
L'ENFANT PROMENADE AND BENJAMIN BANNEKER PARK EA

Environmental Assessment for Improvements to L'Enfant Promenade and Benjamin Banneker Park

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DISTRICT DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION,
EASTERN FEDERAL LANDS HIGHWAY DIVISION



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The seal of the Government of the District of Columbia, featuring three red stars above two red horizontal bars.

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) was prepared Federal Highway Administration, Eastern Federal Lands Highway Division (FHWA EFLHD) in coordination with and on behalf of the District of Columbia Department of Transportation (DDOT) to assist in identifying and evaluating the potential environmental impacts and benefits of improvements to the existing roadway and sidewalks associated with L'Enfant Promenade (10th Street, SW) and Benjamin Banneker Park. The proposed action is the modification of L'Enfant Promenade, within the public road right-of-way, and Banneker Park to fulfill their original purpose by creating a more aesthetically pleasing street environment and improved pedestrian links between the National Mall and the Southwest waterfront. The proposed modifications and improvements would also provide private vehicle and tour bus parking at Banneker Park for visitors to the Southwest waterfront and National Mall in proximity to existing and new transit modes proposed by DDOT.

The modifications to L'Enfant Promenade and Banneker Park are intended to better accommodate vehicular, pedestrian and bicycle traffic and to revitalize the two sites by incorporating public amenities (e.g., landscaping, site furniture, parking facilities, etc.) and other enhancements. The proposed enhancements would also provide a more befitting venue for the proposed Benjamin Banneker Memorial. The Proposed Action has been designed to achieve the following objectives:

- ◆ Establish a gateway between the National Mall and the Southwest waterfront as originally intended in the Urban Renewal Plan for Southwest Washington, DC;
- ◆ Provide an intermodal facility for private automobile and tour bus parking for visitors of the National Mall and Southwest waterfront; and
- ◆ Address structural deficiencies associated with L'Enfant Promenade's bridges.

This EA analyzes potential impacts of the proposed alternatives on the human environment in accordance with the National Environmental Policy Act of 1969. During the environmental review process, the FHWA and DDOT considered a broad range of environmental issues that could affect communities and natural resources on a general (or system-wide), regional, and local level. This approach allowed identification and assessment of potential environmental impacts and the development of reasonable preliminary environmental mitigation measures to address potential adverse impacts.

For descriptive purposes, the modifications and improvements being considered in this project are described separately for L'Enfant Promenade, between Independence Avenue and its bridge over I-395, and Banneker Park, located just south of I-395.

PROPOSED IMPROVEMENTS TO L'ENFANT PROMENADE

Improvements to L'Enfant Promenade would be implemented to enhance the urban design character of the Promenade and provide an accessible route for pedestrians, in compliance with the Americans with Disabilities Act (ADA). The Promenade roadway would continue to have a single traffic lane in each direction with curbside parking. Additional design features and modifications include:

- ◆ Modification of the roadway median;
- ◆ Addition of street trees and/or other landscaping along the roadway;
- ◆ Addition of an on street bicycle lane
- ◆ New street lighting;
- ◆ Addition of seating and site furnishings (e.g., trash receptacles, bicycle racks, etc.);
- ◆ Implementation of a way-finding/signage system;
- ◆ Construction of new stairway and elevator connections to 10th Street from L'Enfant Promenade;
- ◆ Construction of pedestrian crosswalks at Independence Avenue and Maine Avenue;
- ◆ Implementation of intersection modifications at 12th Street-Independence Avenue and 12th Street-C Street, increased pedestrian crossing time each of those intersections, and optimization of all study area traffic signals;
- ◆ Repair of deficiencies associated with the L'Enfant Promenade bridge structures.

Two design options are being considered for modifying the Promenade roadway median: retaining the existing 39 foot median width and replacing the paving with a grass lawn or reducing the median width to five feet. Reducing the width of the median would allow widening of the adjacent sidewalks by approximately 17 feet on each side of the roadway.

PROPOSED IMPROVEMENTS TO BENJAMIN BANNEKER PARK

Banneker Park would undergo major renovations, which include construction of an intermodal transportation center and parking facility (ITC) within the park property. The ITC would be designed to accommodate up to 1,150 automobiles and 75 tour buses. The facility would be recessed into the hillside, designed to blend into the topography of the park. The highest elevation of the park, which is the same height as L'Enfant Promenade, would remain unchanged. Due to the modification of the sloping park hill required to construct the ITC, the existing circular park would be eliminated and the traffic circle would be modified into a smaller traffic circle at a location closer to I-395.

Pedestrian facilities constructed at Banneker Park and integrated with the ITC would include: an exterior staircase from the top of the hill, at the L'Enfant Promenade elevation, to the bottom of the hill, a new mid-block pedestrian crossing of Maine Avenue, and interior staircases and elevators between parking levels to provide an ADA compliant connection between the upper areas of Banneker Park and Maine Avenue.

“NO BUILD” ALTERNATIVE

Although no changes would be made to the physical configuration of L’Enfant Promenade and Banneker Park under the “No Build” alternative, DDOT would schedule and carry out a general rehabilitation and repair of the Promenade’s bridge structures in order to extend the serviceability or lifespan of the Promenade structures an additional 25-30/50-75 years. At Banneker Park, the No Build Alternative provides for only routine maintenance, such as repairing minor cracks in sidewalks, general upkeep (mowing, trimming hedges), and trash removal. The existing park and fountain and vehicle circulation would be maintained.

There are several levels of general rehabilitation and enhancement possible under the No Build Alternative, depending on funding availability. A basic rehabilitation would correct the structural deficiencies associated with the Promenade bridges (excluding the replacement of the Promenade bridge decks, paving and drainage systems) and implement a way-finding signage system for the Promenade and Banneker Park. An enhanced rehabilitation option has also been identified, as an additional short-term measure to provide minimal enhancement of the Promenade aesthetics and pedestrian connectivity. The enhanced rehabilitation option does not duplicate the basic rehabilitation items; rather it includes the rehabilitation of the Promenade median to replace the existing paving with a grass lawn, widening of the sidewalk across the I-395 bridge by expanding it into the existing on-street parking lane (and eliminating parking on the bridge), and the addition of an ADA accessible stairway and elevator between the Promenade and D Street

The No Build alternative also provides a baseline condition with which to compare the environmental impacts or consequences associated with the Proposed Action.

ENVIRONMENTAL IMPACTS

The Proposed Action project site does not contain the following environmental resources, and therefore, impact analyses relating to these resources are not included in this EA: wetlands, floodplains, Coastal Zone, Wild and Scenic Rivers, farmland or biologic resources (including threatened or endangered species). The implementation of the Proposed Action would have no adverse impacts to the areas of land use and zoning, community features, environmental justice, historic and cultural resources, hydrology and water resources, topographic and geologic resources, and utilities. The Proposed Action would have a positive impact on District economic conditions (from parking revenue associated with the ITC), aesthetics and visual resources, parkland, and pedestrian and bicycle circulation.

Minor, adverse impacts would occur to roadway traffic conditions, air quality and noise, primarily as a result of construction activities. Hazardous waste requiring disposal would be generated as a result of the Promenade bridges rehabilitation. Intersection modifications and signal optimization included as part of the Proposed Action would improve future traffic operations at most study area intersections. In cases where traffic operations are projected to deteriorate, the deterioration would be due to increases in traffic attributable to traffic

redistribution, increases in background traffic levels resulting from new development in or adjacent to the study area or changes in intersection signal timing. At those intersections where traffic operations decline, the level of service – a measure of traffic conditions based on vehicle delay – would deteriorate by only one grade in the qualitative rating system used to rate intersection level of service (where “A” is the best and “F” is the worst). All would continue to operate at a level of service “D” or better. The nature, extent, and proposed mitigation for adverse impacts are detailed in the Environmental Assessment.

PUBLIC INVOLVEMENT AND AGENCY COORDINATION

A public meeting was held at the time of the initiation of this EA, for scoping purposes, to generate public interest and receive comments from local residents and members of the general public regarding preferences for improvement alternatives. Property owners within the study area, neighborhood organizations, and other community organizations as identified by FHWA and/or DDOT, were contacted, by letter inquiry, to inform them of the initiation of the EA, solicit input, and to assess interest in the outcome of the investigations. Additionally, FHWA and DDOT have made information on the proposed improvements and alternatives available through the distribution of newsletters and on their respective web sites on the Internet.

Consultation and coordination has occurred with over 20 agencies and organizations having jurisdictional approval authority relative to the Proposed Action or having a vested interest in the project plans and decision process. Comments of agencies and organizations responding to initial, written scoping inquiries have been addressed, where applicable, in the EA. Finally, meetings were held throughout the alternatives development and evaluation process with representatives of the National Park Service, Washington Interdependence Council, FHWA DC Division, National Capital Planning Commission, DC Office of Planning and U.S. Department of Energy to keep them informed of the planning and preliminary engineering progress and solicit informal comments on the various improvement alternatives.

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1. INTRODUCTION

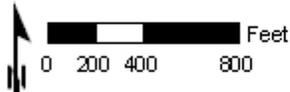
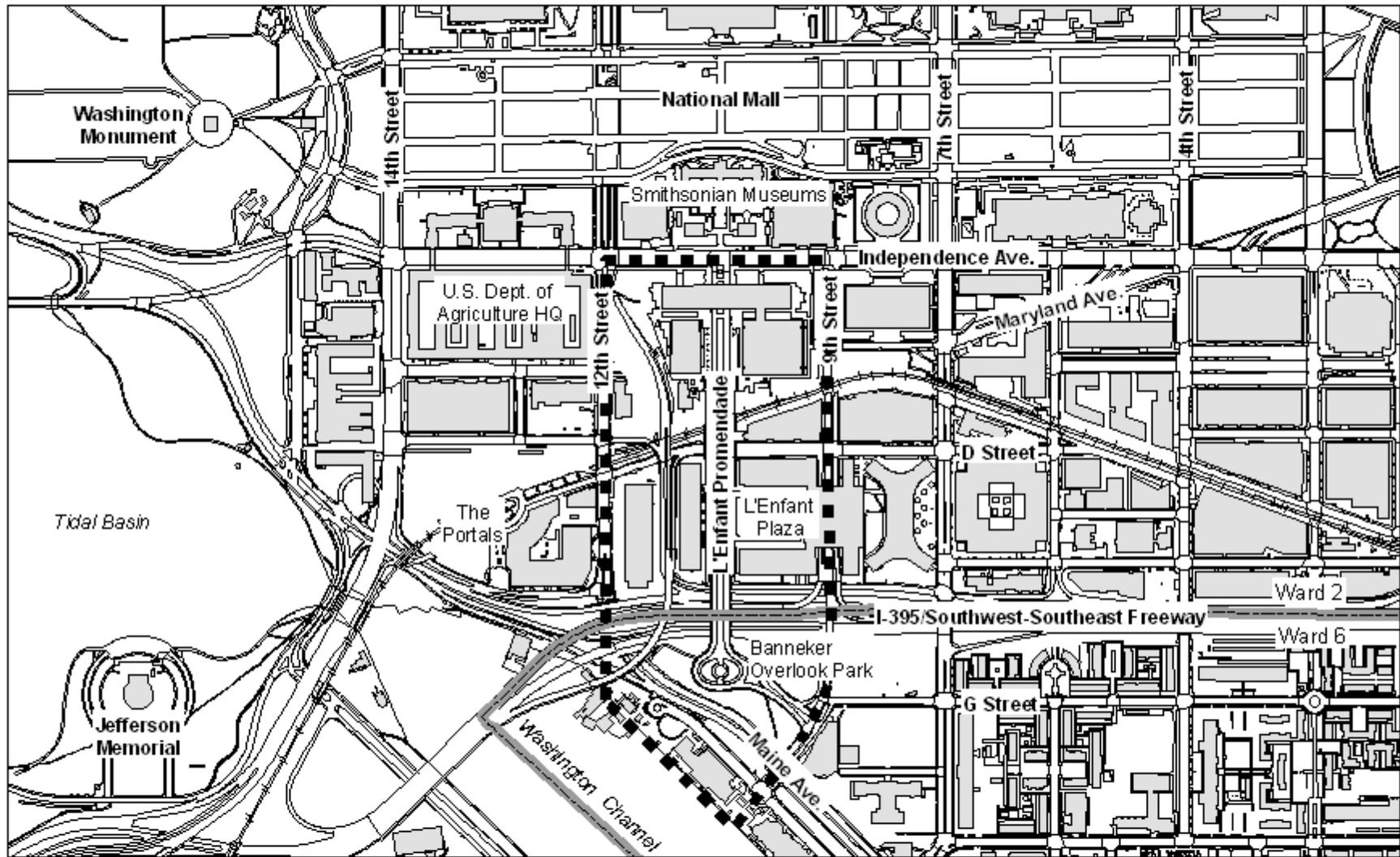
The Eastern Federal Lands Highway Division (EFLHD) of the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA) has prepared this Environmental Assessment (EA) on behalf of the District Department of Transportation (DDOT) to disclose the potential impacts associated with the proposed rehabilitation and improvements to L'Enfant Promenade and Benjamin Banneker Park, located in the Southwest (SW) quadrant of the District of Columbia (the District) and shown in Figure 1-1. L'Enfant Promenade is formally known as L'Enfant Plaza, but is referred to in this report as "L'Enfant Promenade" to distinguish it from the open space surrounded by the L'Enfant Plaza Hotel and two office buildings and frequently also called "L'Enfant Plaza". This document was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; the Council on Environmental Quality regulations implementing NEPA (40 CFR Parts 1500-1508); and the FHWA environmental impact related procedures (23 CFR 771).

1.1. SUMMARY OF PROPOSED ACTION

DDOT proposes to modify L'Enfant Promenade, within the public road right-of-way, and Benjamin Banneker Park to fulfill their original purpose by creating a more aesthetically pleasing street environment and improve pedestrian links between the National Mall and the Southwest waterfront along the Washington Channel locales (see Figure 1-2).



FIGURE 1-1: Regional Location of Project Site



LEGEND: ■ ■ Study Area
 - - - CSX Railroad Tracks
 - - - Ward Boundary

Source: DC Office of the Chief Technology Officer (OCTO)

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 PARK IMPROVEMENTS**

**FIGURE 1-2:
 L'Enfant Promenade and Vicinity**

Additionally, the proposed improvements would provide private vehicle and tour bus parking for visitors to the Southwest waterfront and National Mall in proximity to existing and new transit modes proposed by DDOT.

1.2. EXISTING L'ENFANT PROMENADE AND BENJAMIN BANNEKER PARK

L'Enfant Promenade is a two-lane roadway, with a 40-foot wide median and on-street metered parking. Large, multi-story buildings line each side of the roadway (see Figure 1-3). Additional structured parking is located below the Promenade buildings and is accessed from 9th, 10th and 12th Streets. L'Enfant Promenade limits are from Independence Avenue on the north to Benjamin Banneker Park and 9th Street on the south end. At the north end, the Department of Energy (DOE) headquarters, known as the Forrestal Building, straddles the roadway. The road right-of-way is 150 feet wide from Independence Avenue to I-395 and 101 feet wide from I-395 to Benjamin Banneker Park. The majority of L'Enfant Promenade consists three bridge structures that span the CSX Railroad, D Street, 10th Street and Interstate 395 (I-395). Additional vehicular access to the Promenade is via ramps from 10th Street, north of I-395.

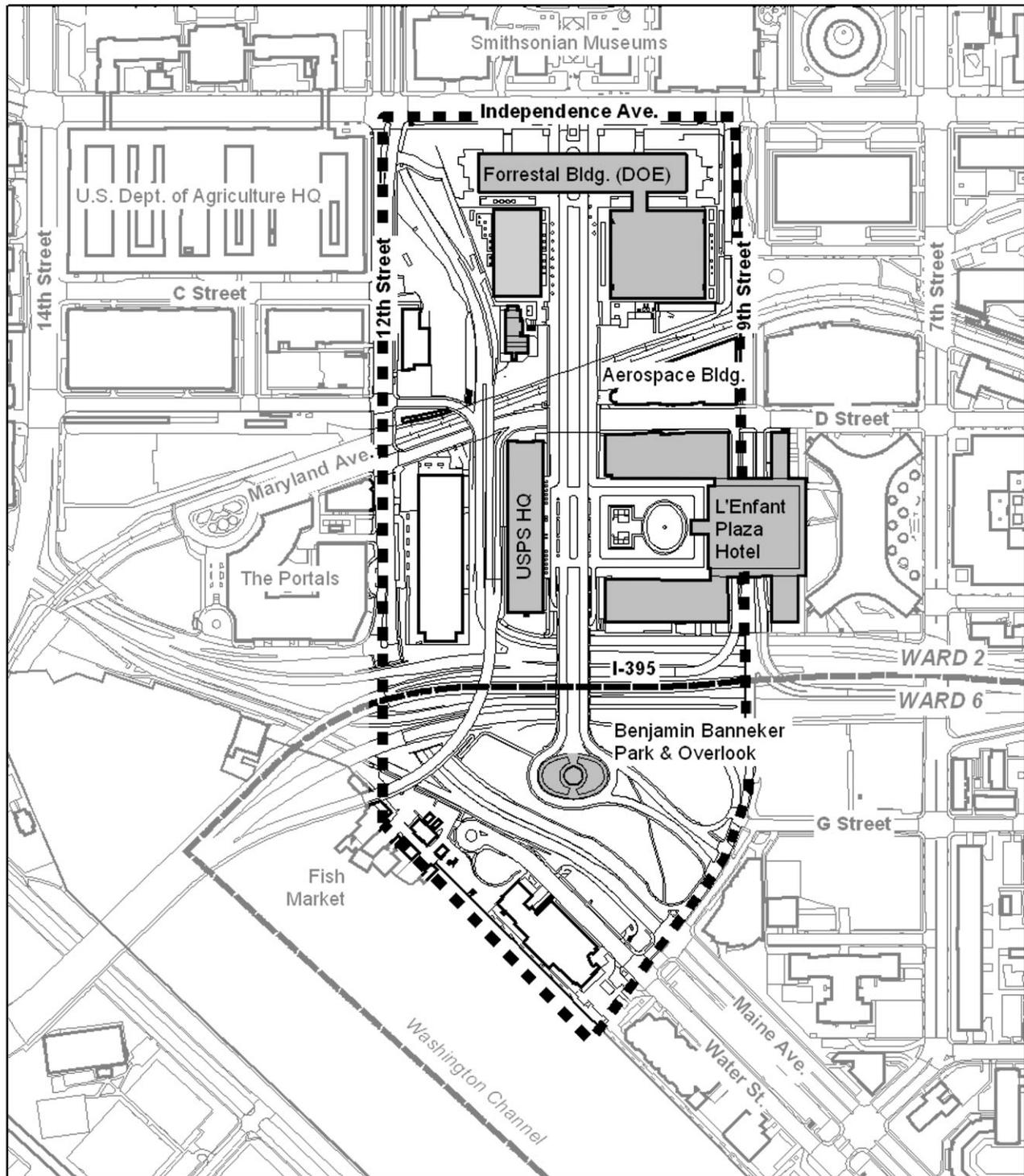
Benjamin Banneker Park consists of a formal, circular landscaped park with a fountain in the center that is aligned with the centerline of L'Enfant Promenade. The fountain park is surrounded by a 5-and-a-half foot tall wall and is level with the Promenade, but is on top of a 30-foot tall hill from the perspective of Maine Avenue. The L'Enfant Promenade roadway and sidewalks curve around the fountain park to an intersection with 9th Street. Grass lawns surround the fountain park and roadway and slope downward to Maine Avenue, 9th Street and I-395. The 4.68 acres encompassing Banneker Park and the surrounding grass lawn is in the jurisdiction of the National Park Service. The road right-of-way is in the jurisdiction of the District.

1.3. BACKGROUND AND HISTORY

1.3.1. L'Enfant Plan and Early History

The area to the southwest of the U.S. Capitol was an original component of the plan of the city of Washington designed in 1791 by Pierre L'Enfant (1754-1825) and mapped the following year by Andrew Ellicott (1754-1820). It developed in a traditional grid street pattern that extended south from Independence Avenue to the Potomac River's edge and included 10th Street, on which the current-day Promenade and Banneker Park are constructed. Maryland Avenue (see Figure 1-4) bisected this quadrant of the city and served as a major thoroughfare, providing a direct link between the Capitol and the Potomac River.

From the early 1800's to early-1900's the Southwest quadrant of the city was home to a racially diverse, predominantly blue collar residential population and a thriving shipping and industrial district along the Washington Channel shoreline. By the early 1940's, however, much of the southwest area became economically depressed, resulting in blighted and unhealthy living conditions.



Source: DC OCTO

LEGEND:

- ■ ■ ■ Study Area Boundary
- ▬▬▬▬▬▬ Ward Boundary
- +—+—+ CSX Railroad Tracks

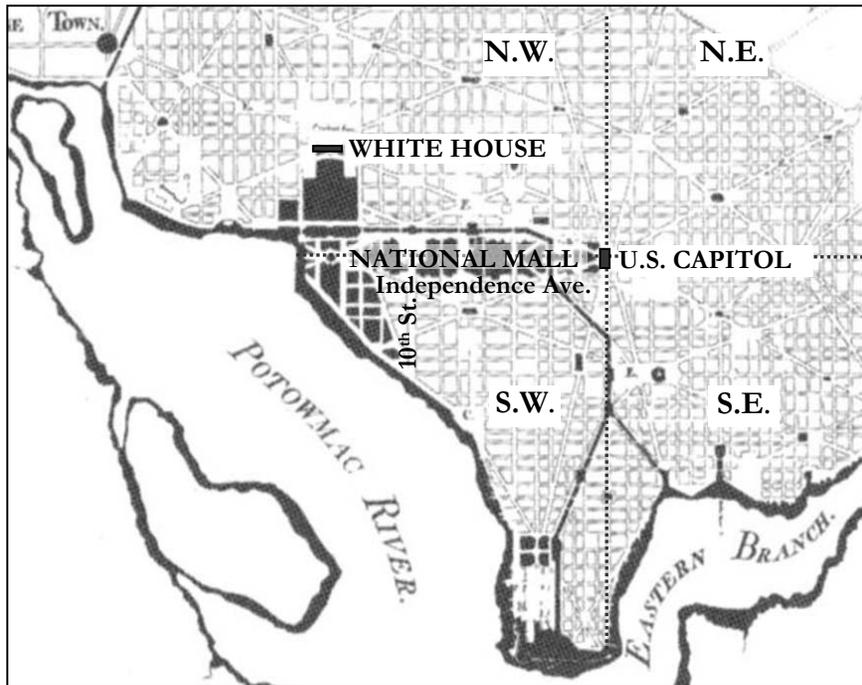


Figure 1-4: The L'Enfant Plan of 1791

1.3.2. DEVELOPMENT OF L'ENFANT PROMENADE AND BENJAMIN BANNEKER PARK

To address depressed economic conditions in Southwest DC, the National Capital Planning Commission (NCP) developed an Urban Renewal Plan for Southwest DC in the mid 1950s. The Urban Renewal Plan replaced the 18th and 19th century neighborhoods with a mixed-use complex of offices, housing and commercial uses designed in the Modernist architectural style popular in the post-World War II period. I-395 was also constructed during this period, which had the effect of severing the Southwest waterfront and neighborhoods from the National Mall and the rest of the city.

The area south of Independence Avenue to the Washington Channel, between 4th and 12th Streets was designated as Project Area C in the Urban Renewal Plan. The plan designated that L'Enfant Promenade, then called the 10th Street Mall, function as a stately pedestrian and vehicular bridge between Southwest Washington and the city as a whole. The plan included a park at the mall's southern terminus, Overlook Park (now Benjamin Banneker Park), which was intended to provide motorists and pedestrians a grand view of the waterfront and residential Southwest Washington beyond. The plan also called for a L'Enfant Promenade roadway connection with Maine Avenue and underground parking at Overlook Park. Due to unsuitable topographic conditions at the Overlook Park site, the roadway connection to Maine Avenue was never built. Instead, a roadway/ramp was constructed that connects to 9th Street.

This roadway is still operational today. While the underground parking at Overlook Park was not constructed, the concept has resurfaced in subsequent planning efforts.

In 1971, at the unveiling of the newly constructed 10th Street Mall and Overlook Park, the National Park Service (NPS) held a public dedication ceremony renaming the street L'Enfant Plaza in homage to Pierre L'Enfant for his role in helping to plan the nation's capital. Also at that time, Overlook Park was officially named Benjamin Banneker Park in commemoration of Benjamin Banneker (1731-1806) for his role in the survey and design of the nation's capitol. Both names were authorized by the U.S. Department of Interior as official commemorative designations celebrating the contributions of these two historic figures.

1.3.3. Benjamin Banneker Memorial

In 1996, the Washington Interdependence Council (WIC) launched a campaign to commemorate Benjamin Banneker with a memorial within DC's monumental core. Historical research by WIC notes that Banneker, an African-American mathematician, scientist and astronomer, was a free black man who assisted in the 1791 survey of the "Federal Territory," a ten-mile square that includes the present-day District of Columbia and a portion of the Commonwealth of Virginia located west of the Potomac River. He was also the author of Benjamin Banneker's Almanac, a yearly almanac of astronomical calculations and weather forecasts, which he published from 1792 to 1797. Public Law 105-355, signed into law during Banneker's birth month of November 1998 by President Clinton, authorized WIC to establish a memorial in DC to honor and commemorate Banneker's accomplishments (see Appendix I).



After receiving Congressional authorization, WIC began pursuit of site approval from the National Capital Memorial Commission (NCMC) to erect the memorial along L'Enfant Promenade and at Benjamin Banneker Park. The NCMC is a federal advisory committee responsible for making recommendations to the Secretary of the Interior and the Administrator of the General Services Administration (GSA) regarding proposals for commemorative works on federal lands within the National Capital Region. The Banneker Memorial concept advanced by WIC envisioned a linear park within the L'Enfant Promenade median extending from Independence Avenue to Benjamin Banneker Park that would encompass a series of commemorative elements including a clock tower, exhibits and statuary, terminating with a heroic statue of Banneker at the park site and a pedestrian bridge crossing over Maine Avenue. In 1999, the NCMC rejected WIC's proposal, citing that the park was too large for the Banneker statue proposed by WIC, and stating its preference to reserve the park for a future presidential memorial or monument to a major event in the history of the nation (see Appendix I). The Commission concluded that the relationship between Banneker and L'Enfant is such that placing the memorial on L'Enfant Promenade would be the most logical location in DC. It recommended a single location on L'Enfant Promenade for the memorial rather than using the entire length of L'Enfant Promenade as proposed by WIC.

The NCMC determination led WIC to revise its proposal, which now includes having memorial elements within the DC public street right-of-way at two locations on the Promenade: at the axis of the CSX railroad and Maryland Avenue and the area in front of the L'Enfant Plaza Hotel and the U.S. Postal Service Headquarters. At the CSX/Maryland Avenue axis, WIC proposed erecting a heroic-sized statue of Banneker on a pedestal base. At the hotel/headquarters location,



FIGURE 1-5: Benjamin Banneker Memorial concept (1997) showing proposed clock tower. Courtesy of WIC.

WIC proposed a 30-40 foot tall tower clock that would symbolize Banneker's achievement in designing the first American-made striking clock (see Figure 1-5). In addition to these two memorial sites, WIC proposed building a Founding Architects Visitor's Center that would provide a historical account regarding the founding and development of the nation's capitol, highlighting the contributions of George Washington, Thomas Jefferson, the three members (Daniel Carroll, Dr. David Stuart, and Thomas Johnson) of the Commission appointed by George Washington to govern the city in 1790, and Major Andrew Ellicott, as well as Benjamin Banneker and Pierre L'Enfant. A location has not been identified for the visitor's center.

While the NCMC recommended the placement of the Benjamin Banneker Memorial within L'Enfant Promenade, the official site approval of the revised memorial proposal now rests with the District of Columbia Commemorative Works Commission¹, which was established in 2000. Advisory Neighborhood Commission (ANC) 6D in Southwest DC approved the WIC proposal in 2004. ANC approval represents the first step towards securing official site approval from the Commemorative Works Commission.

¹ The establishment of the Banneker Memorial on federal lands is subject to the Commemorative Works Act (40 U.S.C. 8901-8909). Section 8903(e) states that "any legislative authority for a commemorative work shall expire at the end of the seven-year period beginning on the date of the enactment of such Authority". The Banneker Memorial legislative authority relative to locating the Memorial on federal lands lapsed on November 6, 2005. This does not preclude the location of the memorial on lands under the jurisdiction of the District of Columbia.

