

# 10<sup>th</sup> Street NW Curbside Management Plan

## Recommended Improvements Technical Memorandum

**Final  
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**d.**  
*District Department of Transportation*





## ACKNOWLEDGEMENTS

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## INTRODUCTION

### Background

10<sup>th</sup> Street NW has great potential as a connecting corridor within downtown Washington, DC tying together the National Mall, retail, and employment centers. While less prominent than adjacent streets such as 9<sup>th</sup> Street and 12<sup>th</sup> Street, its tourist attractions draw a high volume of pedestrian and tour bus traffic. 10<sup>th</sup> Street hosts major facilities that attract large numbers of visitors and employees. The 500 block alone includes the Ford's Theatre, Hard Rock Café, and the Washington Welcome Center.

The roadway and sidewalks are in excellent condition, with attractive street furniture and trees in many areas. The street has a comfortable pedestrian scale and the curbside accommodates a range of supporting activities.

The fundamental elements to create an active urban environment are already present on 10<sup>th</sup> Street. Still, the corridor is limited by challenges in balancing the need for pedestrians, parking, tour buses, loading, and moving traffic. These are issues that are confronted by other streets downtown, but the challenges here are heightened due to the tourist destinations in the corridor.

Stakeholders, including the District Department of Transportation (DDOT), the Downtown Business Improvement District (BID), and community leaders believe that 10<sup>th</sup> Street could be a dynamic urban destination, and have asked for a reevaluation and update of the curbside management and operational strategies to ensure that they are conducive to enhancing activity and connectivity. In response to these requests, DDOT commissioned the 10<sup>th</sup> Street NW Curbside Management Plan.



Figure 1: Destinations in the 10<sup>th</sup> Street corridor



Figure 2: Ford's Theatre

## Project Goals

DDOT wants to improve the transportation management of the 10<sup>th</sup> Street corridor in downtown Washington, DC. Currently, conflicts between many competing travel modes prevent the optimal functioning of this street.

DDOT tasked Parsons Brinckerhoff (PB) with developing curbside management strategies to improve operations in the corridor. The strategies should achieve the following project goals:

- To manage the curbside usage more efficiently, addressing the needs of tour buses, deliveries, and automobiles;
- To balance the present and future needs of street-level uses, paying close attention to the increased pedestrian, bicycle, and Segway activity; and
- To stress transit connections such as Metrobus and the nearby Metrorail stations.

The plan recommends short-term improvements that could be completed without roadway reconstruction and are able to be implemented within an approximate 12-month period.

The first sections of this technical memorandum provide a summary of the findings of the existing conditions of the study area. Subsequent sections outline key issues, competing needs, potential strategies, and options for implementation. The memorandum concludes with a set of recommended strategies with a timeline and responsibilities for implementation.



Figure 3: 10th Street looking north from E Street



Figure 4: 10th Street curbside demand

## Study Area

The study area for this project is in downtown Washington and is bounded by New York Avenue to the north, Constitution Avenue to the south, 11<sup>th</sup> Street NW to the west, and 9<sup>th</sup> Street NW to the east. This area of 10<sup>th</sup> Street NW, herein referred to as the 10<sup>th</sup> Street corridor, is located in Ward 2 of the District. While the study focuses on 10<sup>th</sup> Street and its adjacent land uses, the surrounding street network is included in the study area, shown in Figure 6, as they provide neighborhood circulation. Furthermore, unless otherwise specified, all streets referenced or discussed in this report refer to streets in the northwest (NW) quadrant of the District.

## Stakeholder Coordination

Two meetings were held with project stakeholders to provide updates on project progress and to obtain input on the project findings. The following government agencies, community organizations, and private companies with an interest in the corridor participated in the meetings:

- Alston & Bird LLP
- Blagden Alley Association
- Central Parking System
- Downtown Neighborhood Association
- Ford's Theatre
- Hines
- H.L.Carter + Associates
- Madame Tussauds Wax Museum
- National Capital Planning Commission
- National Park Service
- Old Town Trolley
- Penn Quarter Neighborhood Association
- Vendors Caucus
- Tishman Speyer
- Washington Metropolitan Area Transit Authority

The first meeting was held on January 27, 2009 to provide stakeholders with a summary of the findings from the project's Existing Conditions task, identify any additional issues, and provide stakeholders with an opportunity to voice their concerns. The second meeting was held on May 18, 2009 to provide stakeholders with preliminary recommendations and the opportunity to comment on proposed strategies. These meetings are discussed in greater detail in Appendix A.



Figure 5: Ford's Theatre ad on 10th Street



**Figure 6: Study Area**  
Source: DC OCTO (2008)

## EXISTING CONDITIONS

The first task of this study was the compilation of information and data on the transportation system in the study area, including land uses, existing transportation network, and curbside management along 10<sup>th</sup> Street. Data sources included field visits and data provided by the Downtown BID and DDOT.

In December 2008, DDOT distributed a Draft Existing Conditions Technical Memorandum to stakeholders. This Final Technical Memorandum addresses DDOT and stakeholder comments.

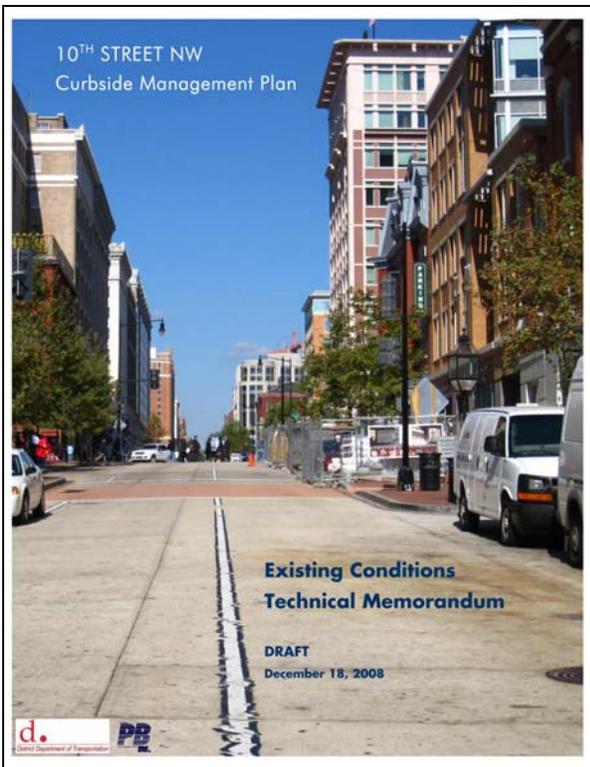


Figure 7: Existing Conditions Technical Memorandum

### Patterns of Activity

Patterns of activity in the study area change throughout the day and with the seasons.

There is significant seasonal variation in the corridor. Tourism in the Washington area peaks in the summer months, driven to some extent by school calendars. However, this is somewhat balanced by student tourist activity during the remainder of the year. According to the Downtown BID, peak times along 10<sup>th</sup> Street are between March and July, and September and October.

During peak seasons, visitor traffic via tour buses and pedestrians at the historic sites reaches its peak volume during the midday periods; however, there is a constant presence of visitors throughout the day. Ford's Theatre is the main generator of traffic in the corridor not only as a destination but as a meeting place for tour groups. According to the business owners in the area, visitor traffic peaks around 7 AM and extends until at least 6 PM, at which time the activities of the local restaurants pick up.

Commuter traffic comprises a smaller share of corridor traffic but peaks during the morning and evening periods, with heavy pedestrian traffic between major employment centers and surrounding transit stations.



Figure 8: Sidewalk activity on 10<sup>th</sup> Street

# Land Use

## Immediate Study Area

### New York Avenue NW to H Street NW

Although New York Avenue is the northern boundary of the study area, currently, the north-most limit of the 10<sup>th</sup> Street corridor ends at H Street. Between New York Avenue and H Street, the Old Convention Center Site is home to a large public surface parking lot and the Art Walk, an artistic pedestrian walkway that aligns with 10<sup>th</sup> Street. Construction of CityCenterDC, a major new mixed-use development, is scheduled to start in fall 2009 on this site. The project would restore 10<sup>th</sup> Street between New York Avenue and H Street.

### H Street NW to G Street NW

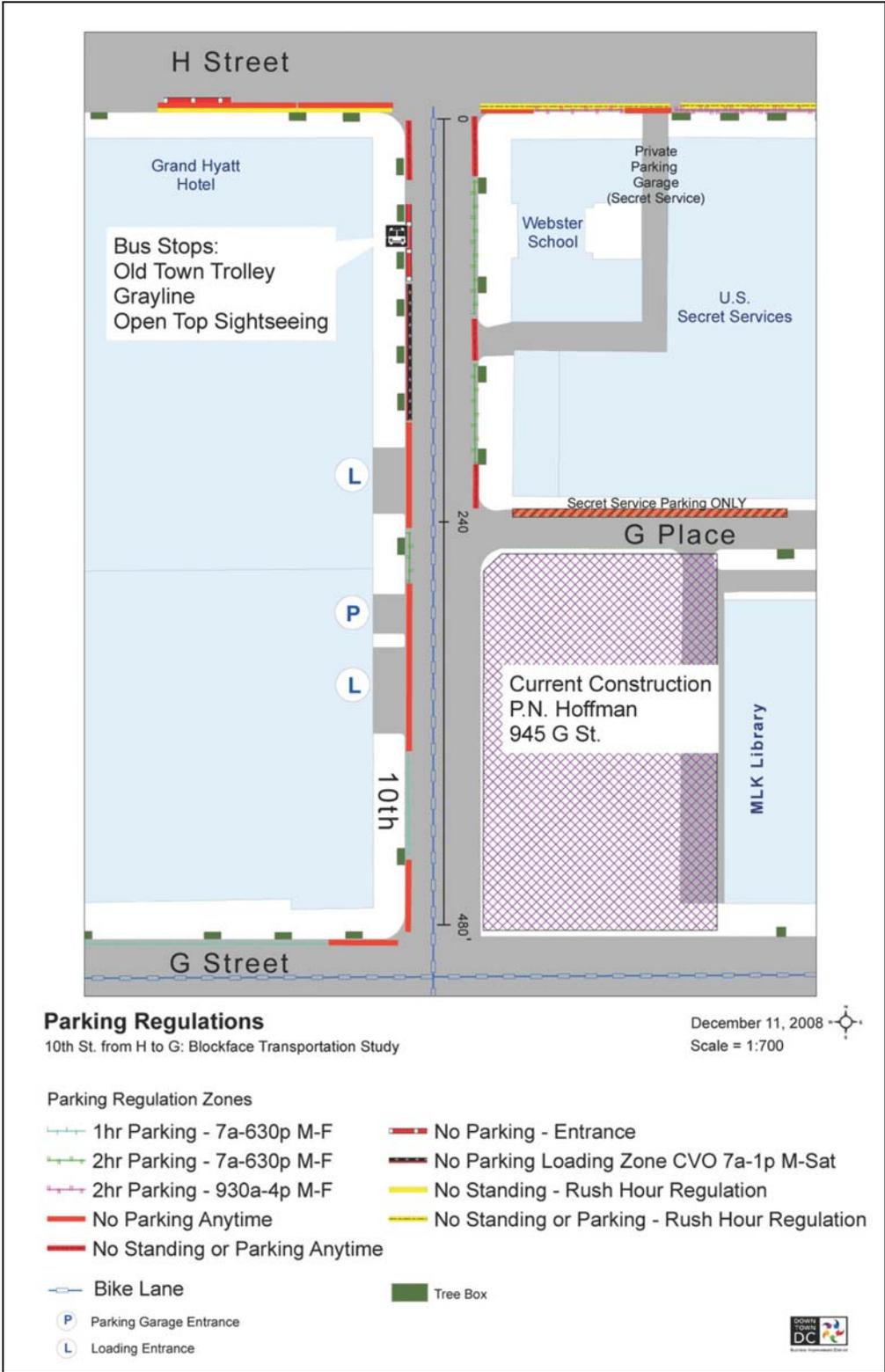
In this section of the corridor, shown in Figure 11, the Grand Hyatt Hotel, a parking garage, and office buildings are located on the west side of 10<sup>th</sup> Street. G Place bisects the east side of the 700 block, where the U.S. Secret Service Building and the 945 G Street development site currently exist. The development at 945 G Street is planned to be a multi-use building that will host the First Congregational Church on the first two floors.



Figure 9: Existing Art Walk at the Old Convention Center site between New York Avenue and H Street



Figure 10: Construction at corner of 10th Street and G Street



**Figure 11: H Street to G Street**  
 Source: Downtown BID (2008)

### G Street NW to F Street NW

The 600 block features establishments of different uses (Figure 15). The Madame Tussauds Wax Museum and a retail store (West Elm) are located on the west side of 10<sup>th</sup> Street. On the east side of the block is St. Patrick's Church, a parking garage, and Carroll Square, a mixed-use development that includes office, retail, and art galleries.

### F Street NW to E Street NW

This section of the 10<sup>th</sup> Street corridor, the 500 block, includes the greatest number of retail and tourist destinations in the study area, as shown in Figure 16. The east side of 10<sup>th</sup> Street has several retail/office developments, the renovated Ford's Theatre, and a large restaurant building. A small parking garage is located under one of the office buildings at 950 F Street.

Located on the west side of the street are numerous retail developments including the future 1000 F Street office/retail development, several restaurants, two to three sidewalk vendors, the Petersen House, the Washington Welcome Center, and the Old Town Trolley kiosk.



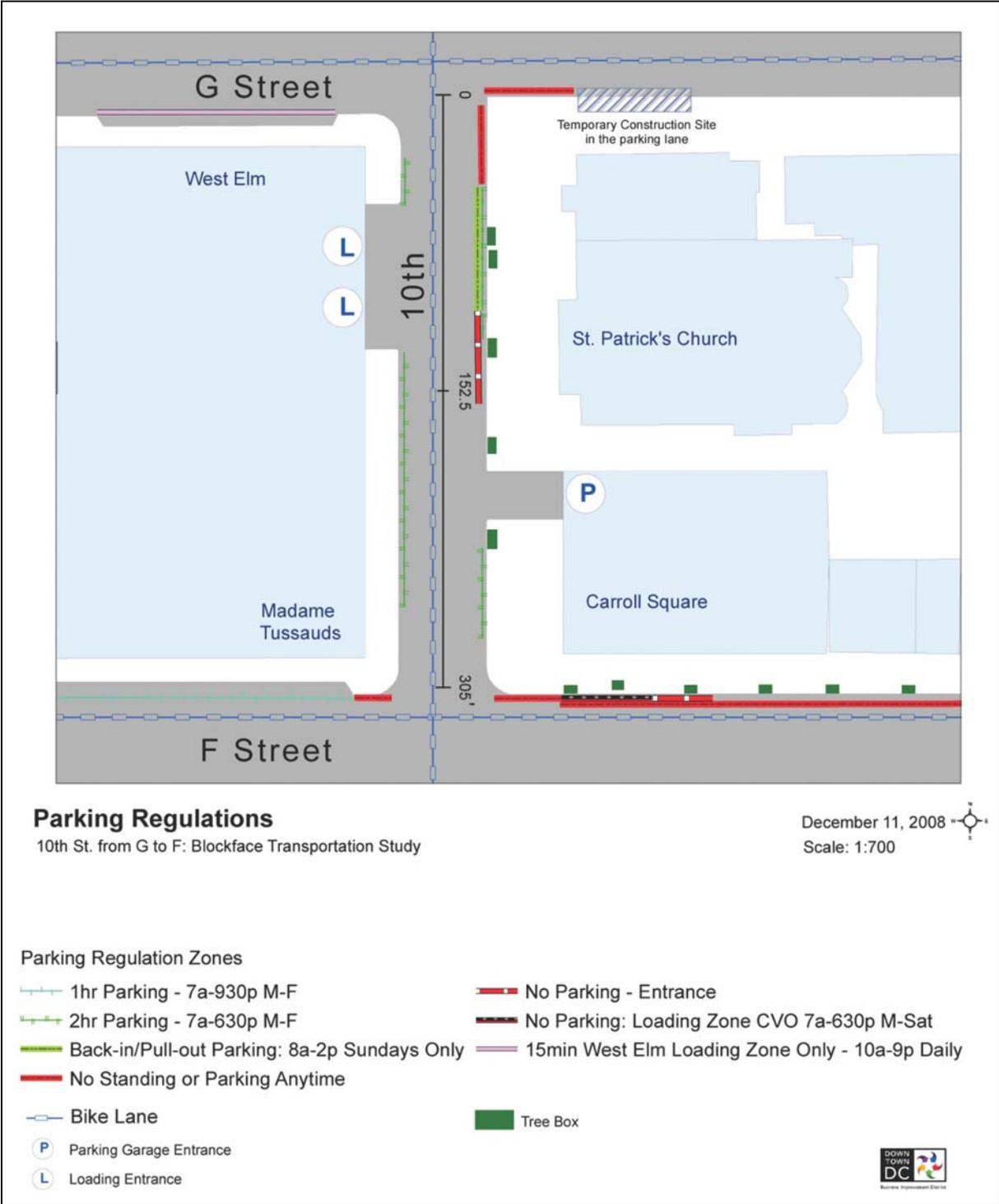
Figure 12: Corner of 10<sup>th</sup> Street and F Street, and Madame Tussauds Wax Museum

