia Science and Technology Campus Shuttle, and the University Police Department (UPD) Escort Service.

**The Vern Express** is a free bus service that provides transportation for students, faculty/staff, and visitors between the Foggy Bottom and Mount Vernon campuses. The three-mile trip between the two

campuses takes between 10 and 13 minutes during non-rush hours. During the academic year, the Vern Express runs 24 hours a day, seven days a week, providing an easy and efficient link between the campuses. During the summer and semester breaks, the Vern Express provides more limited service.

On weekdays during the academic year, the Vern Express operates at headways of five to ten minutes between 7:00 AM and 9:00 PM, and at 15 to 30 minute headways at all other times of day. On weekends during the academic year, the Vern Express operates with headways ranging from 15 to 30 minutes.

During the 2008-2009 academic year, ridership on the Vern Express was 650,137 passengers, which is a increase in ridership of approximately two percent when compared to the 2007-2008 academic year.

The Vern Express routes are shown on Figures 6A and 6B. Stops are located on the Foggy Bottom campus at the following locations:

1. 2025 E Street, N.W. (Red Cross Building);
2. 22<sup>nd</sup> Street and G Street;
3. 23<sup>rd</sup> Street and H Street in front of Fulbright Hall (primary location);<sup>†</sup> and
4. 2601 Virginia Avenue in front of Hall on Virginia Avenue (across from the Watergate), except on weekdays between 6:00 AM and 10:00 AM.

The H Street stop is proposed to be relocated one block south in conjunction with the construction of GW's new Science and Engineering Complex (SEC). As such, the Vern Express route is proposed to be shifted from H Street to G Street, as shown on Figure 7.

**Colonial Express** is a shuttle bus service that transports students, faculty, and staff around the Foggy Bottom Campus. The Colonial Express operates on two routes. The northern route operates as a clockwise loop with stops at Marvin Center, The Aston residence hall (located at 1129 New Hampshire Avenue), 19<sup>th</sup> Street at L Street, Connecticut Avenue at L Street, and 20<sup>th</sup> Street at I Street.

The southern route also serves five stops at the following locations: Marvin Center, Thurston Hall, Health and Wellness Center, the HOVA residence hall, and Columbia Plaza.

Both routes operate between 7:00 PM and approximately 3:00 AM. The northern route generally has headways of 23 minutes while the southern route has headways ranging from 19 minutes to 49 minutes.

The Colonial Express routes are shown on Figure 8.

**GW Virginia Science and Technology Campus Shuttle** runs between the Virginia Science and Technology Campus and the Foggy Bottom Campus. A second shuttle provided by Virginia Regional Transit also is available between the Virginia Science and Technology Campus and the West Falls Church Metro Station. Both shuttle services are free for GW faculty, staff, and students.

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<sup>†</sup> Except on weekdays between 6:00 AM and 10:00 AM, during which time the primary location is at 21<sup>st</sup> Street and H Street adjacent to Marvin Center.





**Bus Stops**

1. 2025 E Street (In Front of Red Cross Building)
2. 22nd and G Streets
3. 23rd and H Streets (In Front of Fulbright Hall)
4. 2601 Virginia Avenue (Hall on Virginia Avenue)