1.4. MEMORANDUM OF AGREEMENT

In 2000, the EFLHD, the FHWA DC Division, the District of Columbia Department of Public Works (DCDPW), the U.S. Department of the Interior, NPS National Capital Region (NCR), and WIC entered into a Memorandum of Agreement (MOA) to work cooperatively to redesign L'Enfant Promenade and Benjamin Banneker Park. DDOT was designated to carry out the roles and responsibilities assigned to the DCDPW in the MOA. A copy of the MOA is located in Appendix II.

1.5. PROJECT PHASES

While the redesign and rehabilitation recommendations developed during the planning process were specifically directed at the L'Enfant Promenade and the Benjamin Banneker Park, these two facilities are also physically and visually connected to the adjacent urban fabric and traffic circulation systems. Therefore, the study area was defined by a northern boundary at Independence Avenue, an eastern boundary at 9th Street, a southern boundary at the Washington Channel, and a western boundary at 12th Street. Figure 1-3 shows the general study area.

The planning process was completed in two phases. The first phase included an urban design assessment of the Promenade and Banneker Park and the identification of redesign concepts at each location. The urban planning study established the design framework from which alternative designs were developed for the rehabilitation of the Promenade and Banneker Park, as the second phase of the planning process. That phase also included environmental analyses of those design plans, as documented in this EA, in compliance with NEPA.

2. PURPOSE AND NEED

The redesign of L'Enfant Promenade and Benjamin Banneker Park is intended to better accommodate vehicular, pedestrian and bicycle traffic and to revitalize the two sites by incorporating public amenities (e.g., landscaping, site furniture, parking facilities, etc.) and other enhancements. It is anticipated the proposed improvements will attract visitors to the Promenade and Banneker Park and thereby increase tourist traffic between the National Mall and the Southwest waterfront. The proposed enhancements would also provide a more befitting venue for the proposed Benjamin Banneker Memorial.

This chapter describes the reasons the FHWA is proposing improvements to L'Enfant Promenade and Benjamin Banneker Park. Upon completion of the project, the sponsoring agency seeks to achieve the following objectives:

- ◆ Establish a gateway between the National Mall and the Southwest waterfront as originally intended in the Urban Renewal Plan;
- ◆ Provide an intermodal facility for private automobile and tour bus parking for visitors of the National Mall and Southwest waterfront; and
- ◆ Address structural deficiencies associated with L'Enfant Promenade's bridges.

A discussion of the issues associated with these objectives is provided in the following sections.

2.1. GATEWAY BETWEEN THE NATIONAL MALL AND THE SOUTHWEST WATERFRONT

As originally envisioned in the 1956 Urban Renewal Plan for the area, L'Enfant Promenade and Benjamin Banneker Park were meant to create an enticing entranceway between the National Mall and the Southwest waterfront, and be key elements in the overall redevelopment strategy of Southwest DC. Unfortunately, they were never able to achieve this objective according to several land use and transportation planning studies undertaken by the District and other agencies, and comments provided by stakeholders. The FHWA's L'Enfant Promenade Urban Planning Study (March 2003) identified the following deficiencies associated with the two sites that prevent them from achieving their original purpose of providing an enticing entranceway between the Mall and the Southwest waterfront:

- ◆ Lack of visual clues that tell people the Promenade provides access between the Mall and the Southwest waterfront;
- ◆ An urban environment perceived as overwhelming and uninviting to pedestrians;
- ◆ Substandard pedestrian facilities and a general lack of landscaping and other amenities that would make the sites attractive for pedestrians; and
- ◆ The inward orientation of the circular Banneker Park.

As shown in the photographs provided in Figures 2-1 and 2-1, L'Enfant Promenade has few visual clues or enticements that would draw in pedestrians from the more heavily trafficked Independence Avenue and the National Mall. Views from the north side of Independence Avenue to points south along L'Enfant Promenade are blocked by the U.S. DOE Forrester Building headquarters, which straddles the Promenade near the intersection with Independence Avenue. The prominent building façade, concrete barriers surrounding the building and absence of crosswalks give the impression that pedestrian passage south beneath the building is not allowed (see Figure 2-1). Likewise, the Forrester Building obscures views of the Smithsonian Castle and the National Mall when looking north from the Promenade towards Independence Avenue (see Figure 2-2). In addition, one looking south on the Promenade from the Forrester Building would be greeted with a gradual upward slope that gives the impression that the road goes nowhere interesting, especially for visitors who are likely to be unfamiliar with the surroundings (see Figure 2-3).

The overall width of the Promenade roadway and the architectural scale of the surrounding buildings vis-à-vis the Promenade can be perceived as overwhelming to pedestrians. The Promenade also lacks many of the elements perceived as inviting to pedestrians, including: shade trees and other plantings, structures that provide shelter from the elements and street furniture such as benches. The absence of a mix of land uses at the Promenade level and other street-level uses, such as vendors, does not provide the characteristics desired to attract greater pedestrian traffic. Furthermore,



FIGURE 2-1: View south from Independence Avenue to L'Enfant Promenade



FIGURE 2-2: View from L'Enfant Promenade north to Independence Avenue

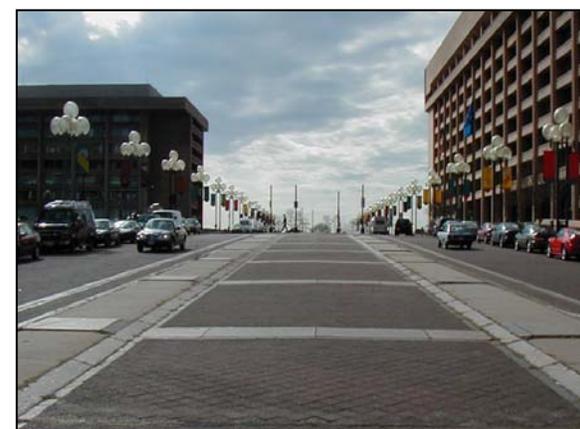


FIGURE 2-3: View south towards the Southwest waterfront

deteriorating pavement and curbs, broken light fixtures, and a general absence of regular maintenance reinforce the image of the Promenade and Banneker Park as bleak and inhospitable places (see Figure 2-4).

Some L'Enfant Promenade pedestrian facilities, such as the Promenade bridge over I-395, are substandard relative to current DDOT standards. The sidewalk on the bridge is 4'-5" wide, with obstructions such as parking meters and light standards located in the travel path (see Figure 2-5). The minimum sidewalk width identified in the DDOT Design and Engineering Manual is 6'-0". Because of this situation, many pedestrians choose to walk within the median or the roadway itself when walking across the bridge.

Finally, the circular landscaped plaza and fountain at the southern terminus of L'Enfant Promenade dominate the visual environment of Benjamin Banneker Park (see Figure 2-6). The fountain area is surrounded by a five-and-a-half foot tall wall and is situated approximately 30 feet higher in elevation than Maine Avenue located about 200 feet to the south. The L'Enfant Promenade roadway and sidewalks curve around the fountain area and intersect with 9th Street. Visually, the current design of Banneker Park is focused inwards towards the central fountain. Views of the waterfront are only possible along the surrounding wall of the park. Additionally, the steep slopes at the southern edge of the park preclude a direct pedestrian connection to Maine Avenue and the Southwest waterfront. Vegetation growing on the slopes further obscures views to the waterfront (see Figure 2-7). Instead, the Promenade sidewalks lead pedestrians on a circuitous route around the Banneker Park fountain to 9th Street. As a result, pedestrians seek the more direct route to Maine Avenue down the hillside of the park (see Figure 2-8).



FIGURE 2-4: Deteriorating light standards and debris along Promenade

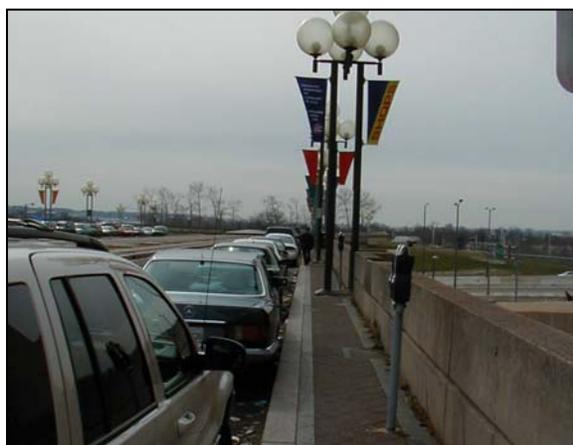


FIGURE 2-5: Sidewalk on I-395 bridge



FIGURE 2-6: Banneker Park fountain

The proposed project is intended to address the deficiencies described above so that L'Enfant Promenade and Benjamin Banneker Park become the gateway or entranceway between the National Mall and the Southwest waterfront as they were originally envisioned in the Urban Renewal Plan.

2.2. PROVIDE VISITOR AND TOUR BUS PARKING

The memorials, monuments, parks, historical and cultural attractions in Washington, DC attracted 17.2 million domestic and international visitors in 2003, which is smaller than the 17.7 million visitors in 2001. The drop is due predominantly to a decline in international visitors, especially after the September 11, 2001 (9/11) terrorist attacks on the U.S. Despite the decline, tourism is a vital component of the Washington, DC economy. The District Department of Employment Services estimates the tourism and hospitality industry accounts for approximately eight percent of the city's total workforce and 12 percent of the city's private sector employment.



FIGURE 2-7: Sidewalk across Banneker Park to 9th Street



FIGURE 2-8: Path from Maine Ave., across Banneker Park to L'Enfant Promenade

Although many visitors arrive within the city by public transit, such as Metrorail, many still use their own vehicles or rental cars. The sheer number of visitors using these modes place high demand on the District's limited parking resources, especially in the National Mall area and downtown business district. On many streets, metered and unmetered parking is limited to short time periods (e.g., one to two hours) during day and evening hours and weekend hours in some locations. On streets that also function as major traffic corridors, on-street parking is often prohibited during morning and evening rush hours. Also, security measures implemented after 9/11 at monuments, memorials and government buildings have resulted in the elimination of previously available parking spaces. In areas outside the Mall and downtown, the city's residential parking zone system limits parking in many residential areas to two hours for motorists who do not live in that zone or have a valid residential or visitor parking permit. Commercial parking lots and garages are located throughout the downtown business district and in some residential areas. However, high parking fees and limited evening and weekend operation can limit their utility to visitors. As a result of the overall limited

parking situation in the District, tourists compete with commuters, businesses and residents for the limited number of public and commercially operated parking spaces. The limited availability of parking spaces, particularly on street parking, also contributes to overall traffic congestion as motorists circle the streets trying to locate a parking spot. As much as 30% of traffic on downtown streets is seeking parking at any given time, according to Donald Shoup in The High Cost of Free Parking (American Planning Association: Chicago, 2005).

The tour bus industry plays a crucial role in the Washington, DC tourism industry and the overall economy. It is estimated that tour buses serve as many as one-third of the visitors to Washington's historical and cultural attractions. While tour bus operations are a major component of the visitor transportation system, their operations also impact the District's traffic flow and congestion levels, on-street parking resources, and the environmental quality of the National Mall and neighborhoods surrounding major tourist attractions. According to the District's Tour Bus Management Initiative report, prepared in 2003, an estimated 1,000 tour buses per day operate in the District during the peak spring season (March 15-June 15). During the fall, summer and winter seasons, the volumes drop to 80, 70 and 50 percent of the spring peak, respectively.



FIGURE 2-9: Tour Buses Loading and Unloading on F Street, NW, near Ford's Theater

The tour bus report identified the following problems that negatively affect tour bus operations as well as traffic conditions, the visitor experience and the quality of life in the District.

- ◆ Traffic congestion caused by tour bus “cruising,” as a result of insufficient amount of tour bus parking;
- ◆ Traffic congestion caused by a lack of space for loading/unloading tour bus passengers at major attractions (see Figure 2-9);
- ◆ Intrusion of tour buses into local neighborhoods as a result of buses seeking parking spaces and waiting to pick up tour groups, causing noise, vibration and air pollution in these neighborhoods;
- ◆ Air pollution caused by diesel fumes, exacerbated by excessive mileage and traffic congestion related to the lack of parking and loading/unloading space, as well as idling in residential neighborhoods;
- ◆ Obstruction of view corridors at major landmarks, especially when a “wall of buses” blocks sight lines; and
- ◆ Damage to infrastructure/pavement conditions.

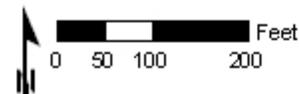
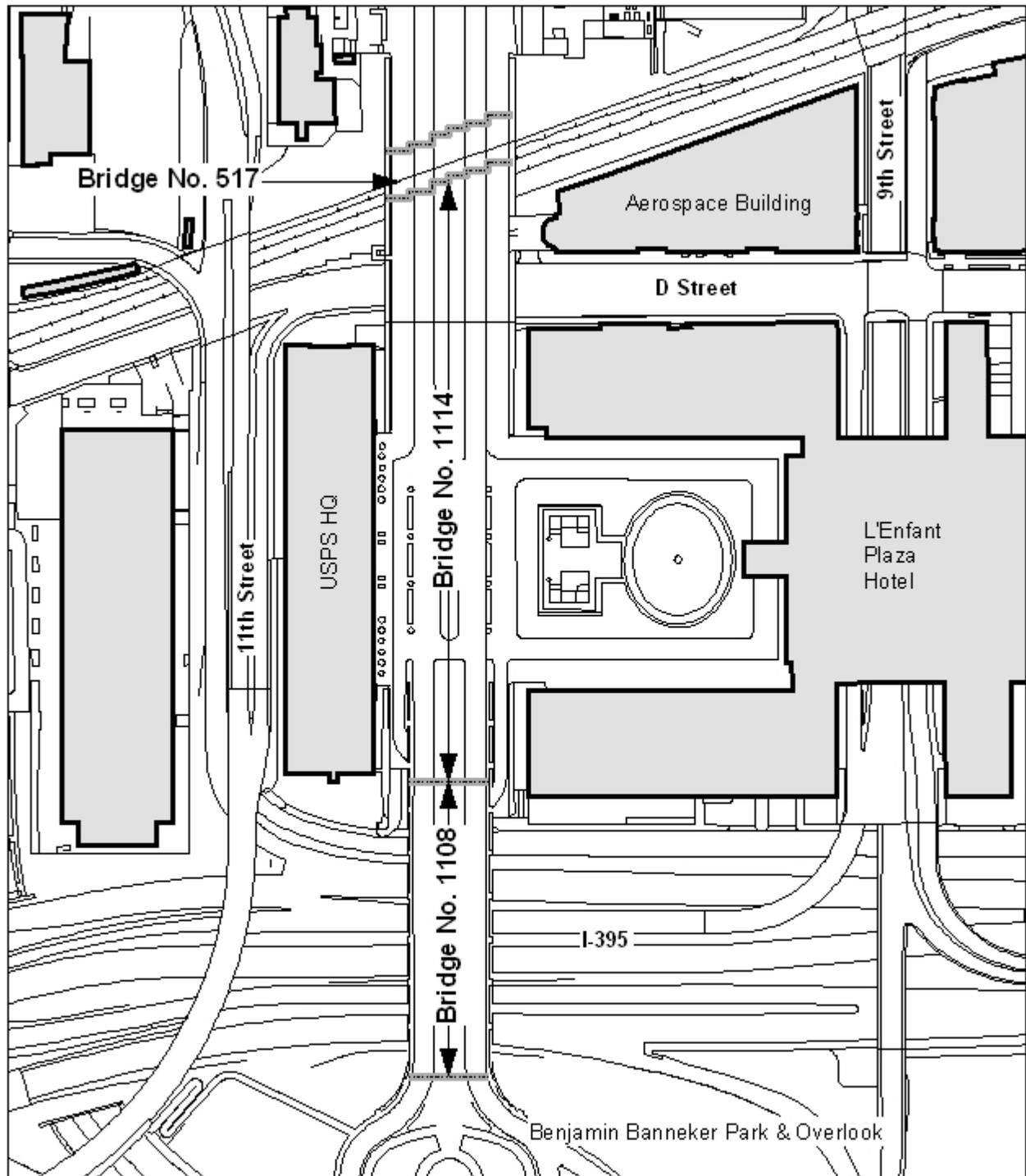
The report concluded that certain actions taken by other U.S. cities faced with similar tour bus problems could be used in the District. They include expanding the supply of tour bus parking and boarding spaces, designating tour bus routes, and developing alternative means of distributing tour bus passengers. Three categories of parking have been identified that may play a role in tour bus management: parking outside the downtown area (i.e., peripheral parking); structured parking facilities within the downtown area; and on-street or off-street surface parking located close to major points of interest.

The proposed project would provide parking for private automobiles and tour buses to alleviate some of the parking demand in and around the Mall by providing an intermodal transportation/parking facility within the project limits. The parking for private vehicles is intended to address the District goal of reducing traffic within the city by allowing motorists to park once and use other travel modes to move around the District, as outlined in the 1997 Strategic Transportation Plan for the District of Columbia. The incorporation of tour bus parking at the facility would also satisfy District goals to promote the city's tourism industry and minimize the adverse impacts of tour buses on its transportation system and environment.

2.3. ADDRESS DEFICIENT STRUCTURAL CONDITIONS

L'Enfant Promenade consists of three distinct bridge structures that align end-to-end spanning the CSX Railroad, D Street, 10th Street, Frontage Road and I-395 (see Figure 2-10). The entire elevated structure has 26 spans for a total length of 1,152 feet, and ranges in width from 166 feet at the north end to 110 feet at the southern end. Bridge No. 517 spans the CSX Railroad and is 83 feet long by 166 feet wide. Bridge No. 1114 is the middle structure, spanning over D Street and 10th Street, SW. It is the longest among the three bridges, ranging in length from 681 feet on the west side to 723 feet on the east side, with widths ranging from 150 to 166 feet. Bridge No. 1108 spans the frontage road and I-395, and is 367 feet long and 110 feet wide.

According to a structural assessment conducted for this project (see Appendix III), the L'Enfant Promenade's concrete deck and all the bridges' structural members were found to be in good condition. However, the assessment did find a number of deficiencies that warrant repair or rehabilitation. Some of these deficiencies have the potential to create hazards that could affect public safety if left unattended or not addressed. Plans depicting the location of the deficiencies are found in Appendix III.



Source: DC OCTD

Among the more serious deficiencies include:

- ◆ Falling concrete from deteriorating bridge joints;
- ◆ Missing or damaged joint filler material on walking surfaces; and
- ◆ Cracked, misaligned or missing paver blocks and granite curbs on walking surfaces (see Figure 2-12)

The above deficiencies require immediate attention and should be addressed separately from a general rehabilitation project. Other deficiencies such as cracks in the concrete deck, precast concrete canopy parapet walls, or other concrete surfaces, strengthening and repainting of structural members, cleaning blocked drains, removing exhaust and water stains, and removing trash and debris do not pose a direct public safety hazard but all need to be repaired or rehabilitated. Because the concrete bridge deck and structural members are in good condition, sustained general maintenance should ensure their full serviceability for many more years. It would not be unreasonable to expect the concrete deck to last another 30 years or more before requiring replacement, if properly maintained.

Because redevelopment of the Promenade is part of a 50 year plan for DDOIT, however, the most viable option may be to replace the deck. Complete replacement would prevent the frequent and undesirable rehabilitation that may be required to sustain the life of the existing deck, such as deck joint replacements. As the existing deck gets older, repetitive rehabilitation and repairs will become more frequent and costly. A deck replacement will typically incur only periodic maintenance measures in the first several years of service. If a general maintenance program is implemented and performed at regular intervals, the time period until the first rehabilitation measures will be greatly extended.



FIGURE 2-11: Missing canopy panel on I-395 bridge



FIGURE 2-12: Misaligned granite curb

3. DESCRIPTION OF THE PROPOSED ACTION

This chapter describes the proposed action that is intended to address the purposes and needs described in Chapter Two. In addition, alternatives to the proposed action are described, as well as the reasons why they were rejected from further consideration.

3.1. PROPOSED ACTION

This section first describes how the proposed action was developed; the urban design concepts that are used developing in the proposed action; and the conditions that limit or constrain what can be done to improve L'Enfant Promenade and Benjamin Banneker Park to address the project purposes and needs. This section will then describe in detail the physical elements of the proposed action, including some options that are still available that may affect the final design.

3.1.1. Development of the Proposed Action

3.1.1.1. Plan Sources

The proposed action was developed from FHWA's L'Enfant Promenade Urban Planning Study and from a thorough review of the following plans and studies, which pertain to redevelopment in areas in and around the L'Enfant Promenade and Benjamin Banneker Park prepared by various federal and District agencies:

- ◆ Development Plan and Anacostia Waterfront Initiative (AWI) Vision for the Southwest Waterfront, National Capital Revitalization Corporation and District of Columbia Office of Planning, February 2003.
- ◆ The Anacostia Waterfront Framework Plan, District of Columbia Office of Planning, November 2003.
- ◆ Extending the Legacy: Planning America's Capital for the 21st Century, National Capital Planning Commission (NCPC), 1997.
- ◆ Memorials and Museums Master Plan, NCPC, September 2001.
- ◆ The National Capital Urban Design and Security Plan, NCPC, October 2002.

Additional information about these plans is provided in Chapter 4.

Plans developed by private interests were also reviewed for development of the proposed action, such as the redevelopment plan for the L'Enfant Plaza Hotel, shopping mall and northern office building. The centerpiece of the plan is the construction of the National Children's Museum in the courtyard area in front of the hotel, scheduled to open in 2008. The plan also calls for the introduction of street-level retail to the complex and residential/office uses adjacent to the hotel utilizing air rights over 9th Street.

3.1.1.2. Urban Design Concepts

The proposed action incorporates the following design features recommended in the L'Enfant Promenade Urban Planning Study, which was prepared to study options that may provide aesthetically pleasing and welcoming environment on L'Enfant Promenade:

- ◆ Adding aesthetic treatments such as landscaping, streetscape and way finding elements;
- ◆ Providing opportunities for monuments or memorials at the Promenade and park sites;
- ◆ Modifying of the Promenade roadway and sidewalk configurations and incorporating other circulation or connectivity elements; and
- ◆ Providing general security measures.

3.1.1.3. Limiting Conditions

The following limiting conditions were identified within the study area that set the physical parameters in developing the proposed action:

- ◆ **Roadways.** The existing transportation network creates limitations within the study area. Roadways within the study area include I-395, 9th Street, Maine Avenue, Water Street, 12th Street, 12th Street Expressway, D Street and Independence Avenue. The proposed action would not involve the relocation or reconfiguration of any of these roadways. However, a separate project already underway associated with the Development Plan and Anacostia Waterfront Initiative Vision for the Southwest Waterfront contemplates the removal of Water Street and some modifications to Maine Avenue as a result.
- ◆ **Rail Lines and Transit Facilities.** The CSX rail line, which is used by Virginia Railway Express (VRE) and Amtrak trains, runs beneath the Promenade along the former Maryland Avenue right of way. The Washington Metropolitan Area Transit Authority (WMATA) Metrorail Yellow and Green Lines run underground in the vicinity of the Promenade. The proposed action would not involve the relocation or reconfiguration of these facilities, nor would it lower bridge heights to below clearance limitations for freight and passenger trains.
- ◆ **Surrounding Buildings.** The Forrestal Building, owned by Department of Energy (DOE), straddles L'Enfant Promenade at its northern terminus. Other DOE buildings, as well as the U.S. Postal Service Headquarters, L'Enfant Plaza Hotel, and additional office buildings are located immediately adjacent to L'Enfant Promenade. The proposed action would not involve the relocation or modification of any of these buildings.
- ◆ **Ongoing Plans and Studies.** In addition to the Development Plan and Anacostia Waterfront Initiative Vision for the Southwest Waterfront mentioned above, the NCPCC Memorials and Museums Master Plan identified Benjamin Banneker Park as a location for a future major museum or memorial. The proposed action would not preclude locating a museum or memorial at Banneker Park even though the proposed

action calls for major changes to the park property. The proposed action contemplates the construction of a subterranean intermodal transportation center (ITC), creating the opportunity for a museum/memorial to be built above it. Also, a specific site for a memorial honoring Benjamin Banneker within the project limits has not been determined. The proposed action provides several locations where memorials, including one to Benjamin Banneker, could be located.

- ◆ **Structural Deficiencies.** Although not a limiting constraint, the proposed action would require repair or rehabilitation of Promenade structures found to be deficient, partially because some elements of the proposed action would require structural modifications.

3.1.1.4. Required Elements of the Proposed Action

In consideration of the purposes and needs described in Chapter Two, the following characteristics would be required of the proposed action:

- ◆ Improve pedestrian accessibility between the National Mall and Southwest waterfront and from points east and west of the Promenade;
- ◆ Address the structural needs of the Promenade structure and consider structural improvements required to meet the needs of the proposed improvements;
- ◆ Maintain existing traffic circulation between Independence Avenue and Maine Avenue via the Promenade and Banneker Park;
- ◆ Create opportunities for intermodal connections;
- ◆ Improve the pedestrian environment; and
- ◆ Minimize environmental, social and cultural impacts.

In addition to the above characteristics, the proposed action should strive to support the goals and policies identified in the Anacostia Waterfront Framework Plan, the Development Plan and AWI Vision for the Southwest Waterfront, the NCPC Monuments and Memorials Plan, and the L'Enfant Promenade Urban Planning Study. Also, consideration should be provided for perimeter security of sensitive buildings and their occupants while maintaining public access to the Promenade and adjacent buildings.

3.1.2. Proposed Improvements

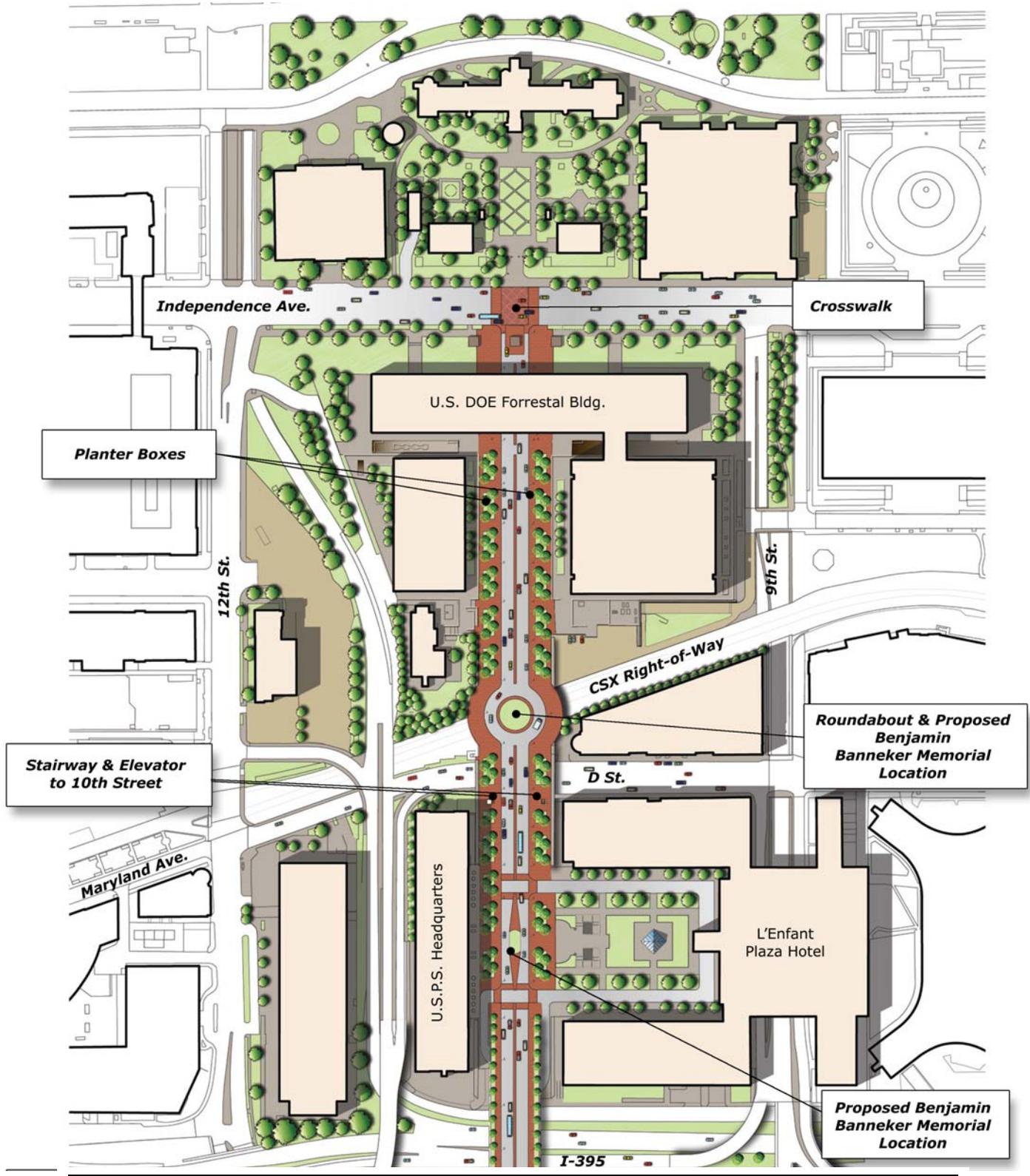
For descriptive purposes, the improvements proposed in this project are described in this section separately for L'Enfant Promenade between Independence Avenue and its bridge over I-395, and Benjamin Banneker Park, located just south of I-395.