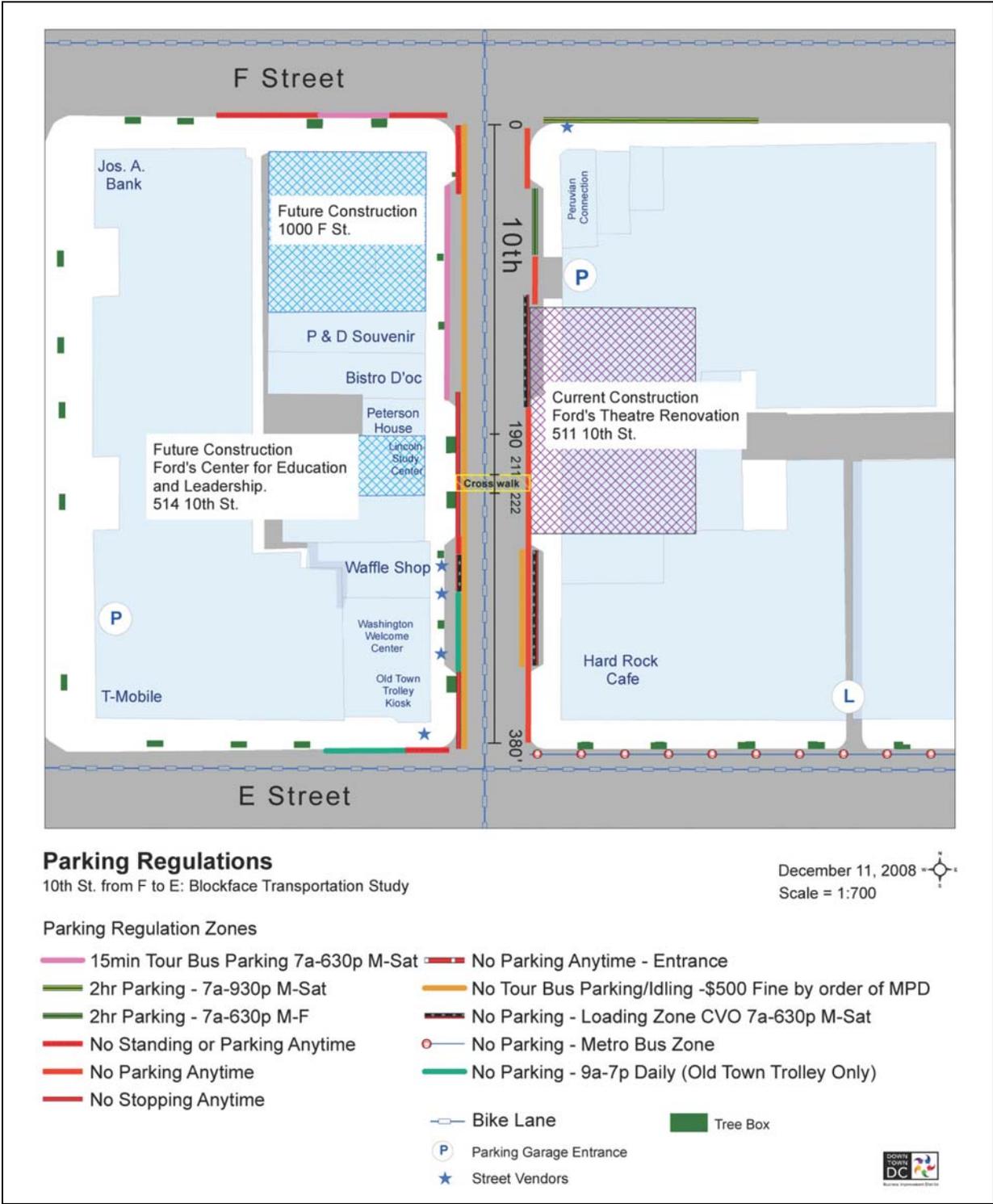


Figure 13: The Petersen House



Figure 14: Public parking garage between E Street and F Street





**Figure 16: F Street to E Street**  
 Source: Downtown BID (2008)

### E Street to Pennsylvania Avenue

The entire east side of the 400 block is occupied by the FBI headquarters. On the west side of the street are several cafés, parking garages, and an office building (1001 Pennsylvania Avenue) located at the corner of 10<sup>th</sup> Street and Pennsylvania Avenue, hosting the Ten Penh restaurant on the ground level (Figure 19).

### Pennsylvania Avenue to Constitution Avenue

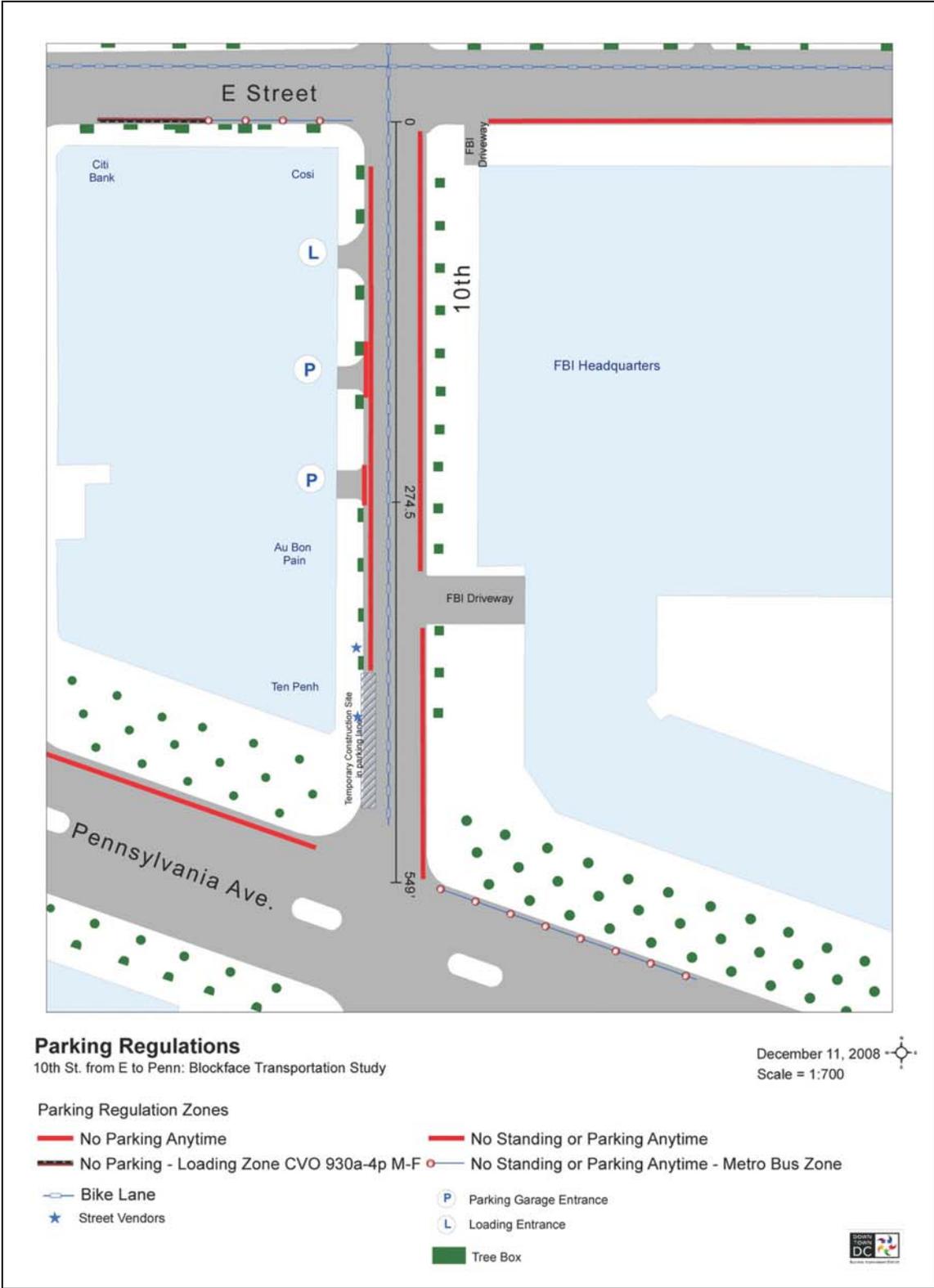
The southernmost block of the study area is occupied by federal and public buildings. The Old Post Office and the IRS buildings are located on the west side, and the Department of Justice headquarters is located on the east side (Figure 20). This stretch of 10<sup>th</sup> Street also hosts a WMATA bus terminal with facilities that allow Metrobuses to circulate.



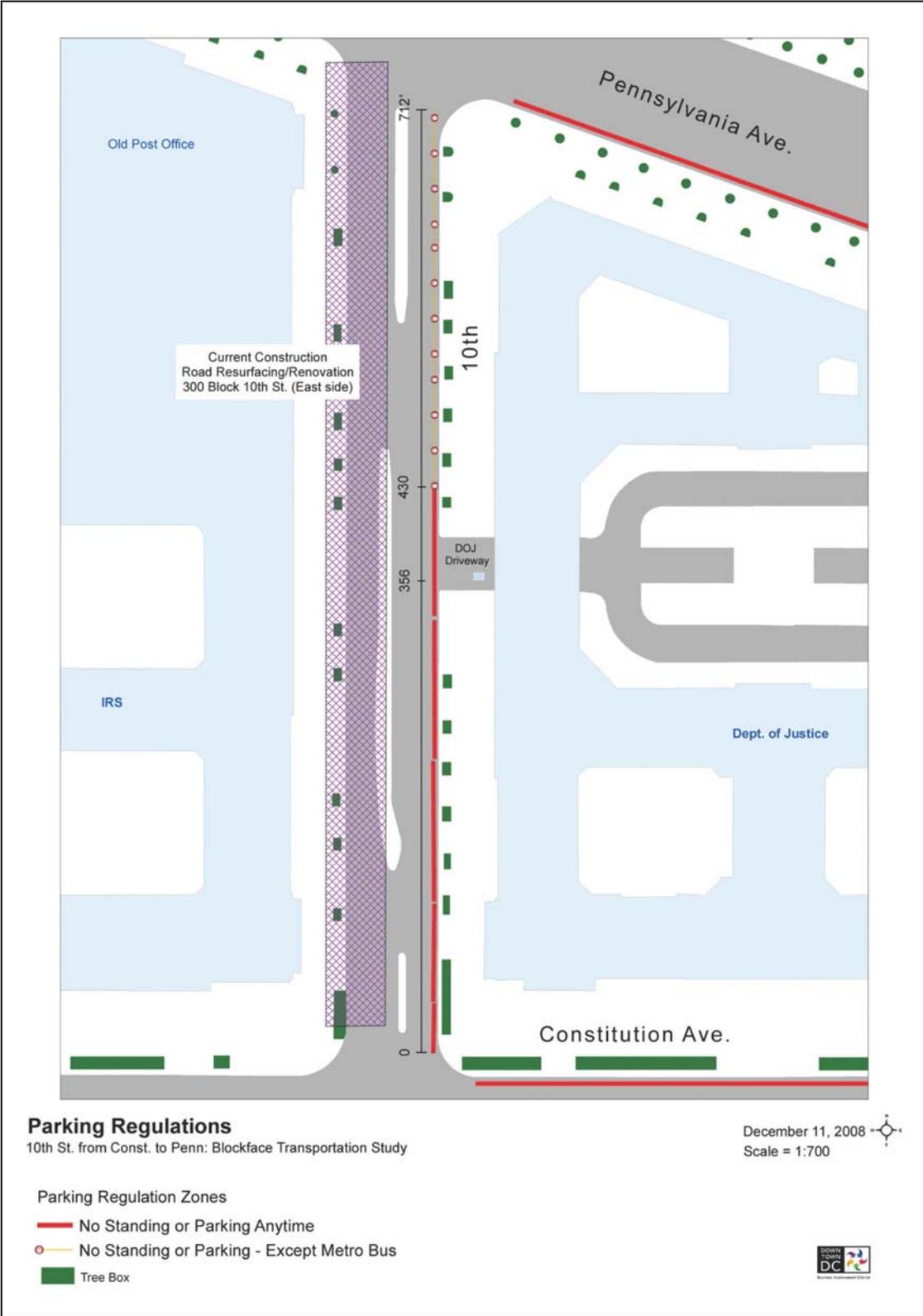
**Figure 17: Pedestrian use of 10<sup>th</sup> Street between E Street and Pennsylvania Avenue**



**Figure 18: 10<sup>th</sup> Street between Pennsylvania and Constitution Avenues**



**Figure 19: E Street to Pennsylvania Avenue**  
 Source: Downtown BID (2008)



## Surrounding Area

The 10<sup>th</sup> Street corridor is surrounded by one of the District's most active areas, having the new Convention Center to the north, federal/government buildings and museums to the south, Gallery Place-Chinatown to the east, and the core of the downtown business district to the west. The proximity to a variety of active land uses provides an opportunity to promote walking in the study area.

### Retail

There are numerous major retail uses surrounding the 10<sup>th</sup> Street corridor. Major-name stores in the area include Macy's on 12<sup>th</sup> and G Streets and H&M on 11<sup>th</sup> and F Streets. The Gallery Place-Chinatown area, which has even more retail activity, is located only a few blocks east of 10<sup>th</sup> Street.



Figure 21: Retail around 10th Street

### Restaurants

There are several restaurants around the study area; they range from small coffee shops to large chain restaurants such as ESPN Zone at 11<sup>th</sup> and E Streets. Also, the Gallery Place-Chinatown area located just a few blocks from 10<sup>th</sup> Street has one of the widest ranges of restaurants in the District.

### Tourism

The 10<sup>th</sup> Street corridor is surrounded by popular tourist areas. To the north, the Washington Convention Center attracts many visitors from outside the city for conferences and other events. To the east, tourists visit the Gallery Place-Chinatown area's attractions including the Verizon Center. Just south of the corridor, tourists visit the numerous museums, including the Smithsonian and Spy Museums and the National Mall.



Figure 22: Downtown Heritage Trail sign near 10th Street

## Approved Land Use Changes

Currently, the CityCenterDC site (former Old Convention Center site) is located at the north end of the study area between H Street and New York Avenue and is used as a parking lot. The District has approved the plan to redevelop the site, and construction is scheduled to start in 2009. The proposed plan for CityCenterDC includes the development of a 462,000 square-foot office building, 252,000 square-foot retail space, 674 dwelling units, and an approximately 1,600-space parking garage.

## Transportation Network

### Pedestrians

There is a strong pedestrian presence on 10<sup>th</sup> Street, but most traffic is localized to one or two blocks and few travel the entire length of the corridor. Pedestrian volumes are generally moderate, with a few locations of higher activity. According to the *District of Columbia Pedestrian Master Plan*, many streets in the study area are considered to be low-pedestrian-activity and low-deficiency streets. This indicates that there is an opportunity for greater pedestrian activity as the corridor has adequate infrastructure, such as two travel lanes, low traffic volumes, closely spaced signalized intersections that facilitate pedestrian crossing, and wide and well-maintained sidewalks, which could accommodate greater number of pedestrians.

The block between F and E Streets, the 500 block, is a major hub of pedestrian activity as it contains numerous tourist attractions—Ford’s Theatre, the Petersen House, the Old Town Trolley Visitor Center, Hard Rock Café, as well as restaurants, souvenir shops, and sidewalk vendors. Typically, pedestrians do not continue on to other blocks because a significant portion of visitors arrive and depart on tour/charter buses instead of on foot.



Figure 23: Visitors waiting on sidewalk between F and E Streets



Figure 24: Sidewalk vendor on 10th Street between F and E Streets



Figure 25: Pedestrians on 10th Street

The 10<sup>th</sup> Street corridor has excellent pedestrian facilities. The sidewalks are relatively wide and in good condition. Every intersection along the corridor, except for G Place, has traffic signals, pedestrian countdown signals, marked crosswalks, and ramps compliant with the Americans with Disabilities Act (ADA).

10<sup>th</sup> Street’s intersections with H Street, G Street, and Constitution Avenue have standard marked crosswalks. There is a midblock, high-visibility crosswalk between Pennsylvania and Constitution Avenues. This facilitates pedestrian circulation at the Metrobus terminal.

10<sup>th</sup> Street’s intersections with F Street, E Street and Pennsylvania Avenue have brick paved crosswalks. The 500 block was recently reconstructed with intersection bulbouts, wider sidewalks, and a signalized and brick paved midblock crosswalk in front of Ford’s Theatre.

The intersection of 10<sup>th</sup> Street and G Place does not have any signals or marked crosswalks, but it does have a standard crosswalk and ADA ramps across G Place on the east side of 10<sup>th</sup> Street.

Generally, the sidewalks in the corridor are continuous and unbroken by driveways or other curb cuts, but there is a cluster of curb cuts in the block between E Street and Pennsylvania Avenue that detracts from the pedestrian environment by introducing potential pedestrian-vehicle conflicts.



Figure 26: F Street crosswalk and ADA ramp

Table 1: Curb Cuts along 10<sup>th</sup> Street

Block	No. Curb Cuts
H to G Streets	4
G to F Streets	2
F to E Streets	1
E Street to Pennsylvania Avenue	4
Constitution to Pennsylvania Avenues	1

Between E and G Streets, there are relatively few curb cuts. The blocks located further north and south are less pedestrian-oriented due to the lack of ground-level attractions, vehicular conflict points caused by multiple curb cuts, and security bollards that impede pedestrian flow.