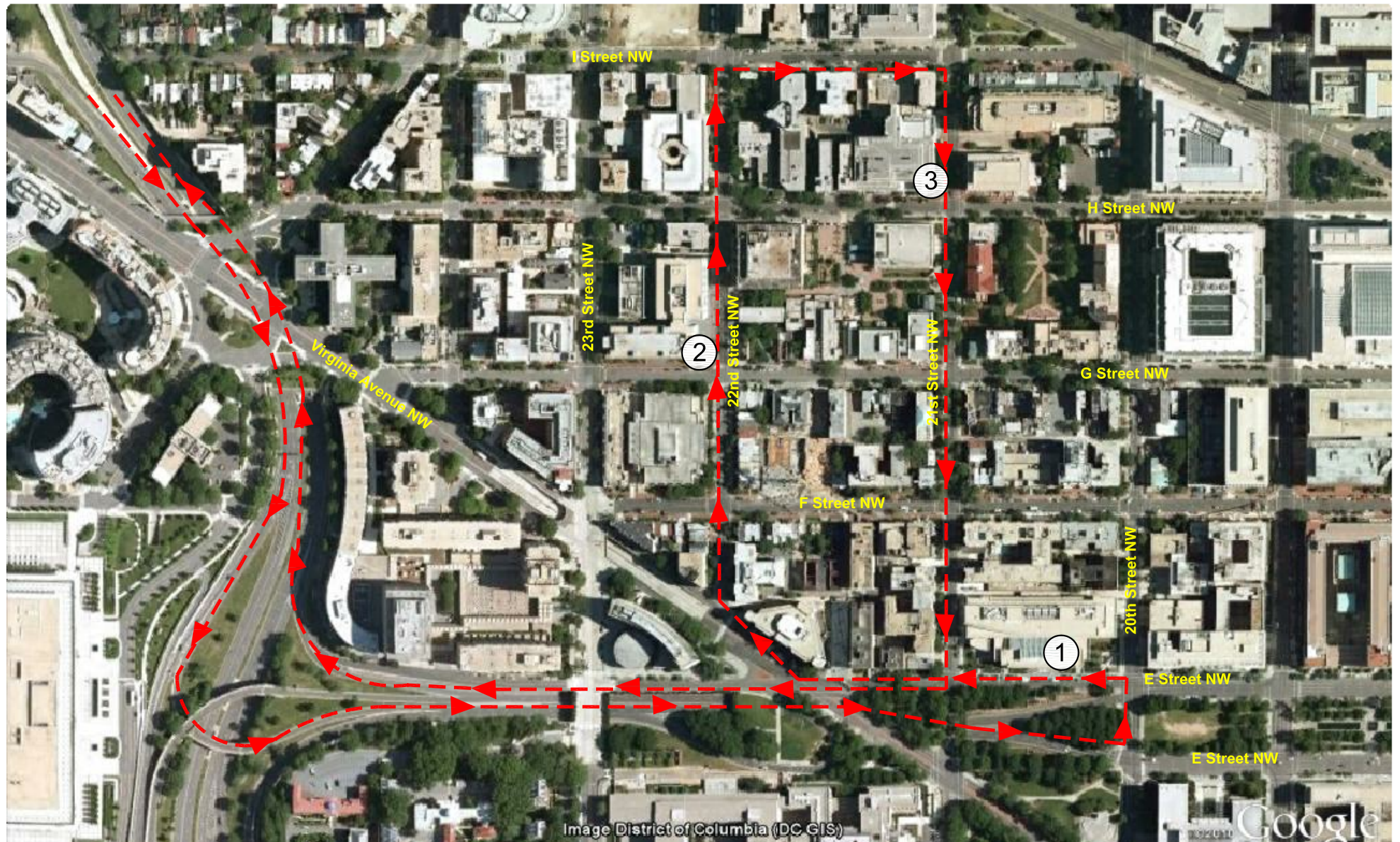


Figure 6B  
Existing Vern Express Route  
Monday Through Friday (6 AM to 10 AM)

Bus Stops

1. 2025 E Street (In Front of Red Cross Building)
2. 22nd and G Streets
3. 21st and H Streets (At Marvin Center)





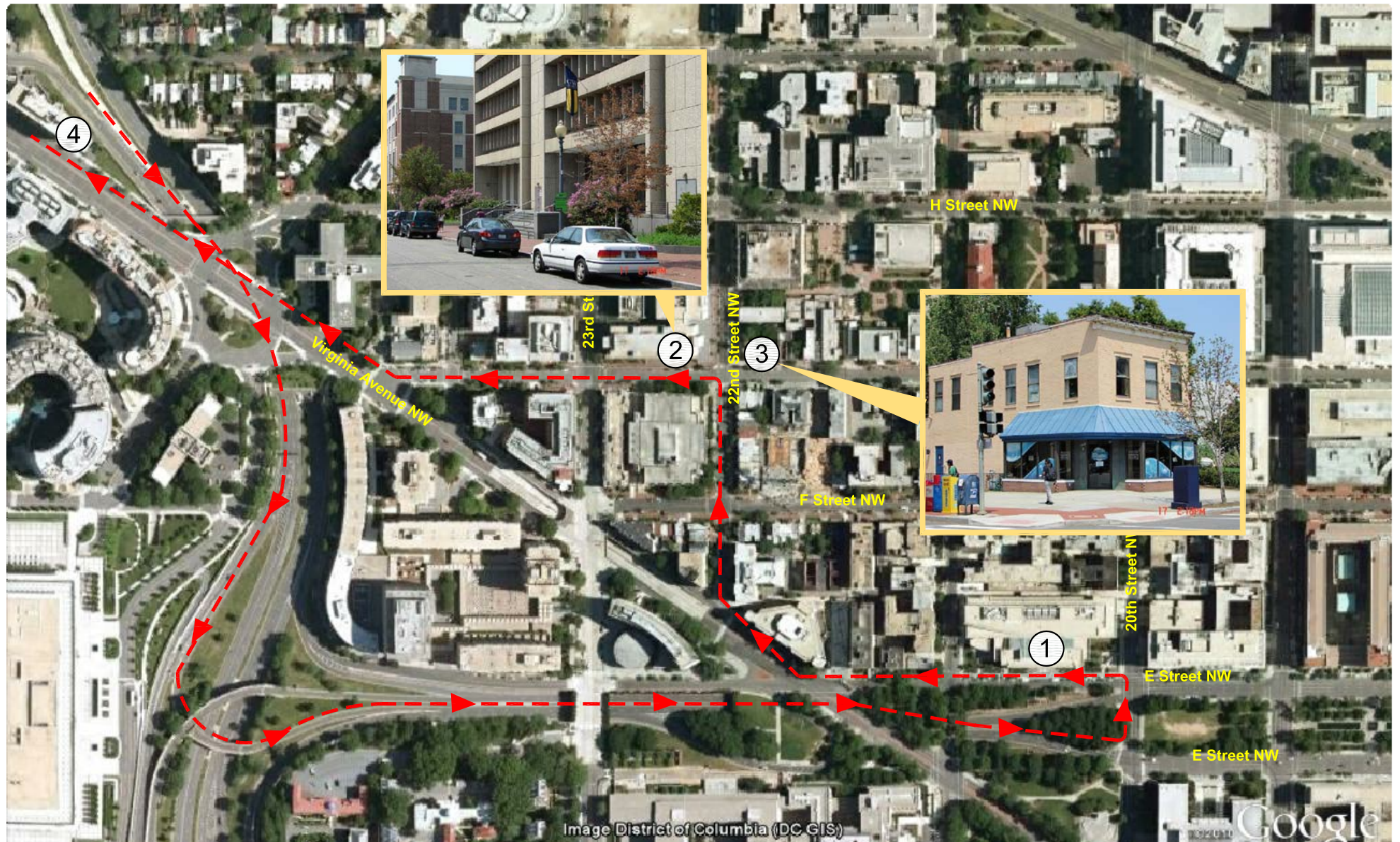


Figure 7  
Proposed Vern Express Route  
Monday Through Friday (All Times Except 6 AM to 10 AM)

Bus Stops

1. 2025 E Street (In Front of Red Cross Building)
2. 22nd and G Streets
3. 23rd and H Streets (In Front of Fulbright Hall)
4. 2601 Virginia Avenue (Hall on Virginia Avenue)





