

3.0 AFFECTED ENVIRONMENT



View of Capitol dome across approved site, which is currently bisected by C Street.

3.0 AFFECTED ENVIRONMENT

3.1 Socio-Economic Environment

3.1.1 Land Use

The approved site for the American Veterans Disabled for Life Memorial is located in the southwestern quadrant of the District of Columbia. It is bordered by Washington Avenue to the east, 2nd Street to the west, and the Interstate 395 (I-395) tunnel to the south. It is located one block from the National Mall, within view of the United States Capitol.

The project site will be configured to consist of three distinct parcels of land surrounding a realigned section of C Street (Figure 3-1). The primary site will consist of approximately 1.16 acres in a triangular configuration (parcel A in Figure 3-1). It is currently bisected by the diagonal alignment of C Street. Additional land, consisting of approximately .91 acres, is located south of the realigned east-west configuration of C Street (parcels B & C in Figure 3-1).

The project site is currently undeveloped, with the exception of a network of sidewalks. It is largely flat and open, with modest vegetation including a manicured lawn and various shrubs and trees. A criss-cross of sidewalks provides pedestrian access from adjacent buildings to Capitol Hill.

There are no fences or walls in or around the site. It is open, easily accessible, and traversed daily by pedestrians. I-395 runs under the site, with access to on- and off-ramps located through and around the site. Access to Interstate 295 (I-295) is also available at this location.



Figure 3-1: The approved site consists of parcels A, B and C as identified here.



Project site looking north with Hubert H. Humphrey Building to the west.



Rayburn Building and Bartholdi Park.

As presented in Figure 3-2, the primary land use within the area surrounding the Memorial site is office, most of which is owned and occupied by the federal government. Office buildings include:

- Hubert H. Humphrey Building, located at 2nd Street and Independence Ave, SW, which houses the Department of Health and Human Services;
- Federal Building 8, located at 2nd and C Streets, SW, which is currently vacant and being modernized for federal office use;
- Ford House Office Building, located at 2nd and D Streets, SW, which is occupied by congressional staff and the Architect of the Capitol;
- Rayburn Building, located at 1st Street, and Independence Ave, SW, which is occupied by the U.S. House of Representatives;
- Cohen Building, located at 3rd Street and Independence Avenue, SW, which houses the Department of Health and Human Services; and
- Switzer Building, located at 3rd and C Streets, SW, which houses the Department of Education.
- A private commercial office building, located at 3rd and D Streets, SW with ground level retail uses and access to the Southwest Federal Center Metrorail Station; and
- A private commercial office building under construction at 4th and E Streets, SW, for lease by the General Services Administration.

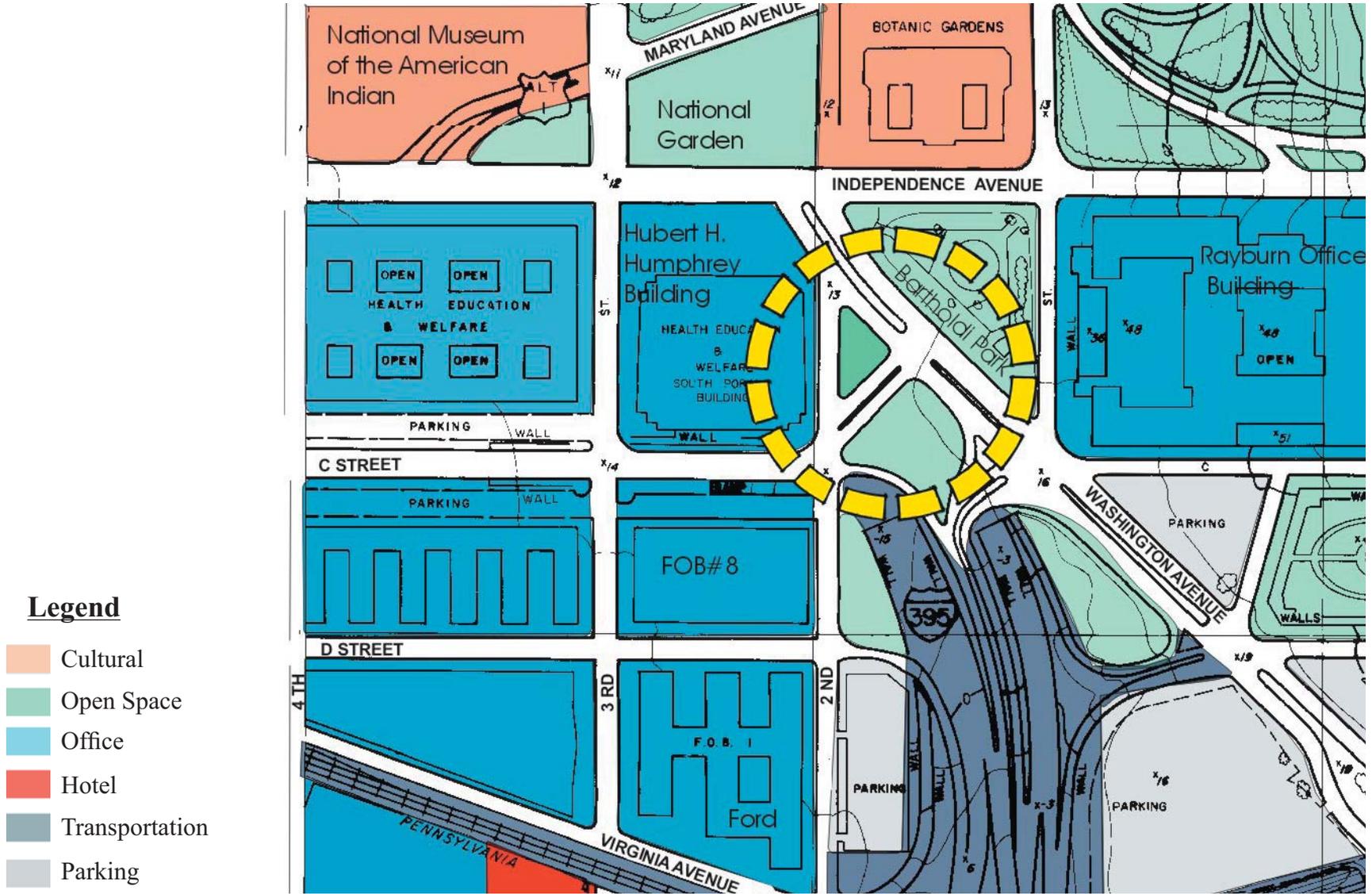


Figure 3-2: Map of land uses in the study area.

Another major land use in the area is open space. In addition to the open space of the project site, this category includes:

- Public parkland on the Capitol Grounds, located to the northeast of the site;
- Bartholdi Park, located to the north of the site, across Washington Avenue, SW;
- Land located adjacent to the U.S. Botanic Garden on Maryland Avenue, SW, which is planned for a National Garden; and
- A public plaza located above a congressional parking garage at Washington Avenue and D Streets, SW.

Other uses in the area include transportation and parking, cultural, and hotel uses. Surface parking lots and transportation infrastructure for I-395 and I-295 are predominant to the south of the site. In addition, a rail line runs along Virginia Avenue and over the Interstate highway two blocks to the south. The Southwest Federal Center Metrorail Station is located three blocks southwest of the project site at 3rd and D Streets, SW.

Cultural institutions near the site include the U.S. Botanic Garden, located to the north of the site at 2nd Street and Independence Avenue, SW., and the National Museum of the American Indian (NMAI), located at 3rd Street and Independence Avenue, SE. The NMAI recently opened in September 2004. Directly northeast of the site is the U.S. Capitol Building, a major public site that is open daily for public tours.