3.1.2.1. L'Enfant Promenade

Improvements to L'Enfant Promenade would be implemented to enhance the urban design character of the Promenade and provide an accessible route for pedestrians, in compliance with the Americans with Disabilities Act (ADA). The Promenade roadway would continue to have a single traffic lane in each direction with curbside parking. Additional design features and modifications include:

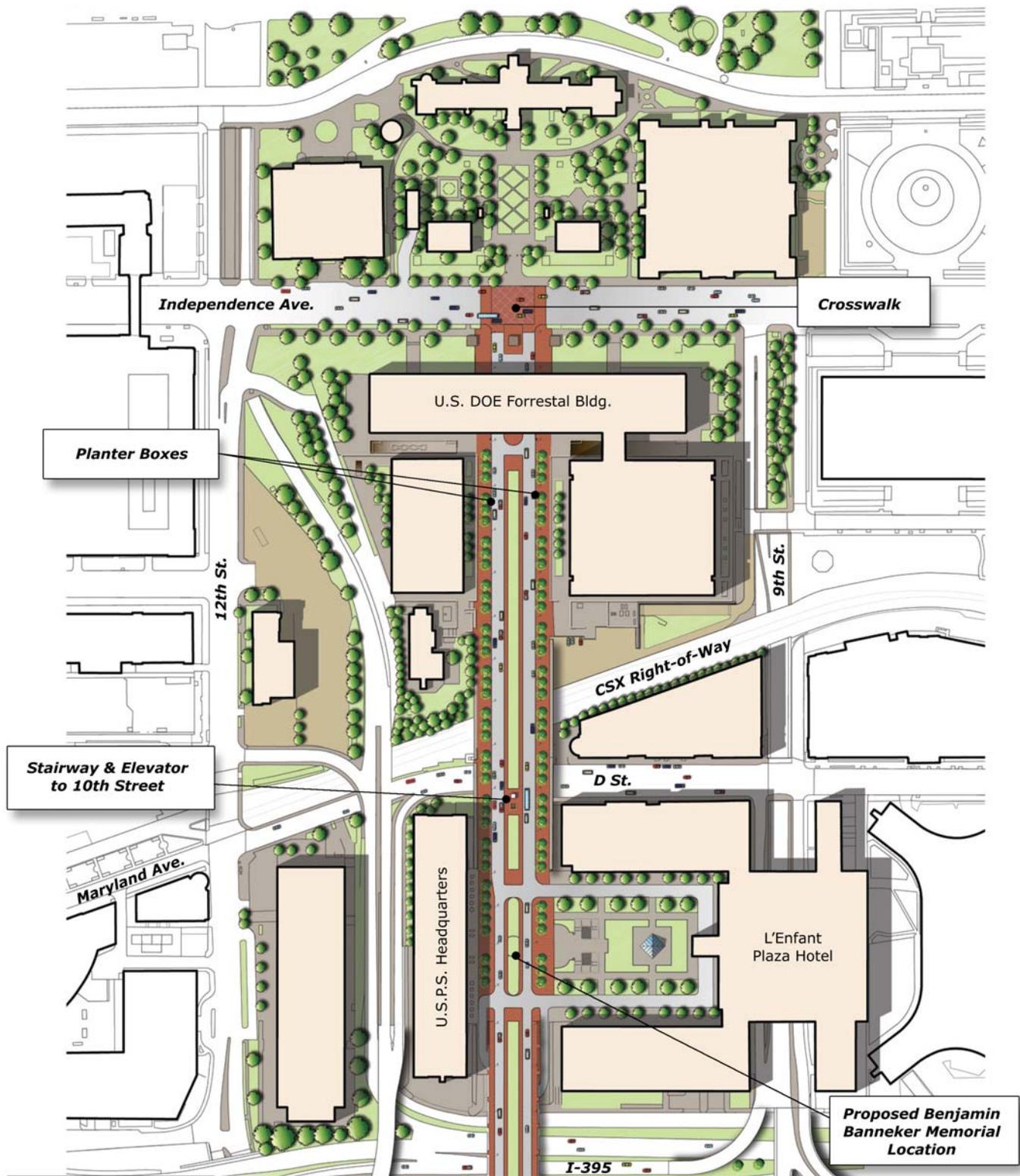
- ◆ Modification of the roadway median;
- ◆ Addition of street trees and/or other landscaping along the roadway;
- ◆ Addition of a five foot wide, on street bicycle lane
- ◆ New street lighting;
- ◆ Addition of seating and site furnishings (e.g., trash receptacles, bicycle racks, etc.);
- ◆ Implementation of a way-finding/signage system;
- ◆ New stairway and elevator connections to 10th Street from L'Enfant Promenade, just south of D Street;
- ◆ Construction of pedestrian crosswalks at Independence Avenue and Maine Avenue;
- ◆ Implementation of the following intersection modifications, and;
 - » Modification of the northbound lanes at the 12th Street and Independence Avenue intersection, through pavement markings, to the following three-lane configuration: one left turn only lane; one shared left-through lane; and one shared through-right lane for all Build Alternatives.
 - » Modification of the existing parking lane and signage on 12th Street to use the eastern parking lane as an additional travel lane through the 12th Street-C Street intersection during the PM peak period for all Build Alternatives.
 - » Increased pedestrian crossing time at the 12th and Independence and 12th and C intersections, in addition to the geometric intersection modifications.
 - » Optimization of all study area traffic signals for better progression and increase traffic signal cycle lengths to 95 – 100 seconds
- ◆ Repair of the deficiencies associated with the L'Enfant Promenade bridge structures as outlined in Chapter 2.

Two design options have been identified for modifying the Promenade roadway median: retaining the existing 39 foot median width and replacing the paving with a grass lawn or reducing the median width to five feet. The two median design options, as well as other design features proposed for L'Enfant Promenade, are illustrated in Figures 3-1 and 3-2. Reducing the width of the median would allow widening of the adjacent sidewalks by approximately 17 feet (to 46 feet wide from Independence Avenue to I-395 and to 21 feet on the I-395 bridge) on each side of the roadway.



ENVIRONMENTAL ASSESSMENT:
L'ENFANT PROMENADE & BENJAMIN
BANNEKER PARK IMPROVEMENTS

FIGURE 3-1:
Proposed L'Enfant Promenade Improvements,
Narrow Median Design Option



ENVIRONMENTAL ASSESSMENT:
L'ENFANT PROMENADE & BENJAMIN
BANNEKER PARK IMPROVEMENTS

FIGURE 3-2:
Proposed L'Enfant Promenade Improvements,
Wide Median Design Option

The wider sidewalks allow more space for tree lawns or planter boxes and street trees or other landscaping while maintaining clear path widths in excess of DDOT minimum design standards (see Figures 3-3 and 3-4). Sidewalk widths for the “wide median” option would also be in excess of DDOT minimum design standards as well, however. Modification of the Promenade bridge superstructure would be required to implement the “narrow median” design option, at a greater construction cost than the “wide median” option, as discussed further in Section 3.1.3. The narrow median design option also includes the construction of a roundabout or traffic circle at the Promenade bridges over Maryland Avenue and the CSX railroad line (see Figure 3-1 and 3-5). The bridge superstructure and deck would be modified to accommodate the roundabout. Plans depicting the proposed superstructure modifications are provided in Appendix IV.

Both median options provide opportunities to locate memorials or monuments along the Promenade to create visual interest by functioning as focal points or nodes of attraction. Each design option provides two primary nodes: the center of the Promenade median at the point where the Promenade bridges over Maryland Avenue and the CSX railroad line and the Promenade median in front of the U.S.P.S. headquarters and L’Enfant Plaza Hotel. The node at the railroad line would be located in the center of the proposed roundabout in the narrow median option and would provide a larger and more distinctive node at that location than in the wide median option (see Figures 3-5 and 3-6).

If the existing median width is retained, on-street parking would be eliminated on the I-395 bridge in order to allow the sidewalk to be widened from 4 feet-5 inches (4’-5”) to 11’-6”. Existing, on-street parking would remain along other segments of the Promenade, between Independence Avenue and I-395 (see Figure 3-7). If the narrow median design option is implemented, on-street parking would remain along the entire width of the Promenade except for those areas where it is already prohibited, such as in front of the U.S.P.S. headquarters and L’Enfant Plaza Hotel.

Design options for the proposed planter boxes include constructing the planters to sit on top of the Promenade sidewalk or constructing them to be partially sunken or below the grade of the sidewalk. The below-grade planters can be constructed with shorter, above-grade wall heights that can also be utilized for informal seating. The Promenade bridges superstructure would need to be modified to accommodate the planters, which would increase the construction cost of this design option. Planters constructed at the grade of the existing Promenade sidewalk would require taller wall heights and be a more prominent visual element along the Promenade. They would not, however, require any modification of the bridge superstructures.

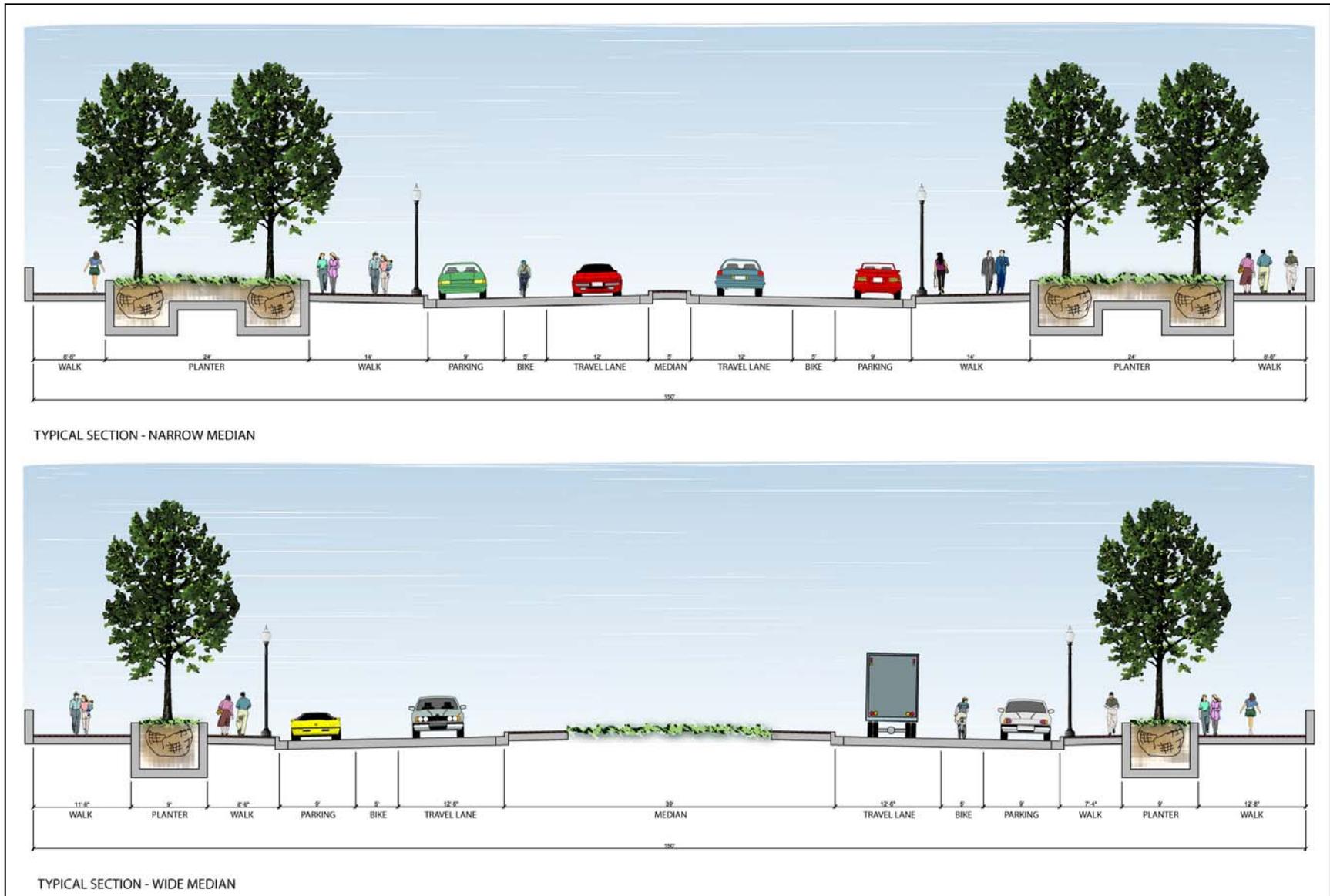


FIGURE 3-3: Typical Section of L'Enfant Promenade



FIGURE 3-4: Section of L'Enfant Promenade at U.S.P.S. Headquarters and L'Enfant Plaza Hotel



FIGURE 3-5: Proposed Roundabout and Memorial “Nodes” (Narrow Median Design Option)



FIGURE 3-6: Proposed Memorial “Nodes” (Wide Median Design Option)

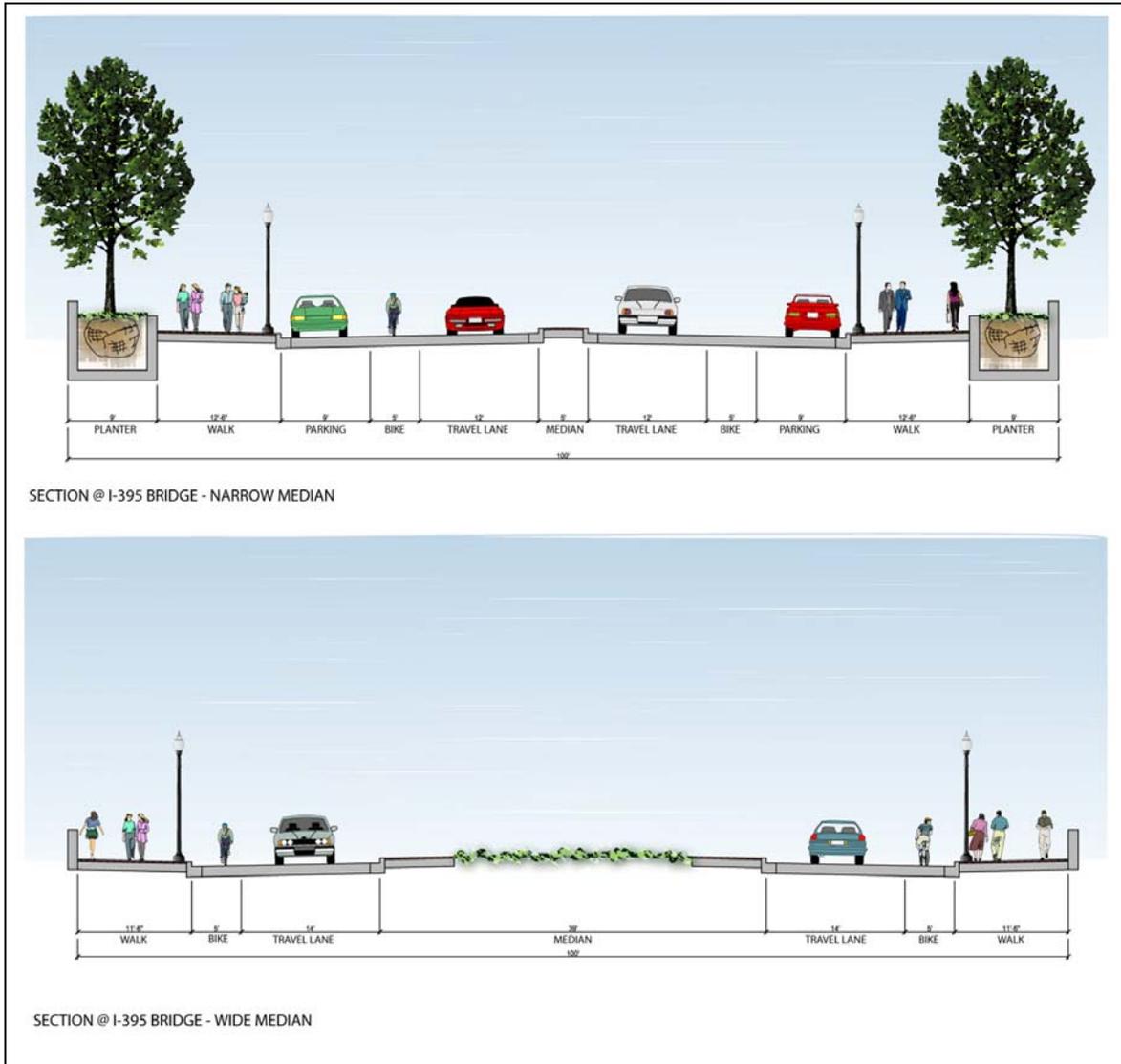


FIGURE 3-7: Section of L'Enfant Promenade at I-395

A final set of design options under consideration is whether to rehabilitate and modify the existing Promenade bridge structures in implementing the proposed improvement recommendations or to demolish the bridge structures and construct a new bridge(s) that incorporates the proposed improvements. Reconstructing the bridges would provide greater flexibility in the design of the proposed median, roundabout and other design elements without any constraints imposed by the existing superstructure and deck. The new construction option is more expensive than modifying the existing superstructure and deck, however.

3.1.2.2. Benjamin Banneker Park

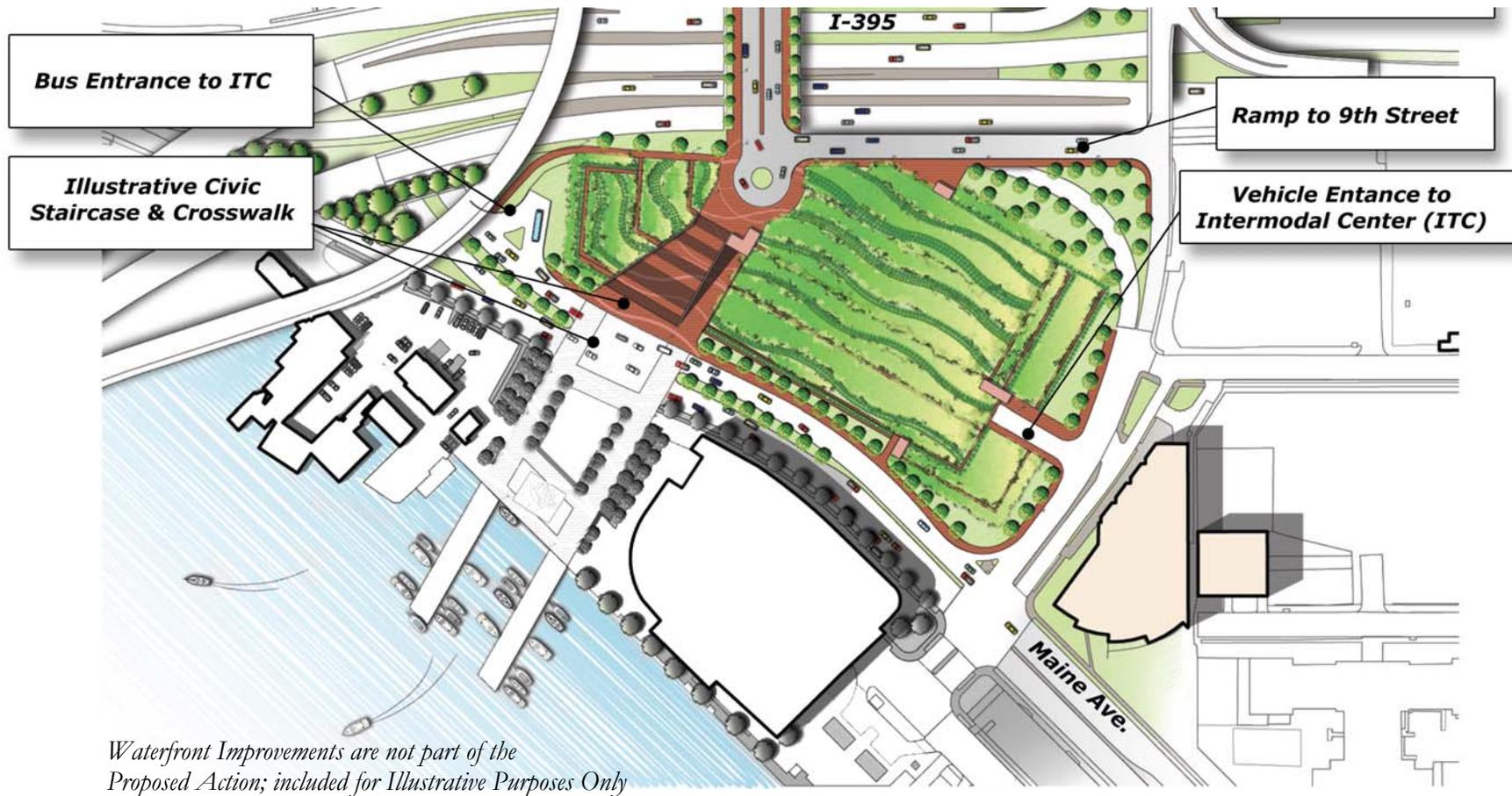
Banneker Park would undergo major renovations, which include providing an intermodal transportation center and parking facility (ITC) within the park property and modifying the park's circular plaza/traffic circle (see Figure 3-8).

The ITC would be designed to accommodate up to 1,150 automobiles and 75 tour buses. The facility would be recessed into the hillside, designed to blend into the topography of the park. The highest elevation of the park, which is the same height as L'Enfant Promenade, would remain unchanged. The ITC would feature a terraced design on the existing hillside that matches different levels of the ITC parking structure. Each terrace would include ample landscaping so that the facility would not appear to be a parking structure from viewpoints on Maine Avenue and the waterfront, and to maintain the park-like environment of the site. Tour bus parking would be located on the lowest level of the ITC, at an approximate elevation of 2 feet, below the grade of Maine Avenue (which is at an elevation of approximately 10 feet in front of Banneker Park). Tour bus access into the ITC would be at a driveway intersection with Maine Avenue while automobiles would enter and exit at a driveway intersection with 9th Street.

Pedestrian facilities constructed at Banneker Park and integrated with the ITC would include: an exterior staircase from the modified circular plaza (see Figure 3-8) on the top of the hill to the bottom of the hill, a new mid-block pedestrian crossing of Maine Avenue, and interior staircases and elevators between parking levels, which also provide access between the upper portion of Banneker Park and Maine Avenue. The exact location of the pedestrian crossing will be coordinated with improvements proposed as part of the Anacostia Waterfront Initiative for the waterfront on the south side of Maine Avenue, including improvements proposed for the Municipal Fish Market.

Pedestrian access between the ITC and the L'Enfant Metrorail Station and other transit connections, such as the Downtown Circulator, would be via L'Enfant Promenade or 9th Street. Pedestrian access would also be possible from the ITC to a future M Street/Maine Avenue transit system, which is planned to have a stop near Banneker Park.

Due to the modification of the sloping park hill into a four-level terrace, the existing circular park and traffic circle would have to be modified into a smaller traffic circle at a location closer to I-395. The center of the traffic circle could accommodate a new fountain, public art or a memorial or monument. As the centerpiece of the ITC, the traffic circle would include circumferential sidewalks that would provide connections to the exterior staircase to Maine Avenue and parking facilities of the ITC. The circle also has the potential to function as the entryway to a new museum and as a location for future intermodal connections, especially if the Downtown Circulator were re-routed down L'Enfant Promenade.



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**FIGURE 3-8:
Proposed Benjamin Banneker Park
Improvements**

The roadway connection from L'Enfant Promenade to 9th Street would be re-aligned, and converted from a two-lane divided roadway to a two-lane undivided roadway with on-street bicycle lane(s), but this would not change the basic vehicular and bicycle circulation from the Promenade to 9th Street. It would establish a new intersection with 9th Street though. The intersection of I-395, 9th Street and G Street would be simplified into one unsignalized intersection as well, to eliminate potentially unsafe weaving and merging areas.

Despite major renovations and changes to Banneker Park, construction of the ITC would not eliminate this site as a possible location for a future museum or memorial. The ITC would be designed to allow for a future museum/memorial with a presence on Maine Avenue. However, if Banneker Park were selected as the site for a museum/memorial, and the NPS approves the development, a supplemental environmental review of the ITC project would have to be conducted in accordance with NEPA. Development of a museum or memorial on top of and surrounding the ITC is anticipated and accommodated by the proposed action, but is not part of the proposed action.

The proposed modification of Banneker Park represents a substantial portion of the total construction cost of the overall project. Because of this cost and limited funding availability, FHWA and DDOT may phase the construction of the project. The ITC would not be included in the first phase, and therefore, no changes would be made to the park's circular fountain plaza/traffic circle and the road between L'Enfant Promenade and 9th Street. However, the first phase or interim condition would still need to address the project objective of establishing a gateway between the National Mall and the Southwest waterfront. Therefore, any first phase of the project would include a pedestrian ramp and possibly a staircase in combination with the ramp. The ramp would be constructed to comply with ADA requirements. These facilities would provide a direct pedestrian connection between the park's plaza and Maine Avenue. In addition, a signalized, mid-block pedestrian crossing on Maine Avenue between 9th and 12th Streets would be provided.

3.1.3. Estimated Cost

The estimated cost of the major elements or options of the proposed action is provided in Table 3-1 in year 2005 dollars.

**Table 3-1
Estimated Cost of the Proposed Action (2005 \$)**

PROJECT OPTIONS	COST
<i>L'Enfant Promenade Improvements</i>	
Narrow Median (retains existing superstructure)	\$ 33,516,000
Wide Median (retains existing superstructure)	\$ 33,120,000
Maryland Avenue Roundabout	\$1,483,000
Reconstruction (including superstructure)	\$ 56,661,000
<i>Benjamin Banneker Park Improvements</i>	
ITC and Modify Traffic Circle and Road to 9 th Street	\$80,223,000

Source: Parsons Brinckerhoff

3.2. ALTERNATIVES CONSIDERED BUT REJECTED

In addition to the proposed action, other alternatives were developed from review of the L'Enfant Promenade Urban Planning Study (2003) and other planning studies, and are described in this section. These alternatives were rejected for various reasons, which are also described in this section. The report, Alternatives Analysis: L'Enfant Plaza and Benjamin Banneker Park Sites (February 2004), describes the development and evaluation of alternatives in more detail and why they were rejected in favor of the proposed action.

The description of alternatives and alternative project elements described in the following sections are grouped by those that would address L'Enfant Promenade and those that would address Banneker Park. Developing alternatives separately provided greater flexibility, which led to those sets of improvements that make up the proposed action.

3.2.1. L'Enfant Promenade

3.2.1.1. Restore Maryland Avenue Deck

This alternative element would construct a bridge or deck structure over the CSX railroad tracks from the L'Enfant Promenade to Maryland Avenue and 12th Street SW. The deck would partially restore Maryland Avenue as an at-grade pedestrian and vehicular link with the Promenade, which was recommended in NCPC's Extending the Legacy plan. This alternative element was eliminated from consideration at this time because it could not be accomplished without affecting operations on the underlying CSX rail line and the 12th St. ramp from I-395. DDOT, however, supports this alternative as a long-term proposal for future implementation.

3.2.1.2. L'Enfant Promenade Park

This alternative would convert the entire L'Enfant Promenade into a park-like setting between Independence Avenue and Banneker Park. It would be reserved for the exclusive use of pedestrians and cyclists. The only vehicles that would be allowed on the Promenade would be for emergency-response, maintenance and transit purposes. Private automobiles would be restricted from using the Promenade, and therefore, the vehicular connection between the National Mall and the Southwest Waterfront via the Promenade would be eliminated. Although this alternative would greatly improve the pedestrian environment, it was eliminated from further consideration because it would not maintain vehicle circulation between Independence and Maine Avenue, a required element of the proposed action.