## COLONIAL EXPRESS SHUTTLE BUS SERVICE ROUTES

### Northern Route

- 1 MARVIN CENTER/GELMAN @ MC H ST
- 2 ASTON
- 3 CORNER OF 19TH & L ST
- 4 CORNER OF CONNECTICUT & L ST
- 5 CORNER OF 20TH & EYE ST



### Southern Route

- 1 MARVIN CENTER/GELMAN @ MC H ST
- 2 THURSTON HALL
- 3 HEALTH AND WELLNESS
- 4 HOVA
- 5 COLUMBIA PLAZA @ CENTER DRIVEWAY

BLUE LIGHT EMERGENCY PHONE

### NORTHERN ROUTE

- 1) MARVIN CENTER/GELMAN @ MC H ST.
- 2) ASTON
- 3) CORNER OF 19TH & L ST
- 4) CORNER OF CONNECTICUT & L ST
- 5) CORNER OF 20TH & EYE ST

### SOUTHERN ROUTE

- 1) MARVIN CENTER/GELMAN @ MC H ST.
- 2) THURSTON HALL
- 3) HEALTH AND WELLNESS CENTER
- 4) HOVA
- 5) COLUMBIA PLAZA @ CENTER DRIVEWAY

Source: <http://gwired.gwu.edu/upd/>

Figure 8  
Existing Colonial Express Routes



Service between the Virginia Science and Technology Campus and the Foggy Bottom Campus is provided between 8:35 AM and 11:00 PM, Monday through Thursday. Friday service is provided between 8:35 AM and 10:00 PM. The shuttle makes five stops daily (Monday through Friday) at the Foggy Bottom Campus. The stop is located at the intersection of 21<sup>st</sup> and I Streets in front of the Marvin Center.

Saturday service is limited to three trips between the campuses.

The **University Police Department (UPD) Escort Service** is offered by the UPD to enhance safety and peace of mind for members of the GW community when they must walk alone after dark. UPD Escort vans are in operation between 7:00 PM and 6:00 AM. During all other hours, escorts are provided by UPD officers on foot or in patrol cars. Escorts are provided from on-campus to on-campus, on-campus to off-campus, and off-campus to on-campus locations.

## **ZIPCAR**

Zipcar is an automated car rental or car sharing system in the Washington, DC area. Zipcar users must fill out an application online and then receive a Zipcard, which enables them to reserve Zipcars at any of the locations. Users pay either an hourly or daily rental fee to utilize the car for their reserved time slot. Cars must be returned to the same designated parking space at which it was picked up.

One Zipcar currently is located on the subject site in the existing surface parking lot. This space will need to be relocated in conjunction with the proposed redevelopment. Ten additional Zipcars are located within approximately three to four blocks of the subject site. Nineteen Zipcars are located on the Foggy Bottom Campus.

The locations of Zipcars in the area are shown on Figure 9.