There is one hotel currently under construction in the area. Marriott Corporation is developing this 13-story facility at 3rd and E Streets, SW.

Land uses beyond the immediate area include the National Mall, a major civic space lined with museums to the north; the Capitol Hill community, a mixed-use historic district located to the east; and several major agencies of the federal government located in an area known as the Southwest Federal Center to the west. Nearby municipal land uses include fire and police stations located on the north side of E Street between 5th and 6th Streets, SW.



View of Federal Building 8 across Washington Avenue.



New Marriott Hotel under construction.
 Foreground: Excavation for new office building for GSA.

3.1.2 Planning Controls and Policies

The project site is located on land owned by the federal government. As such, it is not subject to local zoning regulations. Development of federal property is under the purview of the National Capital Planning Commission (NCPC) pursuant to the District of Columbia Zoning Enabling Act (1938). For federal projects, NCPC has approval authority for use, open space, height, and bulk.

Commemorative Zone Policy

In 2002, Congress adopted a Commemorative Zone Policy as public law. The policy is intended to: preserve the integrity of the Monumental Core; encourage memorials to be located in all quadrants of the city; increase the public's use of the city's waterfronts; and strengthen the North, South, and East Capitol Street axes. The Commemorative Zone Policy is based on the Commemorative Works Act of 1986 (CWA), which provided standards for placing memorials on federal land in the District of Columbia and surrounding areas. The policy recognizes three memorial zones, established to preserve the urban design integrity of the Nation's Capital: The Reserve, Area I, and Area II (see Figure 3-3).

The Reserve, a highly protective area where no new memorials or museums are permitted, is defined by the major cross axial area extending from the Capitol to the Washington Monument and Lafayette Park to the Tidal Basin. Area I is a sensitive area designated for commemorative works of pre-eminent historic and national significance. Area II includes the rest of the city with emphasis on the North, South and East Capitol Street axes.

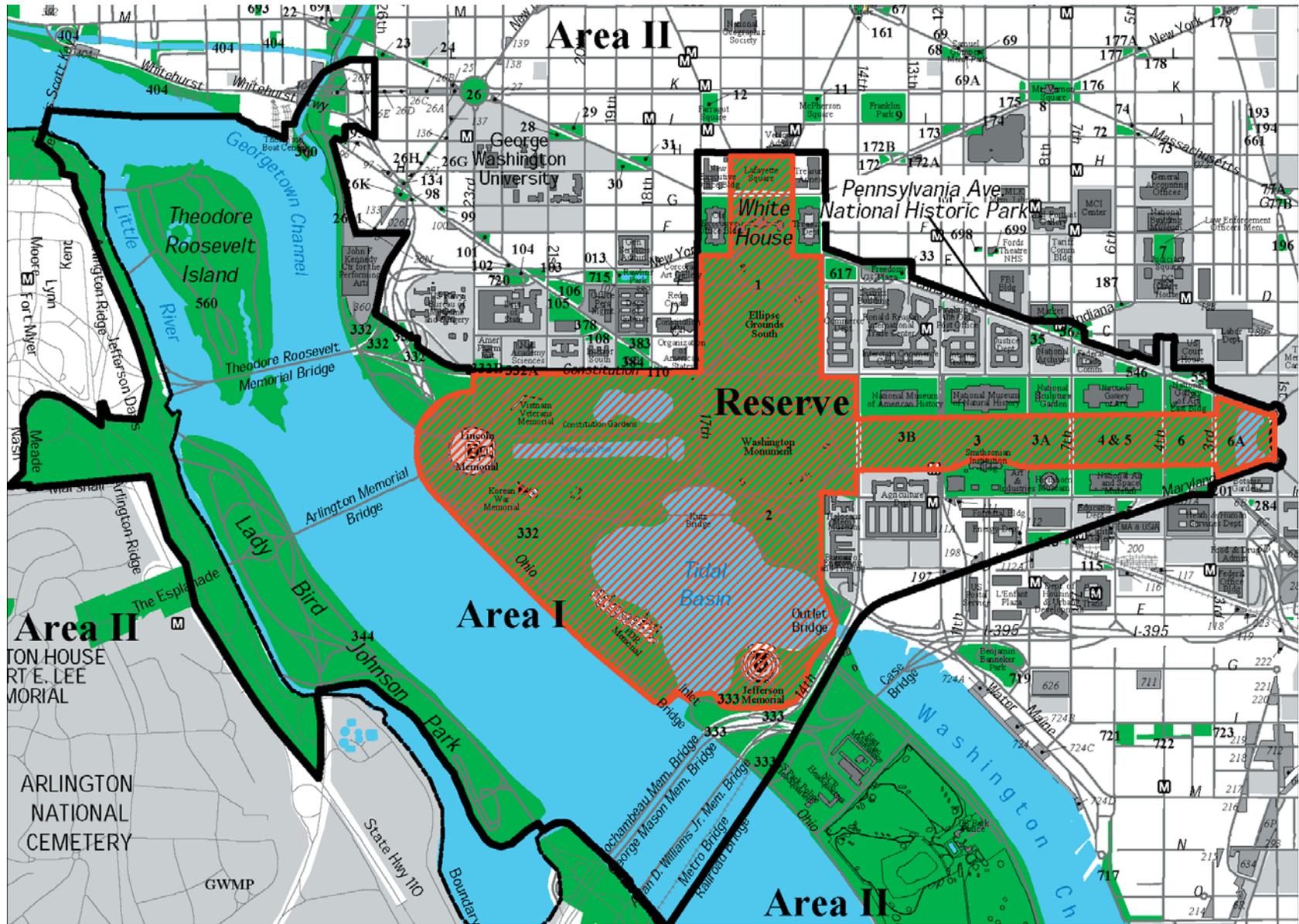


Figure 3-3: Commemorative Zone Policy of 2002.

The *Memorials and Museums Master Plan*, prepared by NCPC in 2001, expands on the principles laid out in the Commemorative Zone Policy by establishing a framework for future memorials along the Potomac and Anacostia Rivers, the circles and squares of major avenues, urban gateways, and scenic overlooks. The *Plan* also identified and evaluated 100 candidate sites for their suitability and appropriateness for a commemorative feature. The site for the proposed Memorial falls within Area II. It is identified as Site 26 or Washington Avenue (Canal Street) at 2nd Street, SW, in the *Memorials and Museums Master Plan*.

The Foundation investigated six (6) different sites, all which were included in the *Memorials and Museums Master Plan*. Site 26 was chosen for its proximity to the U.S. Capitol Building, as well as other museums on and near the National Mall and nearby Metrorail stations. The site has been approved by CFA, NCPC, the District of Columbia and NPS.

Comprehensive Plan for the National Capital

The *Comprehensive Plan for the National Capital, Federal Elements* (1977-1984, updated 2004 in Draft form) is the principal planning document adopted by the NCPC for the planning of federal facilities. The following *Federal Elements* include goals, objectives, and policies relevant to the proposed project:

The *Park and Open Space Element* states that “it is a goal of the federal government to conserve and enhance the park and open space system of the National Capital Region, ensure that adequate resources are available for future generations, and

promote an appropriate balance between open space resources and the built environment.” Relevant policies in support of these goals include maintaining and conserving federal open space as a means to shape and enhance urban areas; and siting memorials in monumentally designed parks in compliance with the *Memorials and Museums Master Plan*.