3.2.1.3. L'Enfant Promenade Park Hybrid

This alternative is similar to the "park" alternative described in the previous section. However, instead of restricting general traffic between Independence Avenue and Banneker Park, this alternative would restrict vehicular traffic (except emergency, maintenance and transit vehicles) on the roadway between the I-395 bridge and 9th Street, and modify this segment into a park-like setting for the exclusively use of pedestrians and cyclists. A roundabout would be provided on the Promenade at the bridge over Maryland Avenue. Similar to the "park" alternative, this alternative would also improve the pedestrian environment. However, it was

eliminated from further evaluation because it would also not maintain vehicle circulation between Independence and 9th Street/Maine Avenue.

3.2.2. Benjamin Banneker Park

Two alternative elements to the proposed action at Banneker Park were developed. One alternative element would address the lack of a direct pedestrian connection from the park plaza to Maine Avenue. It would provide a pedestrian bridge from the park plaza to the southern side of Maine Avenue. At that point an elevator and stairway would be constructed to complete the connection across Maine Avenue to the Southwest waterfront and Water Street. This alternative was rejected after consulting with the DC Office of Planning (OP). These agencies noted that a Maryland Avenue pedestrian overpass would not support the overall goal of the Development Plan and AWI Vision for the Southwest Waterfront, which emphasize increasing pedestrian activity at the street level along Maine Avenue. The second alternative element would remove the roadway connection between L'Enfant Promenade and 9th Street/Maine Avenue by eliminating it from the park property. This alternative was eliminated from further consideration because it would not maintain vehicular circulation between Independence and Maine Avenue via the Promenade and Banneker Park, a required characteristic of the proposed action.

3.3. NO BUILD ALTERNATIVE

Under the “No Build” alternative, DDOT would schedule and carry out a general rehabilitation and repair of the Promenade’s structures found to be deficient (see Chapter 2) in order to extend the serviceability or lifespan of the Promenade structures an additional 50-75 years. At Banneker Park, the No Build Alternative provides for only routine maintenance, such as repairing minor cracks in sidewalks, general upkeep (mowing, trimming hedges), and trash removal. The existing park and fountain and vehicle circulation would be maintained. The “No Build” alternative would not result in any change to the physical configuration of the Promenade median or function of either the Promenade or Banneker Park or include any design modifications (e.g., planters, roundabout, etc.), except as noted for the I-395 bridge under the enhanced rehabilitation scenario.

There are several levels of rehabilitation/enhancement possible under the No Build Alternative, depending on funding availability. A basic rehabilitation would correct the deficiencies identified in Chapter 2 and Appendix III (excluding the replacement of the Promenade bridge decks, paving and drainage systems) and implement a way-finding signage system for the two sites.

An enhanced rehabilitation option has also been identified, as an additional short-term measure to provide minimal enhancement of the Promenade aesthetics and pedestrian connectivity. The enhanced rehabilitation option does not duplicate the basic rehabilitation items; rather it includes the following additional Promenade modifications:

- ◆ Rehabilitation of the Promenade median to replace the existing paving with a grass lawn,
- ◆ Widening of the sidewalk across the I-395 bridge by expanding it into the existing on-street parking lane (and eliminating parking on the bridge)
- ◆ The addition of an ADA accessible stairway and elevator between the Promenade and D Street

Rehabilitation costs associated with the No Build alternative are listed in Table 3-2.

**Table 3-2
Estimated Rehabilitation Cost of the No Build Alternative (2005 \$)**

REHABILITATION OPTIONS	COST
Basic Rehabilitation	\$ 9,488,000
Enhanced Rehabilitation	\$ 11,511,000
<i>Total Short-Term Rehabilitation and Enhancement</i>	<i>\$ 20,999,000</i>

Source: Parsons Brinckerhoff

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing environmental conditions in the area potentially affected by the project. It also describes the short-term construction impacts and long-term environmental impacts of the Proposed Action. In cases where a short- or long-term impact is considered adverse, measures to eliminate, minimize or mitigate the impact is included.

4.1. SCOPE OF ENVIRONMENTAL ASSESSMENT

Based on the nature of the Proposed Action and the environmental conditions of the study area, this environmental assessment (EA) focuses on the following environmental issues:

- ◆ Land Use and Zoning: the interplay between this Proposed Action and existing land use patterns, zoning, and plans for the study area and the District of Columbia.
- ◆ Socio-economic and Community Features: the effect of the Proposed Action on the Southwest Employment Area and Southwest waterfront neighborhood and community facilities.
- ◆ Historic Properties: effects of the Proposed Action on historic properties, such as known and unknown archaeological sites, architectural resources, and historic districts. Compliance with Section 106 of the National Historic Preservation Act is discussed in this EA.
- ◆ Aesthetic Resources and Viewsheds: the effect of the Proposed Action on protected vistas that encompass the L'Enfant Promenade and Benjamin Banneker Park as well as memorials, historic buildings or districts that are adjacent to or have a view of the Promenade and Banneker Park.
- ◆ Parks and Recreational Resources: direct and indirect effects on publicly owned park and recreation lands. Compliance with Section 4(f) of the U.S. Department of Transportation Act is discussed in this EA.
- ◆ Hydrology and Water Resources: temporary construction-related impacts and long-term impacts on the study area's water resources, particularly the Washington Channel and Potomac River.
- ◆ Topographic and Geologic Resources: temporary and permanent impacts to surface and subsurface soils and modification of the existing topography as a result of construction activities.
- ◆ Transportation: the impacts on vehicular traffic, pedestrian and bicycle movements, and public transit systems.
- ◆ Air Quality: temporary construction-related and long-term changes in local and regional air quality levels resulting from the proposed improvements and new facilities.
- ◆ Noise: temporary construction-related and long-term changes to ambient noise levels in the study area as a result of the Proposed Action.

- ◆ Utilities: the effect of the Proposed Action on the existing utility systems and their capacity to accommodate any additional demand related to the Proposed Action.
- ◆ Hazardous Materials and Wastes: identification of hazardous materials and waste sites that may affect development of the Proposed Action.

Project scoping activities have indicated that the Proposed Action project site does not contain the following environmental resources, and therefore, impact analyses relating to these resources are not included in this EA:

- ◆ Farmland: No farmland exists within the study area.
- ◆ Wetlands: The nearest wetlands are within Washington Channel, located just south of the study area. They are designated as a Riverine Tidal Unconsolidated Bottom Permanent-Tidal (R1UBV) system wetland by the U.S. Fish and Wildlife Service (USFWS). Roadway runoff pollution issues will be discussed in this EA under “Hydrology and Water Resources.”
- ◆ Floodplains: The area affected by the Proposed Action is designated as Zone C in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the District of Columbia, meaning it has minimal flooding risk. The areas along the waterfront are within the floodplain, but these areas would not be affected by construction associated with the Proposed Action.
- ◆ Wild and Scenic Rivers: No federally designated wild and scenic rivers or State scenic rivers are located in or adjacent to the study area.
- ◆ Coastal Zone Management (CZM): The District of Columbia does not have a CZM program.
- ◆ Biologic Resources: The study area is almost entirely pavement and other hardscape elements. Vegetation is limited to ornamental plantings and landscaping and small enclaves of open space. Wildlife is typical to that of most urban settings, such as squirrels, chipmunks, and common bird species including robins, mockingbirds, and house sparrows. Large waterfowl (ducks, geese), raptors (hawks, eagles) or shorebirds occasionally frequent the area, using the open water of the Washington Channel for nesting and feeding. The Proposed Action would provide additional ornamental landscape plantings on L’Enfant Promenade and modify existing plantings at the Banneker Park site, providing basically the same kind of urban habitat now within the study area. In a letter dated April 10, 2003, the U.S. Fish and Wildlife Service stated that no federally proposed or listed threatened or endangered species are known to exist within the study area.

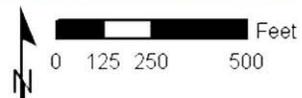
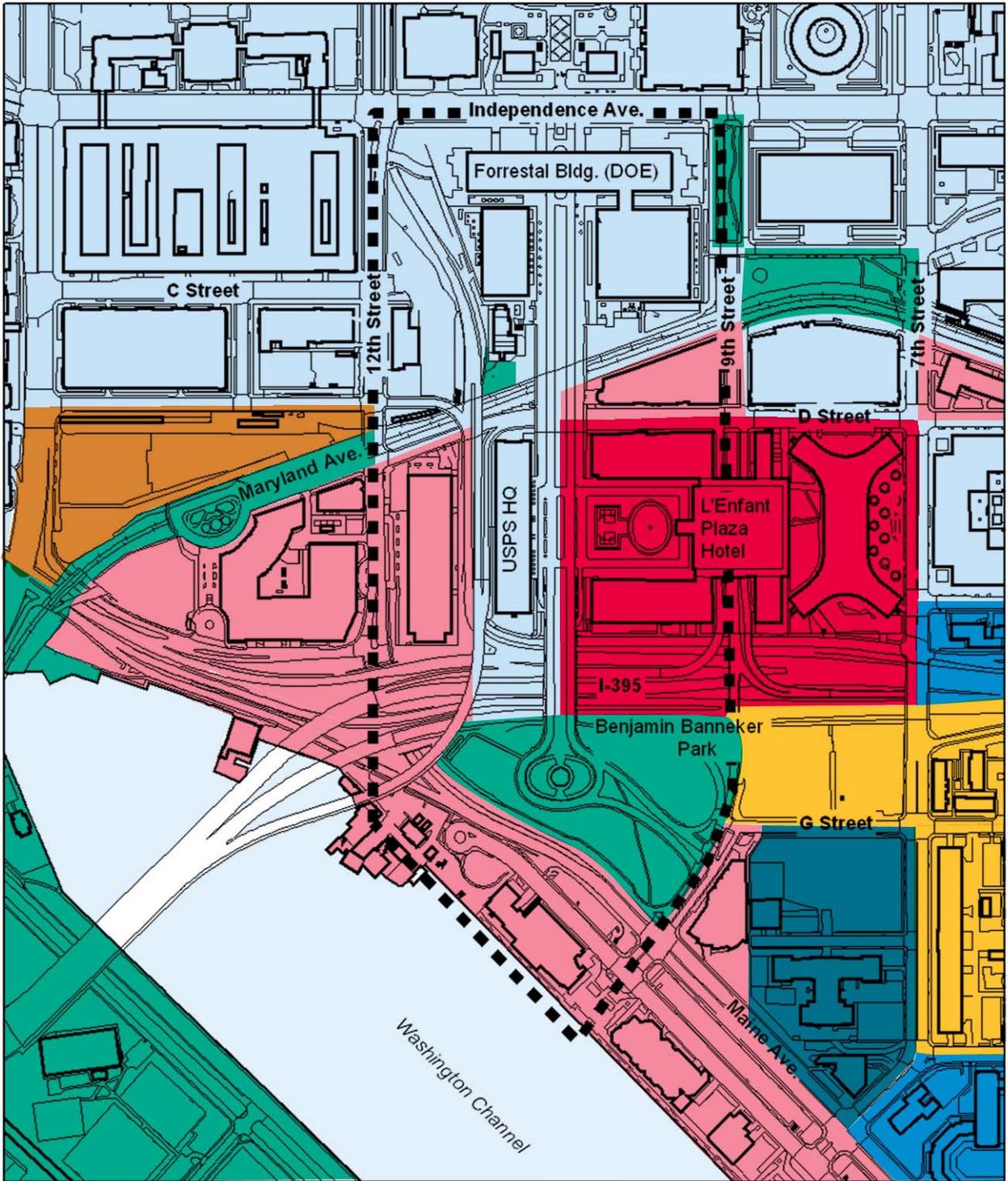
4.2. LAND USE

4.2.1. Affected Environment

The area surrounding L'Enfant Promenade includes a mix of federal, commercial and park uses (see Figure 4-1). Federal land uses with direct access to L'Enfant Promenade include the headquarters of the U.S. Department of Energy (DOE) and the U.S. Postal Service (U.S.P.S.). Commercial uses with direct access to L'Enfant Promenade include the Aerospace Building, L'Enfant Plaza Hotel, office buildings surrounding the hotel, and the Promenade Shops retail concourse located below the hotel and L'Enfant Promenade. The southern end of L'Enfant Promenade contains Benjamin Banneker Park, which is owned by the National Park Service (NPS).

Land uses on the north side of L'Enfant Promenade across Independence Avenue include the Smithsonian Castle Information Center and other Smithsonian Institution museum buildings, which are located on the National Mall. Land uses on the south end of L'Enfant Promenade across Maine Avenue include commercial establishments, such as restaurants, and boating slips as part of the Washington Channel marinas. To the east and west of L'Enfant Promenade, beyond the buildings described above, are federal and commercial office buildings, and a cluster of residential dwellings and public school facilities located between I-395 and Maine Avenue and 7th and 9th Streets.

The District's zoning code regulates the use, density and configuration of buildings and other structures within the District. With the exception of federally owned properties, all lands in the District are categorized into zoning districts, which identify the specific uses allowable on a particular property according to the zoning regulations. With the exception of the federal properties, the entire study area north of I-395, as well as areas to its east and west of L'Enfant Promenade, is zoned C-3-C, high bulk major business and employment. This zoning category allows by-right development of major business and employment centers of medium to high density, including office, retail, housing, and mixed uses. The Southwest waterfront area between Maine Avenue and the Washington Channel is zoned W-1, low-density mixed residential-commercial (in waterfront areas). By-right, low density residential, commercial, and certain light industrial development is permitted in W-1 zones.



Source: DC Office of Planning (May 12, 2005)

LEGEND:	Study Area Boundary	Local Public Facilities
Residential	Commercial	Other Public
Mixed Use	Federal	Parks & Open Space
	Parking	

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**FIGURE 4-1:
Existing Land Use**

4.2.2. Priority Development Areas

The District has designated a number of geographic areas throughout the city as Priority Development Areas (PDAs) that are targeted for development as a means of bringing about economic revitalization of the area. PDAs within the vicinity of L'Enfant Promenade are illustrated in Figure 4-2 and include the Southeast Federal Center/Navy Yard PDA that extends generally south of the I-395 Freeway and along the Washington Channel and the Anacostia River from the 14th Street Bridge to the Washington Navy Yard. The area encompasses the Southwest waterfront, the public housing and residential parcels adjacent to the Navy Yard, the Buzzards Point area, the northern tip of the Anacostia Naval Station, Poplar Point, portions of the West Campus of Saint Elizabeth's, and the area surrounding the Anacostia Metro station. Other PDAs include any federally-approved enterprise zone or empowerment zone, and the District-designated high tech development zones.

The study area also includes several Transfer of Development Rights (TDR) Receiving Zones. TDR Receiving Zones permit the transfer of floor area allowed under the District zoning regulations on parcels in other areas of the city to the designated zone. This raises the allowable density in the receiving zone and greatly increases the potential capacity of the area for new construction and providing an incentive for investment in the receiving zone.

4.2.3. Proposed Development

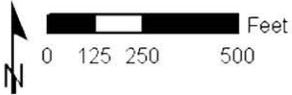
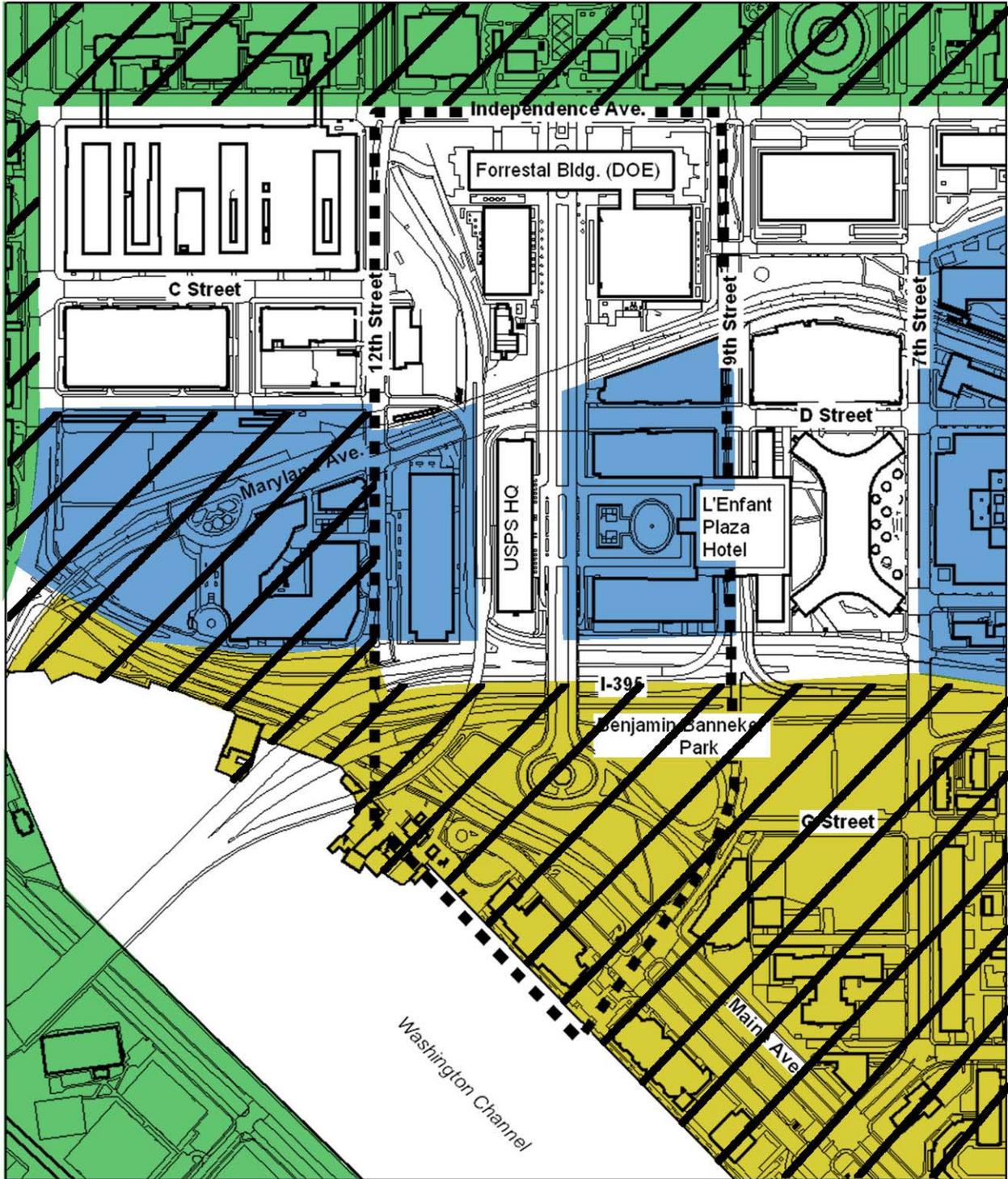
As discussed in Chapter 3, the owners of the L'Enfant Plaza Hotel and Promenade Shops complex will expand the complex by constructing several additional buildings. A building housing the National Children's Museum is planned for the central plaza in front of the hotel, along with Promenade-level retail space. Office and residential buildings are planned to the north and south of the hotel, on a new deck to be built over 9th Street. Occupancy of the new buildings is anticipated to begin in 2008.

The National Park Service is promoting the Banneker Park site as the location for a major new museum or memorial.

4.2.4. Potential Impacts

4.2.4.1. Construction or Immediate Impacts

The Proposed Action would not change the function and basic characteristics of L'Enfant Promenade. For example, the roadway after improvements are made would maintain the two travel lanes. Because the project would not require additional right-of-way from adjacent parcels, including the narrow median option where a traffic circle would be added at the overpass on Maryland Avenue, it would not require the displacement or relocation of any existing land use.



- LEGEND:**
- ■ Study Area Boundary
 - Southeast Federal Center/Navy Yard Priority Development Area
 - Enterprise & Empowerment Zone
 - Transfer of Development Rights (TOD) Receiving Area
 - ▨ Technology Zone

Source: DC OCTO

**ENVIRONMENTAL ASSESSMENT:
L'ENFANT PROMENADE & BENJAMIN
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**FIGURE 4-2:
Priority Development Areas & Special Zoning Areas**

4.2.4.2. Operational or Long-Term Impacts

The Proposed Action would not dictate nor affect the pace of planned development projects, such as redevelopment along the Southwest waterfront. Even if the Proposed Action were not constructed (No Build alternative), the Southwest waterfront development would continue as planned. Nevertheless, unlike the No Build alternative, the Proposed Action would support development along the Southwest waterfront by providing a better pedestrian link between the National Mall and the waterfront than what is currently provided, and by providing additional parking and intermodal services at the Banneker Park site, which is located near the waterfront area. The Proposed Action is not anticipated to cause unplanned development largely because it would not provide capacity enhancements to L'Enfant Promenade and because development within the entire area surrounding the project site is highly controlled by a number of federal and local agencies.

4.2.5. Consistency with Land Use and Development Plans

4.2.5.1. Comprehensive Plan for the National Capital

Land use development in the District is governed by the Comprehensive Plan for the National Capital (1998 and 1999). The plan provided goals, objectives and planning policies for the growth and development of the District of Columbia, and provided detailed plans for each Ward of the City. Any proposed development must be consistent with all elements of the Comprehensive Plan. The plan is divided into two elements: the Federal Elements, which addressed federal lands in the District, and the District Elements, which addressed nonfederal lands. Because the area surrounding L'Enfant Promenade contains both federal and non-federal properties, both elements apply to the project.

The following transportation policies of the Comprehensive Plan for the District are applicable to the Proposed Action:

- ◆ Promote the use of alternatives to the private passenger automobile, including bicycling and walking, and provide additional pedestrian paths and bicycle routes and facilities.
- ◆ Encourage the development of appropriate parking facilities at major intermodal transfer points.
- ◆ Increase the city's program for the repair, reconstruction and redesign of streets, alleys, and freeways, including new sidewalks, curbs and storm drain covers.

Applicable planning policies for the Southwest Employment Area and Waterfront include:

- ◆ Provide opportunities for improved connections with the waterfront from the Portal Site and the L'Enfant Promenade including: new roads and pedestrian paths to link Southwest with the monuments, museums and Downtown; and new street patterns with more green space, squares, and parks.
- ◆ A shuttle bus system to expedite the transportation of tourists, workers, shoppers, and local residents to and from the National Capital Mall, Pennsylvania Avenue, the Navy Yard, Waterside Mall and the waterfront.

The District Office of Planning (OP) is currently in the process of updating the Comprehensive Plan's District Elements, scheduled for completion in 2006.

The Proposed Action is supportive of the transportation policies of the Comprehensive Plan. First, by improving the aesthetic condition of L'Enfant Promenade, the Proposed Action would provide the gateway between the National Mall and the Southwest waterfront, and improve the corridor for walking and bicycling. Second, the ITC element of the project would provide needed parking for private automobiles and tour buses, and provide intermodal connections with nearby a Metrorail station and Metrobus routes. Third, the Proposed Action would include repairing structural deficiencies of L'Enfant Promenade so that other elements, such as new planters and landscaping, can be provided. Furthermore, the Proposed Action addresses the planning policy of providing pedestrian paths between the Southwest waterfront and the monuments and museums of the National Mall.

4.2.5.2. Anacostia Waterfront Initiative Framework Plan

In 2000, 20 federal and District agencies that own or control land along the Anacostia River to signed the Anacostia Waterfront Initiative (AWI) Memorandum of Understanding (MOU), which created a partnership between the agencies with the objective or vision of transforming the Anacostia River and adjacent waterfront from a forgotten river to a clean and vibrant waterfront with parks, recreation uses and urban waterfront settings. The AWI Framework Plan (November 2003) identified a series of initiatives to achieve the vision for the Anacostia Waterfront. Those initiatives that relate directly to the Proposed Action include (see Figure 4-3):

- ◆ A multi-modal transportation center at Benjamin Banneker Park;
- ◆ A museum (or memorial) of national significance at the park site;
- ◆ The transformation of Maine Avenue into a tree-lined urban boulevard; and
- ◆ A grand public staircase from the L'Enfant Promenade level down to a new Maine Avenue crossing at its base.

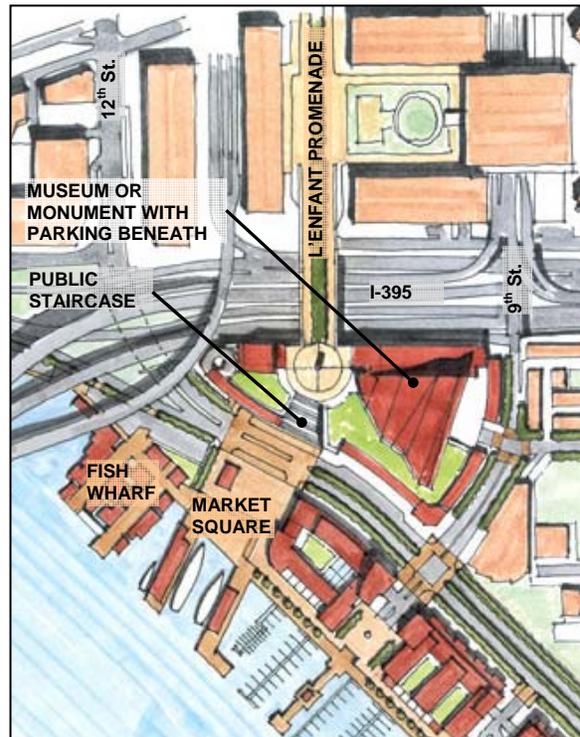


FIGURE 4-3: Proposed Development of Banneker Park, AWI Framework Plan and the Development Plan for the Southwest Waterfront

The Proposed Action would fulfill or support each of the initiatives outlined in the AWI Framework Plan that relative to L'Enfant Promenade and Benjamin Banneker Park. As stated in Chapter 3, the Proposed Action would include construction of an intermodal transportation center and parking facility (ITC) that would provide visitors who arrive by private automobiles or tour buses the opportunity to easily access public transit, including having pedestrian access to the National Mall and Southwest waterfront. Also under the Proposed Action, access to the waterfront would be enhanced by a staircase from L'Enfant Promenade and Banneker Park to Maine Avenue and a signalized, mid-block crosswalk. Although the Proposed Action does not include a museum at the park site or provide landscaping on Maine Avenue, it does not preclude these elements.

4.2.5.3. Development Plan and AWI Vision for the Southwest Waterfront

The AWI process led to the preparation of the Development Plan and AWI Vision for the Southwest Waterfront, focusing on the area along Water Street, SW and the Washington Channel. The planning document is composed of two independent, though complementary recommendations. The *Southwest Waterfront Development Plan* focuses on short- and mid-term actions to reshape the land use of city and NCRC/Redevelopment Land Agency Revitalization Corporation (RLARC)-owned parcels and roadbeds along the Washington Channel and is ready for immediate implementation. The *AWI Southwest Waterfront Vision* includes a number of long-term aspirations for the area that require significant federal funding and approvals. The plan proposes to create a true urban waterfront by the existing buildings and outdoor spaces with six new development parcels containing a mix of residential, office, retail/commercial and cultural uses, as well as designating 15 acres of new public open space (see Figure 4-4). It promotes the maritime legacy of the Washington Channel as a destination for local residents and regional and national visitors alike. A network of grand boulevards and public promenades, parks and plazas will extend the existing neighborhood fabric and the National Mall/Monumental Core to the waterfront and serve as a gateway to the greater Anacostia River Parks system.

The District of Columbia Council approved the draft Development Plan and AWI Vision for the Southwest Waterfront as a Small Area Plan in 2003, thereby establishing the plan as a supplement to the Comprehensive Plan of the District of Columbia. This action does not amend the Comprehensive Plan, but, rather lays out an implementation strategy to achieve the goals for the area as documented in the current Comprehensive Plan, which anticipates the development and adoption of planning initiative for the Southwest waterfront.

Key recommendations of the Development Plan include:

- ◆ Eliminating Water Street to provide for larger development parcels and reduce the expanse of paved roadway and parking currently along Maine Avenue.
- ◆ Transforming Maine Avenue into a pedestrian friendly, urban boulevard and the primary waterfront street providing direct access to waterfront uses.