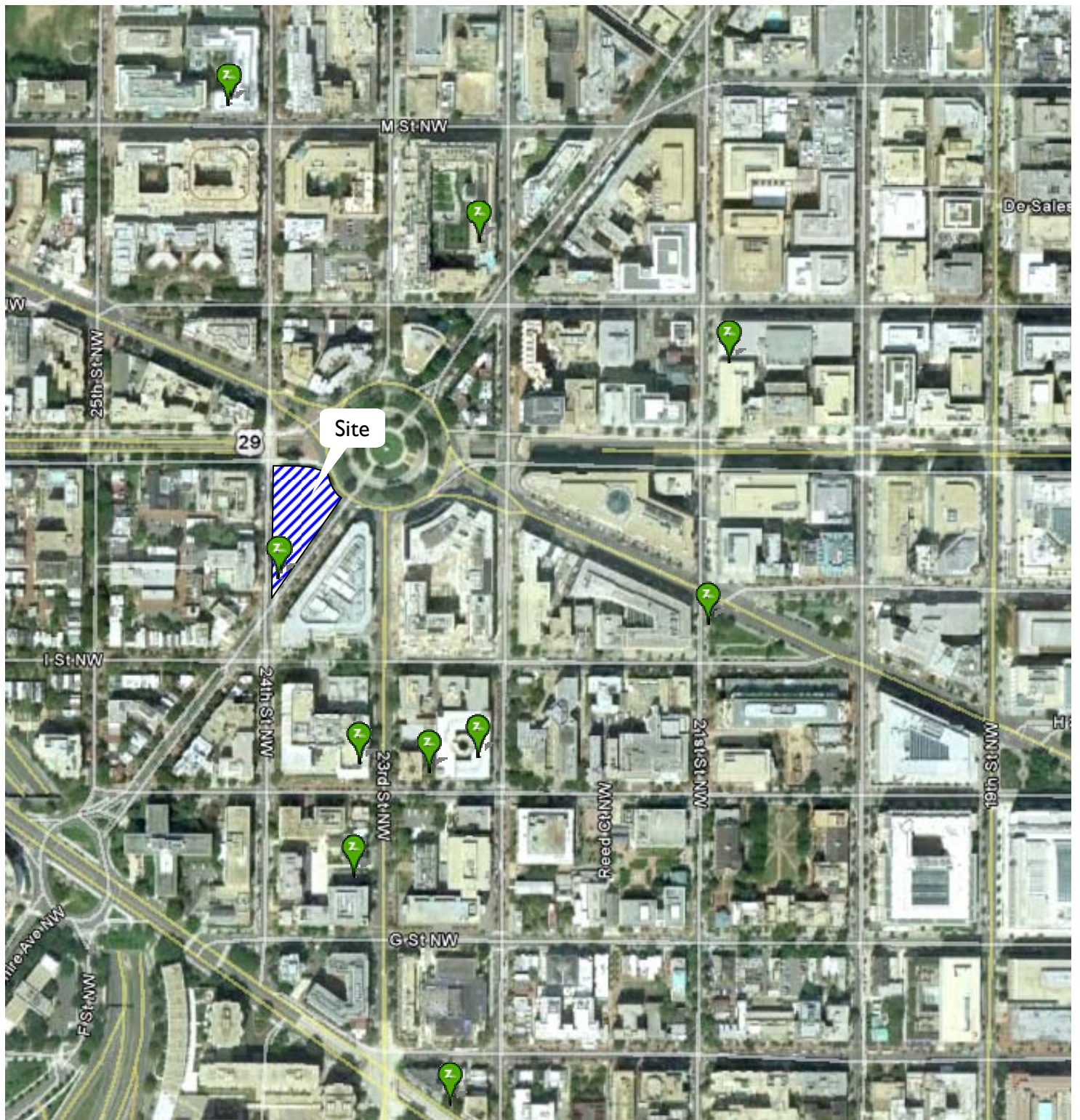
## **BICYCLES ACCOMMODATIONS**

### **Bicycle Master Plan**

The District of Columbia Bicycle Master Plan<sup>iii</sup> seeks to create a more bicycle-friendly city by establishing high quality bicycle facilities and programs that are safe and convenient.

Under the existing condition where bicyclists share the road with vehicles, the bicycle levels of service (BLOS) in the site vicinity are presented in the Plan and have been replicated on Figure 10 and in Table 4.





Source: <http://www.zipcar.com>

Figure 9  
Zipcar Locations

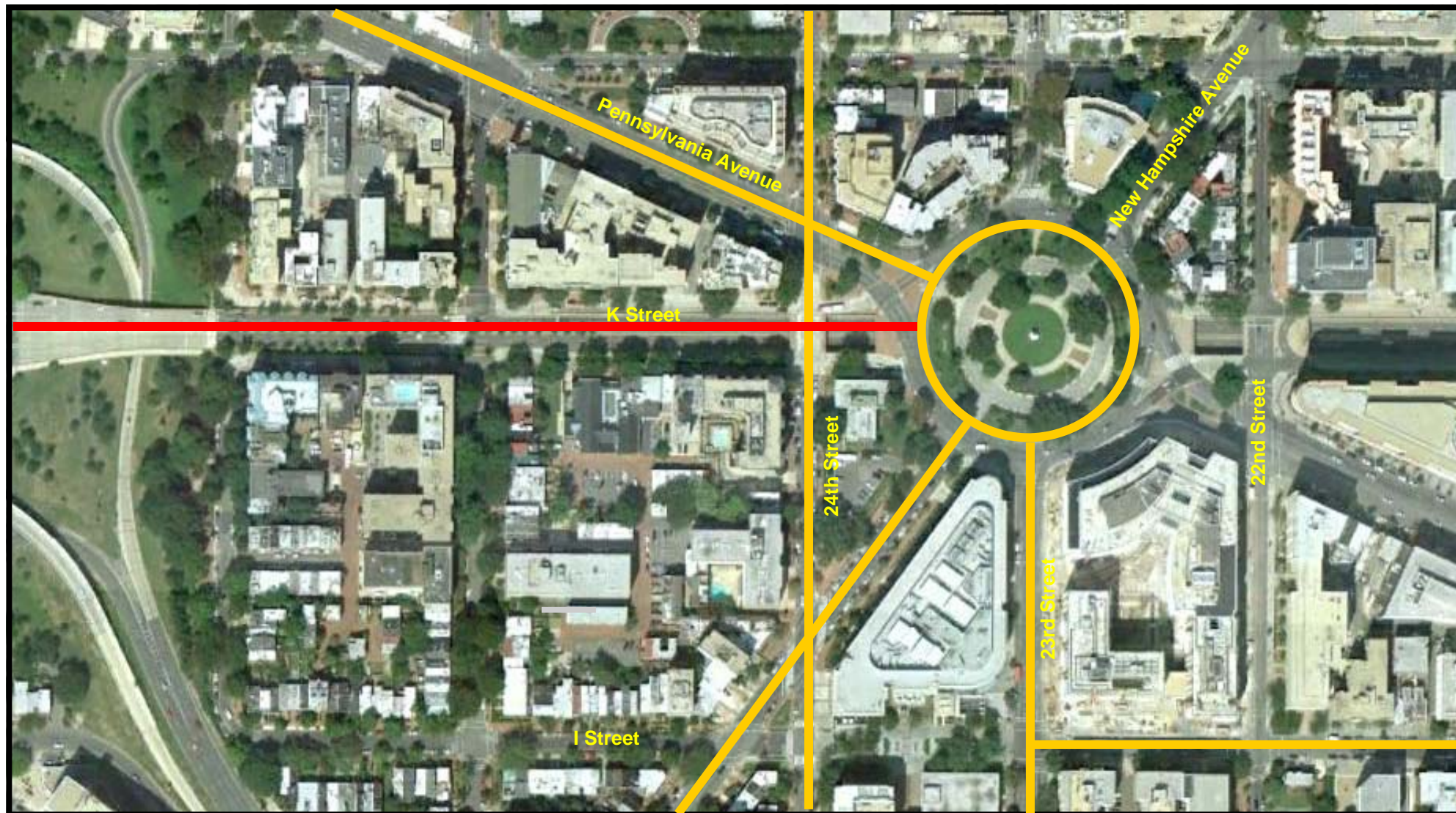


Zipcar Locations



North





Source: DC Bicycle Master Plan

Figure 10  
Bicycle Levels of Service

- ↗ Bicycle LOS A
- ↗ Bicycle LOS B
- ↗ Bicycle LOS C
- ↗ Bicycle LOS D
- ↗ Bicycle LOS E
- ↗ Bicycle LOS F



Table 4  
Existing Bicycle Levels of Service

Roadway	Bicycle LOS
23 <sup>rd</sup> Street	D
24 <sup>th</sup> Street	D
New Hampshire Avenue	D
Pennsylvania Avenue	D
Washington Circle	D
K Street	E

According to the Plan, a bike lane is proposed on New Hampshire Avenue and Pennsylvania Avenue in the vicinity of the site.<sup>iv</sup>

### **Bicycle Parking**

Capital Bikeshare is an automated bicycle rental or bicycle sharing system in the Washington, DC area. The District and Arlington County teamed up to launch a new bike share program that includes over 110 stations with 1,100 bicycles.