DDOT’s *District of Columbia Pedestrian Master Plan* identified the section of New York Avenue north of 10<sup>th</sup> Street as a priority corridor for pedestrian improvements. The majority of the 10<sup>th</sup> Street study area is not part of a priority corridor.



Figure 27: Curb cuts on 10<sup>th</sup> Street

## Bicyclists

10<sup>th</sup> Street has a southbound bike lane from H Street to Pennsylvania Avenue, connecting to bike lanes on G and E Streets. The lane markings on 10<sup>th</sup> Street are not always visible and the lane does not include the standard bicyclist symbol. Another nearby bike lane is the shared bus-bike lane on 9<sup>th</sup> Street. See Appendix C for the location of bike lanes in the study area.

In 2005, the *District of Columbia Bicycle Master Plan* classified the existing bicycle facilities in the corridor as level of service (LOS) D and E. However, the city has significantly improved cycling conditions since that time. The bike lanes on G and E Streets are recent additions to the District's network. Although 10<sup>th</sup> Street has a dedicated bike lane, double-parked vehicles and buses frequently block the path for cyclists. With the competing demands for street space, the bike lane does not function well.

The bicycle plan also calls for bike lanes on Pennsylvania Avenue. Plans for CityCenterDC include two-way bike lanes on 10<sup>th</sup> Street between New York Avenue and H Street.

According to the *District of Columbia Bicycle Master Plan* (2005), a very small proportion—between 0.5 and 1 percent—of people who work in the 10<sup>th</sup> Street corridor commute to work by bicycle. However, field observations reveal that a substantial number of cyclists travel through the corridor.

SmartBike DC, the District's bike-sharing program, has stations near the corridor. The bicycles can be rented at Metro Center at 12<sup>th</sup> and G Streets, and at Gallery Place at 7<sup>th</sup> and F Streets.



Figure 28: Vehicle blocking the 10<sup>th</sup> Street bike lane

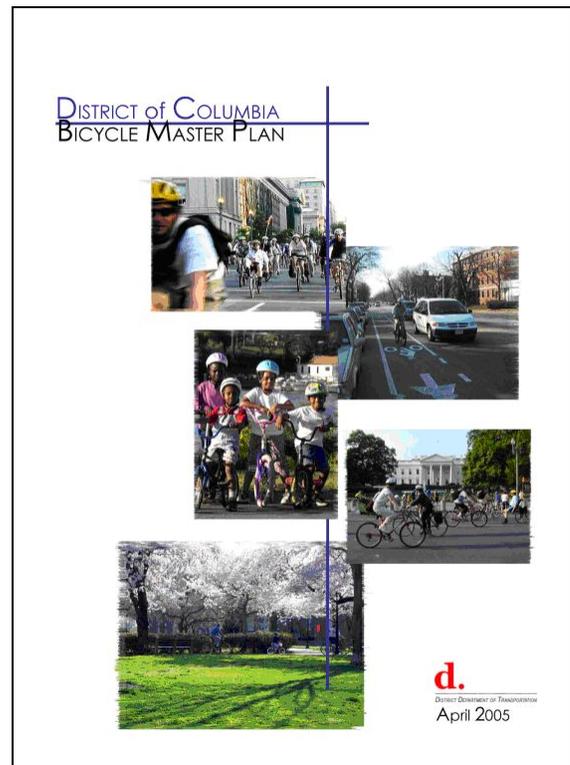


Figure 29: DC Bicycle Master Plan

## Transit

The 10<sup>th</sup> Street corridor is located in a central area of the District with excellent transit access. Transit accounts for a substantial portion of the mode of travel to the study area.



Figure 30: Transit options near the corridor

### Metrorail

There are four Metro Stations located within three blocks of the 10<sup>th</sup> Street corridor. Two of the four are major transfer stations, providing direct service to the study area from other parts of the region. The proximity of the stations facilitates access to all five Metrorail lines.

#### *Metro Center*

The closest Metro Center station entrance is located at 11<sup>th</sup> and G Streets. Metro Center is one of the busiest stations in the Metro system with 29,000 average weekday boardings in 2005. It is a transfer point for the Orange, Blue, and Red Lines.

### *Gallery Place-Chinatown*

The closest Gallery Place station entrance is located at 9<sup>th</sup> and G Streets. Gallery Place is also a major transfer station connecting the Red, Green, and Yellow Lines. In 2005, an average of 19,500 passengers boarded at this station on weekdays.

### *Federal Triangle*

The entrance to the Federal Triangle station is located on 12<sup>th</sup> Street between Pennsylvania Avenue and Constitution Avenue. The Orange and Blue Lines serve this station, which had about 11,000 boardings per weekday in 2005.

### *Archives-Navy Memorial- Penn Quarter*

The Archives-Navy Memorial-Penn Quarter station is located at 7<sup>th</sup> Street and Pennsylvania Avenue. The Green and Yellow Lines serve this station, which recorded approximately 8,500 passenger boardings per weekday in 2005.



Figure 31: Metro Center station entrance at G and 11<sup>th</sup> Streets

**Metrobus**

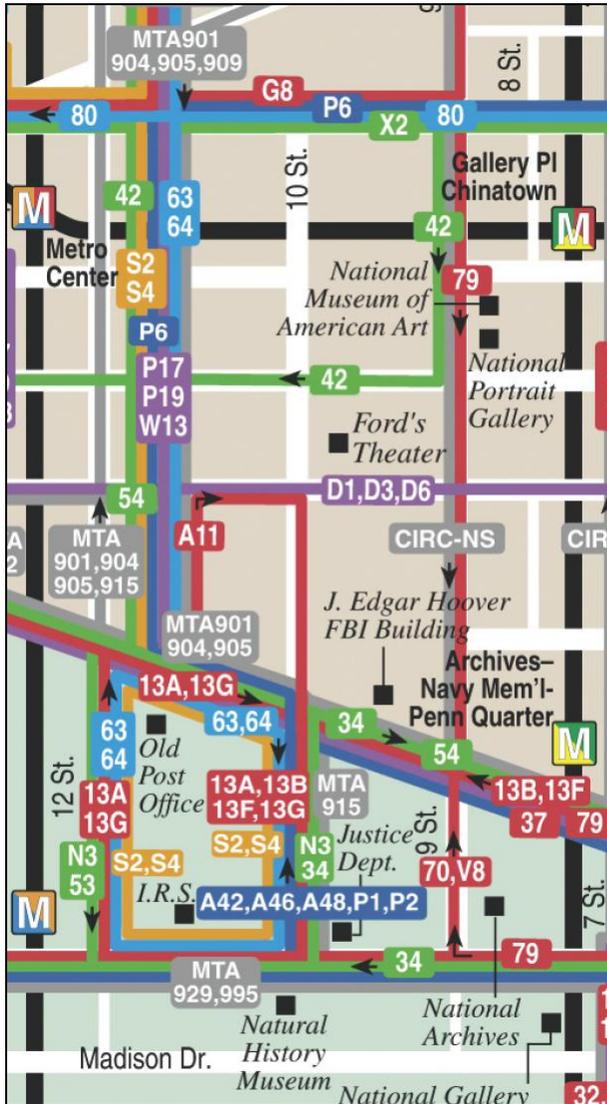
As shown in Figure 32, WMATA provides Metrobus service along some of 10<sup>th</sup> Street within the study area. Although there are no continuous routes through the corridor, one of WMATA’s major Metrobus terminals is at the south end of 10<sup>th</sup> Street.

The District has recently reconstructed this terminal between Pennsylvania and Constitution Avenues to provide bus-only lanes and customized medians to allow easy circulation and idling space for buses transiting from all over the Washington metropolitan area. Metrobus routes utilizing this terminal include:

**Table 2: Metrobus routes at 10<sup>th</sup> Street terminal**

Metrobus Line	From/To
13A, 13B, 13F & 13G	Pentagon Metro Station and weekend service to Reagan National Airport
34	Naylor Road Metro Station
64	Fort Totten Metro Station
63	Takoma Metro Station
A42, A46 & A48	Southern Avenue and South Capitol Street SE
N3	Friendship Heights Metro Station
P1 & P2	Anacostia Metro Station and Rhode Island Avenue – Brentwood Metro Station
S2 & S4	Silver Spring Metro Station
MTA 915*	Commuter bus line between Howard County, Maryland and Navy Yard Metro Station in DC.

The combination of four Metrorail stations and multiple Metrobus routes from all over the region provides excellent access for residents, employees, and visitors to the 10<sup>th</sup> Street corridor and surrounding area.

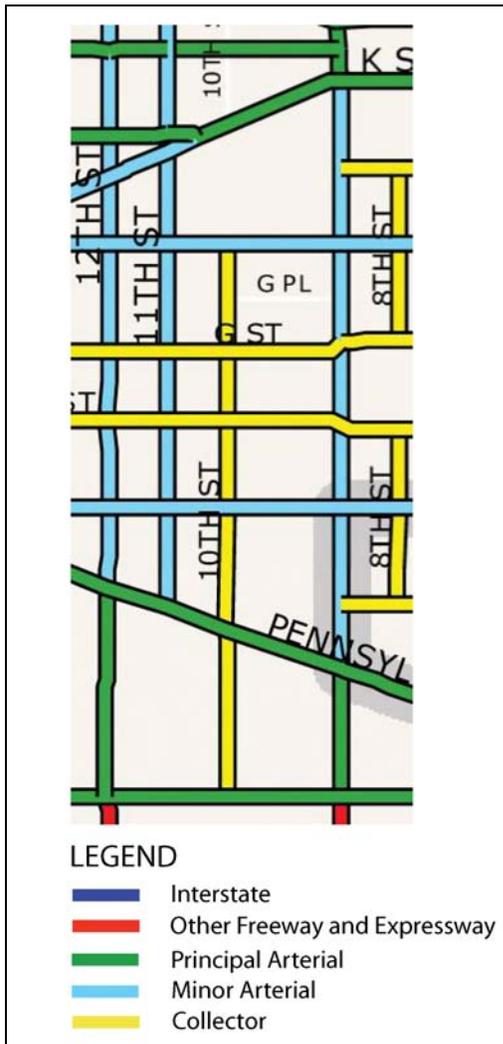


**Figure 32: Existing Metrobus Network**  
 Source: WMATA (2008)

## Automobiles

### Roadway Classification

Most of the roadways in the study area carry lower traffic volumes than other downtown streets and are classified as collector roads — 10<sup>th</sup> Street, G Street, F Street NW—or as minor arterials—H Street, E Street, 11<sup>th</sup> Street and 9<sup>th</sup> Street NW. The major avenues crossing the corridor—New York, Pennsylvania, and Constitution Avenues—are principal arterials and carry a greater volume of traffic. Though 10<sup>th</sup> Street currently carries a relatively low volume of automobile traffic, this could change once CityCenterDC is developed and the street is reconnected through the site.



**Figure 33: Existing Roadway Classifications**  
 Source: DDOT (2006)

### Roadway Characteristics

For most of its length, 10<sup>th</sup> Street is a one-way southbound street with two through lanes, one bike lane, and two parking lanes. Some blocks in the corridor (including the block between G Place and G Street) are under construction and as a result, parking lanes are blocked. The block between Pennsylvania and Constitution Avenues has two-way traffic operation. The majority of 10<sup>th</sup> Street is approximately 45 feet wide from curb to curb, and all of its intersections—with the exception of G Place—are signalized.

### Traffic Volumes

10<sup>th</sup> Street carries between 3,100 and 4,200 vehicles per weekday as shown in Figure 34. This volume is significantly less than the parallel streets, due largely to the fact that the street currently does not extend beyond H Street and Constitution Avenue, limiting the usage primarily to local traffic.

A study performed by Gorove/Slade estimated that CityCenterDC would generate approximately 6,300 vehicular trips per day (503 AM peak-hour and 681 PM peak-hour trips), to be distributed on the adjacent street network. The completion of CityCenterDC could increase traffic on 10<sup>th</sup> Street, due in part to the trips generated by the development, but also because of the creation of a potential new through route once the roadway is connected between H Street and New York Avenue.



**Figure 34: Existing Traffic Volumes**  
 Source: DDOT (2006)

**Traffic Safety Data**

The *District of Columbia Pedestrian Master Plan* documented pedestrian-specific collisions throughout the city. For 10<sup>th</sup> Street within the study area, the high-activity intersection with E Street has been the site of the most collisions.

**Table 3: Intersections with Pedestrian Crashes (2000-2006)**

Cross Street	Pedestrian Crashes
F Street	1
E Street	2-4
Constitution Avenue	1

Source: DDOT (2008)

DDOT’s Bicycle Master Plan reported two collisions involving automobiles and bicycles on 10<sup>th</sup> Street from 2000 to 2002.

Although they are outside of the study area, the nearby intersections of 7<sup>th</sup> and H Streets, 7<sup>th</sup> Street and Pennsylvania Avenue, and Pennsylvania Avenue and 12<sup>th</sup> Street are among the intersections with the most pedestrian-related collisions in the city.

## Intercity Buses

Intercity buses, primarily ones offering discount service between the District and New York, NY, have become increasingly popular in recent years. Two intercity bus companies—Megabus and Bolt Bus—have stops in the study area. Currently, these intercity buses load at the CityCenterDC parking lot to pick up and drop off passengers. Both bus carriers have arrivals and departures approximately once per hour.

Finding a suitable location for intercity bus loading has been an issue in the District. Attempts to centralize loading operations have been met with resistance. Curbside loading in places such as the 900 block of G Street has only lasted for a short time. No intercity buses currently use 10<sup>th</sup> Street for loading; however, they are one of many modes competing for space in the study area. This issue could become more important once CityCenterDC is built and the surface parking lot is removed.



Figure 35: Bolt Bus at CityCenterDC

## Tour Buses

### Long-Distance Tour Buses

There are numerous tour buses traveling along 10<sup>th</sup> Street, especially around the Ford’s Theatre area. These long-distance tour buses, also called charter buses, typically serve tourists traveling in groups. The *District of Columbia Tour Bus Management Initiative Report* from October 2003 reports that tour bus traffic and illegal double-parking is a cause of major pedestrian and vehicular traffic problems, and that solving this problem is a high priority for the Downtown BID.

Although the report states that curbside parking for tour buses is available on 10<sup>th</sup> Street near Ford’s Theatre, in reality tour buses are prohibited from parking most places along 10<sup>th</sup> Street between E and F Streets. There are designated 15-minute parking spaces for tour buses on the west side of the street and around the corner on F Street, but these are intended to be used only for loading and unloading of passengers.



Figure 36: Tour buses double-parked on 10th Street

### Short-Distance Tour Buses

Old Town Trolley operates replica trolley buses on two loops in the District, connecting major hotels and visitor attractions. Connection between the two loops takes place at a stop on the corner of 10<sup>th</sup> Street and E Street. A kiosk is located at this corner next to the Washington Welcome Center. The trolleys park both on the 10<sup>th</sup> Street and E Street sides of the corner to load, unload, and idle for passengers. Ticket holders are offered unlimited rides on these routes.



Figure 37: Old Town Trolley curbside space near E Street

Open Top Sightseeing operates double-decker buses on a loop through the central District, traveling along 10<sup>th</sup> Street. The buses generally operate on half-hour headways throughout the day. The operator designates the stops, and patrons are allowed unlimited rides between these stops.



Figure 38: Open Top Bus on 10th Street

### Segway

The 10<sup>th</sup> Street corridor is a preferred route for Segway tour companies. City Segway Tour runs tours along 10<sup>th</sup> Street three times a day from April through October. Similarly, Segs in the City runs tours along 10<sup>th</sup> Street at least twice a day.



Figure 39: Segway tour in front of Ford's Theatre

## Curbside Management

### *H Street NW to G Street NW*

The west side of this block is mostly signed as no parking. There are three curb cuts at two loading entrances and one parking garage entrance for the Hyatt; these restrict on-street parking space. There are short segments of 1- and 2-hour Monday-through-Friday parking zones. Near H Street, there are bus stops for Old Town Trolley, Grayline Bus Tours, and Open Top Sightseeing.



Figure 40: Curbside use of 10<sup>th</sup> Street between H and G Streets

The northern half of the east side of the block is primarily signed for 2-hour parking on weekdays. There is one curb cut for a private garage under the Secret Service building. The southern half of the east side of the block is under construction.

H Street's eastbound curbside lane is a parking lane during off-peak hours and a travel lane during peak hours. East of 10<sup>th</sup> Street, it is an off-peak 2-hour parking zone.

Near 10<sup>th</sup> Street, the northern side of G Place is reserved for Secret Service parking only. Toward 9<sup>th</sup> Street, however, the parking along the north side of G Place is metered. There may be an opportunity for additional tour bus parking in this vicinity.

G Street has a mix of 1-hour parking and no-parking or standing zones. West of 10<sup>th</sup> Street, there is a 15-minute loading zone in front of West Elm. East of 10<sup>th</sup> Street, the south side of G Street is under construction.

### *G Street NW to F Street NW*

The west side of 10<sup>th</sup> Street is signed for 2-hour metered parking during weekdays. A loading entrance creates a large curb cut on this side of the street.

The east side of the street is a mix of no standing or parking and 2-hour parking to the south. There is a Sunday-only angled parking zone in front of St. Patrick's church. On other days, this zone operates as parallel parking.