The *Preservation and Historic Features Element* states that “it is a goal of the federal government to preserve and enhance the image and identity of the Nation’s Capital and region through design and development respectful of the guiding principles of the L’Enfant and McMillan Plans, the enduring value of historic buildings and places, and the symbolic character of the capital’s setting.” Relevant policies in support of this goal include adhering to the high aesthetic standards already established by the planning and design legacy of the nation’s capital; planning for appropriate and compatible uses in and near the Monumental Core to reinforce and enhance existing uses and historic character; protecting and enhancing the vistas and views, both natural and designed, that are an integral part of the national capital’s image; protecting the historic importance and function of streets as vehicular thoroughfares and avoid inappropriate traffic channelization; providing and maintaining street trees to help frame axial views and reinforce the historic green character of the nation’s capital; and restoring historic streets and reservations that have been inappropriately disrupted or closed to their original right-of-way or configuration at the earliest opportunity.

The *Visitors Element* states that “it is a goal of the federal government to accommodate visitors in a way that ensures an enjoyable and educational experience, showcases the

institutions of American culture and democracy, and supports federal and regional planning goals.” Relevant policies in support of this goal include protecting the Monumental Core by locating and designing new memorials and museums in accordance with NCPD’s *Memorials and Museums Master Plan*; and providing visitor attractions within walking distance of public transportation stations and routes.

Architect of the Capitol Master Plan

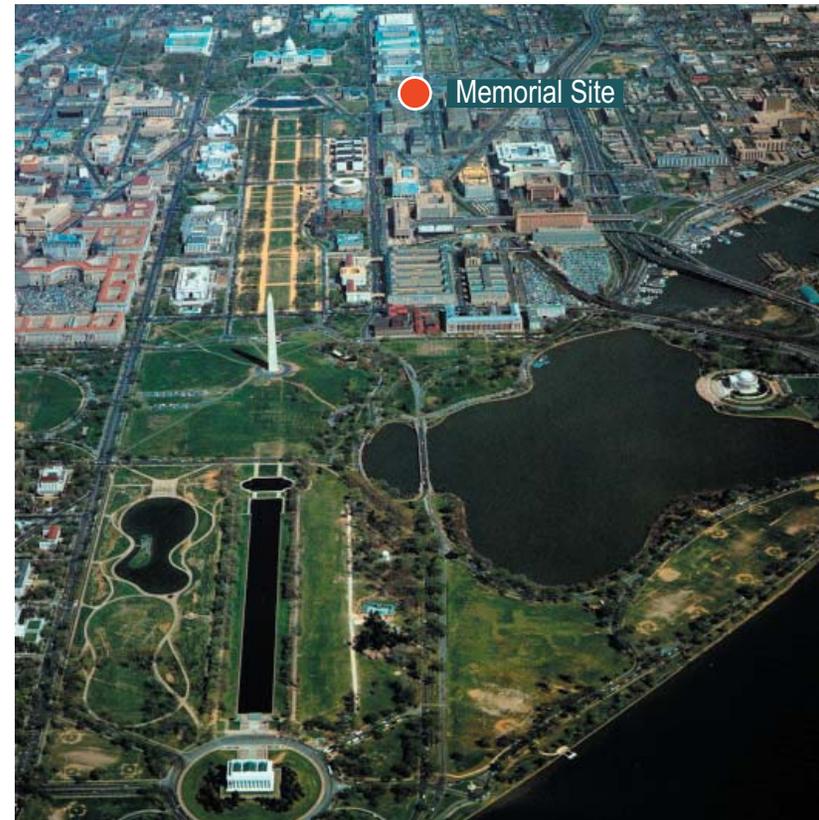
The guiding tool for development of the Capitol precinct is *The Master Plan for the United States Capitol*, published in 1981, and currently being updated. The major emphasis of the Plan relates to visual quality and height and bulk controls in the sensitive transition zone between the Capitol Grounds and adjacent areas, including the Capitol Hill Historic District. The Plan identifies two specific design needs for an area 1-1/2 blocks east of the proposed project. These include a “need for delineation and spatial definition of what is now the most disorganized area of Capitol Hill [the area along South Capitol Street];” and a “need for a plan which will define a compatible design relationship between future Congressional buildings and the adjacent neighborhoods.”

3.1.3 Visitation

One of the world's largest concentrations of outstanding visitor attractions exists in the Washington area. The National Park Service tracks visitation to attractions in the Monumental Core and conducts periodic surveys of visitors. A statistical analysis of visitation patterns and visitor characteristics within the National Capital central region indicates that approximately 10 million people visited National Capital Parks-Central in 2001. Approximately 4.1 million people visited the Lincoln Memorial, 3 million visited the Franklin Delano Roosevelt Memorial, and 2.3 million visited the Jefferson Memorial. These numbers suggest that there is a high level of annual tourism generated by attractions close to the project site.

Special Events and Demonstrations

The Monumental Core is a highly visible stage for special events, such as inaugural activities, Fourth of July celebrations, and demonstrations. These events draw up to hundreds of thousands of participants, which can present issues for public safety and management of these lands. The project site is not currently used for such activities; however, it could draw visitors from such events.



National Mall looking east.

3.1.4 Community Facilities and Services

Community facilities in the vicinity of the site are limited to nearby museums. Public museums provide a source for restrooms and water fountains.

Nearby restrooms are also located at the Botanic Garden, the Capitol Building, and the NMAI. Retail areas located at 3rd and D Streets, SW, near the Southwest Metrorail Station, might also serve as an alternative for store patrons.

3.1.5 Safety and Security

Public areas near the project site are patrolled by both local and federal police who have jurisdiction over different parts of the area. The U.S. Park Police provide continuous patrol service over parkland in the Monumental Core area, including the Botanic Garden and Bartholdi Park. Central District (D-1) of the Park Police is headquartered at Haines Point and patrols in downtown Washington and the National Mall. The Central District personnel have jurisdiction over the project site area.

The Capitol Hill Police provide security patrol for land under jurisdiction of the Architect of the Capitol (AOC). Since the terrorist attacks on September 11, 2001, the AOC has closed certain streets providing access to congressional facilities. In the vicinity of the project site, these include: 1st Street, SW, between Independence and Washington Avenues; C Street, SW, between Washington Avenue and 1st Street, SE; D Street, SW, between Washington Avenue and South Capitol Street; and Virginia Avenue, SW, between 2nd and 3rd Streets, SW. Capitol Hill Police cars are stationed at 1st Street and Independence

Avenue, SW and at Washington and Independence Avenues, SW twenty-four hours a day. Guards are also located at C Street and Washington Avenue, SW to provide access to congressional parking garages.

The District of Columbia provides fire protection and emergency medical protection for the site and the study area. The closest fire and police stations are located on the north side of E Street between 5th and 6th Streets, SW.