Membership is required to use Capital Bikeshare. Daily, monthly, and annual memberships are available for fees of \$5, \$25, and \$75, respectively. The first 30-minutes of use are free; users are then charged a usage fee for each additional 30-minute period. Bicycles can be returned to any station with an available dock.

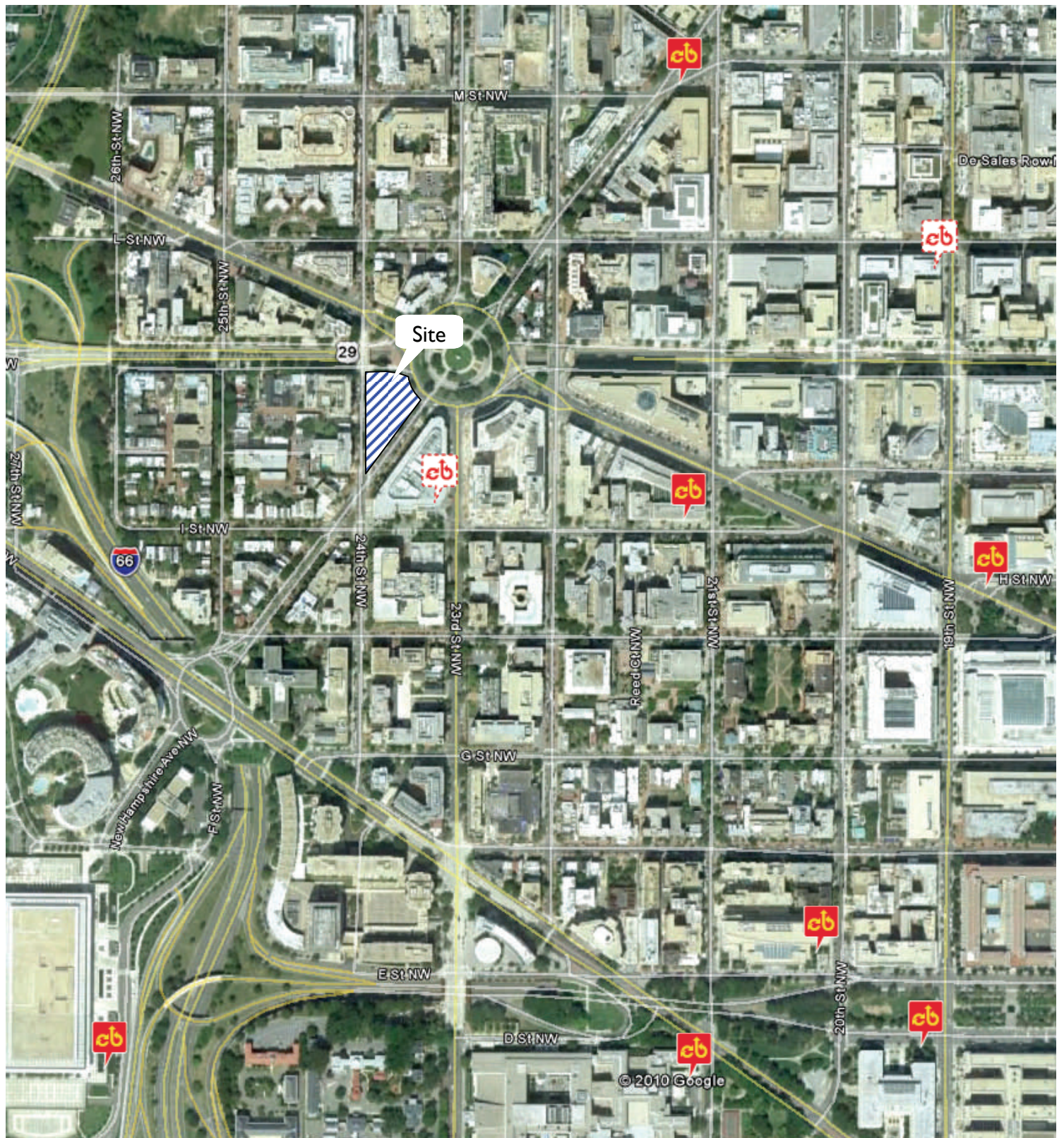
Currently, the closest bikeshare station to the proposed SPHHS is located approximately four blocks south and east, at the 21<sup>st</sup> Street/I Street intersection. This station has 27 docks. A SmartBike station currently is located at the Foggy Bottom-GWU Metro Station, approximately one block south of the subject site. This station is expected to soon transition to the Capital Bikeshare program. A map depicting the locations of these bikeshare stations is shown on Figure 11A.

Additionally, 54 bicycle spaces will be provided on site, near the main entrance along New Hampshire Avenue, as shown on Figure 11B.

### **PEDESTRIAN ACCOMMODATIONS**

In the vicinity of the proposed development, sidewalks are present along both sides of New Hampshire Avenue, 24<sup>th</sup> Street, K Street, and Washington Circle.





Source: <http://www.capitalbikeshare.com>

Figure 11A  
Capital Bike Share Locations



Current Capital Bikeshare Locations



Planned Capital Bikeshare Locations



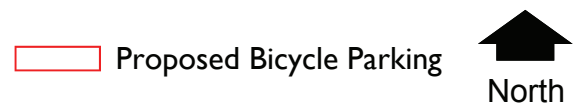
North





Source: Payette Associates Inc.