Figure 41: East side of 600 Block of 10<sup>th</sup> Street

Near 10<sup>th</sup> Street, F Street is signed as a mix of no parking, 1-hour parking, and 2-hour parking. On the south side of F Street, there is a 15-minute tour bus parking zone west of 10<sup>th</sup> Street which accommodates one bus.

## F Street NW to E Street NW

This is the most active segment of the 10<sup>th</sup> Street corridor and, as such, there is a mix of curbside regulations in an attempt to allocate space between competing needs. At both F and E Streets, intersection bulb-outs have created dedicated parking/loading lanes along 10<sup>th</sup> Street.

On the west side of the street, there are two pullout zones for parking. The northernmost one accommodates two or three tour buses for 15 minutes at a time from Monday through Saturday during typical business hours. The southern one is reserved primarily for Old Town Trolley; there is one parking spot designated as a loading zone. Along the rest of the block, tour bus parking and idling is prohibited.

There is an additional Old Town Trolley parking zone along E Street just west of 10<sup>th</sup> Street. Near 10<sup>th</sup> Street, the rest of E Street is signed as no parking or Metrobus parking only.

There are three street vendors located on the west side of the street near the Petersen House. Two are souvenir/gift vendors and one is a food cart.

Along the east side of the street, the northernmost parking pullout accommodates two unmetered spots for two hours at a time. In this vicinity, a parking garage entrance creates the only curb cut on this block.

The southern parking lane in front of the Hard Rock Café prohibits tour bus parking and is signed specifically as a loading zone.

The number of tour buses that serve this block greatly exceeds the number of tour bus parking spots. Field observations and conversations with the Downtown BID and the Old Town Trolley kiosk operator indicate that tour buses regularly stop midblock to discharge passengers. This creates safety issues not only for the passengers but also for nearby automobiles, bicyclists, and pedestrians due to blocked sight distance.

In addition, Old Town Trolley staff stated that vehicles illegally park in the Old Town Trolley parking spots on a regular basis. City-owned vehicles sometimes park in these spaces.



Figure 42: Hard Rock Café



Figure 43: On-street bus transactions on 10<sup>th</sup> Street  
Source: Ford's Theatre (2009)

*E Street NW to Pennsylvania Avenue  
NW*

The FBI Headquarters is located on the east side of this block. No parking or standing is permitted anytime on either side of the street, even though numerous vehicles have been observed parking in this area. On the east side of the street, there is a driveway that likely leads to FBI employee parking.

On the west side of the street, there are two parking garage entrances and one loading vehicle entrance.

*Pennsylvania Avenue NW to  
Constitution Avenue NW*

Because of the federal buildings on either side of the street, this block of 10<sup>th</sup> Street has strict curbside management. Both the east and west sides of the street are no-parking zones, as most of this block is utilized to accommodate the stops and circulation of Metrobuses. The northern part of the east side of the block permits Metrobus parking.



Figure 44: 10th Street between E Street and Pennsylvania Avenue

## KEY ISSUES

Based upon review of collected data, field observations, comments presented at the two stakeholder meetings (January and May 2009), and other project team meetings, four key issues were identified for the 10<sup>th</sup> Street corridor. These key issues were the focus of the final analysis and formed the basis for the recommendations of this study:

- Tour Buses
- Enforcement Challenges
- Excessive Curbside Demand
- Pedestrian Traffic

These issues are not unique to the 10<sup>th</sup> Street corridor nor are they new. The District and key stakeholders have struggled with these issues for years, and despite past attempts to solve them, still continue to face them.

In order to address effective solutions, strategies need to be developed based upon a clear understanding of the root causes. Fundamentally, many of these issues arise from Washington's unique cultural and historical position as the nation's capital. The millions of visitors to Washington each year bring dynamism and support the regional economy, yet the sheer logistics of accommodating these visitors strain the transportation network at key points around major attractions. The 10<sup>th</sup> Street corridor is home to several of these attractions, and the small-scale urban streetscape has problems accommodating the peak visitor traffic.

The following sections summarize each of these four key issues in further detail and present some of the factors that trigger these problems.

## Tour Buses

Vehicles referred to as tour buses in this discussion include chartered and privately owned buses transporting groups of visitors to key attractions on a pre-arranged schedule. Many of these buses transport visitors in groups to the District from outside the region, and then provide local transportation between attractions and accommodations in the Washington area. Generally, a tour bus arrives at a destination at a pre-scheduled time, discharges the passengers and then picks the passengers up following the tour or event for transportation to the next destination. In many cases, a stop would also include time for visitors to eat or purchase souvenirs.

The discussion on tour buses in this section does not include short-distance buses carrying sightseeing groups, as they generally do not stop in the study area for extended periods of time. It also excludes the Old Town Trolley which carries visitors between attractions, but follows an operation plan that minimizes many of the adverse impacts caused by tour buses.

Similarly, transit buses operated by WMATA or other agencies are not considered tour buses, and do not contribute to the problems being addressed in this study.



Figure 45: Tour buses on 10<sup>th</sup> Street  
Source: Ford's Theatre (2009)

Tour buses create a significant problem by parking illegally and/or double-parking in the blocks along 10<sup>th</sup> Street. This is most significant in the 500 block, adjacent to Ford's Theatre and the Petersen House, but it also occurs to a lesser extent between F and G Streets adjacent to Madame Tussauds and in other surrounding areas. Although it can occur year-round, the problem rises to intolerable levels during the peak tourism season.

Tour buses are large vehicles and can easily overwhelm a small-scale streetscape such as 10<sup>th</sup> Street. Short blocks, such as the 500 block, can only accommodate a handful of buses.

10<sup>th</sup> Street has a designated bus loading zone in the 500 block, large enough to accommodate two or three tour buses, which is far less than the peak demand. This zone has a posted 15-minute time limit, which should be long enough to accommodate active passenger loading or unloading. Staging is intended to occur at an off-site location.

However, this operation does not occur in practice. Buses remain in place after discharging passengers and wait for the group to return and reboard following their tour. From an operator's standpoint, this avoids the difficulty of maneuvering through congested streets and the risks of delay. From the bus patron's view, having the bus remain in place reduces confusion and the risk of getting lost. With buses circulating to an off-site staging area, the possibility exists that the bus would load passengers at a different location or even fail to return, or that a person may inadvertently board a different bus. For the bus operators, remaining on site is much preferable to staging off site as it allows them to maintain contact with tour patrons.

These conditions encourage buses to dwell in the available spaces for periods much longer than the permitted 15 minutes, which leads to the bus demand exceeding the two- or three-space capacity of the loading zone. This then leads to the observed problem of buses double parking, blocking travel lanes, loading zones, or parking areas.



**Figure 46: Backup of double-parked tour buses**  
Source: Ford's Theatre (2009)

Aside from the inconvenience and congestion, existing tour bus operation poses real safety concerns. Buses unloading in travel lanes create potential conflicts between pedestrians and moving vehicles. If a bus loads or unloads in a travel lane, pedestrians have to walk in part of a travel lane, across a bike lane, and across a parking lane to reach that bus. None of these spaces are safe for pedestrians as they are designed and designated for moving vehicles traveling at much higher speeds. Additionally, large buses parked in travel lanes block the view for all travel modes, creating potentially dangerous crossing situations. While never a desirable situation, this is a particular concern for the many children participating in tours.

## Enforcement Challenges

The second key issue in the 10<sup>th</sup> Street corridor is poor enforcement of existing parking regulations. To a large extent, this is another manifestation of the tour bus problems discussed above. Tour buses violate the posted 15-minute limitation in the loading zone, and double-park at will. But the problem is more widespread. Automobiles have been observed parking illegally in loading zones or in violation of posted limits. Delivery vehicles have been observed parking in travel lanes or using areas designated for other uses. In some cases, there is a cascading impact. An automobile in a loading zone forces a truck to unload deliveries from a travel lane. A truck unloading in a travel lane blocks a bus from maneuvering into a bus zone. A bus in a travel lane blocks access to a parking zone, leading an automobile to park in a loading zone. In all of these cases, the posted regulations appear to be reasonable

to accommodate all users, but enforcement appears to be non-existent.

Many parking violations are of short duration, and thus difficult to enforce. Double parking, for example, generally only occurs briefly for loading or unloading. Unless an enforcement operator is visibly present at the time, the risk of ticketing is slight. Even if an officer observes a violation, enforcement may also seem unfair due to the chain of cascading impacts described previously.

Parking enforcement is an important element in managing curbside space in many urban areas. The District employs parking enforcement officers and assigns them to locations throughout the city. These officers are responsible for enforcing all parking regulations including meters, permits, and no-parking zones. With these broad responsibilities, it is often difficult for an officer to focus enforcement on a particular block or issue. In addition, the assignments are reallocated based upon changing needs throughout the District.

The parking issues identified on 10<sup>th</sup> Street are not amenable to enforcement with periodic spot inspections. The 15-minute limit posted in the bus loading zone would require inspection every 15 minutes for full enforcement. Essentially, this would require assignment of an enforcement officer to this location full-time.



**Figure 47: Illegal unloading on 10th Street**  
*Source: Ford's Theatre (2009)*

The assignment of a full-time enforcement officer to a particular location to provide stricter enforcement appears to provide a simple solution. But the limited resources in the District make the assignment of a full-time enforcement officer to any particular location impractical. While the District might respond to the problematic locations by increasing enforcement, experience has shown that such attention can only provide short-term benefits without resolving the root of the issue.

Long-term parking enforcement and subsequent compliance with regulations can be expected to be in line with historical patterns. In other words, since enhanced enforcement appears to provide only short-term relief, the best approach to addressing this issue is to develop parking regulations that better fit the historic demands and traffic behavior or implement situations that by nature are self-enforcing. A self-enforcing scenario is one that changes driver behavior such that illegal parking does not occur. For example, experience has shown that drivers are unlikely to block a visibly active driveway or fully block a roadway because they perceive safety or ticketing risks. Therefore, creating a situation where double-parking would not only block a travel lane, but an entire roadway, would likely decrease double-parking.

## Excessive Curbside Demand

Fundamentally, many of the problems observed in the corridor can be traced to an excessive demand for limited curbside space. While this problem arises throughout the corridor, it reaches its peak in the 500 block. In a typical central business district, curbside space would accommodate deliveries for restaurants and retail establishments and short-term parking for business patrons. The 500 block is primarily affected by the museums and the traffic they draw, particularly tour buses. The loading needs of adjacent businesses take place at the curb, creating demands which conflict with the bus operations.

The District has actively attempted to regulate curbside uses in the corridor. Parking and loading regulations have been tailored to find a balance between competing needs. Unfortunately, by striking a balance, these regulations limit the space available for each use. As an unintended consequence, this results

in demand for each type of curbside use exceeding the supply at some point during the day. As the demand generally has to be accommodated in some manner, this can result in the observed violations of the parking, loading, and staging regulations. In the worst case, this results in blocked travel lanes and driveways, interfering with through traffic and the operation of area businesses.

## Pedestrian Traffic

The 10<sup>th</sup> Street corridor experiences both extremes of pedestrian traffic: high volumes and low volumes.

In the middle of the corridor, between E and G Streets, Ford's Theater, the Petersen House, and Madame Tussauds attract many visitors. The sidewalks in this area are relatively narrow and in places are obstructed by street vendors and street furniture. Despite these obstructions, the sidewalks are capable of carrying a heavy movement of pedestrians throughout the day. However, as noted above, many visitors are part of tour groups, often consisting of 40 or more people. These groups generally travel in a dense crowd, led by the tour guide. The groups also wait on the sidewalks outside the attractions, waiting for buses to arrive or waiting for a show or tour to start. As a result, these groups sometimes block the sidewalks, even spreading into the street, and interfere with pedestrian traffic to the point that some people walk in the street to avoid the crowds.

At both the north and south ends, the corridor has low volumes of pedestrian traffic. While the corridor is anchored at the south end by the National Mall and its many surrounding institutions, few visitors walk past the imposing facades of the Department of Justice or the FBI to the lively streetscape in the center of the corridor. At the north end of the corridor, the CityCenterDC site is currently used as a parking lot. This site and the surrounding area do not attract significant numbers of visitors. This would change in the future when CityCenterDC is built to include a mix of hotel, office, retail, and residential uses. Subsequently, the local business community would benefit from attracting pedestrian traffic more evenly throughout the corridor.



Figure 48: Pedestrian traffic in front of Ford's Theatre



Figure 49: Low pedestrian activity in the 600 block

## COMPETING NEEDS

The urban streetscape is complex, with many users competing for the available space. As discussed in this report, 10<sup>th</sup> Street has a unique mix of land uses, with special demands placed on the street by the heavy volume of visitors attracted to the museums. Effective operation of the streetscape requires a balance between the needs of pedestrians, bicycles, transit, tour buses, loading vehicles, parking, and through traffic. Clearly, the limited space on 10<sup>th</sup> Street cannot accommodate all of the needs of each of these groups to the same degree. But with an understanding of each group, and evaluation in the context of the surrounding transportation network, the impact of potential strategies can be evaluated.



Figure 50: Traffic on 10<sup>th</sup> Street

### Pedestrians

Because of the number of visitors and employees in the area, pedestrians need to be a top priority when planning and designing transportation improvements. In this corridor, pedestrians include tourists, workers, and area residents. By focusing improvements on pedestrians, multiple types of travelers are well served.

### Bicycles

Though a relatively low number of cyclists travel on 10<sup>th</sup> Street today, DDOT expects bicycle travel to increase citywide due to recent investments and policies. Improvement strategies presented in this report recognize the fact that the existing bike lane along 10<sup>th</sup> Street does not function well today.

### Transit

Transit facilities in the study area, including Metrorail stations and Metrobus stops along the cross streets, are very important to the corridor. Improvements to pedestrian and bicycle facilities could help improve transit access. Additionally, greater usage of the local transit system by visitors could reduce the demand for tour buses in the downtown area.

### Tour buses

While the volume of tour buses currently exceeds the capacity of the 10<sup>th</sup> Street corridor, they are important in bringing tourists to the key destinations. Tour buses need to be accommodated at certain locations in the corridor without compromising other modes.

### Loading vehicles

Many businesses along the corridor rely on delivery vehicles for their goods shipments including hotels, restaurants, and retail establishments. As previously described, loading vehicles often conflict with other modes and end up double-parked on 10<sup>th</sup> Street. While loading vehicles need access to the corridor, they need to be managed to prevent adverse consequences on other modes of travel.

### Parking

On-street parking is a critical feature for streets that include retail uses. With limited retail uses along most of the length of 10<sup>th</sup> Street, there is a comparatively lower demand for on-street parking than in other locations. Parking is available on adjacent streets and in nearby parking lots and garages.

### Through traffic

In its current form, 10<sup>th</sup> Street is segmented by a parking lot, the site of the future CityCenterDC development, and terminates at Constitution Avenue to the south. 10<sup>th</sup> Street is not a street intended to only move traffic, and it primarily provides access to surrounding land uses. On streets providing local access, DDOT generally places a high priority on accommodating pedestrians, bicycles, and loading vehicles rather than moving large volumes of traffic.

## POTENTIAL STRATEGIES

DDOT considered a range of strategies to address the key issues in the 10<sup>th</sup> Street corridor. Reflecting the complexity of the urban streetscape, these strategies employ a range of tactics, from revised signage encouraging a desired operation to street closures forcing relocation of certain uses. These strategies are:

- Relocate tour buses
- Establish pedestrian zone
- Convert to two-way
- Enhance pedestrian signage
- Add dedicated enforcement
- Convert to one-way northbound

These strategies were identified based on curbside management best practices and stakeholder input. Many of these strategies are not mutually exclusive and can work together.

The following section discusses each of the strategies by providing a detailed description, identifying which of the four key study issues each strategy addresses, and presenting an evaluation of the anticipated impacts.

### Relocate Tour Buses

This strategy involves relocation of tour bus loading and staging away from the center of the 10<sup>th</sup> Street corridor.

#### *Key Issues Addressed*

This strategy directly addresses the key issue of the tour bus impact on 10<sup>th</sup> Street. It has an indirect effect on the key issues of enforcement challenges and excessive curbside demand, as the removal of tour buses from the 500 block would significantly reduce demand and the potential for violation of parking regulations. It also addresses the pedestrian traffic issue by relocating the crowds at tour bus stops away from the congested 500 block and rerouting these pedestrians to other parts of the corridor.

#### *Implementation*

This study identified five potential locations, shown in Figure 51, for relocated tour bus loading and staging:

- Current CityCenterDC site
- 600 block of 10<sup>th</sup> Street
- E Street
- F Street
- 400 block of 10<sup>th</sup> Street

The relocation of buses would be accomplished by posting bus parking regulation signs at new locations, replacing existing signs in the 500 block with No Parking signs, significantly increasing and enforcing the fee for violating the No Parking signs, adding wayfinding signs for buses as appropriate, and communicating the changes with tour bus operators.