3.2 Cultural Resources

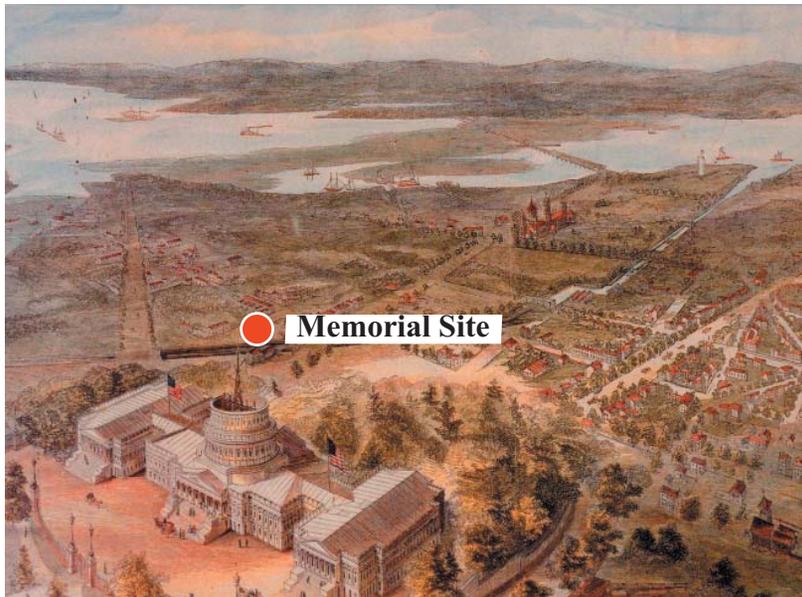
This section documents the historic, archaeological, and visual resources that are present on the site and within the nearby area. For the purposes of this section, the area of potential effects (APE) for historic resources includes the area from which the project site is visible. As a result, the APE for historic resources extends approximately two blocks in each direction and includes a portion of the National Mall and the west front of the Capitol Building. In defining the APE for archaeological resources, it was determined that the only effects on archaeological resources would occur as a result of ground disturbing activities (such as structural footings) on the site. Therefore, the APE for archaeological resources is limited to Square N-580 of the proposed site. The study area for visual resources is the same area as that defined by the APE.

Cultural resource information was derived from a previous cultural resource investigation prepared for the site in 1994, environmental site assessments prepared in 1994 and 1996, and a site reconnaissance survey to field verify report findings. These studies included archival research, consisting of a

literature search and review of historic documents, land records and maps. Site files were reviewed at the DC Historic Preservation Office and the Library of Congress, and surveyor plats were copied at the DC Surveyor's Office.

Historic Context

Despite its current vacant appearance and weak relationship to surrounding infrastructure, the project site was once part of a larger and vital residential community known as Southwest. During the mid-nineteenth century, this community located near the Capitol Building, became attractive to government workers, especially congressmen, who bought homes there.



1861 balloon aerial showing canal route through Southwest.

Source: Reps, John. *Washington On View*.

The influx of residents benefited local businesses, resulting in growth to the general commercial base. Although the more affluent residents lived in areas close to the Mall and Capitol Hill, the rest of Southwest was occupied by lower-income working-class residents employed in occupations related to the waterfront.

Various transportation improvements have contributed to the isolation of Southwest. The Washington Canal, constructed between 1810 and 1815, followed the routes of the Tiber and James Creeks, and physically separated Southwest from the rest of the City. While it was intended to improve transportation and spur economic development, its shallow depth and high siltation rate made it impassable and thus, a failure. It was ultimately filled and converted into a sewer in 1872. The construction of the B&O Railroad in the mid-1800s, had a similar effect by segregating the Southwest's affluent populace from its poorer neighbors to the south. In 1956, the construction of the Southeast/Southwest Freeway (I-395) created another barrier that further isolated residents from the rest of Washington.

During the Depression, Southwest began to experience a steady decline in living conditions as residents with economic means moved away, and the poor remained in dilapidated housing without indoor plumbing. In response to the low quality of life that was occurring less than a mile from U.S. Capitol, Congress passed the Housing Act of 1945, to spearhead urban renewal in the Nation's Capital. Slum-clearance programs began in 1953, when most families were relocated and existing structures were demolished. The new Southwest was redeveloped with large-scale federal buildings and modern residential complexes.

Site History

Based on historic maps, two-story brick dwellings occupied the project site (Square North-580) during the early to mid-nineteenth century, directly adjacent to what was once the Washington Canal. These structures were demolished sometime after the U.S. Government purchased them in 1930.

Prior to the filling of the Canal, the original triangular site known as Square North-580 was much smaller than its current area, which now occupies space over the original location of the Canal (Figure 3-4).

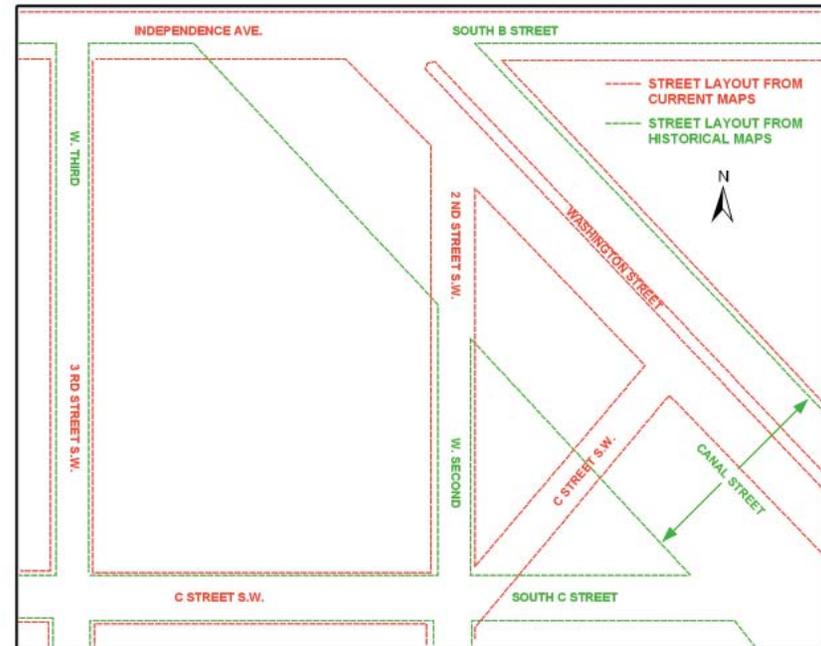


Figure 3-4: Map illustrating changes in street and parcel size around the project site. A significant portion of Canal Street once occupied the existing site.

3.2.1 Archaeological Resources

Soils at the project site consist entirely of fill. According to the District of Columbia General Soil Map, the project site is located on the conjunction of two soil categories, which are characterized as urban land, and soils of udorthent association; “well drained soils that consist of cuts, fills, or otherwise disturbed land (all on landscaped positions).”

Given the site’s reconfiguration during the construction of the Interstate highway system, the possibility for extant archaeological resources is negligible. Although the original Canal was once located underneath the eastern portion of Square North-580, according to highway construction drawings, the construction of the Interstate tunnels would have disturbed any potential remains associated with that structure (Figure 3-5).