Figure IIB  
Proposed Bicycle Parking





### **Pedestrian Accommodations at Signalized Intersections**

At the 24<sup>th</sup> Street/K Street (EB) intersection, pedestrian signal heads are not provided on any approach. Marked crosswalks are present on the east, west, and south legs of the intersection but not on the north leg. Two accessible ramps are located on the southwest corner of the intersection. A single accessible ramp is located on the northwest corner to accommodate disabled persons crossing the K Street frontage road, and a single accessible ramp is located on the southeast corner to accommodate disabled persons crossing 24<sup>th</sup> Street. No accessible ramps are located on the northeast corner of the intersection. Photographs of the pedestrian crossings at the 24<sup>th</sup> Street/K Street (EB) intersection are shown in Figure 12.

At the New Hampshire Avenue/Washington Circle intersection, crosswalks are provided for pedestrians crossing New Hampshire Avenue and for pedestrians crossing the Circle to/from a small island in the center of New Hampshire Avenue, as shown in Figure 13. Pedestrian signals are provided for all marked crossings; however, count down heads are not provided. Accessible ramps are provided for the New Hampshire Avenue crossing. A depressed curb is provided along Washington Circle for pedestrians crossing the Circle.

### **Pedestrian Accommodations at Unsignalized Intersections**

At the K Street (EB)/Washington Circle intersection a single crosswalk is provided for pedestrians crossing the K Street leg of the intersection. Accessible ramps are located on either side of the crosswalk, as shown on Figure 13.

At the 24<sup>th</sup> Street/New Hampshire Avenue intersection, crosswalks are present on all four approaches. Two accessible ramps are located on each corner of the intersection except for the southwest corner. At this location, an accessible ramp is present only for the New Hampshire Avenue crossing. Photographs of the pedestrian crossings at the 24<sup>th</sup> Street/New Hampshire Avenue intersection are shown in Figure 14.

### **Pedestrian Master Plan**

The District of Columbia Pedestrian Master Plan strives to make Washington, DC safer and more walkable by improving sidewalks, roadway crossings, and the quality of the pedestrian environment as well as by ensuring that the District's policies and procedures support walking.<sup>v</sup> The plan provides an overview of existing pedestrian conditions, recommends new pedestrian projects and programs, establishes performance measures, and provides a plan for implementation through 2018.

The Plan estimates areas of pedestrian activity and deficiency. Within the site vicinity, the majority of Washington Circle is designated as an area of high pedestrian activity and deficiency. Twenty-third Street and portions of Pennsylvania Avenue and Washington Circle contain moderate to high pedestrian activity and pedestrian deficiency.



24<sup>th</sup> Street & K Street (EB)  
South Leg



24<sup>th</sup> Street & K Street (EB)  
East Leg



24<sup>th</sup> Street & K Street (EB)  
West Leg

Source: <http://maps.google.com>

Figure 12  
Pedestrian Crossing at the 24<sup>th</sup> Street/K Street (EB) Intersection



New Hampshire Avenue & Washington Circle  
Washington Circle Leg



New Hampshire Avenue & Washington Circle  
New Hampshire Leg



K Street & Washington Circle  
K Street (EB) Leg

Source: <http://maps.google.com>

Figure 13  
Pedestrian Crossing at the New Hampshire Avenue/Washington Circle Intersection and  
K Street (EB) Washington Circle Intersection





24<sup>th</sup> Street & New Hampshire Avenue  
North Leg



24<sup>th</sup> Street & New Hampshire Avenue  
South Leg



24<sup>th</sup> Street & New Hampshire Avenue  
East Leg



24<sup>th</sup> Street & New Hampshire Avenue  
West Leg

Source: <http://maps.google.com>

Figure 14  
Pedestrian Crossing at the 24<sup>th</sup> Street/New Hampshire Avenue Intersection

The Plan provides pedestrian crash data for the years 2000 through 2006. Within the site vicinity, one pedestrian crash has occurred at the I Street/23<sup>rd</sup> Street intersection. Two to four pedestrian crashes have occurred at each of the following intersections:

- 24<sup>th</sup> Street/New Hampshire Avenue,
- 24<sup>th</sup> Street/I Street,
- New Hampshire Avenue/I Street, and
- Pennsylvania Avenue/Washington Circle.

Figure 15 summarizes the pedestrian activity and crashes in the study area.

As part of the Plan, eight priority corridors (one in each ward) were identified based on areas of heavy pedestrian traffic and deficient walking conditions. The priority corridor in Ward 2 is New York Avenue, from 15<sup>th</sup> Street, NW to Penn Street, NE.

## **PARKING**

In accordance with the approved Campus Plan, GW is required to maintain a minimum of 2,800 off-street parking spaces on its Foggy Bottom Campus.

Approximately 945 parking spaces (1,123 including valet capacity) will be displaced permanently as a result of the redevelopment of Square 55 (i.e., 1,252 self-parked spaces in the UPG plus 20 spaces in Lot 2 minus 327 self-parked spaces in new SEC garage or, including valet spaces, 1,482 spaces in the UPG plus 20 spaces in Lot 2 minus 349 spaces in the new SEC garage). Another 24 spaces will be lost permanently with the redevelopment of Square 39. The majority of those spaces will be relocated to other parking facilities on campus. Specifically, 362 new parking spaces (462 including valet capacity) will be designated for GW use in the Square 54 garage in the spring of 2011.

Additionally, a net increase of 357 spaces in the new Law Learning Center (LLC) garage (392 self-garage spaces plus 58 interim valet spaces minus 93 spaces currently on Square 103) will come on-line in the spring of 2012. Upon completion of LLC and SEC, the University will have approximately 3,400 total spaces (including valet), more than exceeding the required minimum of 2,800 off-street parking spaces.