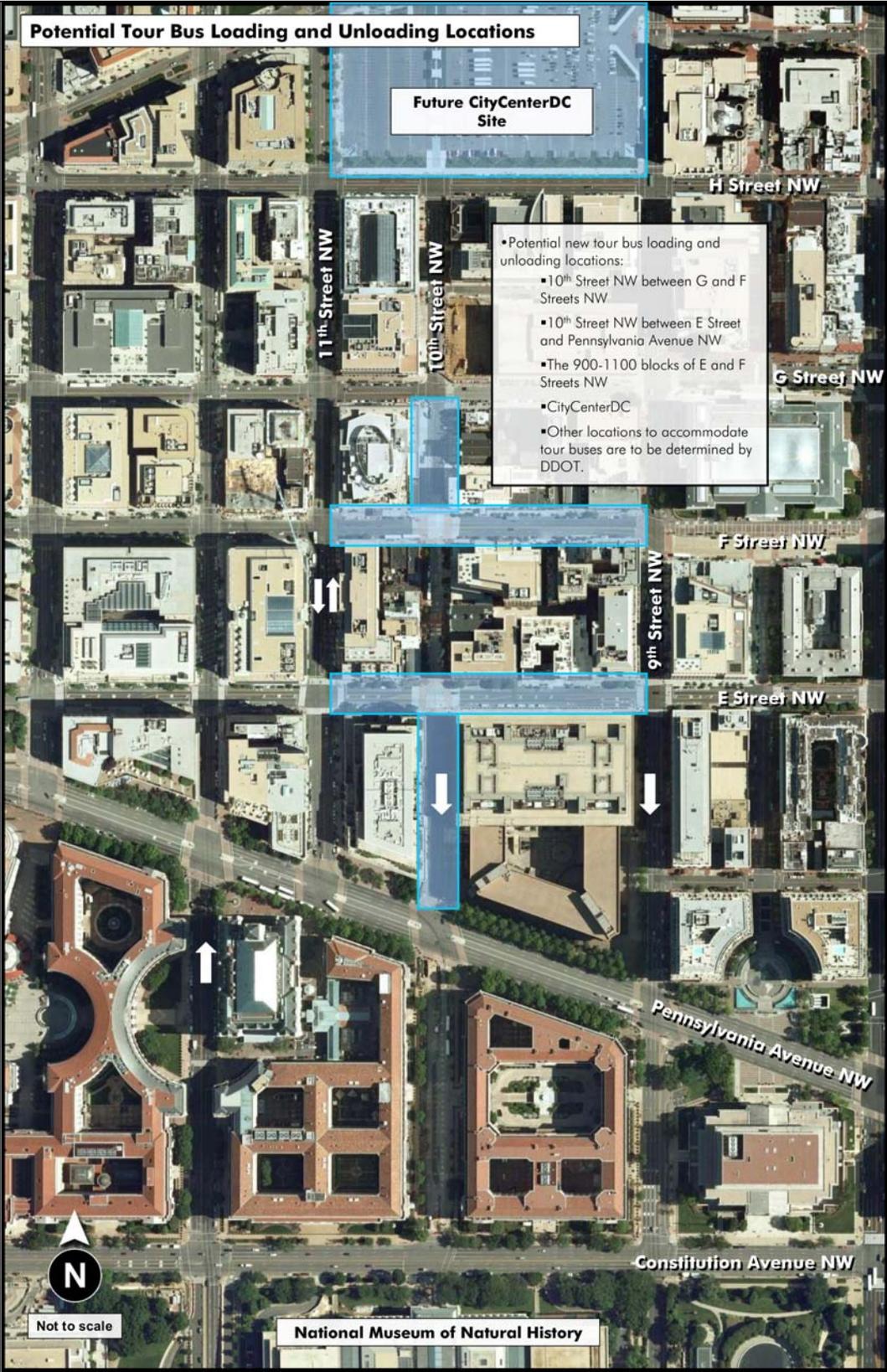


Figure 51: Potential new tour bus loading and unloading locations

## Anticipated Impacts

A suitable location for tour bus loading and staging would need to be identified and implemented before restricting buses from the 500 block. Otherwise, the bus impacts can cascade to unplanned locations. The five potential locations provide a range of near-term options to relocate buses from the 500 block, but they each have aspects that make them less suitable for longer term use. DDOT is currently working to identify suitable locations for long-term use.

**The future CityCenterDC site** is large, with convenient regional access via New York Avenue. 10<sup>th</sup> Street passes through the middle of the site, simplifying pedestrian navigation. The site is within reasonable walking distance. However, the site is slated for redevelopment in the near future and thus may only be available for the near term. Construction is anticipated to begin in the fall of 2009.

**The 600 block of 10<sup>th</sup> Street**, between F and G Streets, provides a second location. Currently, most of the curbside is used for short-term vehicle parking, and the west side has no posted restrictions. The adjacent uses include a loading dock for a retail store, Madame Tussauds, a church, and a mixed-use development. There is no known heavy demand for short-term parking or loading. Tour bus loading could be accommodated in this area during midday periods, with general parking available in the evening and weekends. However, the only challenge lies with the west side curb, which currently is used for on-street loading and parking due to the one-way traffic and provides only a limited number of bus parking spaces.



Figure 52: 600 block of 10<sup>th</sup> Street

**900 and 1000 blocks of E Street and F Street** are immediately adjacent to 10<sup>th</sup> Street, and provide the closest possible location for alternate tour bus staging. However, these streets also support a mix of land uses with heavy demand for curb space. Relocation of tour buses may result in simply shifting the existing conflicts from 10<sup>th</sup> Street to new locations.

In many ways, the **400 block of 10<sup>th</sup> Street**, south of E Street, is an ideal location for tour bus loading and staging, but security concerns at the adjacent FBI headquarters may preclude this location. DDOT is pursuing the feasibility of this location with the General Services Administration. This location is convenient to the 500 block, and has a relatively pedestrian-friendly streetscape. The east curb provides a long, unbroken blockface that can accommodate approximately 10 buses, and has a wide sidewalk that can accommodate the pedestrians that accompany the tour buses. The west curb is less suitable, as the sidewalk is narrower and curb cuts reduce its capacity.

Even if security concerns are addressed, DDOT would be unable to immediately implement tour bus parking on the east side of 10<sup>th</sup> Street due to the one-way traffic flow. DDOT could, however, implement this strategy in conjunction with the Convert to Two-Way strategy, discussed later.

All of the identified on-street locations have limited capacity. DDOT and its partner agencies would need to manage these locations on an ongoing basis to ensure that the use of the available capacity is maximized.

## Mitigation of Impacts

Relocated on-street bus loading areas would require appropriate regulations to control the appropriate usage. Without a time limit, these areas could be used for all-day parking of buses, rendering them unavailable for the shorter-term loading and staging needs. However, the current 15-minute restriction posted on 10<sup>th</sup> Street is ineffective. A longer time limit would allow visitors to attend one or more nearby attractions, with time to walk and patronize adjacent businesses. A three-hour time limit would likely be adequate, but this would need to be coordinated with tour operators and adjacent attractions.

Another way to encourage compliance with new bus parking areas would be to charge for loading zone usage by tour buses. Fees could be collected using a “pay and display” system with multispace parking meters. With a proper fee structure, this would have a minimal impact on short-term visitors, but would discourage all-day use. Furthermore, enforcement of existing and new curbside regulations would help to improve compliance. The District should also consider substantially increasing the fee for violating the curbside regulations in this corridor.

Outreach to tour bus operators would be a key part of this strategy. DDOT has a motor coach specialist and the District is currently developing a comprehensive citywide strategy for tour and tour bus management. This includes identifying locations throughout the city for bus parking. When these locations are finalized, DDOT and the Downtown BID should share information with 10<sup>th</sup> Street-corridor tour bus operators through a variety of methods, including the Tour Bus Parking website, [bus.dc.gov](http://bus.dc.gov). The new parking sites should be made as attractive to the operators as possible. Incentives could include ample information, pricing, and/or a convenient location.

## Establish Pedestrian Zone

This strategy consists of closing the 500 block of 10<sup>th</sup> Street to vehicular traffic on a seasonal or time-of-day basis. Access would be maintained for emergency and maintenance vehicles.

## Key Issues Addressed

This strategy addresses all four key issues identified in this study: tour buses, enforcement challenges, excessive curbside demand, and pedestrian traffic. Closing the 500 block to vehicular traffic would displace tour buses to other locations, mitigating their impact on this high-activity block. It would facilitate enforcement by removing the primary source of parking violations, limiting the demands on curbside space in this block. It would also provide greater space for pedestrian, bicycle, and Segway movements and activities at the point of greatest congestion.

## Implementation

Closure of the street to establish a pedestrian zone could be accomplished through a range of means. The simplest way would be through the installation of traffic signage, such as turn restrictions and “no through traffic” signs, similar to those used for the street closure at the Dupont Circle Farmers’ Market. This could be implemented quickly and at low cost, and would be particularly effective for a closure only during certain hours of the day. This closure should be controlled with cones, temporary barricades or portable fences. The closure could also include public space programs and events in the pedestrian zone.

Should the temporary closure prove to be effective and desirable, DDOT could implement seasonal or long-term closure, installing more permanent barricades such as planters, retractable bollards, and/or street furniture, while allowing access for emergency and maintenance vehicles.



Figure 53: Farmers’ Market on 20<sup>th</sup> Street in Dupont Circle  
Source: M.V. Jantzen/Flickr CC

## Anticipated Impacts

Closure of 10<sup>th</sup> Street to vehicular traffic between E and F Streets has the potential to resolve most traffic conflicts in this area. By closing the street completely, tour buses would be forced to relocate to the alternate locations provided. The street space would become available as a pedestrian zone, made lively by the active land uses and foot traffic. Bicycles and Segways would also be able to use the pedestrian zone with caution.

The pedestrian zone could be programmed with activities such as vendors, artists, or musicians, which would make the block more of a destination and help

to attract visitors from the National Mall area. The Downtown BID may be able to arrange for the installation, removal, and storage of temporary barriers through a partnership with DDOT.

Several issues complicate a full closure:

- Access would need to be maintained for emergency vehicles and for the office building parking garage at 950 F Street. As such, the closure is anticipated to begin just south of the parking garage driveway. Signage would be required to indicate that the garage is open for business during street closures. To maintain access to the parking garage, the pedestrian zone would need to coincide with the establishment of two-way operation on 10<sup>th</sup> Street.
- Loading would need to be accommodated as would the Old Town Trolley stop. Local deliveries could be accommodated before and after the hours of closure. In the evening, curbside space could be used as parking for adjacent businesses and for drop-offs at Ford's Theatre. During closure, the Old Town Trolley would not be able to use their designated stop on 10<sup>th</sup> Street. These vehicles would need to use the stop on E Street, which is large enough for only one vehicle. If this space cannot be expanded, additional vehicles could stage behind this space within the intersection while 10<sup>th</sup> Street is closed to traffic.

If DDOT wishes to establish the pedestrian zone in the near-future, before two-way operation, doing so on weekends when demand for the parking garage is low is a possibility.

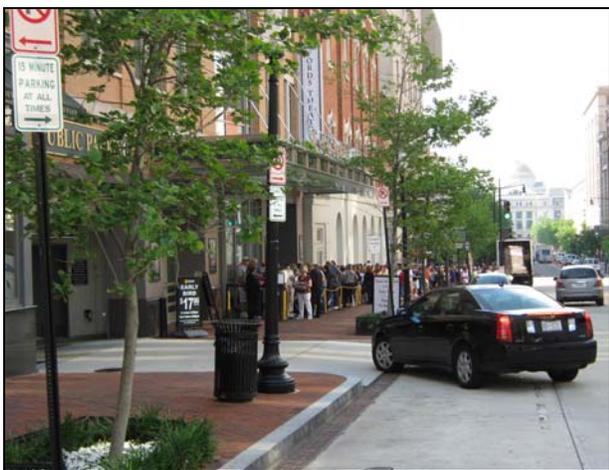


Figure 54: 950 F Street parking garage entrance on 10<sup>th</sup> Street

## Convert to Two-Way

This strategy consists of converting 10<sup>th</sup> Street to two-way operation between Pennsylvania Avenue and New York Avenue, with a single travel lane in each direction.

### Key Issues Addressed

This strategy addresses the key issues of tour buses and excessive curbside demand by making space on the east curb line available for tour bus usage. This strategy is also expected to assist with the enforcement challenge issue both by adding legal curbside loading space and by restricting vehicles from loading in travel lanes.

### Implementation

Conversion of 10<sup>th</sup> Street would require changes to signage and modifications to traffic signals in the corridor. As part of this work, the on-street bicycle lane would be replaced by shared-lane markings in both directions. Prior to undertaking the conversion, DDOT would need to perform a traffic study to identify in detail the required signing and signal changes. This conversion would not require any changes to the curb line. Because building construction along 10<sup>th</sup> Street is expected to continue through 2012, the two-way conversion would likely not happen before that time. In the meantime, DDOT should ensure that all development projects along and adjacent to 10<sup>th</sup> Street would accommodate future two-way operations.

### Anticipated Impacts

The current southbound traffic pattern on 10<sup>th</sup> Street makes the east curb line inaccessible for pedestrian drop-off and pick up and for tour bus parking. It also interferes with some delivery operations. The conversion of 10<sup>th</sup> Street to two-way traffic operations would make both curbs available. It would also return the study area to a traditional grid network and function, enhancing vehicular access and circulation. This would allow 10<sup>th</sup> Street to be better integrated into the downtown area, and would be less confusing for tourists. By increasing access, local businesses may also benefit.

Two-way operation of the street may reduce the blockage of traffic lanes by buses and delivery vehicles. The two-way street would consist of a single

traffic lane in each direction. As noted, double-parking of vehicles is a response to excessive demand for limited curbside space. Enforcement is often of limited effectiveness, due to the short-term nature of such blockages. However, in some cases, having only a single traffic lane in each direction can be self-enforcing. As long as multiple travel lanes are available, a vehicle can block a lane with minimal apparent impact on traffic flow. Blocking the only available lane may make the perceived threat of enforcement—as well as the safety risk—greater.

Two-way operation would provide the opportunity to replace the existing southbound bicycle lane with mixed-flow traffic/bicycle lanes in both directions, marked by shared-lane markings, or sharrows. Because many adjacent streets have bike lanes and traffic flow is relatively low in this corridor, DDOT believes that a sharrow would provide a high bike level of service. Segway vehicles would also use the shared lanes, per DDOT policy.

With two-way operation, 10th Street could become an option for northbound traffic and could attract traffic from other adjacent roadways. However, providing a single lane of traffic in each direction would provide traffic calming and limited capacity. Adjacent tour bus parking, heavy pedestrian flows, and mixed bicycle traffic could reduce its attractiveness as a through route and make it function like the small-scale retail street that it is.

## Enhance Pedestrian Signage

New pedestrian wayfinding signs should be added to encourage pedestrian traffic downtown from the National Mall and nearby transit stations.

### Key Issues Addressed

This strategy would affect the issue of pedestrian traffic.

### Implementation

DDOT would design and install new pedestrian signs to supplement the existing signs in the corridor, directing pedestrians to destinations such as Ford's Theatre, Downtown, and nearby Metrorail stations. Signs, ideally with maps, should be added to the bus stops in and adjacent to the corridor. Similarly, a wayfinding sign should be added at the Metro Center Metrorail station exit at 11<sup>th</sup> and G Streets and potentially within surrounding Metrorail stations. Signage should also be installed, if necessary, to direct pedestrians between the tour bus loading areas and the corridor destinations.

Any new signs should be coordinated with the National Park Service's wayfinding plans for the National Mall as well as with the Downtown BID and the DDOT Transportation Policy and Planning Administration.

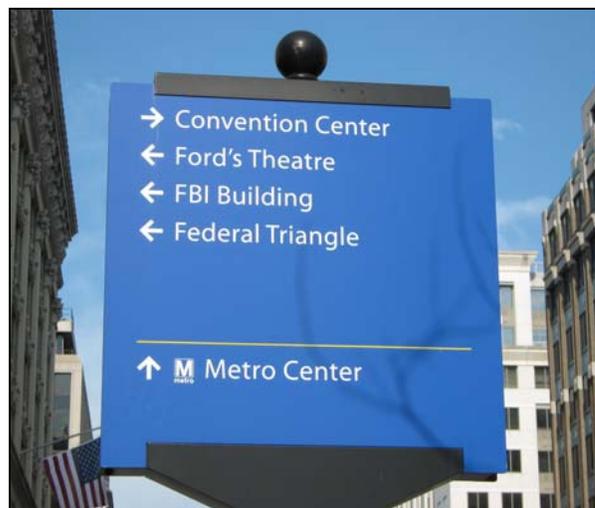


Figure 55: Downtown wayfinding sign

## Anticipated Impacts

Enhanced pedestrian signage could encourage pedestrians to use the entire corridor, rather than congregating at the key attractions. Wayfinding signage could direct pedestrians from the new bus staging areas and existing transit stops to Madame Tussauds, Ford's Theatre, and the Petersen House. By using the standard downtown wayfinding signs, pedestrians would be attuned to signage for other nearby designations and thus encouraged to venture further into the corridor by foot instead of being shuffled around by tour buses from one location to another.



Figure 56: Existing Metrobus shelters that can hold visitor wayfinding signs

## Add Dedicated Enforcement

This strategy consists of providing a traffic control officer dedicated to enforcing parking, loading, and traffic regulations in the 10<sup>th</sup> Street corridor, primarily the 500 block.

### Key Issues Addressed

This addresses the key issue of enforcement challenges.

### Implementation

A traffic control officer could be assigned to this area by DDOT. As an alternative, a private enforcement officer could be hired by the Downtown BID or another entity.