- ◆ Incorporating two major public spaces to anchor the waterfront: a destination Market Square at the northern end of the waterfront near the Fish Wharf and across from Banneker Park and a Civic Park at the terminus of M Street.
- ◆ Providing a pedestrian and bicycle trail route adjacent to the improved Maine Avenue boulevard, as part of the Anacostia Riverwalk and Trail and the Southwest DC segment of the Potomac Scenic Heritage Trail.
- ◆ Constructing a new waterfront promenade along the Washington Channel, also as part of the Anacostia Riverwalk and Trail, with pedestrian and bicycle connections to the adjacent neighborhoods and regional trail network.

The Proposed Action would support the redevelopment strategy of the Southwest Waterfront Development Plan. The project's ITC that would provide visitors who arrive by private automobiles or tour bus the opportunity to easily access the Southwest waterfront, and existing and future developments. Also under the Proposed Action, access to the waterfront would be enhanced by a staircase from L'Enfant Promenade and Banneker Park to Maine Avenue via a signalized crosswalk at the base of the staircase.

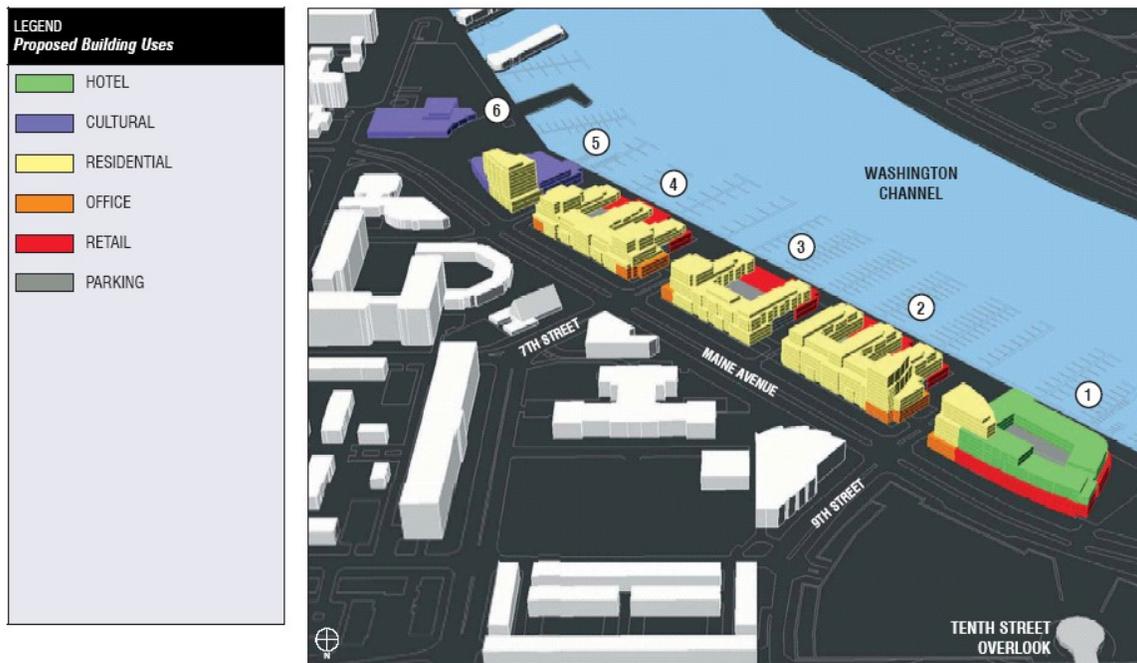


FIGURE 4-4: Proposed land use for the Southwest Waterfront, Development Plan and AWI Vision for the Southwest Waterfront.

4.2.5.4. Extending the Legacy: Planning America's Capital for the 21st Century
Extending the Legacy: Planning America's Capital for the 21st Century Waterfront (1997), known as the Legacy Plan, was prepared by the National Capital Planning Commission (NCPC) to provide a vision and long-range planning framework of how future growth in the federal presence in Washington, DC could be accommodated while respecting the city's form, expanding the local economy and enriching community life. The Legacy Plan included proposals that address transportation, community revitalization, public building and open space throughout the District. It proposed that the Benjamin Banneker Park be used as the site for a museum or memorial of national significance. The plan also advocated the removal of the CSX railroad line and the restoration of Maryland Avenue, SW, as a vehicular roadway.

Other policies for of the Legacy Plan included:

- ◆ Constructing simple, inexpensive improvements such as sidewalks and bike paths at every opportunity;
- ◆ Restoring elements of the L'Enfant and McMillan plans that have been disrupted, especially plans for major avenues and civic spaces; and
- ◆ Removing obstacles and barriers that separate the waterfront from the rest of the city.

The Proposed Action would provide leave open the opportunity for a monument or memorials at Banneker Park. Development of the ITC does not preclude developing this museum within the park property. However, it would place more design constraints than under existing conditions. If Banneker Park is selected for a museum or memorial prior to the construction of the ITC, DDOT would re-evaluate the design of the new traffic circle and ITC in coordination with the design of the museum/memorial.

4.2.5.5. Memorials and Museums Master Plan

The Memorials and Museums Master Plan (2001) prepared by NCPC in consultation with the U.S. Commission of Fine Arts (CFA) and the National Capital Memorial Commission extended the vision as expressed in Legacy Plan specifically for Washington's Monumental Core and beyond. It identified 100 potential sites for future memorials and museums and provided general guidelines for their development. The master plan designated Benjamin Banneker Park as one of 20 "Prime" sites for a future museum or memorial. Development of the park site was also envisioned as a means of drawing visitors down the L'Enfant Plaza from the Smithsonian museums on the National Mall to the Washington Channel, with the potential to also be an economic link from the Mall to the Southwest waterfront.

As noted in the previous section, development of the ITC does not preclude developing a museum within the park property. However, it would place more design constraints on such a development than under existing conditions.

4.2.5.6. Transportation Vision, Strategy, and Action Plan for the Nation's Capital

The Transportation Vision, Strategy, and Action Plan for the Nation's Capital (1997) is the long-range, strategic transportation plan for the District. It presents a vision for the District's future transportation system and an action plan for fulfilling it. Those items in the Action Plan relevant to the Proposed Action include:

- ◆ Construction of public parking facilities at various locations around the District perimeter, including the Southwest waterfront, to intercept automobile traffic as it enters the city and for tour buses.
- ◆ Pedestrian corridor development, including the 10th Street, SW (L'Enfant Promenade), corridor from Independence Avenue to Water Street. Broad sidewalks, landscaping and shade trees, benches and activity or interest points are proposed along the corridor to connect major origins and destinations and improve the quality and appearance of the streets for pedestrians.

The Proposed Action would fulfill the Action Plan's objectives of providing a parking facility for private automobiles and tour buses near the Southwest waterfront, and improving L'Enfant Promenade as a pedestrian corridor.

4.2.5.7. The National Capital Urban Design and Security Plan

NCPC's National Capital Urban Design and Security Plan identified key areas and streets within the District's Monumental Core and recommended solutions that would respond to the unique conditions and special characteristics at each location. Overall, the plan offered a variety of security solutions, such as hardened street furniture, low plinth walls, planters, bollards, and green curbside hedges with embedded security measures that can be applied in a variety of ways to meet the security and design needs of a particular area. Recommendations for L'Enfant Promenade emphasized the establishment of a continuous row of seat planters parallel to the roadway on both sides of the street to provide a curbside defense against the threat of bomb-laden vehicles.

The Proposed Action would fulfill the Security Plan's recommendation of providing planters along L'Enfant Promenade roadway, which would not only improve the aesthetic conditions of the corridor, but also serve as a security measure.

4.2.5.8. Department of Energy Forrestal Complex Perimeter Security Improvements

The DOE is in the process of gaining approval from NCPC to implement a series of measures to secure the Forrestal Building complex. To guard against both vehicle- and pedestrian-borne explosive attacks, DOE proposed a six-phase security concept. NCPC approved phases 1, 3, and 6, but disapproved the other three concept phases in May 2005. Phase 1 consists of wraps that will strengthen the existing ground level columns; Phase 3 reinforces the area of the building that spans over 10th Street; and Phase 6 provides a new enclosure at the building's core in order to increase the stand-off distance and protect the emergency stairs.

In submitting additional security proposals for the complex, NCPC required DOE to include a programmatic evaluation of removing the portion of the building mass that spans L'Enfant Promenade. Removal of that portion of the building, also recommended in the L'Enfant Promenade Urban Planning Study, would not only support DOE security goals but also improve the functionality of the Promenade corridor by providing visual orientation to pedestrians.

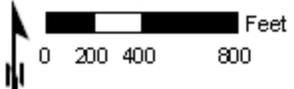
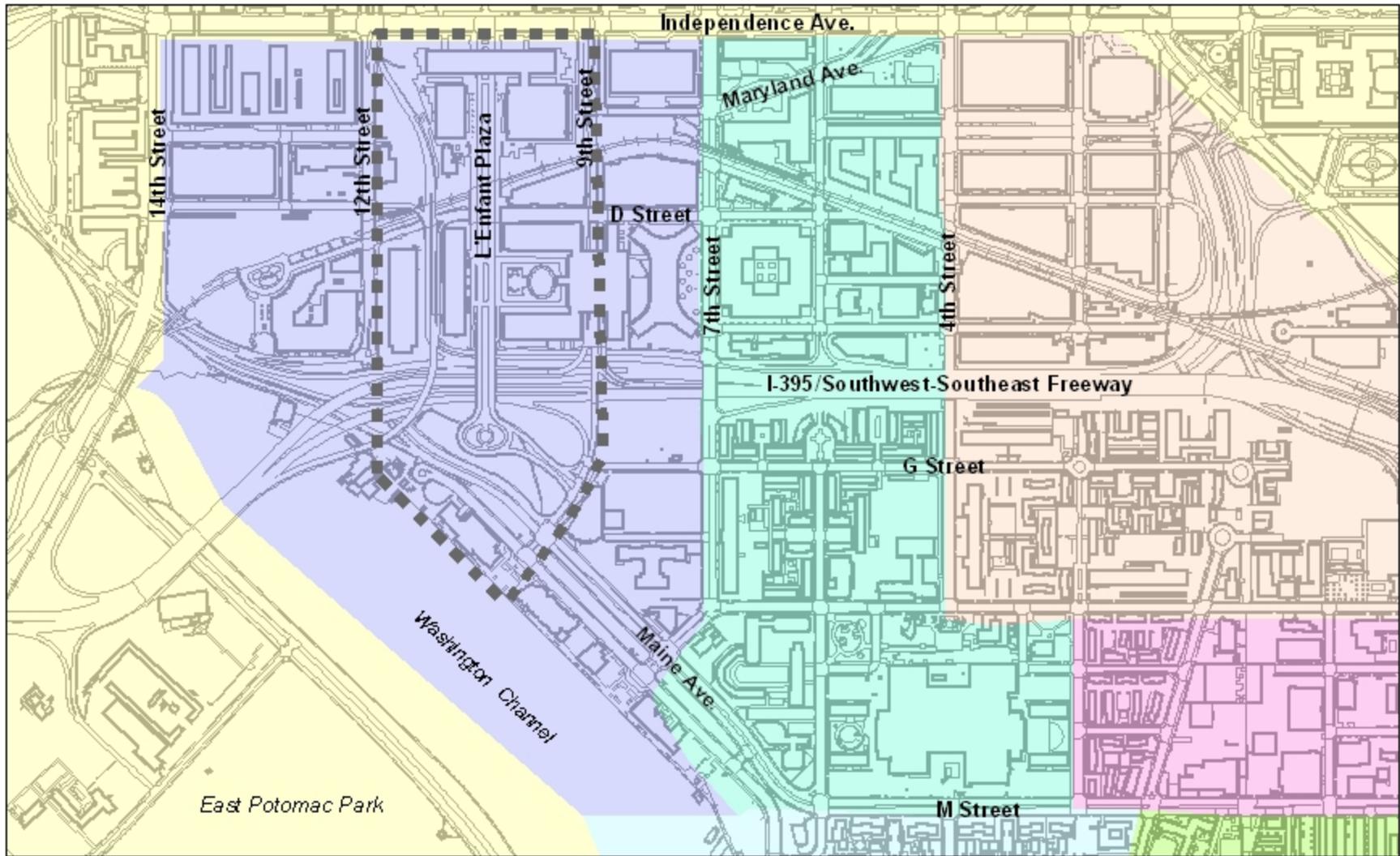
4.3. SOCIO-ECONOMIC AND COMMUNITY FEATURES

4.3.1. Affected Environment

4.3.1.1. Social and Economic Characteristics

There is no permanent housing at or directly adjacent to L'Enfant Promenade. The nearest residences to the project site are within the Capitol Square townhouse community, located east of Benjamin Banneker Park across 9th Street. Also, some boat owners may be living aboard their boats docked at the Washington Channel marinas. Table 4-1 provides a summary of year 2000 demographic and economic characteristics for the census tract 62.01, which encompasses the project site (see Figure 4-5), as well as the same information for residents of Southwest DC and the District as whole for comparative purposes. As noted on Table 4-1, the residents living near the project site did not share the same racial, age and income characteristics as other residents living in the Southwest DC and the District as a whole. For instance, almost 95 percent of residents were white. In comparison, the white population among residents living in Southwest DC and the entire the District comprised 26 and 31 percent, respectively. The nearby residents were also wealthier, with median household incomes more than 50 percent greater than for Southwest DC and the District, and considerably older, with over 70 percent of them 45 years old or greater in 2000.

The District contains approximately 29 percent of total jobs in the metropolitan region (DC Department of Employment Services, April 2005). Local, state and federal government is the largest single employment sector in the District, followed closely by the professional and business services industry. The area surrounding L'Enfant Promenade contains a high concentration of government employees including those who are employed with the DOE and U.S.P.S. Both agencies have office buildings directly adjacent or within L'Enfant Promenade. Many more federal employees also occupy leased space within the L'Enfant Promenade office buildings and the Aerospace Building.



Source: DC OCTO

LEGEND:

■ ■ Study Area	■ Tract 62.01
■ Tract 60.01	■ Tract 62.02
■ Tract 60.02	■ Tract 63.01
■ Tract 61.00	■ Tract 64.00

**ENVIRONMENTAL ASSESSMENT:
L'ENFANT PLAZA & BENJAMIN
BANNEKER PARK IMPROVEMENTS**

**FIGURE 4-5:
Census Tracts**

**Table 4-1
Year 2000 Demographic and Economic Characteristics**

	Census Tract 62.01	Southwest DC¹	DC
Population	144	11,851	572,059
Racial/ethnic Composition			
African-American alone	4.9%	64.8%	60.0%
White	94.4%	26.3%	30.8%
American Indian or Alaska Native	0.0%	0.4%	0.3%
Asian	0.0%	2.7%	2.7%
Native Hawaiian or other Pacific Islander	0.0%	0.0%	0.1%
Other race	0.0%	2.0%	3.8%
Two or more races	0.7%	3.7%	2.4%
Hispanic or Latino	0.7%	4.4%	7.9%
Age Distribution			
Under 15 years	0.7%	13.5%	17.1%
15-24 years	5.6%	9.0%	15.7%
25-34 years	7.6%	17.0%	17.8%
35-44 years	15.3%	16.3%	15.3%
45-54 years	33.3%	17.3%	13.2%
55-64 years	30.6%	12.1%	8.7%
65 years and older	6.9%	14.7%	12.2%
Economic Characteristics			
Median household income (1989)	\$63,846	\$41,077	\$40,127
Per capita income (1989)	\$45,081	\$28,367	\$28,659
% Population below poverty level	9%	22%	20%

Notes: ¹ Includes Census Tracts 60.01, 60.02, 61, 62.01, 63.01, 63.02, and 64.

Source: U.S. Census Bureau, *Census 2000*.

4.3.1.2. Community Facilities

One public school is located near L'Enfant Promenade, Jefferson Junior High School. It is located a few hundred feet east from Banneker Park. The nearest public library, the Southwest Library is one-half-mile east from the park. Several of the following childcare facilities, most of which have outside play areas, were noted near L'Enfant Promenade:

- ◆ Energy Child Development Center at the DOE Headquarters (west side of L'Enfant Promenade);
- ◆ DOT Child Development Center at the Department of Transportation building on Independence Avenue;
- ◆ Childtime Children's Center at 600 L'Enfant Promenade (office building north of hotel); and
- ◆ Creative Child Development Center at the U.S. Department of Housing and Urban Development Headquarters (east L'Enfant Promenade and 9th Street).

The 6th Battalion Fire Department (Engine Company 13) is located a few blocks east of L'Enfant Promenade on 6th Street. The station provides fire and emergency medical response services to the study area. The First District Police Station is located a couple of blocks further east on 4th Street. There are no hospitals or other medical facilities near L'Enfant Promenade.

4.3.2. Potential Impacts

4.3.2.1. Construction or Immediate Impacts

The Proposed Action would not require the severance, displacement or isolation of any neighborhood or housing in Southwest. The nearest neighborhood is located to the east of Banneker Park, across 9th Street. Employment opportunities would be provided from construction, and the local economy would benefit from the purchase of construction materials.

4.3.2.2. Operational or Long-Term Impacts

The Proposed Action would not change nearby existing federal operations and commercial activities, and police and emergency services because traffic patterns would remain the same as today. As noted in Section 4.2, the Proposed Action would not lead to unplanned development. Therefore, an increase in residential population as a direct result of the project would not occur.

A few employment opportunities would be created by the operational requirements of the ITC (parking attendants, janitors, etc.). Indirectly, the project may benefit the general economic conditions of the Southwest waterfront by providing a pedestrian link with the National Mall, and by providing nearby parking with intermodal transit services thereby providing these businesses with potentially more customers.

4.3.2.3. Environmental Justice (Executive Order 12898)

As described in Section 4.3.1, the project site contains no residential population. Therefore, no minority or low-income population as defined in "[FHWA Actions to Address Environmental Justice in Minority and Low-Income Populations](#)" (December 2, 1998) will experience disproportionately high or adverse effects from the project.

4.4. HISTORIC PROPERTIES

4.4.1. Regulatory Requirements

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, requires that federal agencies consider the effect of their projects on any resource listed on or eligible for the National Register of Historic Places. The Section 106 process involves coordination and consultation with the State Historic Preservation Officer (SHPO), and other agencies and organizations that have an interest in or are mandated to protect historic properties. In addition, the Advisory Council on Historic Preservation (ACHP) is afforded the opportunity to comment on actions that may potentially affect historic properties. The Section 106 regulations are published in the Code of Federal Regulations at 36 CFR Part 800 Protection of Historic Properties. The District's historic preservation ordinance, the Historic Landmark and

Historic District Protection Act of 1978, D.C. Law 2-144, is designed to protect historic buildings, structures, districts, aesthetic objects and archaeological sites.

After initiating the Section 106 process, the federal sponsoring or regulating agency identifies whether there are any historic properties in the project's Area of Potential Effect (APE); assesses whether properties identified in the APE would be adversely affected by the proposed project; and resolves adverse effects, if necessary.

4.4.2. Affected Environment

This section describes the effort performed to identify historic properties in the project's APE, and the results of those efforts. A historic property is any district, site, building, structure, or object that is on or eligible for the NRHP. The APE is defined as the geographic areas within which an undertaking may directly or indirectly cause changes in the character of historic properties, if any such properties exist. For the purposes of this project, the FHWA has defined the APE as the area that would be affected by construction, which would include the right-of-way of L'Enfant Promenade, Banneker Park property, Independence Avenue where it intersects with L'Enfant Promenade and the proposed crossing at Maine Avenue.

Consultation with the District Historic Preservation Office revealed that one historic property is within the APE, "The Plan of the City of Washington" which encompasses layout of the city as outlined in the "L'Enfant Plan" of 1791 and subsequent modifications to that layout as outlined in the "McMillan Commission Plan" of 1901. The "Plan of the City of Washington" is listed on the National Register, and is also a National Historic Landmark. The District Historic Preservation Office also indicated that the Southwest quadrant was one of the first areas to be developed in the District according to historical mapping, which might mean that archaeological resources and artifacts relating to the first inhabitants of the District may be buried under existing buildings and roads. However, the office noted that the chances of uncovering such resources are small.

L'Enfant's planned layout of the new City of Washington was completed in October of 1791. However, he opposed the early sale of lots within the Federal City to the public, believing that a premature sale would foster disorderly development and could be detrimental to the integrity of his plan. L'Enfant refused to supply his map, which forced one of the two original surveyors of the District of Columbia, Andrew Ellicott, to draw a map based upon his personal recollections of L'Enfant's plan. This map was the version actually used to plan and locate the city's streets, parks, and other public spaces.

As part of events associated with the celebration of Washington's centennial, the U.S. Senate established a commission in 1901 with the task of studying the potential for improvements to the city's parks, public buildings, and its overall physical environment. The committee was headed by Michigan Senator James McMillan, and included four notable professionals, architects Daniel Burnham and Charles McKim, landscape architect Frederick Law Olmsted, Jr., and sculptor Augustus Saint-Gaudens. Their recommendations, which were made in early 1902, concentrated on trying to re-establish the integrity of L'Enfant's mall and other

prominent axes and vistas, while complementing and magnifying his ideas with new additions. Amongst other things, they succeeded in brokering a deal to remove the railroad tracks and stations from the mall, which allowed the restoration of the mall to its original, unsullied form, as a long, wide open ‘greensward.’ Moreover, they drew up plans to extend the mall farther west onto land reclaimed from the mud flats of the Potomac River, and also proposed the Lincoln Memorial as a bookend monument, placed on an axis with the Capitol building and the Washington Monument. Faithful implementation of the proposals of the McMillan Plan continued until the onset of World War II, after which its plans, strategies, and ideals were essentially abandoned in favor of efforts focused on precipitating the flow of automobiles.

The National Historic Landmark nomination document for the “The Plan of the City of Washington” evaluated the eligibility of individual corridors (i.e., roadways, etc.) in terms of whether or not they would constitute a contributing element to the overall “plan.” Some corridors were evaluated as having either been modified too extensively, or simply do not follow the original intent of either the L’Enfant or McMillan Commission Plans, and therefore, were categorized as “non-contributing.” L’Enfant Promenade, Independence Avenue and Maine Avenue were all evaluated as still following the original intent of the “L’Enfant Plan” and therefore, were categorized as “contributing elements.” All three roadways are within the project’s APE.

4.4.3. Potential Impacts

4.4.3.1. Construction or Immediate Impacts

As is described above, the area affected by construction is unlikely contain subsurface archaeological deposits or resources. In the unlikely event that significant finds are unearthed during excavation, work will stop immediately and the FHWA and DDOT will immediately notify the District Historic Preservation Office. Construction would resume only upon approval of the appropriate authorities.

4.4.3.2. Long-Term Impacts

In assessing the effects of a project on a historic property(ies), there can be only one of the following three possible findings under Section 106:

- ◆ No historic properties affected;
- ◆ No adverse effect; and
- ◆ Adverse effect.

“No historic properties affected” means that either there are no historic properties present, or there are historic properties present but the undertaking will have no effect upon them of any kind (that is, neither harmful nor beneficial).

“No adverse effect” means that there could be an effect, but the effect would not be harmful to those characteristics that qualify the property for inclusion in the National Register.

An “adverse effect” means an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property.

As described above, the FHWA identified “The Plan of the City of Washington” as being within the APE. Specifically, three contributing elements of the “plan” are within the APE, L’Enfant Promenade, Independence Avenue and Maine Avenue. Under the Proposed Action, L’Enfant Promenade would undergo major cosmetic changes that include new street trees and landscaping, sidewalk and median modifications, designation of monument or memorial sites, and a traffic circle at the Maryland Avenue axis under the narrow median option. The purpose of these changes is to make L’Enfant Promenade more appealing to pedestrians, and to fulfill its original purpose as a gateway between the National Mall and the Southwest waterfront.

On Independence and Maine Avenues, the Proposed Action would include pedestrian crossings to also address the gateway purpose of the project. The FHWA finds that the changes to L’Enfant Promenade, Independence Avenue and Maine Avenue are consistent with the intentions of L’Enfant and McMillan Commission Plans, and therefore, finds that the Proposed Action would have “no adverse effect” on “The Plan for the City of Washington.” This determination will be submitted to the District SHPO, with a request for concurrence per requirements of Section 106.



FIGURE 4-6: L’Enfant Promenade and Independence Avenue Intersection

4.5. AESTHETIC AND VISUAL RESOURCES

4.5.1. Affected Environment

The aesthetic environment of the project site is enhanced by L’Enfant Promenade’s wide median and Banneker Park’s grassy field and plaza, which provide open space in an urban environment. However, as noted in Chapter 1, while L’Enfant Promenade was originally envisioned as a physical and visual connection from the National Mall to the Southwest waterfront this vision was not achieved. As shown in Figure 4-6, the Forrester Building façade dominates the critical intersection of L’Enfant Promenade



FIGURE 4-7: View from the Promenade South to the Benjamin Banneker Park Fountain

and Independence Avenue, forming a visual barrier that somewhat conceals the Promenade's northern entrance. The guardhouse and concrete security barriers surrounding the building columns also give the impression that visitors are not welcome, even though the street is open to the public. Also, the gradual upward slope of the Promenade just south of the Forrestal Building provides no visual clues that the Promenade provides a connection to the Southwest waterfront or that the Promenade itself is a pedestrian attraction (see Figure 4-7). The reciprocal view plane to the north terminates at the Forrestal Building, which obscures any visual connections to the Smithsonian Castle and National Mall across Independence Avenue (see Figure 4-8).

At the south end of L'Enfant Promenade at Banneker Park, the topographically isolated location and inward focus of the park's fountain plaza and traffic circle provides no indication that the Southwest waterfront is just beyond the park. Beyond the oval fountain plaza and traffic circle, the park provides a large, but sloping, grassy lawn that provide open space and visual and aesthetic relief from within and outside the property. However, views of the park from points outside the property, such as along the waterfront, also includes concrete retaining walls for the fountain park and plaza within the traffic circle.

East-west viewsheds from L'Enfant Promenade are limited because they are blocked by adjacent buildings. Some views are available at the overpasses of crossing streets, some of which provide a rather unattractive visual environment, such as the CSX railroad tracks (see Figure 4-9). However, this same viewshed also provides a vista of the U.S. Capitol. At the Promenade



FIGURE 4-8: View from the Promenade Midpoint North to the Forrestal Building



FIGURE 4-9: View from the Promenade Northeast to the U.S. Capitol



FIGURE 4-10: View from Banneker Park West

terminus at Banneker Park, east-west views are dominated by the I-395 freeway travel lanes (see Figure 4-10).

Despite its open space, L'Enfant Promenade does not provide visually stimulating environment, especially for pedestrians. The wide roadway, the extensive use of concrete in the buildings and railings flanking the Promenade, and the general lack of street trees or other landscaping creates a visual environment that emphasizes the expansiveness of the area and the lack of people and activities. In addition, the deteriorating condition of some structures and low level of maintenance contribute to the negative image to the Promenade's visual and aesthetic environment.

4.5.2. Potential Impacts

4.5.2.1. Construction or Immediate Impacts

Construction activities of the Proposed Action would temporarily eliminate the open space resources provided by L'Enfant Promenade and Banneker Park, which contribute to the limited visual and aesthetic environment of the project area. Portions of Banneker Park would probably be used for construction staging and stockpiling, which would temporarily affect this visual resource.

4.5.2.2. Operational or Long-Term Impacts

Under the No Build condition, DDOT would repair the structural deficiencies of L'Enfant Promenade (e.g., repairing and replacing damaged pavement and curb, removal of accumulated trash and debris in drain inlets, etc.), which would provide some minor improvements to the visual environment.

The Proposed Action would enhance the visual environment of L'Enfant Promenade so that it would be attractive to pedestrians from the National Mall, and create the gateway originally envisioned by the 1956 Urban Renewal Plan. The visual enhancements would be in the form of street trees and other landscaping, seating areas, new lighting, and other amenities (see Chapter 3). Additionally, future monuments or memorials at designated locations would provide visitors walking along Independence Avenue and the National Mall who are unfamiliar with the Promenade with visual clues that the Promenade is meant to be a pedestrian-oriented mall. The narrow median option would be better than the wide median option in providing these visual clues because this option would provide a location for a future monument at the Maryland Avenue axis, which would be visible from Independence Avenue. The additional monument or memorial sites at the Promenade midpoint (between the L'Enfant Plaza Hotel and U.S.P.S. headquarters building) and at the modified Banneker Park traffic circle would provide additional visual attractions or clues to pedestrians or visitors.