## **TRANSPORTATION MANAGEMENT PLAN**

### **EXISTING TRANSPORTATION DEMAND MEASURES (TDM) MEASURES**

The GW Transportation Management Plan (TMP) was created as a comprehensive plan that promotes safe and efficient traffic operations within the campus, encourages alternate modes of transportation, and maximizes the use of the on- and off-street parking facilities to efficiently serve the campus parking demands. The campus-wide plan currently consists of the following measures:

1. Transportation Management Coordinator,
2. Public Transportation Pass,
3. GW Parking Facility Permits,
4. On-Campus Parking Pre-Tax Deductions,
5. Off-Campus Parking Pre-Tax Deductions,
6. Attendant Parking,
7. Carpool Programs,
8. Shuttle Bus Service Plan,
9. Car Sharing,
10. Technology Initiatives,
11. Web-based Transit Purchases,
12. Parking Management During On-Site Construction, and
13. Truck Management Program.

### **Transportation Management Coordinator**

In accordance with the approved Campus Plan, the University designated a Transportation Management Coordinator in the fall of 2006. The Transportation Management Coordinator is responsible for implementing and monitoring the TMP, including:

- Advising undergraduate students, faculty and staff of the various TMP initiatives through student and faculty/staff orientation programs;
- Marketing and promoting TMP initiatives through printed materials and online resources;
- Working with students, faculty and staff to evaluate appropriate locations for bike racks and lockers (including evaluation of bike storage facilities in connection with future University development projects) to encourage more members of the GW community to bike to campus; and
- Working with appropriate University offices to promote public transportation for special events on campus.

In the spring of 2010, the University combined the responsibilities for transportation and parking initiatives to allow for a comprehensive approach to campus transportation matters.

### **Public Transportation Pass**

The Foggy Bottom campus is served by the Foggy Bottom – GWU Metrorail station, conveniently located within the Campus, and numerous Metrobus lines. GW offers a pre-tax transportation benefits program to University employees (regular full-time and part-time) to promote the use of public transportation. This program (SmartBenefits) allows employees to purchase a SmarTrip Card, which can be used on Metrorail, Metrobus, and on MARC or VRE commuter trains.

GW also introduces all new students to the WMATA public transportation program during their orientation.

### **GW Parking Facility Permits**

Parking permits are issued to students, faculty, staff, residents, and physicians who drive and park on-campus. The permits are sold with monthly contracts or on an occasional/daily parking basis and are assigned to a specific parking facility. Freshman and sophomores are not permitted to bring cars to campus.

Visitors are required to pay hourly rate fees, but do not need to purchase a permit.

Discounted daily parking rates are offered to encourage faculty, staff, and students who do drive to park in University garages. Parking fees can be paid conveniently by payroll deduction or via funds deposited to the GWorld card.

### **On-Campus Parking Pre-Tax Deduction Program**

A pre-tax deduction for on-campus parking fees is offered to all regular GW employees.

### **Off-Campus Parking Pre-Tax Deduction Program**

This program allows employees who pay for parking at a Metro station or at a commercial parking facility to participate in a pre-tax parking program.

### **Attendant/Valet Parking**

When class attendance is high or when special events occur on campus, attendant/valet parking is available at specific parking facilities to provide additional parking spaces. Attendant/valet parking also will be used during the redevelopment of Square 39 and other site to ensure that the minimum parking requirement is met.

### **Carpool Programs**

Carpooling is encouraged at GW through the Carpool Program, which allows employees to park any car registered in their carpool group in one group-shared parking space in any parking facility. The University is enrolled in “NuRide,” a ride sharing program that encourages and rewards carpooling. Registered riders earn reward points that can be redeemed for gift cards, discounts, and event tickets.

### **Car Sharing**

The University actively promotes Zipcar at University fairs and events. Since 2007, GW affiliated Zipcar memberships have increased by more than 50 percent (including students, faculty, staff, and alumni). Since then, the University has worked closely with Zipcar to increase the number of Zipcars on campus. Currently, 19 Zipcars are located on the Foggy Bottom Campus.

### **Shuttle Bus Service Plan**

To alleviate the need for private automobile use on-campus and between campuses, GW provides four forms of campus transportation: the Colonial Express Shuttle, the Vern Express Shuttle, the Virginia Science and Technology Campus Shuttle and the University Police Department (UPD) Escort Service.

### **Technology Initiatives**

The University promotes the use of video conferencing, podcasts, online library resources, the Bb@GW on-line course management system (based on the Blackboard Learning System™), and administrative document management systems to reduce the need for physical movement to and between the Foggy Bottom and other GW campuses.

The University's website also provides links to Commuter Connections and other transportation resources.

### **Web-based Transit Purchases**

In accordance with the Campus Plan approval, GW now provides a link from its website to Metro pass sales information where members of the University community can purchase transit fare media, including SmarTrip fare cards online.

### **Parking Management During On-Site Construction**

The University has a parking management plan in place to ensure that campus parking demands are adequately met during construction. Specifically, 362 (462 including valet capacity) GW designated spaces in the Square 54 garage will come on-line prior to demolishing the UPG. Additionally, the University plans to lease interim spaces at the Kennedy Center and additional spaces in the Square 54 garage during construction of the SEC and other redevelopment projects.

While leased parking at the Kennedy Center is in place, users who choose not to walk can ride the Kennedy Center shuttle during its hours of operation. GW is exploring the possibility of providing a shuttle to transport people from the Kennedy Center to the Foggy Bottom Campus when the Kennedy Center shuttle is not in operation.

### **Truck Management Plan**

The University currently has a truck management plan in place with the goal of reducing the impact of GW delivery trucks on the campus roadways. Preferred truck routes were developed in conjunction with DDOT to identify the main roadways that delivery vehicles should use to access the GW loading facilities, while discouraging the use of smaller and narrower neighborhood streets. GW is committed to developing specific truck management plans for new developments on campus.