## Anticipated Impacts

A dedicated traffic control officer has the ability to provide the continuous monitoring and enforcement needed to address the short-term violations observed in the corridor. However, it would not solve the underlying issue of a high demand for limited street space. Enforcement may divert some demand to other locations, but without appropriate management, conflicts are likely to occur at these locations.

DDOT employs a number of traffic control officers and assigns them to key intersections throughout the District. With many competing priorities, it is difficult to ensure that an officer could be assigned to any particular location for the long term. Funding for an additional officer dedicated to the 10<sup>th</sup> Street corridor would improve the long-term success of this strategy. As an alternative, funding could be used to engage a private enforcement officer to take on the duties in this corridor.

Because it would not solve the underlying curbside management issues, dedicated enforcement is not recommended as a primary strategy.

## Convert to One-Way Northbound

This strategy consists of changing the traffic flow direction of 10<sup>th</sup> Street from one way southbound to one way northbound between Pennsylvania Avenue and H Street.

### Key Issues Addressed

This strategy could affect the key issues of enforcement challenges and excessive curbside demand by making the east curb line, where many attractions are, more accessible to tour buses and delivery vehicles.

### Implementation

Conversion of 10<sup>th</sup> Street would require changes to signage and traffic signals in the corridor. Prior to the modifications, DDOT would need to perform a traffic study to identify the required changes. The conversion would not require any reconstruction of the curb line.

## Anticipated Impacts

10<sup>th</sup> Street operates one-way southbound in the same direction as adjacent 9<sup>th</sup> Street, while 11<sup>th</sup> Street operates two-way. This violates the typical alternating pattern of one-way streets. In fact, 10<sup>th</sup> Street was historically one-way northbound, but was reversed to discourage cut-through traffic when the old Convention Center was built.

This conversion would allow bus loading zones and delivery zones to be relocated to the east curb line. However, it would require eliminating bus loading and deliveries from the west curb line, without changing available spaces. In addition, the driveway entrance to 950 F Street is located on the east curb line of the 500 block, and would reduce the number of loading vehicles that could be accommodated on the east curb.

As noted, the conversion to northbound flow would restore an alternating pattern of streets. This would have the potential to attract commuter traffic in the northbound direction, which could improve overall network traffic flow but would have undesirable impacts on the 10<sup>th</sup> Street streetscape.

Because of the adverse effect this strategy would have on bus loading operations, it was not carried forward as a recommendation.

## Modified Bus Loading Signage

Existing signage in the 500 block of 10<sup>th</sup> Street restricts buses on the west curb line to 15-minute parking. This strategy consists of changing the posted regulation to only permit 15-minute standing while loading and unloading passengers and to specifically say “No Parking.”

## Key Issues Addressed

This strategy would address the enforcement challenge issue.

## Implementation

DDOT would change the existing parking signs. This strategy could be implemented very quickly with DDOT approval, as cost, engineering, and coordination efforts are minimal. This strategy could

serve as an immediate measure, while other, longer-term measures are being implemented.

## Anticipated Impacts

This strategy may increase compliance with the posted regulations if noncompliance results from misinterpretation of the regulations. However, without other provisions to accommodate parking or staging of buses, this could result in simply a displacement of the problem. In addition, the existing loading zone space would still be inadequate to accommodate peak demand. The effectiveness of this strategy would need to be evaluated in the field as it could influence the implementation of other bus loading and parking operations.

However, at this time, this strategy is not recommended as its effectiveness may be limited.



Figure 57: Typical bus parking sign on 10th Street

## IMPLEMENTATION PHASING

A phased implementation of improvements would allow for rapid relief of some corridor issues while funding is identified for longer-term measures. The recommended phases are as follows:

- Phase A: Short-term improvements
- Phase B: Medium-term improvements
- Phase C: Long-term improvements

### Phase A

This phase of work consists of strategies that can be implemented in the short term, potentially within six months. It is shown in Figure 58.

The work in this phase involves the relocation of tour buses away from the 500 block of 10<sup>th</sup> Street. This includes relocation of the bus loading zone to the 600 block, and also accommodation of tour buses in the CityCenterDC lot.

This would begin with a coordination phase, to develop a new agreement with the operators of the CityCenterDC lot to set a pricing scheme, and to communicate with motor coach operators regarding the new rules. The fee for a bus to park at the lot should be reasonably low to encourage compliance. Similarly, at this time, the fee for parking violations in the 500 block of 10<sup>th</sup> Street should be substantially increased and strictly enforced.

After appropriate notice has been provided and necessary arrangements made, the actual relocation of the buses loading can take place. Bus parking signs in the 500 block should be removed during this phase. On the west side of the 600 block, bus parking signs should be installed indicating an appropriate time limit. If the District desires to charge a fee for bus parking in this zone, a multispace parking meter should be installed along this curb line and appropriate prices should be set.

Signage would also be placed on Pennsylvania Avenue, H Street and possibly New York Avenue to alert bus operators of the parking options at CityCenterDC.

This phase is intended to be implemented in the short term. Because of the time required for coordination, this phase would take several months to implement, but could be in place by the beginning of the 2010 tourism season.

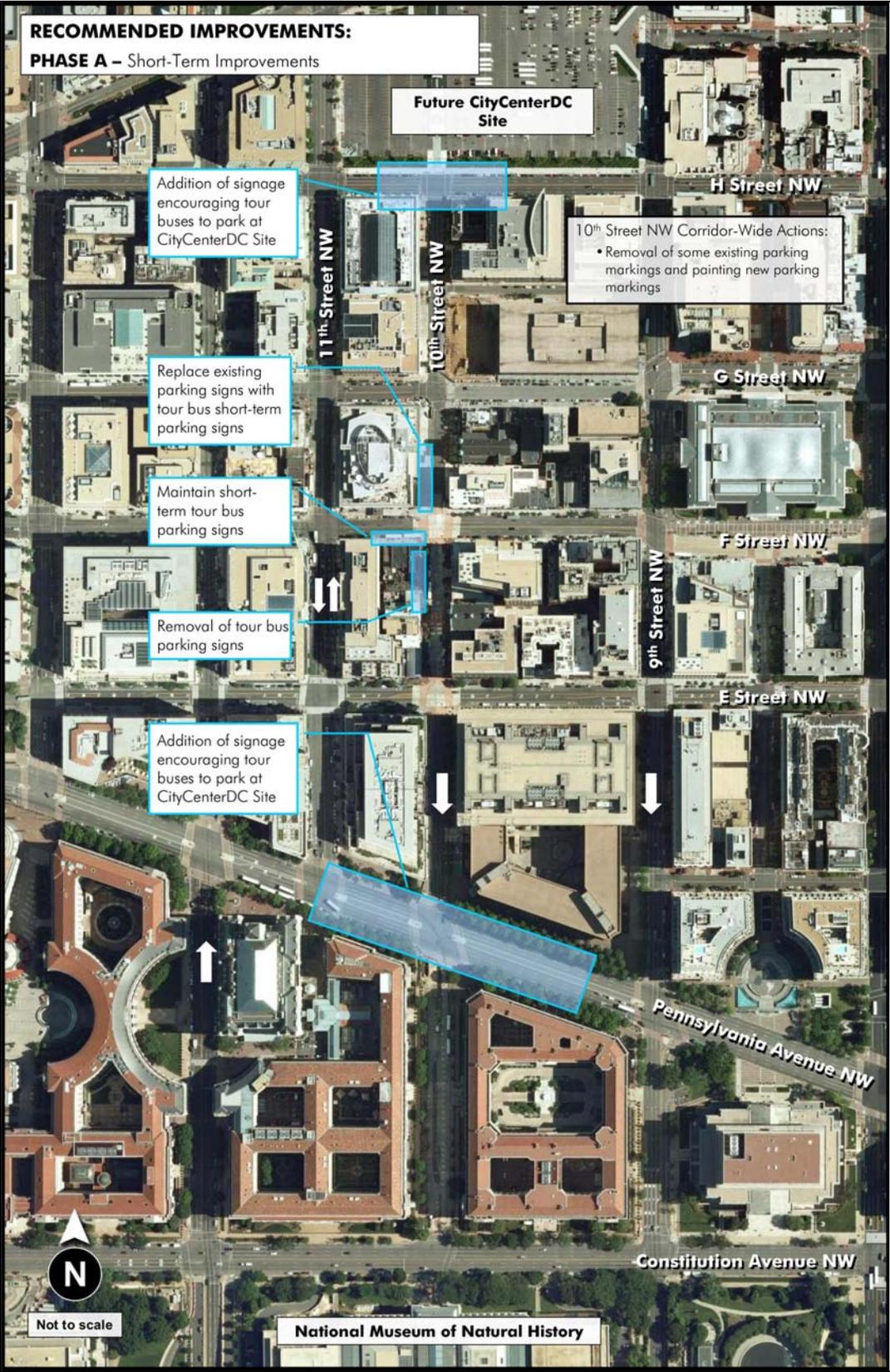


Figure 58: Phase A - Short-Term Improvements

## Phase B

This phase consists of strategies that can be implemented in the medium term, potentially between six and 12 months after initial improvements are begun. It is shown in Figure 60.

Primarily, this phase consists of adding enhanced pedestrian signage at key locations in and around the corridor. Existing high-quality wayfinding signs should be supplemented by signs at bus stops and the Metro Center Metrorail station exit at 11<sup>th</sup> and G Streets. Additional signs may be appropriate within the corridor to guide visitors between tour bus loading locations and the corridor attractions.

It may also be possible to implement a trial of the pedestrian zone in the 500 block during this phase. The trial would need to occur on Saturdays or Sundays when regular access to the parking garage in the 500 block, which serves office workers, is not needed. With light traffic and few parking garage trips during these times, a traffic control officer may be able to adequately direct traffic.

Because the CityCenterDC site may be under construction by this time, tour buses may need to be relocated to an alternate location determined by DDOT. Signs would need to be adjusted, agreements with parking lot owners and operators would need to be made, and information would need to be disseminated to motor coach operators.

It is anticipated that this phase could be implemented in the medium term, ideally with the wayfinding signs installed for the peak tourism season in spring 2010.

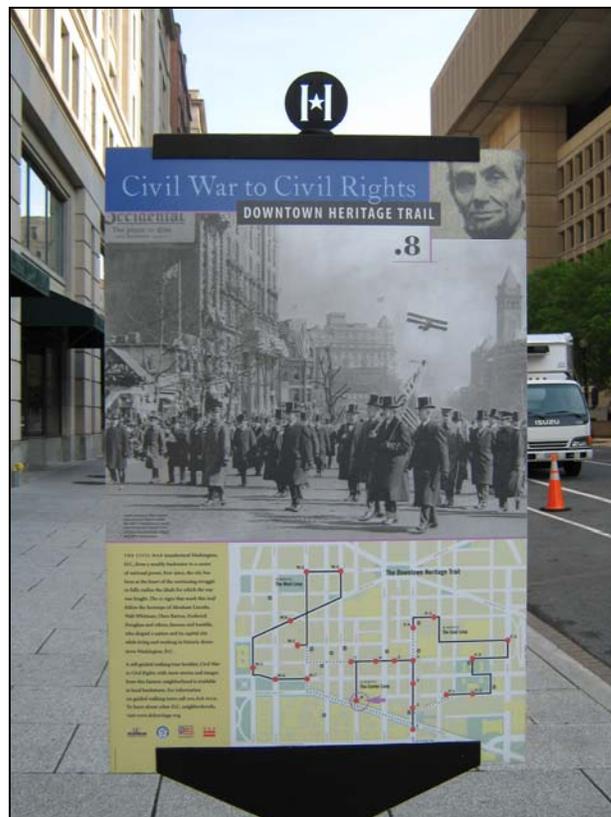


Figure 59: Existing pedestrian map for visitors

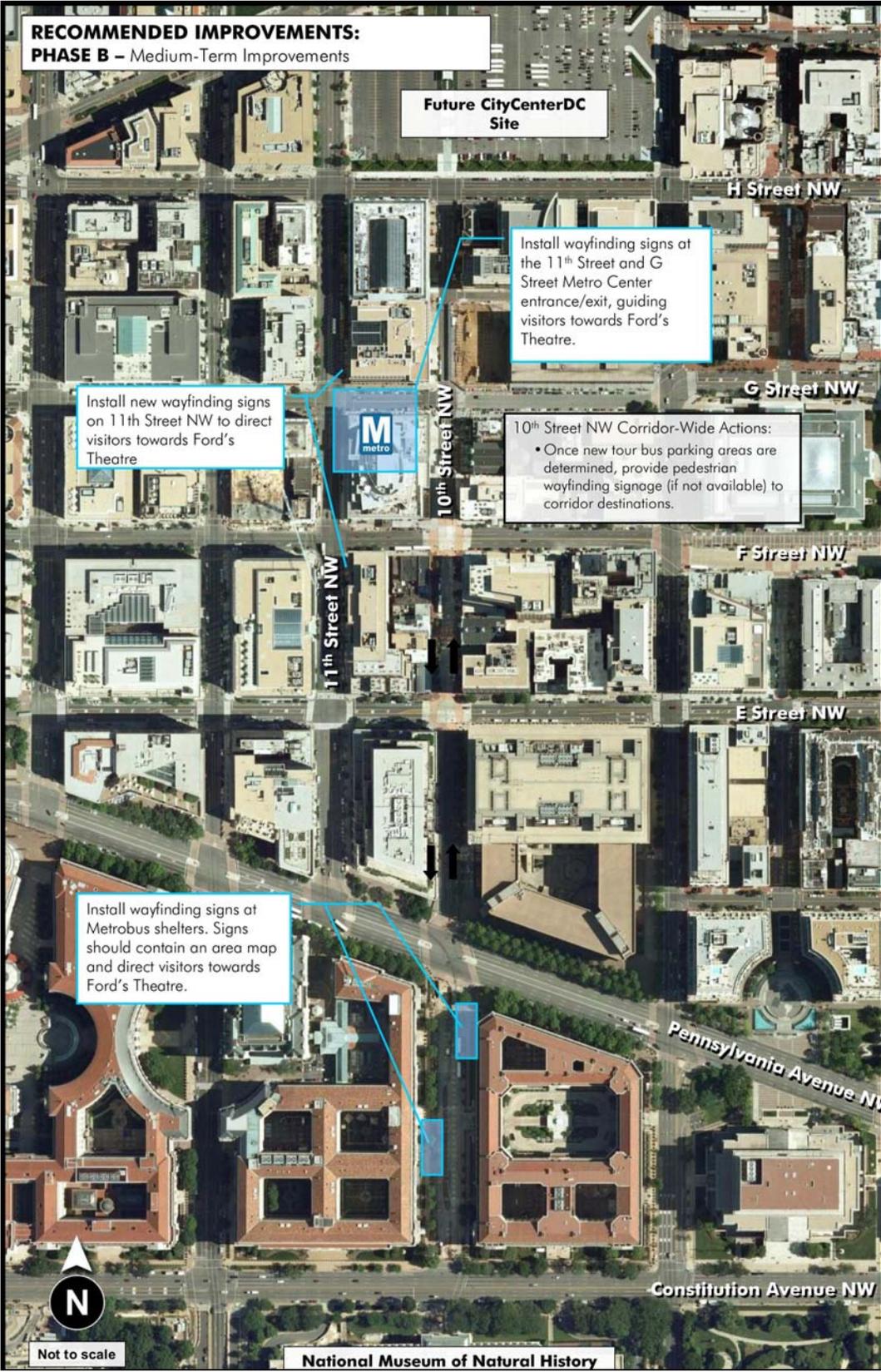


Figure 60: Phase B - Medium-Term Improvements

## Phase C

Phase C consists of strategies that can be implemented in the long term, generally more than 12 months. It is shown in Figures 62 and 63.

This phase consists primarily of two strategies: the conversion of 10<sup>th</sup> Street to two-way operation, and the implementation of the daytime pedestrian zone in the 500 block.

In order to implement this pedestrian zone, the Old Town Trolley parking signs and the bus parking signs would be removed or temporarily covered during this phase. The loading zone signs on the east-side curb would be replaced with signs specifying early-morning or evening loading times as appropriate. To block off the street to traffic, DDOT would need to acquire moveable cones or signs.

The conversion of 10<sup>th</sup> Street to two-way operation is the ultimate goal for this corridor to better manage curbside uses and traffic, but it is a longer-term measure requiring coordination and funding. Due to these constraints, as well as the constraints of adjacent development and construction, implementation would likely occur around 2012. In the meantime, DDOT should conduct a traffic study to identify optimal signal timings and signage for the reconfigured corridor. Following construction of signal modifications, the street can be converted to two-way operation. At that time, tour bus parking could be installed along the east curb of 10<sup>th</sup> Street in the 400 or 600 blocks, if appropriate. Also, sharrows could be installed in both directions during this phase.

With the conversion to permanent two-way operation and signal modifications, implementation of the daytime pedestrian zone would become possible, without the need for traffic control officers. If desired, DDOT could install retractable barriers or retractable bollards at each end of the pedestrian zone.