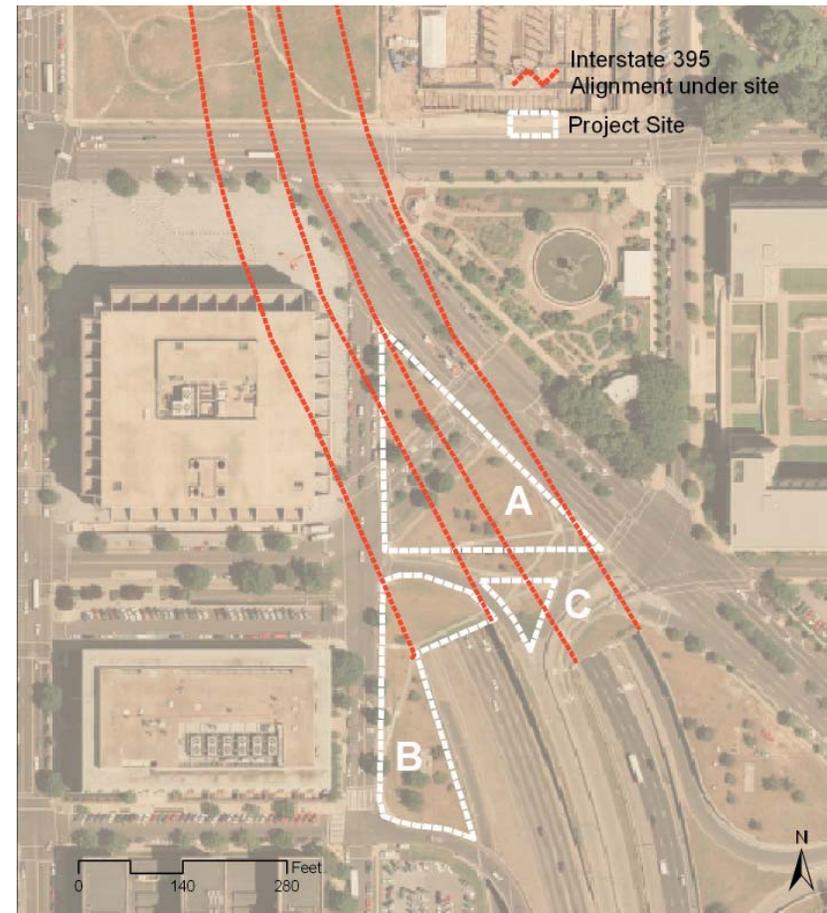
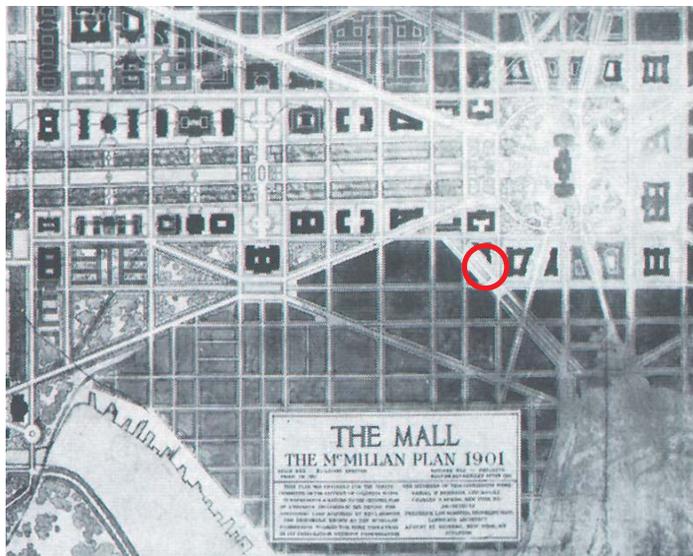


Figure 3-5: Footprint of Interstate 395 tunnels under site.



L'Enfant Plan of Washington, DC, 1791.



Detail of the McMillan Plan of 1901.

3.2.2 Historic Resources

There are no known historic or cultural resources located on the project site. The urban context of the project site, however, includes numerous historic and cultural resources. These vary from the city's historic plan of streets and squares to the many historic structures and places of cultural activity that surround the site.

L'Enfant Plan of Washington

The sole American example of a comprehensive Baroque city plan, the 1791 plan includes a coordinated system of radiating avenues, vistas, and parks overlaid upon an orthogonal grid of streets. Major elements of the L'Enfant Plan within the study area include the National Mall, Independence Avenue, 2nd Street, and the historic east-west alignment of C Street (all within the Southwest section of the city). The current diagonal configuration resulted from the construction of I-395 in the 1960s.

The McMillan Plan of 1901

The Senate Park Commission of 1901, known as the McMillan Commission, expanded on the L'Enfant Plan in a manner consistent with the City Beautiful movement. The Commission successfully removed railroad tracks from the Mall and extended the Mall and other monuments one mile to the west to create a site for the Lincoln Memorial. The features implemented from the 1901 McMillan Plan are included in the Landmark nomination for the L'Enfant Plan.

National Mall

Officially bounded by Constitution Avenue on the north, the Capitol Grounds on the east, Independence Avenue on the south, and 15th Street on the west, the National Mall is informally considered to be the entire greensward stretching to the Lincoln Memorial on the west. It was listed on the National Register in 1966 as an historic site. The proximity of the Memorial site to the Mall creates a unique visual setting. The National Museum of the American Indian (NMAI) is a large curvilinear building recently constructed on the south side of the Mall in the study area. Clad in stone, this museum can be partially viewed from the Memorial site. The site's orientation toward Independence Avenue provides a vista of trees on the Mall through the open space defined by the NMAI and Botanic Garden buildings.



View of National Museum of American Indian and the National Mall from Washington and Independence Avenues, SW.

U.S. Capitol Building and Grounds

The Capitol Building is located approximately 1,400 feet from the project site. Designed in the Neo-classical Style in 1793, the Capitol was completed in 1827, and then expanded and renovated during the nineteenth century. It was listed on the National Register in 1966. The building is fronted by a columned portico and crowned by a dome, with a central core and two wings, and is sheathed in white marble from the Lee, Massachusetts quarry and Aquia Creek sandstone painted to match the marble. The Capitol is significantly higher than any other occupied building in the Nation's Capital and its dome is one of the most prominent features visible from the Memorial site.



Bartholdi Fountain and Park with Capitol dome visible in background.

- *U.S. Botanic Garden Conservatory* - The Botanic Garden, located within the Capitol Grounds along Independence Avenue, is referred to as a ‘living plant museum,’ showcasing vegetative species and ecosystems in varying climatic exhibits. The garden was originally established by Congress in 1820, and remains one of the largest of its kind in North America. Designed in the Beaux Arts Style and constructed in 1933, the building’s limestone walls and large glass and steel solarium is in direct view of the Memorial site. Plans are currently underway to add a National Garden to the area west of the Conservatory. The Garden will be in direct view of the Memorial site.
- *Bartholdi Fountain and Park* - This park was established in 1932, and is widely recognized for its Bartholdi Fountain, sculpted in 1876, by Frederic August Bartholdi, sculptor of the Statue of Liberty. The Park is a part of the U.S. Botanic Garden, and is located immediately south of Independence Avenue. It is in complete view of the Memorial site.

Other notable resources in the study area include:

- *Hubert H. Humphrey Building (1976)* - The Humphrey Building is a six-story concrete federal office facility located at 2nd Street and Independence Avenue, SW. It was designed in the International Style by Marcel Breuer with a brise soleil, a penthouse, and a recessed ground floor. Located immediately adjacent to the Memorial site, the Humphrey Building provides an imposing western edge. The Humphrey Building could be potentially eligible for the National Register.



U.S. Botanic Garden.



View of Federal Office Building 8 (left) and Humphrey Building (right).

- Rayburn House Office Building (1965) - The Rayburn Building is a six-story marble building with an inner courtyard designed in the Neo-classical Style. It provides less immediate enclosure than the Humphrey Building as it is further from the project site. The Rayburn Building is not listed on the National Register, but is deemed eligible given its design and historic association with government.
- Mary Switzer Building (1940) - The Mary Switzer Building is a stone building designed with six wings off a main base in the Stripped Classical Style and is deemed potentially eligible for the National Register. Located at 3rd and C Street, SW, it is not visible from the project site.
- Wilbur J. Cohen Building (1939) - The Cohen Building is a stone building designed with interior courtyards in the Stripped Classical Style. Located at 3rd and Independence Avenue, SW, it is not visible from the project site.

3.2.3 Visual Resources

Visual resources include the Memorial site, important street corridors, vistas, and views of historic and cultural resources surrounding the site. Their quality is defined by the massing, setback and architectural detail of surrounding buildings, as well as the trees, paved and unpaved surfaces, signage and street furniture that characterize surrounding open space.