At Banneker Park, the Proposed Action would dramatically change the appearance of the park due to the modified traffic circle and the construction of the ITC. The viewsheds from new traffic circle and public staircase would include vistas of the Southwest waterfront, which are not obscured by the orientation and configuration of the existing park fountain plaza. The recessed design of the ITC would maintain much of the open space of Banneker Park because

the rooftops of the facility would consist of grassy lawns, vegetation and landscaping. The view of the park from adjacent sites, such as the Capital Square town homes and the properties along Maine Avenue and the Washington Channel waterfront, would change from gently sloping grassy lawns along with the circular retaining wall of the park plaza, to a terraced structure with ample landscaping. Viewpoints from I-395 of the modified park and TTC would include a retaining wall.

4.6. PARKS AND RECREATIONAL RESOURCES

4.6.1. Affected Environment

Benjamin Banneker Park is the only park facility within the project area. This 4.68-acre NPS property is bounded by I-395 on the north, 9th Street on the east, Maine Avenue on the south and 12th Street on the west. Originally called Overlook Park, the park was jointly designed and constructed with L'Enfant Promenade in the early 1970's. It was renamed Benjamin Banneker Park in 1971, and in that same year, the DC Redevelopment Land Agency conveyed title of the property to the NPS. However, the District retained ownership of the road right of way that serpentine through the park.

The formal park area consists of an oval-shaped paved plaza, which includes a center fountain, park benches, small trees and landscaping, and an NPS interpretive display. The L'Enfant Promenade roadway encircles the park plaza and connects to 9th Street to the east. The fountain plaza is surrounded by five-and-a-half foot tall concrete railings, some of which sit on top of a concrete retaining wall along the west, south and east sides of the plaza within the traffic circle. The retaining wall is visible from along Maine Avenue and the waterfront. The activities within the park plaza include passive recreational uses, which may include picnicking and informal socializing, particularly by workers from the Promenade office buildings.

The property outside of the park fountain plaza/traffic circle consists of gentle to relatively steep slopes down to the I-395 off-ramp, 9th Street and Maine Avenue. Although much these areas provide well-maintained grassy lawns, their slopes make them inappropriate or difficult for active park activities, such as sporting games, and therefore they have no designated function other than for open space. The steepest part of the park, directly south of the fountain plaza/traffic circle, consists of riprap boulders that currently support weedy forest vegetation, some of which are tall enough to block views of the waterfront from the fountain plaza and traffic circle roadway.

Other parks located near L'Enfant Promenade include:

- ◆ Earth Day Park, a narrow strip of land situated on 9th Street next to the on-ramp to I-395 South, just south of the Independence Avenue intersection, which provides for passive recreation uses;
- ◆ Reservation 113, a small park located south of C Street between 7th and 9th Streets, which includes an open field with a small tot lot area; and

- ◆ The Jefferson Recreation Center, 700 I Street, SW, a facility that provides a before and after school program, a cooperative play center and a Head Start program.

4.6.2. Potential Impacts

4.6.2.1. Construction or Immediate Impacts

During construction at Banneker Park, access to the park would be temporarily closed to the public for safety reasons. Also, the park may be used for construction staging and stockpiling. No other park in the vicinity of L'Enfant Promenade would be affected by construction.

4.6.2.2. Operational or Long Term Impacts

Despite major modifications to Banneker Park, the property would remain as a park under the NPS. However, the DDOT or another District agency would likely operate the ITC. The existing amenities that provided for passive recreational uses, such as park benches and landscaping, would also be provided within the modified park. Because of the terraced design of the ITC, more flat or level areas would be provided under the Proposed Action than under current or No Build conditions, which may provide more opportunities for passive recreation. At a minimum, the modifications to Banneker Park under the Proposed Action would not change the current level of park usage. However, because the Proposed Action would substantially improve L'Enfant Promenade's aesthetic environment, pedestrian traffic through the Promenade and the park is expected to increase, which may also increase use of the park.

4.7. SECTION 4(F) EVALUATION OF BENJAMIN BANNEKER PARK

Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. 303 and 23 U.S.C.138 (referred to hereafter as Section 4(f)), prohibits the FHWA from approving any project (other than any project for a park road under section 204 of Title 23, United States Code) which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge, or historic site, of national, State, or local significance as determined by the officials having jurisdiction over such site (hereinafter referred to as a Section 4(f) resource), unless it is determined that:

- ◆ There is no feasible and prudent alternative to such use; and
- ◆ The project includes all possible planning to minimize harm to the property resulting from such use.

The purpose of Section 4(f) is to prevent the use of parks, recreation areas, refuges, and historic/ archaeological sites as locations for transportation projects. The word "use" in this case means:

- ◆ Land is permanently converted from use as a Section 4(f) resource to use as a transportation facility;
- ◆ A temporary occupancy of land by the transportation project is adverse to the present or future use of the land as a Section 4(f) resource; or

- ◆ The transportation project's proximity to a Section 4(f) resource substantially impairs its use as a Section 4(f) resource, even though no land is permanently or temporarily acquired. This last type of use is called "constructive use."

Compliance with Section 4(f) requires first the identification of Section 4(f) resources within or adjacent to the area of the proposed transportation project, which have the potential to be "used" by the project.

First, the project site does not contain or is near a wildlife or waterfowl refuge. Regarding historic sites, L'Enfant Plaza, Independence Avenue and Maine Avenue, three streets that would be affected by the project, are documented as contributing elements of the "Plan of the City of Washington", an historic property listed on the National Register and is a National Historic Landmark. The FHWA finds the "Plan" to be a Section 4(f) resource. However, because the proposed action would have a "no adverse effect" on the property in accordance with NHPA Section 106, the FHWA has determined that the Plan would be subject only to a "de minimis impact" and therefore, the proposed action would not require a Section 4(f) "use" of the "Plan".

The proposed action includes major modifications to Benjamin Banneker Park, which is administered by the NPS. The 4.68-acre Park consists of an oval-shaped paved plaza with a fountain in the middle, which is used for recreation, such as picnicking and informal socializing. Most of the rest of the park consists of gentle to relatively steep slopes of well-maintained grassy lawns, with no designated function other than for open space. Because Banneker Park is publicly owned (by NPS) and is open to the public, the FHWA has determined that it is a Section 4(f) resource. No other publicly owned, public park or recreation area is within the area affected by the project.

As noted in Chapter 3, Banneker Park is identified as a site for a future museum or memorial. A museum or memorial would probably be considered a Section 4(f) resource because it would be publicly owned and likely open to the public free of charge, the same as other Smithsonian museums. However, because no decision has been made regarding the specific location of a museum/memorial, the FHWA has determined that a potential museum/memorial within Banneker Park cannot be considered a "planned" Section 4(f) resource. The proposed action would not preclude this future use of the site, even though the proposed action calls for major changes to the park property.

Although it is established that the Banneker Park is a Section 4(f) resource, the next question is whether the proposed use meets the exception for a park road or parkway under Section 204 of Title 23, United States Code. The project is a transportation enhancement project intended to improve the use of the Park by adding pedestrian facilities and a parking garage. Specifically, the proposed modifications and changes to Banneker Park are meant to address two objectives of the project as described in Chapter Two. The proposed pedestrian facilities in the park, which would include exterior and interior staircases and elevators, would help to

establish a gateway between the National Mall and the Southwest waterfront. To address the need for an intermodal facility for visitors to the National Mall and Southwest waterfront arriving by private automobiles or tour bus, the proposed action would provide a parking facility with convenient pedestrian access to nearby Metrorail (L'Enfant Plaza Metrorail Station) and Metrobus connections. The facility would be recessed into the hillside, designed to match the topography of the park, but would require that the existing circular plaza and traffic circle be modified into a smaller traffic circle at a location closer to I-395.

The FHWA finds that the portion of the project related to pedestrian facilities within Banneker Park qualifies for the exception to Section 4(f) for park roads under Section 204 because pedestrian facilities are included within the definition of the Park Road Program under this regulation (Section 204, paragraph (h)(5)). However, the FHWA finds that the intermodal facility would not qualify for the exception to Section 4(f) for park roads under Section 204 because the facility would be administered and maintained by the District. In accordance with Title 23, Section 101, paragraph (a)(19), title and maintenance responsibilities must be vested in the United States in order for the proposed action to qualify for the exception as a park road per Section 204.

The final Section 4(f) question is whether the intermodal facility, which would not qualify for the Section 204 exception, would be subject to a Section 4(f) “use.” This question depends on two factors. The first factor is the intended use by NPS of its property rights below the surface. If NPS intends to make use of its subterranean property rights, a competing use for a transportation project would be a use under Section 4(f). If NPS had no intention to make use of its subterranean property rights, then a conflicting use would not be a use under Section 4(f) if the second factor was resolved. Other than the potential for locating the a future museum or memorial within the park property (see above), the NPS has no subterranean property plans. The second factor would involve the impact of the subterranean intermodal facility on the surface of the park. Because, the intermodal facility would result in potential visual and physical impacts on the surface, which would include excavation, root damage, and topographic changes, these impacts would be considered a “use” of Banneker Park as a Section 4(f) resource.

4.7.1. Avoidance Alternatives

Because Banneker Park is essentially part of the L'Enfant Promenade corridor, there is no feasible and prudent alternative to the use of park property.

4.7.2. Mitigation Measures

The same level of passive recreational facilities and amenities, such as park benches or other seating areas and shade trees, shall be provided at the Banneker site as elements of the proposed improvements. The ITC would be designed to be recessed into the Banneker Park hillside, thereby minimizing its height and bulk. The site will be re-landscaped following construction of the ITC to incorporate lawn and planting areas adjacent to and on the roof of the ITC.

4.8. HYDROLOGY AND WATER RESOURCES

4.8.1. Affected Environment

4.8.1.1. Surface Waters

The project area is within the Potomac River Drainage Basin. Stormwater from L'Enfant Promenade drains into Washington Channel, which connects to the Tidal Basin and Potomac River. These waterways are freshwater and tidally influenced.

According to The District of Columbia 2000 305(b) Report, prepared by the District Department of Health, Bureau of Environmental Quality, Water Quality Division, the Potomac River has poor water quality that is attributable to high levels of toxins, pathogens, and organic enrichment/low dissolved oxygen. The sources of these pollutants are from sewer overflows, urban runoff, habitat modification and other non-point sources. During substantial rainfall events, combined sewer and stormwater overflows discharge raw sewage and other pollutants directly into the river. These conditions often result in low dissolved oxygen levels that may violate water quality standards and threaten aquatic life.

4.8.2. Potential Impacts

4.8.2.1. Construction or Immediate Impacts

The implementation of the Proposed Action will involve excavation and other construction activities, particularly at the Banneker Park site, that will expose soils to the elements and create the potential for sediment-laden storm runoff. Even if the Promenade bridge replacement option is selected, ground disturbing activity associated with the Promenade improvements would be minimal as the existing bridge foundations would be utilized to support the new bridge structure(s). Stormwater management, sedimentation and erosion control plans would be developed and approved before construction begins. Best management practices would be used during construction to minimize impacts to surface waters.

4.8.2.2. Operational or Long Term Impacts

There will be no direct discharge of runoff from L'Enfant Promenade and Banneker Park to surface waters. All runoff will be conveyed to the Promenade and park storm drainage system. There is little potential for increased sedimentation; all unpaved areas will be stabilized through landscaping and/or use of mulch or other surface treatment. Low-impact development (LID) techniques will be utilized as part of the Promenade and Banneker Park stormwater management measures to the extent possible.

The addition of grass lawn and/or planter boxes to L'Enfant Promenade will slightly decrease the amount of impervious surface along the Promenade, although not to a great extent compared to the existing or No Build condition. The ITC design recesses the facility into the hillside and maintains a "green" cover of lawn or other landscaping over the facility to the extent possible. This will minimize the amount of impervious surface area created and limit paved areas to the public staircase to Maine Avenue, roadway/ramp from L'Enfant Promenade to 9th Street, and entrance/exit portals to the ITC.

4.9. TOPOGRAPHIC AND GEOLOGIC RESOURCES

4.9.1. Affected Environment

4.9.1.1. Topography, Geology and Soils

The District is situated along the fall line between the Piedmont Plateau and Atlantic Coastal Plain physiographic provinces. The study area, which is located in the Southwest quadrant of the District, lies within the Coastal Plain. The coastal plain is relatively flat, with low-lying areas associated with floodplains. Low, steep slopes throughout the coastal plain are a result of erosion and past water channels. Elevation ranges between 10 and 30 feet above mean sea level. Groundwater levels in the coastal plain are shallow.

Geologically, the area is covered with unconsolidated deposits of alluvium consisting of gravel, sand and clay, underlain with sedimentary formations and crystalline rocks. The bearing capacity of this formation is considered to be poor to fair in the sandy alluvium and very poor to poor in the silt/clay alluvium.

Two soil associations are prevalent throughout the Southwest quadrant: Urban Land (Ub) and Udorthents (U1). Urban land covers most of the study area and is classified as land having more than 80 percent of the surface covered with asphalt, concrete, buildings or other impervious surfaces. The Udorthent association is limited to the Banneker Park site and is primarily earthy fill material, mixed with other matter, deposited over poorly drained to somewhat excessively drained soils.

4.9.2. Potential Impacts

4.9.2.1. Construction or Immediate Impacts

As discussed in the previous section, the implementation of the Proposed Action will involve excavation and other construction activities, particularly at the Banneker Park site, that will expose soils to the elements and modify the existing ground surface. For the L'Enfant Promenade bridge replacement option, the existing bridge foundations would be reutilized, thus eliminating the possibility of having to construct new foundations.

Because the Banneker Park hillside is composed of fill material, additional geotechnical investigations will be needed during design of the ITC and other improvements to determine the best foundation type and construction methods.

Land-disturbing activities will comply with DC Soil Erosion and Sediment Control program requirements and best management practices would be used during construction. The proximity of existing structures (e.g., bridges and retaining walls along I-395) will be taken into account when designing the foundation system for the ITC and choosing an excavation method.

4.9.2.2. Operational or Long Term Impacts

The existing grade of L'Enfant Promenade would remain unchanged with the implementation of the Proposed Action. At Banneker Park, the overall park elevations would remain generally

the same, although the topography would change from a gently sloping hillside to a terraced landform.

4.10. TRANSPORTATION AND TRAFFIC CONDITIONS

4.10.1. Affected Environment

4.10.1.1. Existing Roadway Network

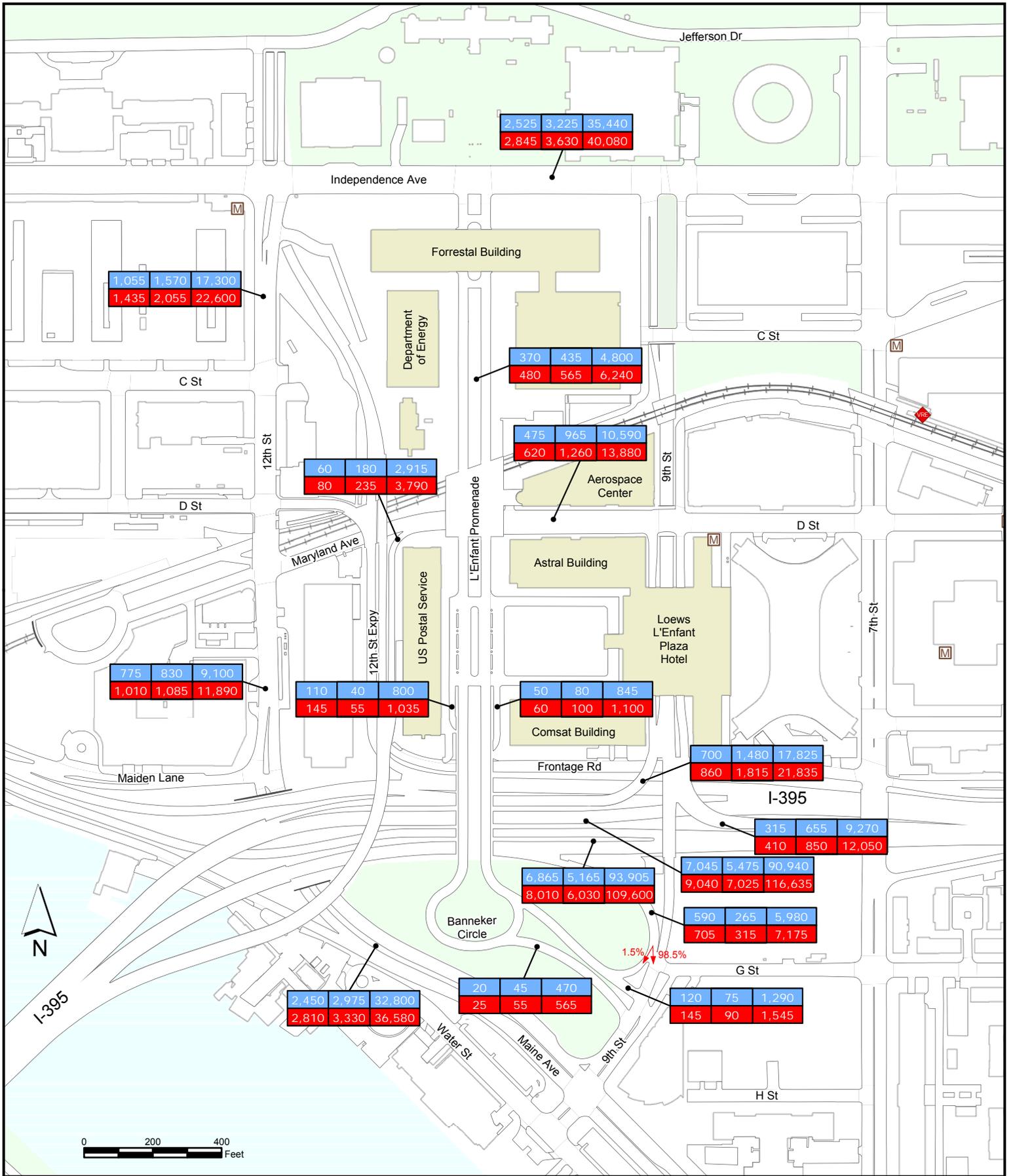
The roadway network in the vicinity of L'Enfant Promenade (10th Street SW) includes Independence Avenue, the 12th Street Expressway, 9th Street, D Street, Maine Avenue and I-395 (see Figure 4-11). High traffic volumes near L'Enfant Promenade are generated from:

- ◆ Employment centers that including the DOE, U.S. Department of Agriculture (USDA), U.S.P.S. and L'Enfant Plaza Hotel;
- ◆ Cultural attractions such as the Smithsonian Institution museums on the National Mall; and
- ◆ The fish market, restaurants and other destinations on the Southwest waterfront.

The major east-west arterial roadways are Independence Avenue and Maine Avenue. The north-south arterial roadways are 12th Street, L'Enfant Promenade and 9th Street. The major freeway serving the project area is I-395, a six-lane divided interstate highway, which provides a ramp at 12th Street that connects with Independence Avenue.

Although the Promenade provides a roadway connection between the National Mall and the Southwest waterfront, it is poorly signed and includes geometric and operational deficiencies. Vehicles merging onto the Banneker Park roadway from 9th Street must yield to traffic on the road; however, limited sight distance makes this movement potentially dangerous. A weaving and merging area confronts vehicles at the junction of 9th Street, the I-395 ramp to 9th Street, the Banneker Park roadway, and G Street. Southbound 9th Street traffic wishing to access L'Enfant Promenade must avoid potential merging traffic from the I-395 ramp just prior to turning right onto the roadway to Banneker Park.

The ramp from I-395/12th Street Expressway to D Street is also problematic, where anecdotal evidence suggests that semi-trailer trucks have difficulty turning within the provided radius. Though the existing radius is acceptable by AASHTO standards, the downward slope of the ramp preceding the turn makes the movement challenging. Sight distance is limited where this ramp merges onto D Street, which affects the ability of drivers to see pedestrians traveling back and forth on D Street.



LEGEND

- AM Peak | PM Peak | Daily Volume (Blue box) 2003 Actual Volumes
- AM Peak | PM Peak | Daily Volume (Red box) 2025 Forecasted Volumes
- M Metrorail Station Access Point
- VRE VRE Station Access Point

TRAFFIC VOLUMES

4.10.1.2. Traffic Movements and Flow Patterns

Peak period traffic volumes at 13 intersections within the study area were collected in June 2003 (see Figure 4-11). Twenty-four hour volumes and vehicle classification counts were collected over a two-day period at eleven ramp locations in the study area. This traffic data was analyzed using the Synchro and Highway Capacity Software (HCS) software packages, which determine the delay and Level of Service (LOS) of roadways, intersections, and sidewalks. LOS is a measure of traffic conditions based on vehicle delay, and is expressed by qualitative score that range from “A” (best) to “F” (worst).

The traffic analysis indicated that Maine Avenue and Independence Avenue experience the highest volumes and longest traffic delays among all the roadways in the study area. On an average day, approximately 35,000 and 33,000 vehicles travel on Maine Avenue and Independence Avenue, respectively. In comparison, D Street carries approximately 11,000 vehicles per day.

Table 4-2 displays the results of intersection analyses. Because traffic signals at signalized intersections in the study area are coordinated, and their cycle lengths sufficiently handle most of the traffic volumes, most intersections operate at LOS A or B (best and second to best) during the AM and PM peak hours. The intersections that do not operate this well include:

- ◆ Independence Avenue and 12th Street intersection: LOS D during both the AM and PM peak hours:
- ◆ 12th and C Streets intersection: LOS D during PM peak hour;
- ◆ 12th and D Streets intersection: LOS D during AM peak hour;
- ◆ 12th Street and Maiden Land: LOS D during PM peak hour; and
- ◆ Maine Avenue and 9th Street intersection: LOS F during both the AM and PM peak hours.

Table 4-2 also displays LOS for through segments of I-395 and its ramps. I-395 travel lanes operate at LOS F in both directions during the morning peak and LOS D in the evening peak. The ramps that do not operate this well include:

- ◆ Northbound I-395 ramp to southbound 9th Street : LOS F the AM peak and LOS E in the PM peak hours:
- ◆ Southbound 9th Street ramp to southbound I-395: LOS F during the AM and PM peak hours.

TABLE 4-2: Existing Levels of Service at Intersections and Freeway Segments and Ramps

INTERSECTION	LOS/DELAY (AM)	LOS/DELAY (PM)
Independence Avenue & 12 th Street	D / 53.6	D / 39.0
Independence Avenue & L'Enfant Promenade	A / 9.2	A / 7.9
Independence Avenue & 9 th Street	A / 1.6	B / 14.8
12 th Street & DOE Garage Entrance	A / 7.2	B / 10.0
12 th Street & C Street	B / 10.8	D / 45.7
12 th Street & D Street	D / 45.4	A / 9.0
12 th Street & Maryland Avenue	B / 15.1	B / 19.1
12 th Street & Maiden Lane (Maine Avenue)	B / 19.7	D / 35.4
10 th Street & D Street	A / 4.3	B / 11.6
9 th Street & D Street	A / 7.9	B / 11.3
9 th Street & Maine Avenue	F / 92.1	F / 108.8
9 th Street & Water Street	A / 27.1	B / 61.0
RAMPS	LOS	LOS
12 th Street Expressway ramp to D Street	B	B
NB I-395 ramp to 9 th Street	F	E
SB 10 th Street ramp to NB L'Enfant Promenade	A	B
SB 9 th Street ramp to NB I-395	C	B
SB 9 th Street ramp to SB I-395	F	F
FREEWAY SEGMENTS	LOS	LOS
NB I-395 (3 lanes of through traffic)	F	D
SB I-395 (3 lanes of through traffic)	F	D

4.10.1.3. Collision Information

DDOT maintains collision records for most intersections throughout the District, including many in the study area. Table 4-3 summarizes this collision data for 2000 and 2001. During this time frame, no fatalities in the study area were reported.

The intersection of 9th Street and Maine Avenue experienced the highest number of collisions and consequently the highest number of injuries in the study area. The majority of the collisions at this intersection occurred during the evening rush hour and varied in type, with most being rear end collisions, as a result of driver inattention or travel at speeds greater than traffic conditions warrant. Based on this data, there do not appear to be any major traffic safety deficiencies in the study area.

TABLE 4-3: Summary of Collision Data (January 2000 through December 2001)

INTERSECTION	NUMBER OF COLLISIONS	NUMBER OF INJURIES
Independence Avenue & 12 th Street	9	9
Independence Avenue & 10 th Street	7	1
9 th Street & C Street	1	0
9 th Street & D Street	1	0
9 th Street & Maine Avenue	15	12
12 th Street & D Street	1	0
12 th Street & Maryland Avenue	1	1
12 th Street & Maine Avenue	11	3

Source: District Department of Transportation

4.10.1.4. Transit Facilities and Services

Two Metrorail stations are in the general vicinity of L'Enfant Promenade. The nearest is the L'Enfant Plaza Metrorail station (see Figure 4-12), a major transfer station, connecting the Orange/Blue and Green/Yellow Lines. The station features four entrances located at:

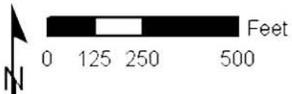
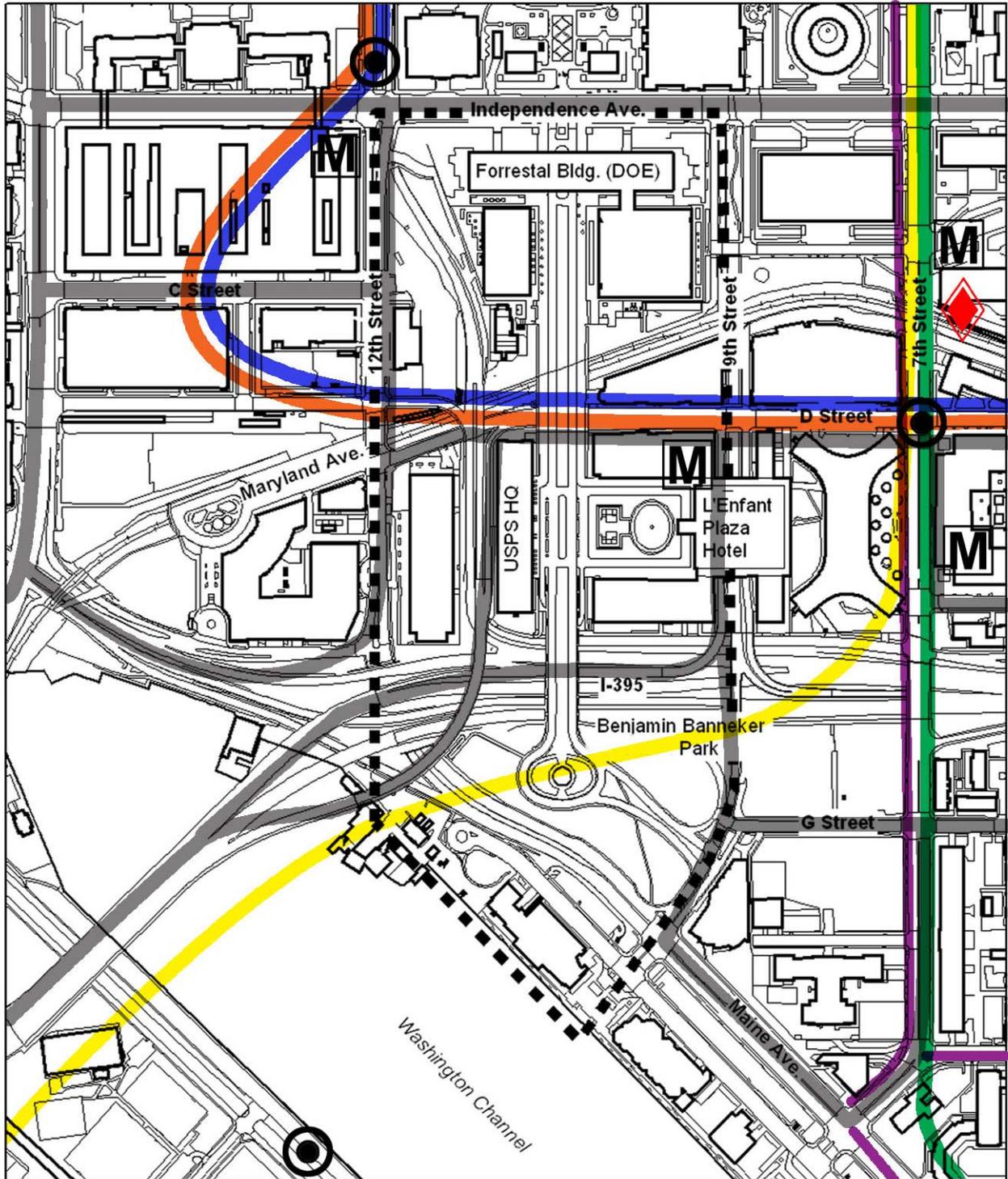
- ◆ L'Enfant Plaza Promenade Shops concourse at the intersection of 9th and D Streets;
- ◆ Southeast corner of Maryland Avenue and 7th Street;
- ◆ D Street between 6th and 7th Streets; and
- ◆ Southwest corner of the Department of Transportation Courtyard.