**Figure 61: Example of sharrow**  
Source: richardmasoner/Flickr CC

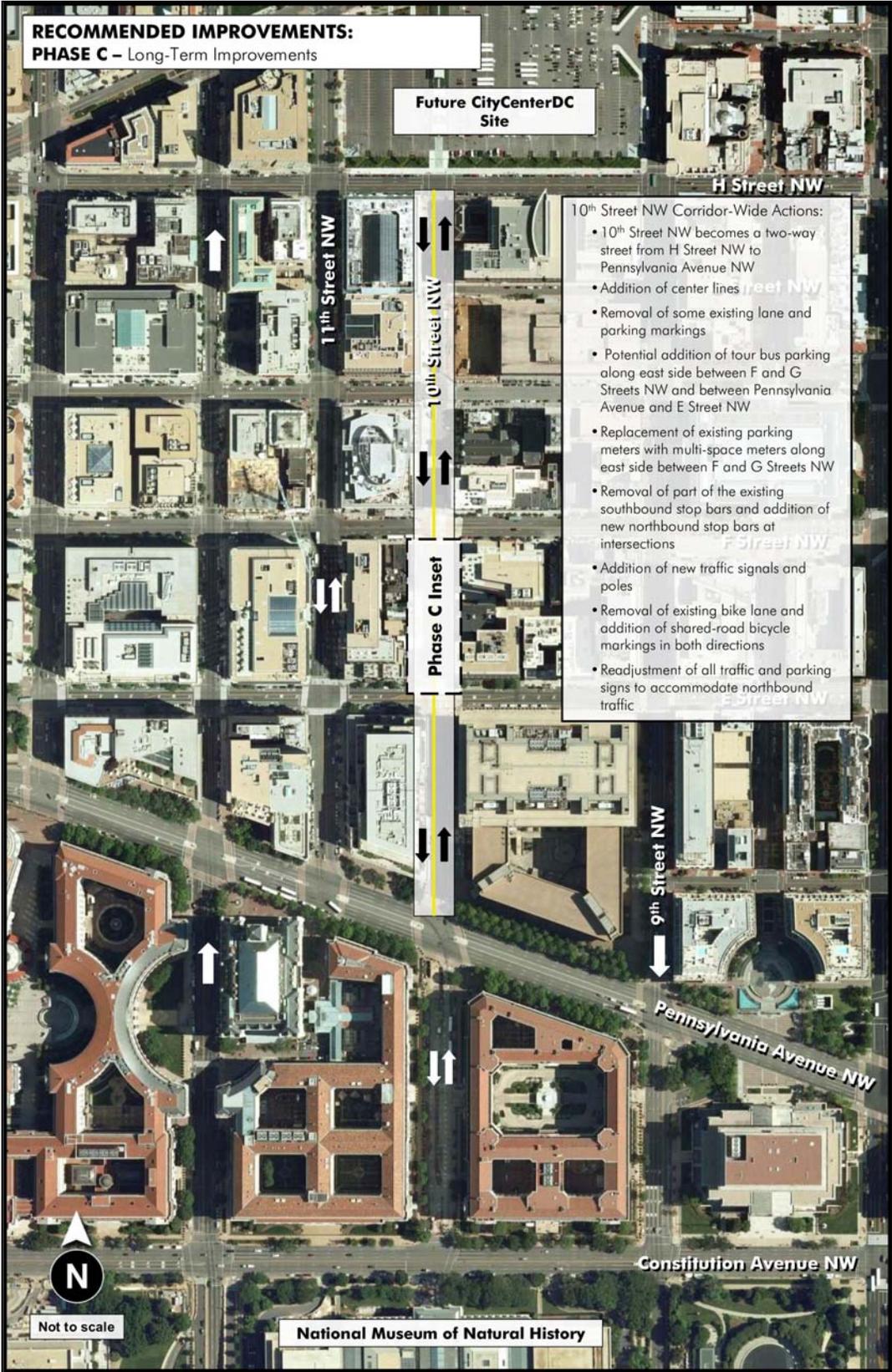


Figure 62: Phase C - Long-Term Improvements

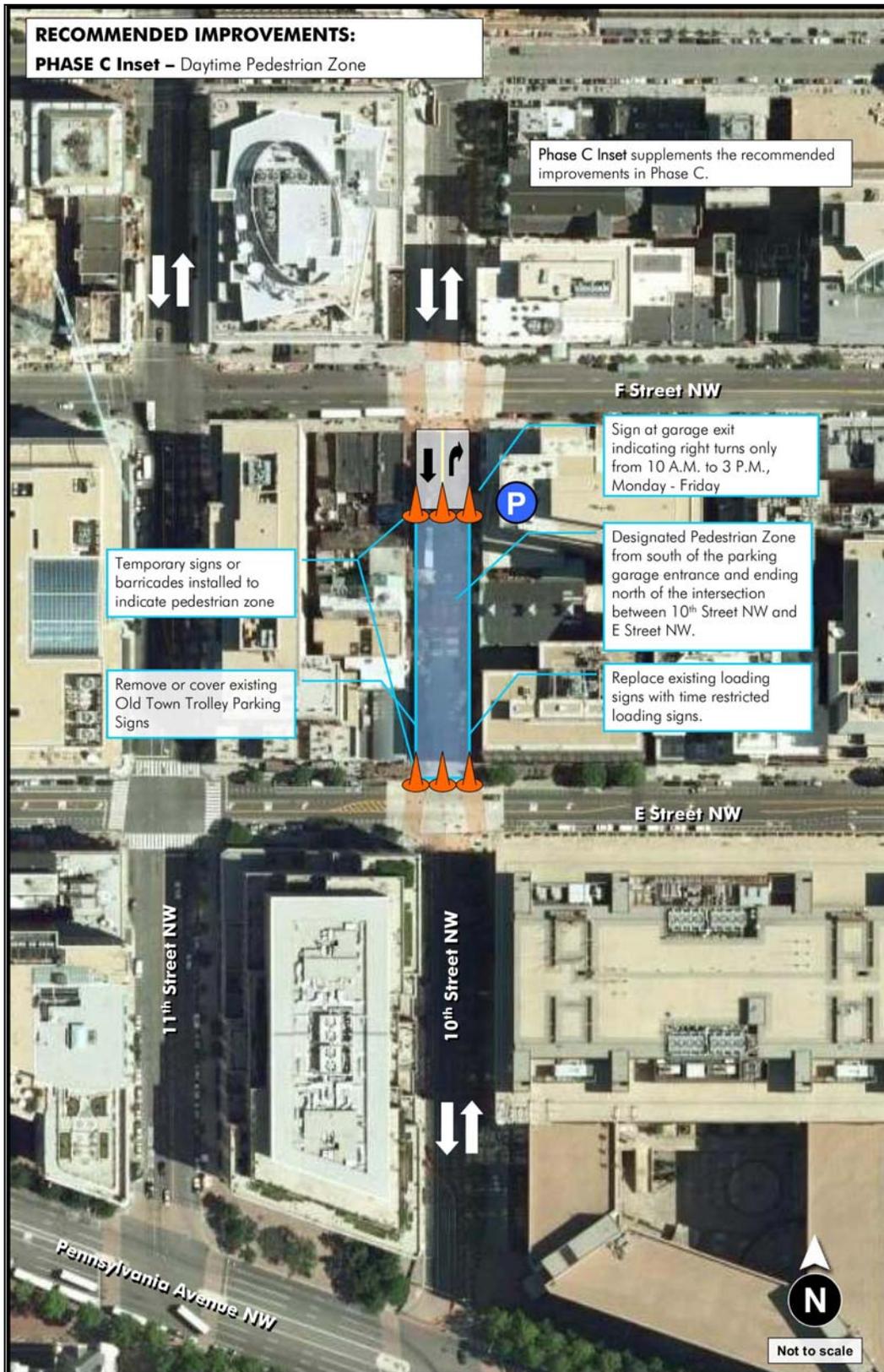


Figure 63: Phase C Inset - Daytime Pedestrian Zone

## RECOMMENDATIONS

### Schedule for Implementation

Figures 64 and 65 show the proposed implementation schedule. As previously discussed, Phase A could occur within six months. This is an aggressive schedule, and it depends on the ability of DDOT to allocate funding and implement field changes quickly. This schedule would allow for implementation by the beginning of the spring 2010 peak tourism season.

Implementation of Phase B is anticipated to occur within six to 12 months. Some of the strategies in this phase could be implemented at the beginning of the 2010 peak tourism season, with the remainder following during the course of the season. The installation of wayfinding signs included in Phase B should be coordinated with the Downtown BID and the National Park Service.

Phase C would include the conversion of 10<sup>th</sup> Street to two-way operation and would require modification to four to five traffic signals. The cost of this phase would be significant, and DDOT would need to secure funding for this work. Based on conversations with DDOT and the Downtown BID, this phase is not expected to be completed until 2012. As part of this phase, the pedestrian zone would also be implemented.

### Funding

The initial phases of the proposed strategies could be implemented at relatively low cost, as they consist primarily of signing, pavement markings, and work that could be performed by DDOT without additional funding. Table 4 summarizes the preliminary estimate of the cost for each phase of improvements. These preliminary cost estimates were compiled utilizing unit costs from various sources and do not include other project costs such as overhead, profit and fees, contingencies, escalation, and engineering.

**Table 4: Preliminary Cost Estimates**

PHASE	COST (FY09)*
A	26,000
B	40,000
C	483,000

\* Includes material costs only.

A brief description of the preliminary estimate of the project cost by phase is outlined below.

**PHASE A:** The majority of Phase A's estimated costs are composed of pavement marking and traffic sign modification work. The pavement marking work is based on the adjustment of the bus loading and unloading zones.

**PHASE B:** Phase B's costs include the price of wayfinding signs. Phase B proposes an interim implementation of the pedestrian zone where traffic could be controlled by a traffic control officer, but a cost for this was not estimated due to uncertainty with the details and methods.

**PHASE C:** Phase C will be more expensive than the earlier phases, primarily due to the need for physical modifications to the traffic signals to accommodate the change to two-way traffic. The cost estimate also includes modification of pavement markings, traffic signs, and the implementation of the daytime pedestrian zone. The cost estimate of the daytime pedestrian zone does not include a permanent barrier structure (e.g., retractable bollards) and assumes that a removable traffic barrier would be utilized to delineate the boundary of the pedestrian zone.

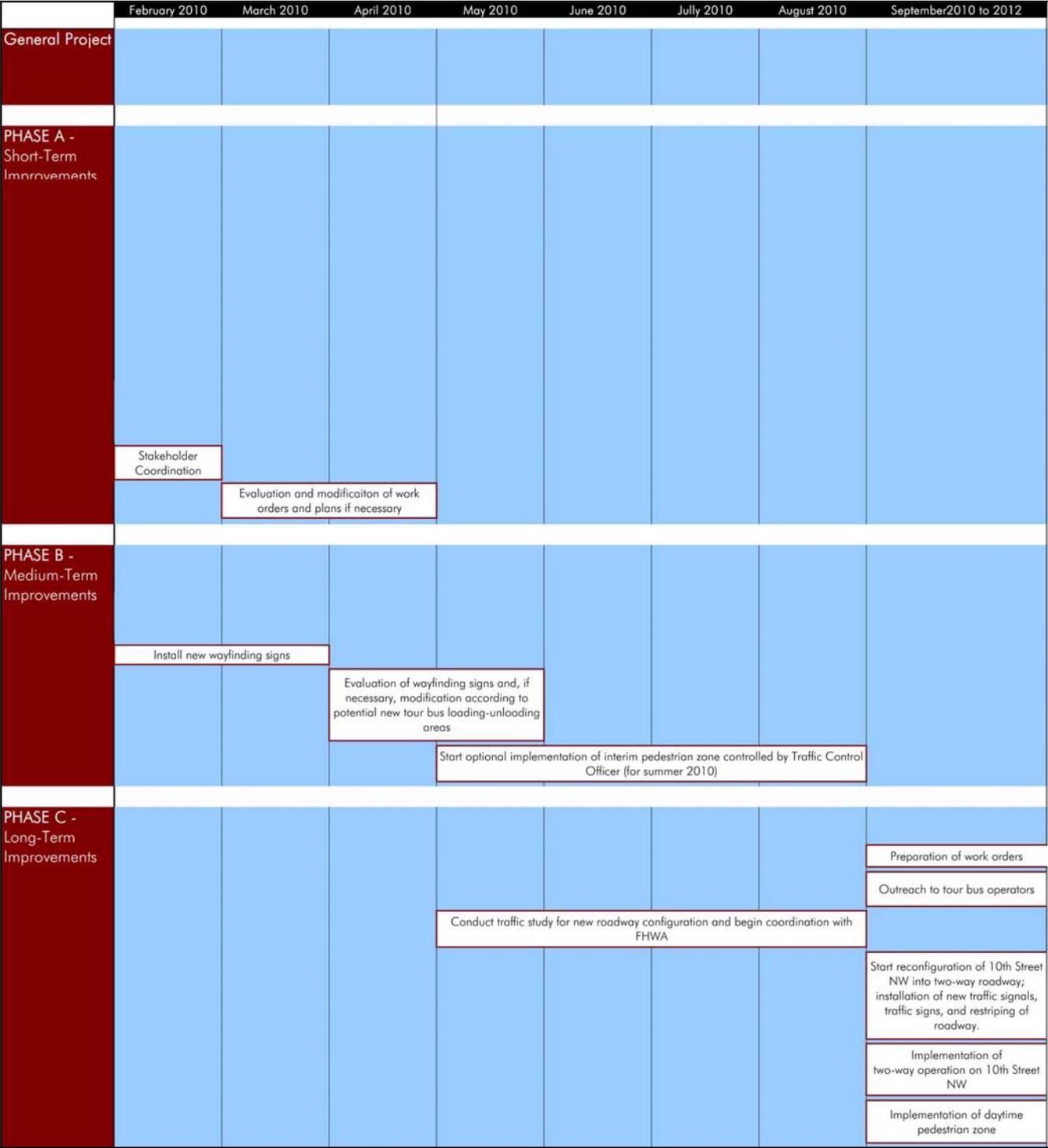
A more detailed breakdown of the cost estimates for the proposed implementation phases outlined above are presented in Appendix B.

10<sup>th</sup> Street NW Curbside Management Plan  
 Recommended Improvements Final Technical Memorandum

	May 2009	June 2009	July 2009	August 2009	September 2009	October 2009	November 2009	December 2009	January 2010
General Project	Stakeholder Coordination								
				DDOT approval					
PHASE A - Short-Term Improvements					Coordination with CityCenterDC				
						Designation of new locations for tour bus loading-unloading			
							Outreach to tour bus operators		
							Preparation of tour bus relocation work orders		
								Relocation of tour buses; removal/replacement of existing signs and addition of new signs at new locations	
PHASE B - Medium-Term Improvements							Identification of funding for new wayfinding signs		
									Design and fabricate new wayfinding signs
PHASE C - Long-Term Improvements					Identification of funding for modifications on roadway configurations				

Figure 64: Implementation Schedule from May 2009 to January 2010

10<sup>th</sup> Street NW Curbside Management Plan  
Recommended Improvements Final Technical Memorandum



**Figure 65: Implementation Schedule from February 2010 to 2012**

## Responsibilities and Evaluation

DDOT would be responsible for funding and implementing all phases of the plan, though the Downtown BID could help to coordinate the installation of wayfinding signs. The Downtown BID should participate in all phases, particularly Phase C to determine if public space programming or a longer-term closure of the 500 block is desirable. If programming of the space is desired, the BID would assume and/or coordinate responsibility for daily installation and removal of required barricades or signs.

A stakeholder meeting could be held one month after the tour bus relocation is implemented. This meeting would help assess the progress and results of the improvement measures to that point. A follow-up meeting should be held in 2010 to revisit the effectiveness of the measures and to discuss the two-way conversion. Once study and design of the two-way conversion is underway, DDOT would need to coordinate with FHWA due to the federal-aid roadway status of 10<sup>th</sup> Street.



Figure 66: 10<sup>th</sup> Street streetscape

## CONCLUSION

The recommended implementation plan presented in this report would solve key issues in the 10<sup>th</sup> Street corridor. By emphasizing urban pedestrian and bicycle travel, access to transit, and relocating tour buses, the corridor would become a more vibrant connection from the National Mall to downtown DC. With appropriate programming, the pedestrian zone can develop an identity, attracting tourists north from the mall and through the 10<sup>th</sup> Street corridor.

By employing both incentives and penalties, the District could achieve better compliance with curbside regulations. Ultimately, reconfiguring 10<sup>th</sup> Street as a two-way street and establishing a pedestrian zone in the 500 block would establish the corridor as a great local street and destination.

## REFERENCES

District Department of Transportation (DDOT). 2005. District of Columbia Bicycle Master Plan.

DDOT. 2008. District of Columbia Pedestrian Master Plan (Draft).

DDOT. 2008. Downtown Washington, D.C., Bicycle Map. Washington, D.C. Online. Available from Internet, <http://ddot.dc.gov/ddot/frames.asp?doc=/ddot/lib/ddot/information/bicycle/map/2008/downtownmap.pdf>, accessed 17 November 2008.

DDOT. 2006. Functional Classification Map. Washington, D.C. Online. Available from Internet, [http://ddot.dc.gov/ddot/lib/ddot/information/maps/fclass\\_e\\_p\\_2006-08-22\\_rev2.pdf](http://ddot.dc.gov/ddot/lib/ddot/information/maps/fclass_e_p_2006-08-22_rev2.pdf), accessed 19 November 2008.