The Memorial site is relatively flat and open, vacant of permanent structures or facilities. Several deciduous trees are located on the site, with larger ones planted along its borders. Small shrubs and a manicured lawn are also located on the site.



View of Memorial site at Washington Avenue and 2nd Street, SW with the Rayburn Building on the left (signage identifies highway access located to the south).



Highway infrastructure located south of the Memorial site. (In the center is the I-395 corridor that runs beneath the site, and to the left is the I-295 access ramp.)



Southwest view of highway and elevated train tracks.



View of the Capitol dome across the diagonal segment of C Street traversing the project site.

The surrounding area is characterized by unattractive transportation infrastructure that is visible to the south of the site. This includes vehicular access ramps to I-295 and I-395, surface parking lots, and elevated railroad tracks.

The pattern of streets and associated visual corridors in the original portion of Washington, DC are significant to the city's early development. These corridors were established in the earliest plans for Washington by Pierre L'Enfant and have been maintained in subsequent plans and development. Of equal importance are views to and from key cultural resources, such as the U.S. Capitol.

The principal streets of the L'Enfant Plan influencing development of the Memorial site are the visual corridors formed by the strong diagonal street terminating at the National Mall (Washington Avenue), and the north-south and east-west grid streets defining city blocks (2nd and C Streets). According to the L'Enfant Plan, east-west streets are designated with alphabetic names, north-south streets are numbered, and diagonal avenues are named for states. Currently, however, C Street, S.W., between 2nd Street and Washington Avenue, S.W., is misaligned, as it runs at a diagonal angle from its original east-west orientation.

The most dramatic asset of the Memorial site is its view of the U.S. Capitol dome. Looking northeast from the site, the Capitol is the dominant visual resource in the landscape.

3.3 Natural Resources

3.3.1 Geophysical Resources

Most of the Washington Metropolitan area lies within the extreme western edge of the Atlantic Coastal Plain Physiographic Province. Groundwater within the western Coastal Plain occurs in loosely consolidated small near-surface sand aquifers with variable porosity, or in more homogenous continuous porous sands within the Potomac Group. Hydrogeologically, the project site gradient is toward the east and southeast.

The topography of the project site is nearly flat with surface elevations ranging from 9 to 13 feet (NGVD). The soils on the site are classified as Urban Land Association which are soils that have been previously disturbed, cut or filled. Existing fill is present at the ground surface across the site; the fill is generally a soft to medium stiff clay with foreign materials related to previous disturbances of the site.

There is a below-grade tunnel structure passing directly under the Memorial site. The elevation of the top of the tunnel slab varies, with the depth of soil above the tunnel varying from three to eight feet.

3.3.2 Vegetation and Wildlife

The Memorial site is located within an urban environment where the original natural condition of the area has been virtually eliminated by decades of urbanization and development. Vegetation on the site consists of open lawn and deciduous street trees. Within the last few years, the Architect of the Capitol planted trees in the open space of the primary site as a means to enhance the pedestrian's experience. The existing wildlife community primarily consists of species tolerant of urban conditions, such as squirrels, rats, pigeons, sparrows, and starlings. There are no aquatic species present on the site. No known endangered or threatened animal species currently exist on the site.

3.3.3 Noise Levels

Noise is generally defined as unwanted or objectionable sound. Sources of ambient noise at the Memorial site are primarily related to transportation activities. The greatest source of noise is vehicular traffic on local streets, and the magnitude of the noise is related directly to the levels of traffic and mix of vehicle types on those streets. Idling buses contribute to the noise as does moving traffic. The peak hour traffic period is expected to be the peak noise period of the day, since traffic is the largest source of noise in the study area. Those exposed to rush hour noise would be primarily pedestrians along local sidewalks, on other museum grounds, and on the Mall.

3.4 Transportation

This section presents an overview of the existing transportation system and parking facilities serving the project site and the surrounding area. This assessment is based on field observation of existing vehicle and pedestrian travel patterns and traffic flow, as well as an evaluation of the existing peak hour traffic volumes data and safety conditions within the immediate study area. This section also presents an evaluation of the anticipated year 2005 traffic situation, considering planned roadway improvements, prospective land use developments in the area, and annual growth in through traffic.

3.4.1 Roadways and Traffic

The Memorial site is located immediately east of the Hubert H. Humphrey Building and bounded by 2nd Street, SW to the west, Washington Avenue, SW to the north and east, and C Street, SW to the south (see Figure 3-6). The site is accessed by regional roadways including I-395 and I-295. Other primary access roadways include major arterials such as Independence Avenue, South Capitol Street, Pennsylvania Avenue, and Georgia Avenue/7th Street, SW. These roadways also serve as key commuter routes into and out of the city's central employment area, including Capitol Hill. Some roadways in proximity to the site, including 1st and C Streets to the east, have restricted access due to security arrangements established by the Capitol Hill Police. A segment of D Street, SW, located southeast of the project site, is temporarily closed for construction.

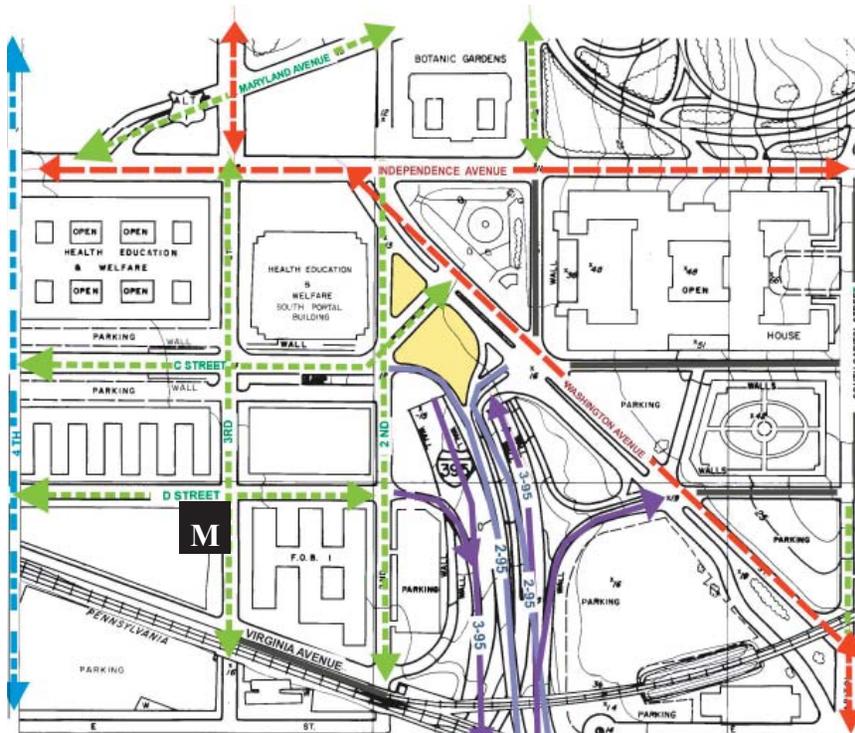


Figure 3-6: Existing Roadway Network

- Collector
- Principal Arterial
- Minor Arterial
- Closed Street
- Interstate
- M Metrorail

Immediate access to the project site is provided via Independence Avenue, Washington Avenue, 2nd Street and C Street, SW. In order to facilitate the following analysis and discussion, the key features of these local access roadways are presented below:

- Independence Avenue, SW: This is an eight-lane undivided major arterial running east-west through the study area north of the site. This roadway provides direct access to the proposed Memorial site and a number of museums, federal buildings, and other visitor attractions within the Monumental Core of the District. Parking is restricted along Independence Avenue in the immediate vicinity of the site (i.e., between 2nd and 3rd Streets), and immediately east of the site (i.e., within the Botanic Garden and Capitol Hill areas). To the west of 3rd Street, metered parking is provided on both sides of Independence Avenue. This roadway serves moderate to heavy traffic, with Average Daily Traffic (ADT) volumes of approximately 37,000 vehicles in the vicinity of the site. The posted speed limit is 30 miles per hour (mph).
- 2nd Street, SW: This is a local, two-lane, southbound street adjacent to the project site. It has direct on-ramp connections to the adjacent I-395 freeway. Metered parking is provided on both sides of 2nd Street. This facility currently serves ADT volume of approximately 1,000 vehicles in the vicinity of the site. The posted speed limit is 25 mph.