## GW TRANSPORTATION CHARACTERISTICS

A University-wide transportation survey was conducted during the spring semester of 2010 in order to identify the existing travel behaviors of the GW community and to assess the effectiveness of its Transportation Management Plan. The survey was distributed electronically to 800 faculty, 1,300 staff, and 6,000 students at the Foggy Bottom, Mount Vernon, and Virginia Science and Technology Campuses. The number of respondents from the Foggy Bottom Campus is presented in Table 6.

Table 6  
Summary of Respondents  
Foggy Bottom Campus

Type of Response	Number of Responses
Faculty	294
Staff	536
Students	854
Total	1,684
Numerous respondents provided only partially complete surveys. The numbers reflected in this table include both complete and partially complete surveys.	

### Mode Choice

Based on the survey data, an estimated 51 percent of Foggy Bottom students live on campus. The remaining 49 percent commute to campus. Faculty, staff, and students who commute to campus were asked about their mode of transportation to campus. These data are summarized in Table 7.

As shown in Table 7, 29 percent of the faculty and staff drive alone. Eight percent carpool and 12 percent walk, jog, or bike to campus. The majority of the faculty and staff, 47 percent, commute via some form of public transportation.

The mode split of students commuting to the Foggy Bottom Campus is summarized in Table 7. Just 17 percent of students who commute drive alone to campus while three percent carpool. The majority of commuter students, 76 percent, commute to campus via a non-auto mode of transportation (i.e., rail, bus, walk/jog, or bike).

### Carpooling Characteristics

The average vehicle occupancy for those who travel by automobile was determined based on the number of persons in each respondent's carpool. The carpooling data for faculty/staff and students also are summarized in Table 7.

Based on the data, the average vehicle occupancy for faculty and staff is 1.25 persons per vehicle. Based on the student commuter data, the average vehicle occupancy for commuter students is 1.17 persons



per vehicle.

Table7  
Mode Split Summary  
Foggy Bottom Campus

Mode	Faculty/Staff		Student Commuters	
	Number	Percent	Number	Percent
<b>Auto</b>				
Drove Alone	242	29%	139	17%
Motorcycle	1	0%	2	0%
2 person Carpool	56	7%	18	2%
3 person Carpool	7	1%	5	1%
4-6 person Carpool	2	0%	0	0%
7+ person Carpool	0	0%	0	0%
Sub-total	308	37%	164	20%
<b>Non-auto</b>				
Commuter Rail	309	37%	431	53%
Light Rail	21	3%	8	1%
Public Bus	53	6%	65	8%
Private Bus	8	1%	4	1%
Walk/Jog	84	10%	63	8%
Bicycle	17	2%	39	5%
Other	26	3%	28	3%
Sub-total	518	62%	638	79%
No Response	4	1%	9	1%
Total	830	100%	811	100%

## Parking Location

Faculty, staff, and students affiliated with the Foggy Bottom Campus were asked to indicate their parking location. Table 8 summarizes the responses. As shown, 83 percent of faculty/staff who drive to campus and 44 percent of students who drive to campus park in a GW lot or garage. Approximately nine percent of faculty/staff and 47 percent of students who drive to campus park on the street. The remainder park in a private lot or garage.

Table 8  
Parking Location Summary  
Foggy Bottom Campus

Location	Faculty/Staff		Students	
	Number	Percent	Number	Percent
GW Facility	239	83%	97	44%
Private Facility	24	8%	21	9%
Street	25	9%	103	47%
Total	288	100%	221	100%

## CONCLUSIONS

In conclusion, the new School of Public Health and Health Services proposed on Square 39 is not anticipated to have a significant impact on the traffic operations in the area. Specifically:

- No parking will be provided in conjunction with the proposed redevelopment; therefore, vehicular impacts in the immediate vicinity of the site are expected to decrease;
- The departments and functions that will relocate to the new SPHHS currently are housed in several buildings within a three to four block radius of the site. Due to the close proximity of these buildings to the new site, mode choices, travel patterns, and behaviors are not anticipated to alter;
- The new SPHHS will be well served by an extensive multi-modal transportation system, including rail, public bus, University shuttles, bicycle and pedestrian facilities, and a connected network of arterial, collector, and local streets;
- The loss of 24 spaces is not expected to have a significant impact on the overall parking supply for the University;
- GW currently has an extensive TMP that promotes safe and efficient traffic operations within the campus, encourages alternate modes of transportation, and maximizes the use of the on- and off-street parking facilities to efficiently serve the campus parking demands;
- In accordance with the GW's TMP, the proposed SPHHS will encourage alternate modes of transportation by eliminating parking on site, providing ample bicycle parking, and providing shower and changing facilities on-site for those who choose to walk, bike, or jog to the facility;

- A site specific truck management plan will be implemented for the proposed SPHHS to minimize the impact of the building's truck operations; and
- As a result of the GW's aggressive TMP, the University community widely uses alternative modes of transportation. Specifically, 67 percent of faculty and staff at the Foggy Bottom Campus commute via a carpool or non-auto mode of transportation. Of the students who commute to campus, 79 percent do so via a carpool or non-auto mode of transportation.

## REFERENCES

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- <sup>i</sup> Foggy Bottom-GWU Station Second Entrance Demand Analysis, Final Report, Washington Metropolitan Area Transit Authority, March 1, 2007.
  - <sup>ii</sup> Ibid.
  - <sup>iii</sup> District Department of Transportation, District of Columbia Bicycle Master Plan, April 2005.
  - <sup>iv</sup> Ibid.
  - <sup>v</sup> District Department of Transportation, District of Columbia Pedestrian Master Plan, May 2008, [[http:// www.dc.gov/DC/DDOT/On+Your+Street/Bicycles+and+Pedestrians/Pedestrians/Pedestrian+Master+Plan](http://www.dc.gov/DC/DDOT/On+Your+Street/Bicycles+and+Pedestrians/Pedestrians/Pedestrian+Master+Plan)].