DDOT. 2006. 2006 Traffic Volumes. Washington, D.C. Online. Available from Internet, [http://ddot.dc.gov/ddot/frames.asp?doc=/ddot/lib/ddot/information/maps/trafficvolume/2006\\_downto wn.pdf](http://ddot.dc.gov/ddot/frames.asp?doc=/ddot/lib/ddot/information/maps/trafficvolume/2006_downto wn.pdf), accessed 17 November 2008.

Gorove / Slade Associates, Inc. 2006. Downtown BID Study: Redirection of Traffic and Re-Striping of Lanes Along the 500 Block of 10<sup>th</sup> St NW, July 3, Washington, D.C.

Downtown DC Business Improvement District (BID). 2008. "10th Street NW Block Maps". Washington, D.C.

Downtown DC BID. 2008. "Construction Zones, Tourist Bus Lines, and Traffic Flow; Transportation Planning for 10th Street NW". Washington, D.C.

Gorove / Slade Associates, Inc. 2006. "Downtown BID Study: Redirection of Traffic and Re-Striping of Lanes Along the 500 Block of Tenth Street, NW". July 23, Washington, D.C.

Gorove / Slade Associates, Inc. 2006. Old Convention Center; Master Plan (Transportation Component), Basic Street Plan and Alternatives. September 25, Washington, D.C.

Schiesel, Robert, and Felice Brichta (Gorove / Slade Associates, Inc.). 2008. "Technical Memorandum: City Center DC (Old Convention Center Site), Operation of Internal Roadways". May 23, Washington, D.C.

Schiesel, Robert, and Felice Brichta (Gorove / Slade Associates, Inc.). 2008. "Technical Memorandum: City Center DC (Old Convention Center Site), Signal Warrant Analysis". May 23, Washington, D.C.

Washington Metropolitan Area Transit Authority (WMATA). 2008. Metrobus Service Map. Washington, D.C. Online, Available from Internet, <http://www.wmata.com/pdfs/bus/DC.pdf>, accessed 20 November 2008.

Volpe National Transportation Systems Center. Prepared for the DDOT, National Capital Planning Commission. 2003. District of Columbia Tour Bus Management Initiative (Final Report).



## APPENDICES

### Appendix A – Stakeholder Coordination

Two meetings were held with key stakeholders to provide updates on project progress and to obtain input on the project findings. The first meeting was held on January 27, 2009 to provide stakeholders with a summary of the findings from the project's existing conditions task, identify any additional issues, and to provide stakeholders with an opportunity to voice their concerns. The second meeting was held on May 18, 2009, to provide stakeholders with preliminary recommendations and with the opportunity to respond to the recommendations. These meetings are discussed in greater detail below.

#### January 27, 2009 Meeting

The first stakeholder meeting was held at the office of the Downtown BID. Participants included representatives of DDOT and the Downtown BID as well as:

Alston & Bird LLP  
Central Parking System  
Downtown Neighborhood Association  
Ford's Theatre  
Hines  
Madame Tussauds Wax Museum  
National Capital Planning Commission  
National Park Service  
Old Town Trolley  
Penn Quarter Neighborhood Association  
Vendors Caucus  
Washington Metropolitan Area Transit Authority

#### Comments on developments in the area:

- The Ford's Theatre has completed the renovation project. The renovation of the Petersen House is scheduled to start this year.
- The construction of the development at the corner of 10th and G Streets has been delayed.

- The new CityCenterDC is planned to be completed by 2012.

#### Comments on the roadway and sidewalk operations:

- Statements of support and concern were made regarding the possibility of changing 10th Street into a two-way road.
- Concerns were raised regarding the existing bicycle lanes on 10th Street. It was stated that an alternative to remove the bicycle lanes from 10th Street should be considered.
- There were concerns regarding the lack of signage indicating "No Right Turn on Red" (dangerous for pedestrians) on the intersections of 10th and F Streets, and 10th and G Streets.
- Concerns were raised regarding the significant number of vehicles making a turn into the wrong direction on 10th Street.
- It was expressed that the pedestrian countdown lights are not working at some intersections along 10th Street.
- It was clarified that under DDOT regulations Segways are allowed to operate on the sidewalks. Concerns were raised that the presence of Segway on the sidewalk is a point conflict in front of the Ford's Theatre.
- The construction on the block between Pennsylvania Avenue and Constitution Avenue has been completed and WMATA has resumed their Metrobus operations. WMATA stated that this block is an important terminus for Metrobus operation.
- It was stated that there use to be approximately 28 vendors along 10th Street between F Street and Pennsylvania Avenue, and now there are only two.
  - Vendors in front of the Hoover Building were removed by the FBI due to security issues.
  - Vendors on the east side of 10th Street between F and E Streets were removed due to safety issues.

- The lack of management and enforcement of roadway and curbside operation was mentioned numerously throughout the meeting.

**Comments on loading and unloading of delivery vehicles:**

- It was stated that delivery vehicles for the West Elm store do not fit into delivery garage (due to low heights of the entrance) and end up blocking the road on a daily basis.
- It was mentioned that non-delivery vehicles park in the 15-minute loading and unloading spaces, which encourage delivery vehicles to double-park (e.g., deliveries for Hard Rock Café).

**Comments on bus operations:**

- It was expressed that the large presence of tour, chartered, and intercity buses along the 10th Street corridor is incompatible and a major issue for the corridor.
- It was stated that the busiest time for Ford's Theatre is between February and June, and then around October. It was further mentioned that 70 to 80 percent of those visiting the Ford's Theatre arrive in buses (i.e., tour and chartered buses).
- Old Town Trolley has designated spaces to load and unload passengers. It was stated that in many cases those spaces are occupied by other vehicles.
- It was agreed that the double-parking of some tour buses and chartered buses cause many traffic issues.
  - Lack of management and enforcement to prevent double parking.
  - Due to overwhelming amount of tour buses in the area, it was suggested that enforcement-only might not be an effective solution to the issues caused by the bus operations.

**Ideas or Potential Solutions:**

**Traffic:**

- Improve signage and signalization to ensure safe operation between vehicles and pedestrians.

- Analyze one-way and two-way roadway configuration.
- Provide traffic officer to enforce proper flow and traffic operation

**Delivery Vehicles:**

- Apply regulations restricting delivery times.
- Ensure management and enforcement of proper use of designated loading and unloading spaces.

**Buses:**

- It was suggested to allow buses to load and unload passengers on 10th Street, but manage them to idle and wait at a site off 10th Street.
  - Issue: the availability of a location where buses could idle and wait for passengers to finish their visit.
- Provide management and enforcement to ensure proper operations of buses.
- It was suggested to look into restricting bus access on 10th Street.
  - It was suggested that buses could be diverted onto E and F Streets, but there were concerns that business on these streets would be affected negatively.
  - Concerns were raised suggesting that restricting buses from 10th Street might eliminate buses from coming into 10th Street, hence reducing the number of visitors.
- It was suggested the possibility to close off the 500 block area partially and/or temporarily to pedestrians only.
- DDOT stated that the agency is working on producing a policy that would manage and relocate all type of buses in the District.
- The Ford Theatre has eliminated their 15-minute drive-by tours, which could reduce the number of idling buses.
  - Ford's Theatre's implementation of advanced/timed tickets could reduce huge lines of people waiting to get into the theater.

- It was suggested that coordinating entry and visiting hours between visitor destinations in the area could help alleviate issues.
- Consider reutilizing the meter parking spaces located on the west side of the 600 block.
- It was suggested that local businesses should create a budget to fund dedicated traffic control officers that would manage and enforce proper curbside operations.

Activating blocks north and south of the 500 block:

- Allowing street vendors.
  - It was stated that street vendors are not necessarily an effective way to activate areas.
- Reconsider use of curbside space in front of the FBI building.
- Improve the way-finding signage in the area to encourage people to walk towards the 500 block.

## May 18, 2009 Meeting

The second stakeholder meeting was held at the office of the Downtown BID. Participants were:

Chris Ziemann	DDOT
Olusegun Olaore	DDOT
William McGuirk	DDOT Traffic
Charles Whalen	DDOT-IPMA
Kelly Peterson	Downtown BID
David Cohen	Old Town Trolley
Shameka Lloyd	Madame Tussauds DC
Miles Groves	DNA
Richard Neidich	Blagden Alley Assn
Michael Weil	NCPC
Stephen Dunakoskie	NCPC
David Erion	WMATA
Elizabeth Germain	Alston + Bird
Paul Tetreault	Ford's Theatre
Teri McDonald	Ford's Theatre
Shaazad Asghar	CPS
Howard L. Carter	H L Carter + Associates, PC
Edward Carter	Tishman Speyer
Kym Elder	NPS-Ford's Theatre
Jo-Ann Neuhaus	PQNA

### Tour buses

- The major issues in the corridor rise from congestion on the roadway caused by illegal parking of tour buses.
- Double-decker buses illegally stop in the travel lane to perform ticketing transactions for visitors, congesting the roadway even more.
- Old Town Trolley has designated loading spaces on 10th Street NW and on E Street NW. It was agreed that the trolley operations do not contribute to the congestion issues in the corridor.
- The need for traffic and curbside operation enforcement was mentioned throughout the meeting; many believed that the lack of enforcement is the only issue that needs to be addressed in the corridor.
- The peak hours for tour buses in the corridor range from 7 a.m. to 6 p.m. during peak season.

### Loading and unloading of delivery vehicles

- Non-delivery vehicles park in the 15-minute loading and unloading spaces, which encourage delivery vehicles to double-park (e.g., deliveries for Hard Rock Café).
- Some delivery vehicles tend to park in the loading spaces all day, taking away curbside space for other delivery vehicles.

### Proposed pedestrian zone in the 500 block

- It was clarified that the pedestrian zone would be closed to all vehicles (including delivery vehicles) except emergency vehicles.
- There was a concern that the closure of the 500 block would divert and increase traffic on F Street NW. It was mentioned that the closure of the 500 block would have to be combined with a proper management and coordination to maintain adequate traffic operation in the surrounding areas.
- Ford's Theatre is not only an attraction for visitors and tourists, but it is also a point of reference or meeting point used by DC visitors in general.
- There were some concerns that on the potential two-way section, north of the closure, people might be tempted to park or idle their vehicles, which would block the access to the parking garage.
- The successful operation of the closure of the 500 block would mainly depend on the enforcement of traffic and curbside regulations.

### Proposed two-way operation

- Two-way operation would increase the number of curbside space that can be used for loading/unloading for buses and delivery vehicles.
- Some agreed that the two-way operation would calm traffic and help turn the corridor into an urban corridor.
- Some were concerned that the two-way operation would increase through traffic in the corridor.
- Some were concerned that even though it would mean blocking an entire direction of traffic, buses might continue to double-park.

### Recommendations from stakeholders

#### Bus traffic:

- Eliminate 15-minute tour bus parking signs and replace with "No Parking – Loading and Unloading Only" signs in the 500 block.
- Provide and train traffic control officers (TCOs) that would ticket buses performing illegal traffic operations.
- DDOT warned that policy should be careful not to facilitate tour bus operations at the expense of other modes.
- Bus relocation:
  - DDOT is still working to find a central bus parking location for when the CityCenterDC site is no longer available.
  - F Street NW has residential buildings, so diverting buses to this street should not be an option.
  - NCPC is currently trying to contact the FBI and discuss using curbside space in front of their building.

#### Delivery Vehicles:

- Apply regulations restricting delivery times.
- Ensure management and enforcement of designated loading and unloading spaces.

#### Enforcement:

- Enforcement is believed to be the most important issue by several stakeholders.
- Previous attempts to provide private enforcement were not effective due to funding issues.
- DDOT has successfully arranged to allow private funds to pay for TCOs in the area, but stakeholders decided not to pursue this option at this time.
- A representative from Central Parking presented the possibility of providing their services for parking enforcement in the corridor.

## Appendix B – Preliminary Cost Estimates

**Project:** 10th Street NW Curbside Management Plan **Date:** 5/13/2009

**Preliminary Cost Estimate**

**Phase A**

Line	2005 DDOT Item Number	Spec. Number	Item	Unit Cost (\$/Unit)	Unit	Quantity	Item Cost
1	616006	616.03	Removal of existing pavement marking(s)*	3.30	LF	3020	10000
2	616046	616.13	New lane marking(s) (6")*	1.76	LF	1250	2200
3	620014	620.03	Installation of new sign(s) (parking, loading/unloading, etc.)**	32.00	SF	34.5	1200
4	620032	620.08	Removal of existing sign(s)***	12.00	SF	21	300
5	620009	620.02	Installation of new metal sign post(s)**	15.00	LF	36	600
6			Removal/relocation of existing parking meter(s)****	220.00	Each	7	1600
7			Installation of new multispace parking meter(s)****	10000.00	Each	1	10000
<b>PHASE A TOTAL</b>							<b>26,000</b>

\*Unit costs were provided by DDOT  
 \*\*Unit costs were taken from Virginia DOT Bid Tabulations at <http://www.virginiadot.org/business/const/resources-bidtabs.asp>  
 \*\*\*Unit costs were taken from NTI\_Roadway\_Final\_ESTIMATE\_022807.xls from the South Capitol Street Near Term Improvement project  
 \*\*\*\*Unit costs were estimated from several different resources  
 \*\*\*\*\*Unit costs were provided by the DC Downtown BID

**Project:** 10th Street NW Curbside Management Plan **Date:** 5/13/2009

**Preliminary Cost Estimate**

**Phase B**

Line	Item	Unit Cost (\$/Unit)	Unit	Quantity	Item Cost
1	Visitor wayfinding signs with area map*****	6300.00	Each	4	26000
2	Visitor directional signs*****	3500.00	Each	4	14000
<b>PHASE B TOTAL</b>					<b>40,000</b>

\*Unit costs were provided by DDOT  
 \*\*Unit costs were taken from Virginia DOT Bid Tabulations at <http://www.virginiadot.org/business/const/resources-bidtabs.asp>  
 \*\*\*Unit costs were taken from NTI\_Roadway\_Final\_ESTIMATE\_022807.xls from the South Capitol Street Near Term Improvement project  
 \*\*\*\*Unit costs were estimated from several different resources  
 \*\*\*\*\*Unit costs were provided by the DC Downtown BID

**Project:** 10th Street NW Curbside Management Plan

**Date:** 5/13/2009

**Preliminary Cost Estimate**

**Phase C**

Line	2005 DDOT Item Number	Spec. Number	Item	Unit Cost (\$/Unit)	Unit	Quantity	Item Cost
<b>Two-way Conversion</b>							
1	616006	616.03	Removal of existing pavement marking(s)*	3.30	LF	4530	15000
2	616046	616.13	New lane marking(s) (6")*	1.76	LF	1250	2200
3	616046	616.13	New center line(s)*	1.77	LF	1510	2700
4	616051	616.14	New stop bar(s)*	3.00	LF	75	300
5	616053	616.14	Sharrow(s)*	93.50	Each	20	1900
6	620014	620.03	Installation of new bus loading/unloading sign(s)**	32.00	SF	33	1100
7	620992	620.08	Removal of existing sign(s)***	12.00	SF	57	700
8	620992	620.08	Relocate existing sign(s)***	12.00	SF	50	600
9	620992	620.08	Removal of existing sign post(s)**	175.00	Each	14	2500
10	620009	620.02	Installation of new sign post(s)**	15.00	LF	96	1500
11	600006	617.00	Installation of new traffic signal(s) [intersection]*	75000.00	Each	4	300000
12	600006	617.00	Installation of new traffic signal(s) [midblock]*	50000.00	Each	1	50000
13			Removal/relocation of existing parking meter(s)****	220.00	Each	7	1600
<b>Sub Total</b>							<b>381,000</b>

<b>Permanent Pedestrian Zones</b>							
1	616006	616.03	Removal of existing pavement marking(s)*	3.30	LF	820	2800
2	616046	616.13	New lane marking(s) (6")*	1.77	LF	250	500
3	616046	616.13	New center line(s)*	1.77	LF	120	300
4	616051	616.14	New stop bar(s)*	3.00	LF	15	100
5	616053	616.14	Sharrow(s)*	93.50	Each	3	300
6	620009	620.02	Installation of new sign post(s)**	15.00	LF	24	400
7	620014	620.03	Installation of new sign(s) (parking, loading/unloading,	32.00	SF	15	500
8	620014	620.03	Installation of new "One-way" sign(s)**	32.00	SF	6	200
9	620014	620.03	Installation of new "Do Not Enter" sign(s)**	32.00	SF	12.5	400
10	620992	620.08	Removal of existing sign post(s)**	175.00	Each	4	700
11	620032	620.08	Removal of existing sign(s)***	12.00	SF	21	300
12	600006	617.00	Installation of new traffic signal(s) [intersection]*	75000.00	Each	1	75000
13			Removable traffic barriers****	5000.00	Each	4	20000
<b>Sub Total</b>							<b>102,000</b>

**PHASE C TOTAL**

**483,000**

\*Unit costs were provided by DDOT

\*\*Unit costs were taken from Virginia DOT Bid Tabulations at <http://www.virginia-dot.org/business/const/resources-bidtabs.asp>

\*\*\*Unit costs were taken from NT1\_Roadway\_Final\_ESTIMATE\_022807.xls from the South Capitol Street Near Term Improvement project

\*\*\*\*Unit costs were estimated from several different resources

\*\*\*\*\*Unit costs were provided by the DC Downtown BID