View from Independence Avenue looking south on Washington and 2nd Streets, SW.



View from sidewalk along 2nd Street looking south.

- C Street, SW: This is a local, two-lane, east-west roadway providing direct access to the site. C Street becomes four-lanes between 2nd Street and its junction with Washington Avenue. C Street continues east approximately 500 feet south on Washington Avenue; however, this segment of C Street and 1st Street north of C Street has been closed for security reasons due to its proximity to the adjacent Rayburn House Office Building. During the peak AM traffic period, traffic is manually directed by the Capitol Police at the intersection of Washington Avenue, C Street, and 1st Street. Metered parking is provided along C Street west of 2nd Street. C Street serves an ADT of approximately 8,000 vehicles in the vicinity of the site. The posted speed limit is 25 mph.
- Washington Avenue, SW: This roadway runs northwest-southeast adjacent to the project site and provides seven lanes of travel (i.e., three lanes northbound and four lanes southbound). Permit parking is provided on the east side of the roadway. Washington Avenue currently serves ADT volumes of approximately 28,000 vehicles, and the posted speed limit is 25 mph.

In determining the study area road network to be evaluated, the following assumptions were made regarding vehicle trip generation:

- a) Visitor trips to the Memorial site would occur largely during the off-peak periods; and given that most visitors would already be on the Mall, Memorial visitors would include a large percentage of transit, pedestrian, and other non-private vehicle trips (i.e., tour buses).



View at C Street looking southeast across Memorial site.

Table 3-1: Peak Traffic Hours.

Intersection	AM Peak Hour	PM Peak Hour
Independence Ave at Washington Ave, SW	8:00-9:00	4:30-5:30
Independence Ave at 3 rd Street, SW	8:00-9:00	4:30-5:30
Washington Ave at 1 st Street, SW	8:00-9:00	4:30-5:30
Washington Ave at C Street, SW	7:45-8:45	4:30-5:30
3 rd Street at C Street, SW	7:30-8:30	4:45-5:45
2 nd Street at C Street, SW	7:30-8:30	5:00-6:00

Source: O.R. George & Associates, Inc., 1996.

Table 3-2: Intersection Levels of Service.

Intersection/ Roadway Segment	AM Peak Hour		PM Peak Hour	
	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)
C Street @ 2 nd Street, SW	C	21.1	C	26.3
C Street @ Washington Avenue, SW	C	30.4	B	16.8
Washington Avenue @ 1st Street, SW	D	43.2	D	41.4
C Street Corridor-Eastbound	N/A	N/A	N/A	N/A
C Street Corridor-Westbound	N/A	N/A	N/A	N/A
Washington Avenue-Northbound	F	162.5	D	41.4
Washington Avenue-Southbound	D	26.9	D	41.4

Source: O.R. George & Associates, Inc. 2002, per Highway Capacity Manual, Transportation Research Board, Washington, D.C. 1997.

- b) Trips by private vehicles and taxis would provide access for several occupants at a time.

Based on observed circulation factors and proposed modifications to the existing road system, the study area road network was defined by the signalized intersections in the vicinity of the project site. In order to assess current traffic conditions, field observations were made of the area road network during the weekday AM and PM peak periods, and vehicle turning movement volumes were obtained. The weekday morning and afternoon peak hours were determined as presented in Table 3-1.

Traffic volumes were analyzed using the Highway Capacity Manual (HCM) procedures for analyzing the capacity of signalized intersections. Roadway level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream or at an intersection, and their perception by roadway users. The LOS describes these conditions based on factors such as speed and travel time, delay, freedom to maneuver, traffic interruptions, comfort, convenience and safety. The HCM defines six LOS for roadway links and intersections, ranging from A to F, with LOS A representing the best operating conditions, and LOS F representing the worst. LOS D represents the minimal acceptable traffic condition for urban areas, including the District of Columbia.

The LOS analysis results shown in Table 3-2 are based on average delays computed by the HCM procedure for vehicles utilizing the study area intersections during the morning and afternoon peak hours. The results show that the project site intersections currently operate at LOS C and above during the peak hours evaluated. The favorable results are due to the fact

that the study area intersections are within the District's computerized signal system; there have been recent traffic operational changes implemented in the Monumental Core/Capitol Hill area; and public transportation is available. However, other intersections and roadway segments in proximity to the project site operate at unacceptable LOS of D and F during peak periods.

Accident data for the latest available three-year period was obtained from the D.C. Department of Public Works, Traffic Safety Division, for key intersections in proximity to the project site. Typically, accident data for intersections is evaluated within the context of the number of Million Entering Vehicles (MEVs) per year (i.e., the number of accidents per million vehicles which utilize a particular intersection during a twelve-month period). The Institute of Transportation Engineers (ITE) recommends that locations with accident rates of 2.0 or greater should be evaluated further based on safety considerations.

Based on the peak hour and average daily traffic volumes obtained for area intersections, estimates of the intersection annual vehicular traffic volumes were calculated. The accident rates for intersections in proximity to the Memorial site were less than 2.0. These rates indicate that none of the intersections warrants further analysis based on safety considerations.

Other Related Studies

There are several pre-existing and ongoing studies or actions in the local area including Area Interchange Studies, South Capitol Street Corridor Study, General Security Considerations, Washington Avenue/1st Street Traffic Control, and I-295 On-Ramps Usage. Due to security concerns for Capitol Hill, travel is restricted along the C Street and 1st Street, east and north of Washington Avenue, respectively. Under consideration is the closure of 1st Street at Washington Avenue to allow access to the Rayburn House Office Building parking garage exclusively from Independence Avenue. Manual traffic control of the Washington Avenue/C Street intersection during weekday peak periods is expected to continue based on security and operational reasons. The ramps from Washington Avenue to I-295 are very lightly used, and there are alternative routes to access I-295 southbound from the area.

3.4.2 Vehicular Parking

The parking supply within the immediate area of the project site is limited to on-street parking. There are nearly 700 metered on-street parking spaces within a 2,000-foot radius of the project site. Most are priced at \$0.25 per 20-minute period with a two hour maximum. There are also unmetered parking spaces on the Mall available to visitors. There are no parking spaces along C Street between 2nd Street and Washington Avenue, SW. There are no designated on-street handicapped parking spaces in the immediate site area; however, handicapped persons may park free in DC metered spaces for up to two hours. On-street parking in the project area is summarized in Table 3-3.

The District enforces its parking policy regarding time restrictions and violations of metered parking. The area also contains significant numbers of on-street spaces which are restricted to particular users that display a permit decal associated with a government agency, and are therefore not available to the general public. Neighborhood parking stickers are required along the area’s southern and eastern periphery, except for periods less than three or four hours.