In addition to being a major Metrorail transfer station, the L'Enfant Plaza Metrorail Station is also a major multimodal center serving numerous Metrobus routes, and commuter buses serving suburban Maryland and northern Virginia

The Smithsonian Metrorail station, on the Blue and Orange Lines, is just west of the study area, with an entrance at 12th Street and Independence Avenue (see Figure 4-12).

Virginia Railway Express (VRE), a commuter rail service between the District and the suburbs of Northern Virginia, operates its L'Enfant Plaza station in the area, on C Street, SW between 6th and 7th Streets (see Figure 4-12). Connections to Metrorail or Metrobus from VRE trains can also be made at that station.

On July 2005, the DC Circulator bus began service, linking cultural, entertainment and business destinations within the city's central core. The North-South Circulator route between the District Convention Center and the Southwest waterfront includes stops along 7th Street, SW and at the L'Enfant Plaza Metrorail Station.



- LEGEND:**
- Study Area Boundary
 - M Metro rail Station Entrance
 - Metro rail Station
 - ◆ VRE Station
 - Downtown Circulator Route

- Green Line
- Blue Line
- Orange Line
- Yellow Line
- Metrobus Routes

Source: DC OCTO

**ENVIRONMENTAL ASSESSMENT:
L'ENFANT PROMENADE & BENJAMIN
BANNEKER PARK IMPROVEMENTS**

**FIGURE 4-12:
Transit Facilities**

4.10.1.5. Pedestrian Circulation

Most intersections in the study area include crosswalks and pedestrian push buttons. Although sidewalks run along most streets in the study area, these routes are sometimes discontinuous and do not always comply with the Americans with Disabilities Act (ADA). In addition, the multiple levels of L'Enfant Plaza and the Promenade Shops concourse are typically connected with stairs making it difficult for persons with disabilities to access the different services of the concourse.

Pedestrians accessing L'Enfant Promenade from the north use the Independence Avenue crosswalk, which is pedestrian push button controlled. From Independence Avenue to I-395, approximately 29-foot wide sidewalks run along each side of the roadway and a 40-foot wide brick median runs down the center. A narrow stairway on the west side of L'Enfant Promenade leads down to D Street and Maryland Avenue, providing the only pedestrian access to these streets. A 42-inch high barrier runs along the outside of the sidewalks for pedestrian safety along D Street. From I-395 to Banneker Overlook the sidewalks are only 4 to 3 ½ feet wide, and are frequently obstructed by light poles and parking meters. Consequently, pedestrians often use the 40-foot wide brick median as an alternate route.

The pedestrian wayfinding signs along the Promenade mainly consist of banners attached to the light poles. The banners indicate services provided in L'Enfant Promenade. However, these banners do little to direct pedestrians to these services. For example, the Metrorail station can be accessed via the Promenade Shops concourse. The only signage is the “Metro” banner. It is not marked with the standard Metrorail brown column, making it easy to overlook. The signs are also inconsistent with other wayfinding signs present throughout the District.

Similar wayfinding banners are also present near the L'Enfant Plaza Metrorail entrance adjacent to the intersection of 9th and D Streets. However this station entrance is also clearly marked with a standard Metrorail column. A staircase leads pedestrians to the Metrorail via the Promenade Shops concourse. Pedestrians can also continue up the staircase to access L'Enfant Promenade. Since this Metrorail route is not accessible to persons with disabilities, a sign on the Metrorail station marker tells pedestrians that an ADA accessible station entrance is located on 7th Street near C Street, SW. Another staircase connects Frontage Road, which runs parallel to I-395, to the upper L'Enfant Promenade.

The Promenade terminates at Benjamin Banneker Park, providing limited connections to adjacent streets and destinations. A pedestrian route runs from the west-side sidewalk on the Banneker Park circle to a pedestrian path ultimately connecting to the Francis Case Memorial Bridge spanning the Washington Channel. The only other established connection is provided by a narrow asphalt trail running from the east side of Banneker Park down to the corner of 9th Street and Maine Avenue. Neither connection provides curb cuts. Because of the circuitous pedestrian route to Maine Avenue, many pedestrian choose to walk through the grassy park,

which has worn down the grass to a dirt trail. However, the steep downward slope of this trail coupled with the lack of a Maine Avenue crosswalk make this option unsafe.

4.10.1.6. Bicycle Circulation

Bicycling is legal on all streets in the District, except for freeways, such as I-395. The ADC Washington DC Region Bike Map, 6th Edition, shows official and unofficially designated bike routes. L'Enfant Promenade is not designated an official bike route by the District. Unofficial routes are typically used by experienced cyclists who have identified them as convenient or scenic on-street paths. For instance, an unofficial bike route runs from Independence Avenue to a multi-use path on Francis Case Memorial Bridge using L'Enfant Promenade and Banneker Park. Another unofficial bike route is on Water Street along the Southwest waterfront. According to the DC Bicycle Master Plan (April 2005), identified a proposed multi-use trail along Maine Avenue from the 12th Street Expressway overpass to M Street that will form one segment of the Anacostia Riverwalk.

4.10.1.7. Parking Resources

Parking resources for private vehicles in the vicinity of L'Enfant Promenade, as listed in Table 4-4, are limited. The parking resources include on-street, metered parking along the Promenade, D Street, Independence Avenue, Frontage Road, 9th Street, and 12th Street. Parking is also available in underground parking structures located beneath the L'Enfant Promenade buildings. Underground parking associated with the DOE Forrestal Building and the U.S.P.S. headquarters is limited to agency employees and official or agency vehicles. Underground parking associated with the L'Enfant Promenade office, retail and hotel facilities and the Aerospace Building is available for an hourly or monthly fee to building patrons, employees and visitors. Patrons of Southwest waterfront commercial establishments may use the relatively limited number of surface parking spaces in lots at along Water Street. In nearby residential areas, most on-street parking is restricted by the District residential parking system, which limits parking to two or four hours except for residents holding the applicable District parking permit.

Parking for tour and charter buses in the vicinity of L'Enfant Promenade is even more limited than parking for private automobiles, and limited bus parking is basically a District-wide problem. Although District bus parking regulations prohibit tour buses from parking in metered spaces not designated for motor coach parking, tour buses were observed during a field visit parking in these kinds of spaces. The District also prohibits buses from parking adjacent to any residential property, school, playground, hospital, church or park. In the general vicinity of L'Enfant Promenade, tour or charter buses have few parking choices. Five curbside bus parking spaces are available on the north side of Maine Avenue adjacent to Banneker Park. Further east from Banneker Park on Maine Avenue, an additional six bus parking spaces are available between 7th and 9th Streets. Two additional bus parking spaces are available on the 600 block of Water Street. The bus parking along Maine and Water Streets is limited to four hours. Long-term tour bus parking for 60 buses is available in a city-owned lot on South Capitol Street, SW, approximately two miles from L'Enfant Promenade and Banneker Park.

TABLE 4-4: Existing Parking Resources

LOCATION	ON-STREET (NO. OF SPACES)	OFF-STREET (NO. OF SPACES)	ACCESS POINT(S)	NOTES
L'Enfant Promenade	124	NA	NA	1
Frontage Road, SW (between 9 th and 10 th Streets)	12	NA	NA	
D Street, SW (between 9 th and 12 th Streets)	9	NA	NA	
Independence Avenue (between 9 th and 12 th Streets)	63	NA	NA	
12 th Street, SW (between Independence Avenue and Maine Avenue)	42	NA	NA	
Department of Energy	NA	800	9 th Street and 12 th Street, SW	2
Aerospace Building (370 L'Enfant Promenade)	NA	421	D Street, SW	3
U.S. Postal Service Headquarters (475 L'Enfant Promenade)	NA	670	10 th Street, SW	4
L'Enfant Plaza Hotel	NA	300	10 th Street, SW	
L'Enfant Plaza Office and Retail Complex (470, 490 and 955 L'Enfant Promenade)	NA	1,350	9 th and 10 th Street, SW	
South office building (950 L'Enfant Promenade)	NA	—	10 th Street, SW	5
U.S. Department of Agriculture Cotton Annex Parking Lot	NA	438	12 th Street, SW	3

Notes:

1. Metered parking; no parking in front of U.S. Postal Service HQ and L'Enfant Promenade; 44 spaces on I-395 Bridge.
2. Number of spaces approximate; parking limited to DOE employees, official vehicles and visitors.
3. Paid parking available to the public (hourly or monthly).
4. Parking limited to USPS carpools and senior employees.
5. Unknown.

Source: Parsons Brinckerhoff Quade and Douglas, Inc., 2003.

4.10.2. Potential Impacts

4.10.2.1. Future Traffic Conditions

For purposes of evaluating the long-term traffic impacts of the proposed action, 2025 was used as the analysis year. It is standard practice to evaluate the traffic impacts of a project in a time frame several years after the project is completed.

The 2025 traffic volumes expected on L'Enfant Promenade and surrounding streets were calculated using the MWCOG Travel Demand Model, version 2. The model includes expected future transportation improvements planned for the region, as well as estimates on the future regional population, households, and employment distributed throughout the metropolitan area. The MWCOG model was assumed to include development projects on the Southwest waterfront as identified in the Development Plan and AWI Vision for the Southwest Waterfront. Future traffic conditions at the intersection level were predicted using

Synchro and HCS software programs. Additional information about the methodology used to evaluate traffic impacts is provided in Appendix IV.

Under either the proposed action or the No Build condition, Maine Avenue would be reconfigured as an urban boulevard, as recommended in the AWI Framework Plan, which would involve lowering its speed limit and providing an additional through lane in each direction, increasing the number of lanes on this road to three lanes in each direction. Also under both scenarios, Water Street would be removed per recommendation of the AWI Framework Plan. Other than L'Enfant Promenade, under the proposed action, no other street in the general vicinity would undergo major changes by 2025.

Year 2025 traffic conditions under the No Build condition and the proposed action is provided in Figure 4-11 and Table 4-5, reported in LOS.

4.10.2.2. Construction or Immediate Impacts

Implementation of the L'Enfant Plaza elements of the Proposed Action would require temporary closure of portions of the Promenade roadway, lower 10th Street and I-395 during construction activity, which would disrupt vehicular, pedestrian and bicycle traffic and circulation patterns. Access to all buildings located on the Promenade would be maintained during construction, however. The replacement option for the Promenade bridges would involve more extensive construction activity and greater traffic-related impacts since it provides for the complete replacement of the L'Enfant Promenade bridge structures.

Construction of the ITC would require the demolition of the existing Banneker Park fountain, roadway and ramps to 9th Street. Traffic volumes on the Banneker Park roadways are low and alternative access to L'Enfant Promenade will be maintained via Independence Avenue and the ramps from 10th Street, SW to the Promenade. A new roadway would be constructed at the north edge of the Banneker Park site, concurrent with the construction of the ITC, to maintain the vehicular connection between L'Enfant Promenade and 9th Street. Temporary closure(s) of 9th Street or the eastbound I-395 ramp to 9th Street would be required during the construction of the new ramp.

A maintenance of traffic plan would be developed to address the construction-related roadway closures and would identify steps to be taken to minimize impacts to traffic operations and study area businesses and residences, such as signage noting construction zones and identification of detour or alternate routes. Construction barriers, such as fencing, would be used to prevent pedestrians and vehicles from entering the construction site(s).

Table 4-5: Study Area Levels of Service – 2025 No Build and 2025 Build

INTERSECTION	2025 NO BUILD LOS AM/PM	2025 BUILD LOS AM/PM)
Independence Avenue & 12 th Street	F/F	E/E
Independence Avenue & L’Enfant Promenade	A/A	A/A
Independence Avenue & 9 th Street	A/A	A/B
12 th Street & DOE Garage Entrance	B/B	C/C
12 th Street & C Street	C/F	C/E
12 th Street & D Street	C/B	C/C
12 th Street & Maryland Avenue	B/D	B/D
12 th Street & Maiden Lane (Maine Avenue)	C/B	C/B
10 th Street & D Street	A/A	A/B
9 th Street & D Street	A/D	A/C
9 th Street & Maine Avenue	C/D	D/D
9 th Street & Water Street	Removed	
Proposed 9 th Street/ITC Entrance	N/A	B/C
Proposed Maine Avenue Crosswalk (between 9 th and 12 th Streets)	N/A	A/A
RAMPS		
12 th Street Expressway ramp to D Street	B/E	Ramp configuration remains the same
NB I-395 ramp to 9 th Street	F /F	Ramp configuration remains the same
SB 10 th Street ramp to NB L’Enfant Promenade	B/B	No proposed improvements to ramps
SB 9 th Street ramp to NB I-395	F /B	No proposed improvements to ramps
SB 9 th Street ramp to SB I-395	F/F	No proposed improvements to ramps
FREEWAY SEGMENTS		
NB I-395 (3 lanes of through traffic)	F /E	No proposed improvements to I-395
SB I-395 (3 lanes of through traffic)	F /F	No proposed improvements to I-395

4.10.2.3. Operational or Long Term Impacts

Traffic Impacts

Based on the results of the traffic analysis, traffic operations at most intersections would improve or remain the same as No Build conditions under the Proposed Action.

Implementation of the proposed intersection modifications plus the optimization of traffic signals within the study area would improve 2025 operations by one grade at the intersection of Independence Avenue and 12th Street, from LOS F to LOS E, in the AM and PM peaks and at the 12th and C Street intersection, from LOS F to LOS D, in the PM peak. Operations are also projected to improve, from LOS D to C, at the 9th Street-D Street intersection. While it would not improve LOS, the redesign of the intersection of the northbound I-395 exit ramp, G Street, ramps to Banneker Park and 9th Street as a single, unsignalized intersection would create fewer conflicts and make the intersection safer for vehicles and pedestrians.

In cases where LOS is projected to deteriorate, the deterioration would be due to increases in traffic attributable to traffic redistribution or due to increases in background traffic levels

resulting from new development in or adjacent to the study area. The reduction in LOS at the intersection of 12th Street & the DOE Garage Entrance would be due to a reduction in green time for northbound and southbound movements. This reduction was performed to allow more green time for the east-west movements, in coordination with the east-west movements at Independence Avenue and 12th Street, which is connected to the 12th Street and DOE Garage Entrance signal. The deterioration of LOS from A to B for the 10th Street and D Street intersection would be due to an overall reduction in cycle length for the D Street corridor; this was done to allow for better coordination and progression on D Street. In all cases of reductions of levels of service, the reduction would be only by one grade.

As under No Build conditions, the ramps from southbound 9th Street to northbound and southbound I-395 and the northbound I-395 ramp to 9th Street would all operate at LOS F in 2025, as would the I-395 mainline. While the failing levels of service for the select freeway ramps and freeway segments reveals that improvements are needed, the traffic study did not review any suggested improvements. Changes such as expanding freeway or ramp lane capacities would improve the operations of these roadway facilities, and the overall traffic operations in the study area. Representatives of sponsoring agencies (e.g., FHWA and DDOT), however, must make the decision whether to implement any improvements on the freeway ramps/segments.

The Proposed Action also introduces a signalized, mid-block, pedestrian crosswalk at Maine Avenue between 9th and 12th Streets to the roadway network. The level of service for the signal would be LOS A in both the AM and PM periods, which is above capacity. The pedestrian signal would not impact traffic flow on Maine Avenue.

Proposed vehicle trips resulting from the addition of the ITC at the Banneker Park site were calculated using ITE Trip Generation Handbook trip generation rates. Approximately 3,100 daily vehicle trips would be generated from the ITC. The proposed ITC includes two entrances/exits: one on Maine Avenue and one on 9th Street. Two new intersections would be created from these access points. Peak hour vehicle volumes, both entry and exit volumes, were generated for the new access points/intersections as well. Overall study area peak hour volumes were adjusted for the Maine Avenue and 9th Street intersection and the mid-block pedestrian crosswalk on Maine Avenue to account for the additional traffic associated with the ITC. The 9th Street/Maine Avenue intersection would operate at LOS D in the AM and PM periods (compared to LOS C under AM No Build conditions). The 9th Street/ITC intersection would operate at LOS B in the AM and LOS A in the PM. The Maine Avenue/ITC intersection would operate at LOS A in both the AM and PM.

If the ITC is implemented a new intersection would also be added on southbound 9th Street. A new roadway provides a new vehicular connection between L'Enfant Promenade and 9th Street, to replace the existing Banneker Park roadway that would be eliminated to allow for the construction of the ITC. The new roadway would be a two-lane road but access would be limited to right entrances and exits to and from 9th Street. Ninth Street is a southbound one-way street north of the intersection with the new ramp but would become two-directional

south of the intersection. The intersection is assumed to be stop sign controlled on the new roadway.

Transit Impacts

There will be no change in transit service or operations as a result of the implementation of the Proposed Action. The implementation of a wayfinding/signage program for L'Enfant Promenade and Banneker Park, included as part of the Proposed Action and No Build alternative, should make the L'Enfant Promenade Metro station and other transit facilities in the study area easier to find.

Because the area surrounding L'Enfant Promenade and Banneker Park is proposed for major re-development, increased trips through the L'Enfant Plaza Metro station may result even if the proposed action is not implemented. The ITC would allow many visitors to travel about the city after leaving their vehicles in the facility's parking structure by using the many transit options available nearby from the ITC, such as Metrorail, Metrobus and the Downtown Circulator.

Pedestrian and Bicycle Circulation Impacts

The proposed action is expected to make L'Enfant Promenade and Benjamin Banneker Park into the gateway between the National Mall and the Southwest waterfront as originally intended in the Urban Renewal Plan for the area. As a result, pedestrian and bicycle traffic within the Promenade is anticipated to increase substantially for the following reasons:

- ◆ New landmarks spaced a few hundred feet apart would provide visual clues to draw pedestrians and cyclists into the Promenade from the National Mall and the Southwest waterfront. The narrow median option provides opportunities for three landmark locations, whereas the wide median option provides only two.
- ◆ The sidewalks on the I-395 bridge would be widened to between 11'-6" and 12'-6", depending on whether the narrow or wide median option is implemented.
- ◆ The Banneker Park pedestrian ramp and/or staircase would provide the missing pedestrian connection between L'Enfant Promenade and Maine Avenue, and the signalized Maine Avenue crosswalk would provide a pedestrian-safe connection to the Southwest waterfront and Municipal Fish Wharf.
- ◆ Elevators located within the ITC would provide wheel-chair dependent persons with easier access between the waterfront and Mall.
- ◆ Bicycle lanes would be provided along the entire length of the L'Enfant Promenade and Banneker Park from Independence Avenue to 9th Street.

Additionally, future development along the Promenade – the proposed National Children's Museum, retail, and residential units at the L'Enfant Plaza hotel and office complex and the location of a museum or memorial at Banneker Park – will substantially increase visitation by all modes of travel to the Promenade.

Parking Impacts

The proposed action would require the elimination of approximately 50 metered spaces parking spaces on the I-395 bridge, if the wide median option is implemented. Approximately 75 metered spaces on L'Enfant Promenade would remain in operation. Despite this loss of parking, the proposed action would provide approximately 1,150 parking spaces for private automobiles and parking for approximately 75 buses in the ITC. As noted above, the ITC would play an integral role in enhancing intermodal transportation within the District and promoting more efficient travel by providing a location for visitors to park and complete their trips within the District via transit or other modes of travel. The ITC also supports the District's efforts to manage tour bus traffic within the city by providing a location for drivers to park while waiting to pick up tour groups rather than circulating or idling on city streets.

4.11. AIR QUALITY

4.11.1. Affected Environment

4.11.1.1. Relevant Pollutants

“Air Pollution” is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants degrade the atmosphere by reducing visibility, damaging property, reducing the productivity or vigor of crops or natural vegetation, or reducing human or animal health. Eight air pollutants have been identified by the U.S. Environmental Protection Agency (EPA) as being of concern relative to air quality: carbon monoxide (CO), sulfur oxides (SO_x), hydrocarbons (HC), nitrogen oxides (NO_x), ozone (O₃), particulate matter sized 10 microns or less (PM₁₀), particulate matter with a size of 2.5 microns or less (PM_{2.5}), and lead (Pb). The sources of these pollutants, their effects on human health and the nation's welfare, and their final deposition in the atmosphere vary considerably.

As required by the Clean Air Act (CAA), National Ambient Air Quality Standards (NAAQS) have been established for seven of the eight major air pollutants. These pollutants are: CO, NO₂, O₃, PM_{2.5}, PM₁₀, SO₂, and Pb. Primary standards have been established to protect the public health. Secondary standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

The pollutants that are most important for air quality impact analysis for this study are those that can be traced principally to motor vehicles, such as CO and O₃. Motor vehicles also contribute to emissions of HC, NO_x and PM_{10/2.5}, but these pollutants are also generated from other sources.

4.11.1.2. Air Quality Regulations

The 1977 CAA Amendments (CAAA) require that the EPA publish a list of all geographic areas in compliance with the NAAQS, as well as those not in attainment of the NAAQS, referred to as nonattainment areas. Areas that were designated as nonattainment when the CAAA were implemented but have since attained compliance with the standards are classified as maintenance areas. The designation of an area is made on a pollutant-by-pollutant basis.

The CAA requires each state to develop and implement a State Implementation Plan (SIP) that outlines steps to be taken in nonattainment areas to attain and maintain the compliance with the applicable NAAQS.

The Washington, DC metropolitan region is classified as a severe nonattainment area for 1-hour O₃ and a moderate nonattainment area for 8-hour O₃. The Metropolitan Washington Air Quality Committee (MWAQC) of the MWCOG is the entity certified by the mayor of the District of Columbia and the governors of Maryland and Virginia to prepare the SIP for the DC-MD-VA Metropolitan Statistical Area. On May 13, 2005, EPA approved the area's 1-hour O₃ air quality plan to meet the CAA requirements for a severe ozone nonattainment area. EPA plans to revoke the 1-hour standard on June 15, 2005. The MWAQC is developing a new air quality plan to meet the 8-hour O₃ standard and has an attainment deadline of June 2010. The area is also classified as a nonattainment area for fine particles (PM_{2.5}). As such the area must develop SIP that will demonstrate attainment by April 2010. The region is classified as a maintenance area for CO.

4.11.1.3. Transportation Planning and Air Quality Conformity

The CAAA of 1990 and the Final Conformity Rule (40 CFR Parts 51 and 93) direct the EPA to implement environmental policies and regulations that will ensure acceptable levels of air quality and affect proposed transportation projects such as the Proposed Action that are located in nonattainment or maintenance areas. According to the CAAA, "No federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program, or project has been found to conform to any applicable State Implementation Plan (SIP) in effect under this act." The transportation project must conform to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. Additionally, it must not cause or contribute to any new violation of any NAAQS in any area; increase the frequency or severity of any existing violation of any NAAQS in any area; or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in any area.

In CO and PM₁₀ nonattainment and maintenance areas, projects also cannot cause or contribute to any new, localized CO or PM₁₀ violations, known as "hot spots", or increase the severity of existing violations.

The Conformity Rule also identifies projects that are exempt from the requirement to determine conformity (Title 40 CFR, Section 93.126, as amended). If a project does not fulfill one of the exceptions to the conformity rule, the following requirements must be met in order for the project to be found to conform:

- ◆ The project must come from a conforming transportation plan or TIP.
- ◆ The design concept and scope of the project at the time of the conformity finding must be maintained through project implementation.

- ◆ The project design concept and scope must have been sufficiently defined to determine emissions at the time of the plan/TIP conformity determination.

If a project does not meet those three criteria, in order for it to be found to conform, its emissions, when considered with the emissions projected for the conforming transportation plan and program, cannot cause the plan and program to exceed the emissions reductions projections and schedules in the area's SIP.

4.11.2. Potential Impacts

Air quality impacts are analyzed at a regional or "mesoscale" level and at a localized or "microscale" level, depending upon the pollutant being evaluated.

Emissions from automotive sources, specifically HC and NO_x, are a concern primarily because they are precursors in the formation of ozone and particulate matter. Ozone is formed through a series of reactions that occur in the atmosphere in the presence of sunlight. Since the reactions are slow and occur as the pollutants are diffusing downwind, elevated ozone levels often are found many miles from sources of the precursor pollutants. Therefore, the effects of HC and NO_x emissions generally are examined on a regional or "mesoscale" basis. PM₁₀ also is examined on a regional basis.

CO impacts, however, are localized. Even under the worst meteorological conditions and most congested traffic conditions, high concentrations are limited within a relatively short distance of heavily traveled roadways. Vehicle emissions from gasoline-powered cars and trucks are sources of 96% of CO emissions. Consequently, it is appropriate to predict concentrations of CO on a localized or "microscale" basis. While the EPA has indicated that PM₁₀ is a pollutant of concern for mobile-source projects, PM₁₀ hot-spot analysis guidance has not been adopted by the EPA. It is possible that a PM₁₀ hot-spot analysis might be required in the future; it is unlikely that the study area would require this analysis as it is classified as an attainment area for PM₁₀. However, since the ITC facility will accommodate diesel engine tour buses, which are large sources of PM₁₀, a quantitative screening analysis was conducted.

The regional or mesoscale analysis of a project determines its overall impact on regional air quality levels. In the Washington, DC region transportation projects are analyzed as part of a regional transportation network developed by MWCOG. Projects included in this network are those identified in the Constrained Long Range Transportation Plan (CLRP) and the Transportation Improvement Plan (TIP) for the region. The CLRP/TIP includes a regional analysis whose results are used to determine if an area is in conformity with regulations set forth in the CAAA Final Conformity Rule.

Microscale air quality analysis of the Proposed Action is performed by using computer modeling software to predict CO and PM₁₀ concentrations in emissions from motor vehicles using roadways immediately adjacent to a specific location or intersection. Emissions are predicted for both existing conditions and future conditions that reflect both the No Build

condition and the implementation of the Proposed Action. The future No Build condition is the baseline against which the Proposed Action is compared.

CO and PM₁₀ levels were estimated at the intersection of Maine Avenue and 9th Street. The analysis site was selected through a screening methodology based on intersection volumes, LOS and project-induced changes in traffic conditions. The Maine Avenue - 9th Street intersection was chosen for detailed analysis due to its proximity to the proposed ITC and its LOS D rating. Receptors were placed at the intersection in accordance with the guidelines found in EPA's Guideline for Modeling Carbon Monoxide from Roadway Intersections (EPA-454/R-92-005) and with respect to the unique geometry of each analysis site. Receptors were also placed near the entrance of the proposed ITC.

Traffic data for the air quality analysis were derived from traffic counts and other information developed as part of an overall traffic analysis for the project using methodology accepted by DDOT. The microscale analyses were performed based on data from the traffic analysis for the AM and PM peak traffic periods. These are the periods when maximum traffic volumes occur on local streets and when the greatest traffic and air quality effects of the proposed project are expected. A "background" level was added to the emissions values generated by the modeling, to account for CO and PM₁₀ entering the project area from other sources upwind of the receptors.

For the Proposed Action both a mesoscale and microscale analysis of impacts was conducted. The results of those analyses are detailed in the Air Quality Technical Report, located in Appendix V. The following sections summarize the results of the analyses.

4.11.2.1. Construction or Immediate Impacts

Construction related effects associated with the No Build Alternative would be limited to short-term increased fugitive dust and mobile source emissions during rehabilitation activities. During the construction period all appropriate measures and regulations would be incorporated to minimize the air quality impacts. These include: minimizing land disturbance; spraying water or dust suppressants on unpaved travel paths to minimize dust; covering haul trucks; washing or cleaning trucks before leaving the construction site (alternative to this strategy is to pave a few hundred feet of the exit road, just before entering the public road); revegetating disturbed areas as soon as possible. Since emissions of CO from motor vehicles increase with decreasing vehicle speed, every effort should be made during the construction phase to limit disruption to traffic (such as the temporary reduction of roadway capacity and the increased queue lengths), especially during peak travel periods.