In addition to on-street parking spaces, there are eight commercial/public parking facilities within a 2,000-foot radius of the Memorial site. These facilities provide a total of 3,600 parking spaces. The nearest public parking garage is at the intersection of 2nd and E Streets.

The “Tour Bus Guide to Washington,” published by the D.C. Office of Tourism and Promotions, indicates that approximately 112 short-term and 250 long-term parking spaces are available within the immediate area of tour bus pick-up and drop-off locations.

Table 3-3: Parking Meter Supply.

Street/ Avenue	Meter Count
2 nd	16
3 rd	94
4 th	129
6 th	89
C	81
D	15
E	146
Independence	53
Maryland	32
Total	655

Source: O.R. George & Associates, Inc.

Note: All street locations are within Southwest.



Parking on C Street near 2nd Street intersection (looking east).

3.4.3 Public Transportation

In its Ward 2 Plan, the District of Columbia identifies a number of actions to be taken in support of its transportation policies. A key action noted is the need to promote better use of public transportation services. This planning document cites Metro-rail service as the single most important factor in improving transportation access to the center of Washington.

The Memorial site is served by two stations along the Blue and Orange Lines which also provide access to National Airport. These include Southwest Federal Center, located less than two blocks southwest from the site, and Capitol Hill South, located three blocks to the southeast of the site. The Memorial site is also within easy reach of Union Station, the region's most significant intermodal transportation terminal.

A second major component of the public transportation system serving the Memorial site and immediate area is WMATA's Metrobus. Ward 2 is the focal point for the Metrobus, served by nearly 100 Metrobus routes. Most of these routes converge on the District's Central Employment Area. The principal bus line which serves the area is the Pennsylvania Avenue Line, which consists of the '30s' series of bus routes. A number of these routes use Independence Avenue, connecting the far northwest and southeast portions of the District of Columbia.

The public transportation framework serving the subject site is supplemented with taxi, tour bus, AMTRAK, MARC, (Maryland Commuter Rail), and Virginia Railway Express (VRE). The AMTRAK and MARC trains interface with WMATA's Metrorail and Metrobus systems at Union Station. The Virginia Railway Express is accessible at Union Station and at the L'Enfant Plaza Metrorail Station.

3.4.4 Pedestrian and Bicycle Circulation

Visitor pedestrian activity in the Memorial site vicinity is low relative to other more centrally located areas of the Monumental Core, however local employee pedestrian circulation is challenging. Within the immediate area of the site, sidewalks are provided along key roadways; and cross-walks, pedestrian signals and curb-cuts are provided at key intersections. Yet, as illustrated in Figure 3-7, the existing arrangement of sidewalks is confusing and creates mobility challenges for pedestrians. Existing routes create hazardous conditions by encouraging pedestrians to cross at unmarked locations, including at highway ramps.

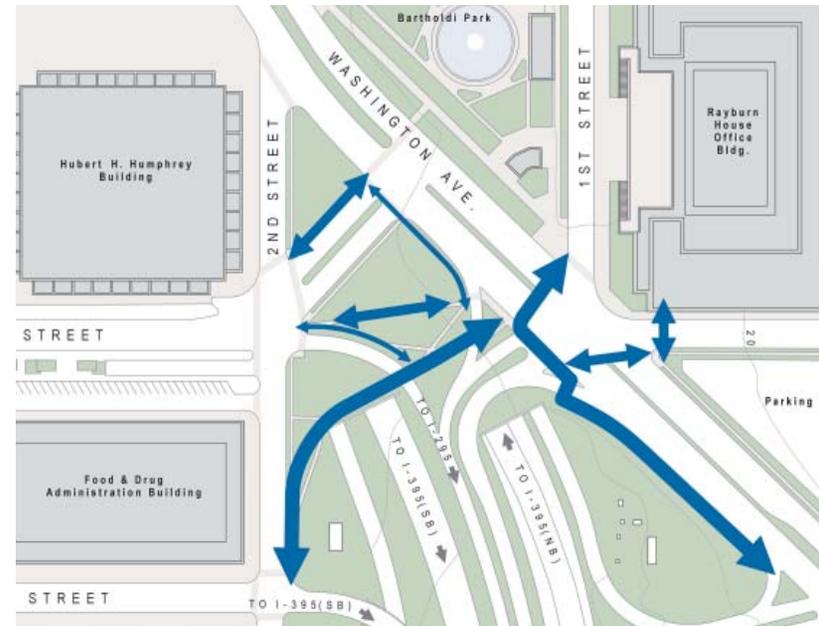


Figure 3-7: Existing Pedestrian Movement



Sidewalk system on project site looking westbound on C Street.

3.5 Utilities and Infrastructure

3.5.1 Stormwater Management

Natural stormwater drainage patterns in the project area have been altered as a result of urbanization. Stormwater within the area drains away from the buildings and is collected in storm drains and combined sewer lines. Combined sewer lines that convey both stormwater and sanitary sewage are located throughout the project area, including a large pipeline that runs under the northeast corner of the Hubert H. Humphrey Building, parallel to the I-395 southbound tunnel, and potentially under parcel B of the Memorial site.

Under extreme stormwater events, combined sewer overflows (CSOs) may be released directly into the Potomac River due to combined flows exceeding the hydraulic capacity of the system. The governing body for storm water management in DC is the Stormwater Management Section of the Department of Consumer and Regulatory Affairs.

3.5.2 Sanitary Sewer

The District of Columbia Water and Sewer Authority (DC-WASA) provides wastewater management for DC, including the collection, treatment, and discharge of effluent. Sewage is collected and transported for treatment at DC-WASA's Blue Plains Wastewater Treatment Plant (WWTP). Treated effluent is then discharged into the Potomac River.

3.5.3 Site Utilities

Water: Water lines run throughout the study area. The governing body for water is WASA.

Gas Service: Gas lines run throughout the study area. These lines create a network for potential connections. The governing body for all gas lines is the Washington Gas Company.

Electrical Service: Electrical lines surround the Memorial site along C Street, 2nd Street, and Independence Avenue. The governing body and source of existing line locations for all electric lines is the Potomac Electric Power Company (PEPCO).

Telephone Service: Telephone lines run along C Street. The source of the existing line locations is Verizon.

Steam Facilities: The closest steam line runs along 6th Street from the intersection of 6th and C Streets, SW, across Independence Avenue under the Air and Space Museum. This steam line is serviced by two separate steam plants, which are located on 27th and K Streets, SW. The governing body for all steam lines is the U.S. General Services Administration.

I-395 Tunnel Air Shafts: Air shafts provide ventilation to the I-395 tunnels beneath the primary parcel of the Memorial site. These shafts, constructed of large cast-in-place concrete box girders, were constructed at the same time as the Hubert H. Humphrey Building and the I-395 tunnels. They extend from the Humphrey Building's mechanical room and pass above the below-grade sewer line that traverses the tunnel. Most of the

air shafts are supported on grade by existing compacted soil materials, but a portion is supported by the sewer line and the I-395 tunnels. Several of the vaults, including those located within the proposed project site with with reconfigured C Street alignment are abandoned.

3.5.4 Highway Tunnels

There is an underground tunnel structure for I-395 passing directly under the project site (see Figure 3-6). This structure consists of two tunnels for north and southbound travel. The tunnels average 100 feet in width. Most of the roof of the tunnel structure consists of 60-inch steel girders, located at about five feet on center. A seven-inch thick reinforced concrete slab is located over the steel girders. The elevation of the top of the tunnel slab varies, with the depth of the soil above the tunnel varying from three to eight feet.