4.11.2.2. Operational or Long Term Impacts

Mesoscale Analysis

The rehabilitation of the L'Enfant Promenade bridge structures, landscaping, pedestrian and bicycle improvements included in the Proposed Action, are included in the 2003 Update to the Financially Constrained Long-Range Transportation Plan for the National Capital Region and the Transportation Improvement Program for the Washington Metropolitan Region

FY2005-2010 as project number 47. While the overall CLRP and TIP have been determined to conform to the region's SIP, the L'Enfant Promenade improvements fall under the category of transportation projects that the Conformity Rule identifies as exempt from the requirement to demonstrate conformity. Exempt projects include:

- ◆ Safety-related projects, including roadway resurfacing/rehabilitation, lighting improvements, widening narrow pavements or reconstructing bridges (no additional travel lanes)
- ◆ Bicycle and pedestrian facilities
- ◆ Plantings, landscaping, etc.
- ◆ Directional and informational signs

As discussed in Section 4.10, an estimated 3,100 daily vehicle trips – both private vehicles and tour buses – will be generated from the ITC. Therefore, the ITC portion of the Proposed Action is subject to the Conformity Rule. The CLRP/TIP also includes project number 120, Public Parking, which includes the construction of District-owned parking facilities (including a tour bus parking facility). While the overall CLRP and TIP have been found to conform, the District's public parking project was not sufficiently defined to determine emissions associated with it and it was not included in the regional conformity determination. Amendment of the TIP is required to more clearly define the project concept and scope and enable emissions and transportation conformity to be determined.

Microscale Analysis

The maximum one-hour and eight-hour CO levels and the maximum 24 hour and annual PM₁₀ levels predicted at the intersection of Maine Avenue and 9th Street under future No Build conditions are below the applicable federal and state standards for CO and PM₁₀.

The Proposed Action scenario is predicted to have the same pollutant levels as the No Build scenario; except for a slight increase in 24 hour PM₁₀ predicted concentrations at the analysis site. This increase is attributable to the tour buses at the ITC. A slight decrease occurs in one-hour CO concentrations due to a slight decrease in traffic along Maine Avenue. All predicted CO and PM₁₀ concentrations are below the applicable Federal and State Standards.

4.12. NOISE

4.12.1. Affected Environment

4.12.1.1. Characteristics of Noise

The primary source of noise within the study area is that generated by motor vehicle traffic on study area roadways and, in particular, from I-395. Other sources of noise include jet aircrafts approaching Washington National Airport along the Potomac River and helicopters passing over the area. Unlike traffic noise, these sources are intermittent.

The most commonly used measure of noise level is the A-weighted sound level (dBA). Scientists have found that the human ear is more sensitive to midrange frequencies than it is

to either low or very high frequencies. At the same sound level, midrange frequencies therefore are heard as louder than low or very high frequencies. The A-weighted sound level is a measure of sound intensity with frequency characteristics that correspond to human subjective response to noise weighted. The A-weighted sound level is accepted by acousticians as a proper noise impact unit for traffic noise. An understanding of these relationships is helpful in providing a subjective impression of changes in the A-weighted sound level:

- ◆ Except in carefully controlled laboratory experiments, an increase of only 1 dB in A-weighted level cannot be perceived;
- ◆ Outside of the laboratory, a 3 dB increase in A-weighted level is considered a just-noticeable difference;
- ◆ A change in A-weighted level of at least 5 dB is required before any readily noticeable change in the noise level in a community is perceived; and
- ◆ A 10 dB increase in A-weighted level is subjectively heard as approximately a doubling in loudness, independent of the existing noise level.

The sound level descriptor used in this study is L_{eq} . L_{eq} is defined as the continuous A-weighted sound level that, in a given time period, contains the same energy as the actual time-varying sound during that period. For traffic noise assessment, L_{eq} typically is evaluated over a one-hour period of peak traffic.

4.12.1.2. Noise Regulations

Noise evaluations were performed in accordance with Federal Highway Administration's guidelines presented in Title 23, United States Code of Federal Regulations, Part 772, (23 CFR 772), entitled "Procedures for Abatement of Highway Traffic Noise and Construction Noise." These guidelines were established in order to protect the public, supply abatement criteria and establish requirements for information to be supplied to local highway agencies for use in planning and design of highways.

The FHWA's Noise Abatement Criteria (NAC) is shown in Table 4-6. These criteria identify different land use categories and establish an abatement criterion for these based on their activity category. The NAC applies to areas having regular human use and where lower noise levels are desired. FHWA regulations state that: "Noise impacts occur when the predicted traffic noise levels approach or exceed the NAC levels, or when the predicted design year traffic noise levels substantially exceed the existing noise levels," even though the predicted noise levels may not exceed the NAC. FHWA defines "approaching" as 1 dBA less than the NAC for a particular Land Use Activity Category. A "substantial increase" is defined an increase of 10 dBA or more. A "substantial increase" also justifies consideration of noise abatement measures. The DDOT Noise Policy for Federal-Aid Transportation Projects (July 1996) defines "approaching or exceeding" as any activity category land use with a predicted noise level within 1 dBA of its criteria. Substantial increases are defined as 15 dBA or more than the existing noise level.

Table 4-6: Federal Highway Administration Noise Abatement Criteria

ACTIVITY CATEGORY	L _{EQ} FOR NOISIEST TRAFFIC HOUR	DESCRIPTION OF ACTIVITY CATEGORY
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purposes.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Highway Traffic Noise in the United States, USDOT, FHWA, April 1986

4.12.1.3. Existing Noise Environment

The area surrounding L'Enfant Promenade and Banneker Park is developed and occupied by government buildings and commercial/office facilities that fall within Land Use Activity Category B. The governing NAC for Activity Category B is 67 dBA. Any noise level that exceeds 66 dBA, for Activity Category B, is considered impacted and qualifies for abatement consideration.

A noise measurement survey was conducted in the project area to document existing noise levels. Ambient noise levels were measured at five sites in the vicinity of the proposed project where land use is consistent with Activity Category B. Table 4-7 lists each measurement site and the average A weighted noise levels (L_{eq}) measured at the location. The measurement locations or receptor sites were selected to provide geographic coverage, to be representative of existing and future land uses in the study area, and to characterize conditions in the general vicinity of that location.

Table 4-7: Ambient Noise Measurements

SITE NO.	DESCRIPTION	LAND USE	TIME OF MEASUREMENT	L _{EQ}
1	DOE Child Development Center near the corner of 12 th and D Streets.	Institutional	1:07 pm	67.4
2	Benjamin Banneker Park near 9 th Street.	Recreational	1:48 pm	67.0
3	Capital Square Town homes near the corner of 9 th and G Streets	Residential	2:15 pm	68.8
4	Jefferson Junior High School Athletic Fields near 9 th Street.	Recreational	2:45 pm	64.5
5	Benjamin Banneker Park near Maine Avenue.	Recreational	3:17 pm	68.2

Note: Ambient noise levels measured on June 5, 2003.

Ambient noise levels were measured using a Larson Davis Model 820 Type I Integrating Sound Level Meter fitted with a condenser microphone located at a height of approximately 5 feet above the ground surface. A windscreen was utilized to reduce wind noise at the microphone. The sound level meter was calibrated before and after each measurement was taken. The measurement procedures conformed to those contained in the FHWA document, “Sound Procedures for Measuring Noise: Final Report” (FHWA-BP-45-1R, August 1981).

Due to the urban nature of the study area and proximity of the Promenade and Banneker Park to I-395, accurate prediction of existing and future noise levels cannot be performed using standard noise modeling methods without modeling all the roadways adjacent to the proposed improvements (i.e., surface streets and I-395) and not just those roadways that will be affected by this project (i.e., surface streets only). If only surface roadways were analyzed the model would consistently under predict the existing and future noise levels because it would not account for the noise contributed by the other roadways in the area, particularly I-395. Modeling all adjacent roadways is outside the scope of this study. Therefore a qualitative analysis of noise impacts was utilized.

The traffic noise level at a site depends on the amount of traffic traveling along a roadway, the types of vehicles that travel along that roadway, and the speed at which they travel. Typically, a doubling in traffic volume over a given period produces a doubling in the sound energy. A doubling in sound energy corresponds to only a 3 dBA increase in noise level, a barely perceptible change. At locations where traffic volumes and noise levels are already high, such as the study area, a large change in traffic volume (more than double) will be required to cause a perceptible change in the noise level. Additionally, noise levels from trucks are much greater than levels from automobiles. Consequently, at a given traffic speed, noise levels are more sensitive to changes in truck volumes than they are to changes in overall traffic flow. When the traffic volumes are high, a doubling of heavy truck volumes will result in an increase in noise level equivalent an increase of approximately 2 dBA. Finally, on a roadway carrying a given volume of automobile traffic, the noise level will increase as the speed increases; an increase from 45 miles per hour to 55 miles per hour equates to an approximately 3 dBA increase in noise levels.

4.12.2. Potential Impacts

4.12.2.1. Construction or Immediate Impacts

Temporary noise impacts will occur during the construction of the improvements identified in the Proposed Action. The degree of construction noise impact will be a function of the number and types of equipment being used, and the distances between the construction equipment and the noise sensitive areas. Generally, construction activity will occur during normal working hours on weekdays. Therefore, noise impact experienced by local residents as a result of construction activities should not occur during sleeping hours. Some impact will occur in the project vicinity where outdoor recreation takes place during normal working hours. As a result, Benjamin Banneker Park and the Jefferson Junior High School Athletic Fields may be most affected. A number of measures can be utilized in order to minimize noise resulting from construction activities, including: ensuring construction equipment or vehicles

with internal combustion engines are equipped with a properly functioning muffler; routing construction equipment and vehicles along routes that will cause the least disturbance to nearby receptors, where possible; placing continuously operated diesel powered equipment in areas as far as possible from or shielded from noise-sensitive locations; prohibiting or restricting, where possible, any work that produces noise that exceeds 80 dBA between 7 P.M. and 7 A.M. Construction operations will comply with the District noise regulations (DC Municipal Regulations, Title 20, Chapters 27 and 28).

4.12.2.2. Operational or Long Term Impacts

The Proposed Action will not increase the number of through traffic lanes on roadways in the study area, increase the amount of traffic traveling along the roadways, or alter the vehicle mix or the speed of the traffic traveling along the roadways. The roadway connection between L'Enfant Promenade, Banneker Park and 9th Street will be realigned approximately 400 feet north of its current location, at the periphery of the Banneker Park site.

Future ambient noise increases in the study are attributable to the overall growth in background traffic volumes throughout the study area. Traffic volumes are projected to increase by approximately 30% on study area surface roadways. That level of increase in traffic volume is not anticipated to result in a perceivable change in the noise level in the community; actual noise levels at the five receptor sites are projected to remain the same or increase only slightly due to the projected increase in traffic volumes throughout the study area and continue to exceed the applicable NAC. However, there will be no permanent increase in ambient noise levels under future (2025) conditions that are attributable to the Proposed Action.

While the existing and the predicted noise level will exceed the NAC during peak hour, the proposed improvements will not involve the construction of new roadways or improvements to the existing roadway network. Therefore, in accordance with 23 CFR 772, this noise analysis will provide sufficient information for highway agencies to determine the appropriate noise abatement measures. However, DDOT currently does not have a funding source for and therefore does not develop or implement abatement measures for Type II (existing highways) projects.

4.13. UTILITIES

4.13.1. Affected Environment

Table 4-8 summarizes the public utilities identified within the general vicinity of L'Enfant Promenade and Banneker Park. These utilities include separate sanitary sewer and storm water lines, gas lines, water main lines and electric lines owned by public agencies. Also, it is likely that privately owned utility lines are present within the study area. .

Table 4-8: Summary of Public Utilities by Street

LOCATION Street	UTILITY SYSTEM		
	Sewer (Sanitary/Storm/Combined)	Water	Gas
Independence Avenue	27"-78" storm pipes (between 12 th & 9 th Sts.) < 27" sanitary pipes	20" water main	8" wrapped steel pipe (wrpd)
D Street	< 27" combined pipes	12" water main	6 wrpd
Frontage Road	27"-78" sanitary pipes 78" storm pipes (between 12 th & 10 th Sts.)	12" water main	4 wrpd
Maine Avenue	< 27" combined pipes	20" water main	No active lines, abandoned lines present
Water Street	< 27" combined pipes	8" water main	6 wrpd
12 th Street	<27" combined pipes (between Maryland Ave & Frontage Rd)	20" water main (between Independence Ave. & D St.) 8" water main (between C St & Frontage Rd.)	8 wrpd
11 th Street	27" combined pipes	20" water main (between D St. & Frontage Rd.)	8 wrpd
10 th Street	48" storm pipe (lower level 10 th St – between Maryland Ave & Frontage Rd.) <27" storm pipe (Promenade level – between Independence & Maryland Ave.)	12" water main (Independence Ave. to Maryland Ave.) 8" water main (D St. to Frontage Rd.)	No active lines, abandoned lines present
9 th Street	42" storm pipe (between Independence Ave & RR) <27" sanitary pipe	12" water main (D St. to Frontage Rd.)	No active lines, abandoned lines present
Maryland Avenue		8" water main (12 th St. to 11 th St.)	6 wrpd

Sources: Water Distribution System map, DC Department of Public Works, April 1985; District of Columbia Government, Sewerage System map, 1986; Washington Gas map, WG C-001/002-SW

The District of Columbia Water and Sewer Authority (DCWASA) operates the wastewater collection system for the District. The system is comprised of separate and combined sewers. Prior to 1900, combined sewers were constructed. Sewers built since then are separate systems that have one system for sanitary sewer and one system for stormwater. Sanitary waste from the L'Enfant Promenade area is pumped via the sanitary sewer system to the O Street pumping station in southeast DC and then directed to the Blue Plains wastewater treatment plant. There is also a pumping station located on 9th Street between I-395 and Capitol Square Place. Stormwater is collected, channelized and directed to outfalls along the Potomac River.

Gas lines owned by Washington Gas are present throughout the study area. Major gas lines are located along Maryland Avenue, Independence Avenue, D Street and Water Street. Company records indicate that multiple abandoned gas lines exist throughout the study area.

According to the DC Department of Public Works, Water Distribution System Map (April 1985), water main lines are present throughout the study area. The water mains range between 8 and 20 inches in diameter. Service in the study area is categorized as "low", serving ground elevations between 0 and 70 feet. The overflow elevation is 172 feet.

Potomac Electric Power Company (PEPCO) owns underground power transmission lines in the study area. The existing facilities include underground vaults and typical conduits that transmit power for streetlights and adjacent buildings.

4.13.2. Potential Impacts

4.13.2.1. Construction or Immediate Impacts

In general, there will be minor effects on the existing utility systems serving L'Enfant Promenade and Benjamin Banneker Park as a result of the implementation of the Proposed Action. For L'Enfant Promenade, effects are primarily related to connecting to the existing utility systems; relocation of utilities is not anticipated. Effects on the existing utility systems serving Banneker Park resulting from the implementation of the Proposed Action are primarily related to the operation of the proposed ITC. That facility will require connection to the existing sanitary sewer (for restrooms), water (for restrooms and drinking fountains) and electrical systems (for lighting). The location and depths of existing utilities will be identified in areas proposed for excavation prior to conducting any ground disturbing activities.

4.13.2.2. Operational or Long Term Impacts

The proposed L'Enfant Promenade elevator and new street lighting would require connection to the existing electrical system, as would the proposed ITC. The increase in electrical demand would be minor. The ITC demand on the existing sanitary sewer and water systems would be minor as well.

Although there would be a reduction in impervious surfaces due to the introduction of landscaped areas along L'Enfant Promenade, the new staircase to Maine Avenue, entry/egress driveways into the ITC, and the roadway and bridge from L'Enfant Promenade to 9th Street

would replace the hardscape surfaces of Banneker Park. Other areas of the Banneker Park site would remain landscaped with grass and other plants. The overall increase or decrease in stormwater flows would be minor. Drains from the Promenade landscaped areas would be connected to the existing stormwater drainage system and would comply with District stormwater management and water quality regulations. If utilized, irrigation systems for the L’Enfant Promenade landscaping would require connection to the existing water system. The increase in water demand associated with the irrigation systems would be minor.

4.14. HAZARDOUS WASTE

4.14.1. Affected Environment

The following activities were conducted to identify hazardous waste sites in the study area:

- ◆ Database search of EPA’s Envirofacts Warehouse website;
- ◆ Coordination with the District’s Department of Health, Environmental Health Administration, Underground Storage Tank Division; and
- ◆ Field work and site reconnaissance;
- ◆ Review of National Response System (NRS) and historic mapping to indicate past land uses that may have led to site contamination in the study area; and
- ◆ Where necessary, attempts were made to contact property owners via telephone to determine types of facilities/or materials.

In searching for information on two zip codes that encompass Southwest, 20024 and 20065, the Envirofacts website uncovered following information:

- ◆ No Superfund sites were reported;
- ◆ 1 facility reporting a toxic release, but is located approximately 1-1/2 miles from the study area;
- ◆ 34 facilities reported to have handled hazardous waste were identified, but only four of them are adjacent to the project site area (see Table 4-9).

Table 4-9: Properties Reporting Hazardous Waste Activities within the Study Area (RCRA Database)

FACILITY NAME	ADDRESS	TYPE OF HANDLER	HANDLER ID
Blue Cross Blue Shield NCA	550 12 th Street, SW	Conditionally exempt small generator	DCD983967845
Growth Enterprises Industries	955 L’Enfant Promenade, Suite 4000, SW	Not indicated	DCR000000091
Jefferson Junior High School	8 th and H Streets, SW	Conditionally exempt small generator	DCD982565434
L’Enfant Promenade CITGO gas station	970 D Street, SW	Conditionally exempt small generator	DCD983971003

Source: Envirofacts Warehouse, August 17, 2005

In addition to obtaining the EPA information, the District Department of Health, Environmental Health Administration, Underground Storage Tank Division was contacted for information on underground storage tanks (USTs) and leaking underground storage tanks (LUSTs). Tables 4-10 and 4-11 list registered UST and LUST sites, respectively, adjacent to the project site. A “closed” status as indicated on Table 4-11 indicates that the site has been closed and cleaned up and tank has either been removed or filled.

Table 4-10: Registered USTs within the Study Area

FACILITY ID	FACILITY NAME	STREET ADDRESS
2000414	Department of Energy, Forestall Building	1000 Independence Avenue, SW
2001061	U.S. Postal Service Headquarters	1025 Frontage Road, SW
2000068	L'Enfant Promenade – East, L'Enfant Plaza Properties, Inc.	875 Frontage Road, SW
2001064	L'Enfant Colony, LLC Lincoln Property Management	950 L'Enfant Plaza, SW
2000351	Exxon Mobil Corporation, Former Exxon S/S #2-6239	970 D Street, SW
2000676	L'Enfant Promenade CITGO, L'Enfant Plaza Properties, Inc.	970 D Street, SW

Source: DC UST Sites Database Printout 2003

Table 4-11: LUST Sites within the Study Area

CASE #	COMPANY NAME	STREET ADDRESS	FACILITY TYPE	STATUS
89019	Exxon	970 D Street, SW	Gas Station	Closed
91016	L'Enfant Promenade North Office	955 L'Enfant Promenade North, SW	Other	Closed
91044	L'Enfant Promenade East Office	875 Frontage Road	Other	Closed
93012	Comsat Corporation	950 L'Enfant Promenade, SW	Other	Closed
93023	L'Enfant Promenade North Office	955 L'Enfant Promenade North, SW	Other	Closed
96002	U.S. Postal Service	1025 Frontage Road, SW	Federal	Closed
2003052	Potomac Creek Limited	955 L'Enfant Promenade, North	Gas Station	Closed

Source: DC LUST Sites Database Printout 2003

The site reconnaissance focused on L'Enfant Promenade, Banneker Park and 10th Street, SW. The following items were noted:

- ◆ L'Enfant Promenade bridge structures: it was noted during the structural condition assessment that the bridges are painted with lead-based paint.
- ◆ CSX Railroad right of way: the CSX ROW runs underneath and perpendicular to the Promenade along the Maryland Avenue axis. Visual inspections of the ROW were conducted from the stairway leading from L'Enfant Promenade to D Street. Debris and some stained gravel/soil area were noted along the tracks. A large area of debris was noted between the tracks and D Street. The debris appears to be mostly household-type trash and litter.
- ◆ 970 D Street, SW. During the database searches, a gas station with registered USTs and known LUSTs was noted at this location. The site is no longer a gas station. It is now an Enterprise car rental facility. Staff were questioned regarding the USTs and indicated that there are no longer gas tanks on the premises; further investigation to confirm the closure and/or removal of the tanks is recommended.
- ◆ 10th Street, SW. 10th Street runs directly beneath L'Enfant Promenade. A large median separates northbound and southbound traffic. Within the median, near the intersection with D Street, two metal cabinets were observed. There was no indication of the ownership or use of these cabinets; further investigation as to the use of the cabinets is recommended.

Baists Real Estate Maps of Washington, DC for 1946, 1956 and 1967 maps were reviewed to identify past land uses that may have the potential for contamination within the study area. Prior to construction of I-395, L'Enfant Promenade and Benjamin Banneker Park, the general area in the vicinity of the project site consisted of commercial, residential and industrial land uses. The following information was obtained from the Baists Real Estate Maps:

- ◆ 1946: a freight railroad headquarters building was located in the northeast quadrant of the intersection of 10th and D Streets (currently where the Aerospace Center building is located). A gas station was present at the southwest quadrant of the intersection of 10th and G Streets. A fire station, Engine House Number 13 was located east of the gas station. The Johnson and Wimatt lumber yard were located along H Street. The gas station, fire station and lumber yard sites have all been displaced by the Banneker Park site.
- ◆ 1956. Same information as 1946.
- ◆ 1967. This map shows L'Enfant Promenade and Banneker Park as the area exists today.

4.14.2. Potential Impacts

4.14.2.1. Construction or Immediate Impacts

The removal and disposal of lead paint from the L'Enfant Promenade structural steel would be conducted as part of the Proposed Action. The paint removal will comply with applicable regulations governing the removal and disposal of lead-based paint. Any removal and disposal of lead painted structural members as part of the construction of design elements or if the bridge replacement option were selected would be conducted in accordance with applicable regulations governing such actions.

Subsurface excavation would be required to construct foundations for the proposed stairway and elevator between L'Enfant Promenade and 10th Street, SW, and the proposed ITC. Prior to that work, further investigations, such as a Phase II Environmental Site Assessment should be completed to determine whether contamination is present and specific locations of USTs. In particular, any work done at the Banneker Park site warrants further investigation due to past site land uses that typically use or handle hazardous materials and may have led to contamination and due to the unknown origin of the fill material used to construct the park.

4.14.2.2. Operational or Long Term Impacts

No long term impacts are anticipated.

4.15. CUMULATIVE EFFECTS

4.15.1. Affected Environment

There are a number of other projects proposed in or adjacent to the study area that may, when combined with the proposed action, result in cumulative impacts. Planned projects in the immediate study area include:

- ◆ Museum or memorial of national significance at Banneker Park: a specific museum/memorial has not been identified for the site.
- ◆ Public Staircase and pedestrian connection to L'Enfant Promenade via Banneker Park.
- ◆ Redevelopment of the Southwest waterfront: proposed land uses and functions at the northern end of the Washington Channel include a public plaza, hotel, retail shops, offices, residential dwellings and parking.
- ◆ Removal of Water Street and reconstruction of Maine Avenue as an urban boulevard.
- ◆ National Children's Museum: the museum is proposed for the open plaza area in front of the L'Enfant Plaza Hotel and above the L'Enfant Plaza Promenade Shops.

Additional planned development outside of the study area that may generate additional traffic through the study area includes:

- ◆ Redevelopment of the Waterside Mall property at M and 4th Streets.
- ◆ Washington Nationals Baseball Stadium at South Capitol and N Streets.
- ◆ U.S. DOT Headquarters and mixed use development at the Southeast Federal Center.

◆ Capper Carrollburg Hope VI housing development

In addition to the specific projects listed above, the Buzzard Point area between Fort McNair and South Capitol Street as well as the Near Southeast neighborhood adjacent to the proposed ballpark and Southeast Federal Center are poised for transformation from predominantly industrial uses to mixed commercial and residential uses.

4.15.2. Potential Impacts

The Proposed Action is not expected to contribute to cumulative impacts in the study area or surrounding areas. It would not dictate nor affect the pace of planned development projects, such as redevelopment along the Southwest waterfront. It is not anticipated to cause unplanned development largely because it would not provide capacity enhancements to L’Enfant Promenade and because development within the entire area surrounding the project site is highly controlled by a number of federal and local agencies. There will be no increase in the traffic-carrying capacity of L’Enfant Promenade, Banneker Park or adjacent streets or other environmental or community impacts. While the ITC will generate private vehicle and tour bus trips to the study area, it will increase the parking capacity in the area and remove those vehicles from neighborhood streets and may serve to mitigate the transportation impacts of other developments proposed for the study area and vicinity compared to the No Build alternative.

The L’Enfant Promenade and Banneker Park improvements are an important element of the District’s transportation, land use and economic revitalization plans for the study area. Realization of those plans is projected to provide benefit the District economically through increased property values, increased tax revenue from businesses located in redeveloped areas and increased tourist visitation.

4.16. IMPACT SUMMARY

The environmental impacts associated with each of the alternatives evaluated are summarized in Table 4-12.

4.17. MITIGATION MEASURES AND REQUIRED PERMITS

Mitigation measures that would be incorporated during the construction, operation and maintenance of the selected alternative(s) are summarized in Table 4-13 for those resource areas where there is the potential for adverse impact. Permits that would be required to construct or operate the selected alternative(s) are listed in Table 4-14.

TABLE 4-12: Summary of Impacts

ENVIRONMENTAL RESOURCE	NO BUILD ALTERNATIVE	PROPOSED ACTION
Land Use and Zoning	No change in land use or zoning	Parking land use added to Banneker Park Implements AWI Framework Plan vision for the Banneker Park site, District Long-range Transportation Plan strategy and Comprehensive Plan policy
Socio-economic and Community Features	Minor positive economic impact from construction-related spending No direct, long-term impacts	Minor positive economic impact from construction-related spending Direct, long-term economic benefit from ITC parking revenue
Environmental Justice	No impact	No impact
Historic and Cultural Resources	No impact	No adverse impact
Aesthetics and Visual Resources	No impact	Positive impact
Parkland	No impact	Positive impact
Hydrology and Water Resources	No impact	No adverse impacts
Topographic and Geologic Resources	No impact	Banneker Park landform will be modified No adverse impact
Transportation and Traffic	No impact	Short-term increase in roadway traffic and closures/detours during construction Intersection modifications and signal optimization improve future traffic operations at most study area intersections Improves pedestrian and bicycle circulation on L'Enfant Promenade and in Banneker Park
Air Quality	No impact	Minor increase in air emissions during construction No long-term impacts
Noise	No impact	Minor noise increases during construction No long-term impacts
Utilities	No impact	L'Enfant Promenade elevator and lighting require connection to electrical system ITC requires connection to electrical, sanitary sewer, water and storm sewer systems Site drainage requires connection to storm sewer system
Hazardous Waste	No impact	Lead paint removal and disposal required for Promenade bridge rehabilitation
Cumulative Impacts	No impact	May contribute to cumulative economic benefit to the District in conjunction with Southwest waterfront redevelopment

TABLE 4-13: Mitigation Measures

ENVIRONMENTAL RESOURCE	PROPOSED ACTION	
PARKLAND	Construction	N/A
	Operations & Maintenance	The ITC would be designed and constructed partially below grade and recessed into the hillside to minimize its size and visual appearance The public staircase and other improvements would improve pedestrian and bicycle access in Banneker Park
HYDROLOGY AND WATER RESOURCES	Construction	Stormwater management, sedimentation and erosion control plans would be developed and approved before construction begins. Best management practices would be used during construction.
	Operations & Maintenance	Low impact development measures would be incorporated where possible to control stormwater runoff The ITC would be equipped with pumps in case of flooding
TOPOGRAPHIC AND GEOLOGIC RESOURCES	Construction	Land-disturbing activities would comply with the District Soil Erosion and Sediment Control program requirements and best management practices would be used during construction. Proximity of existing structures would be taken into account when designing the foundation system and choosing an excavation method for the ITC. Measures would be taken to protect existing structures/foundations during excavation.
	Operations & Maintenance	N/A
TRANSPORTATION AND TRAFFIC	Construction	Access to all L'Enfant Promenade buildings will be maintained during construction. Maintenance of traffic measures and construction staging would be developed that minimizes impacts to existing traffic, roadways and sidewalks and allows them to be as functional as possible.
	Operations & Maintenance	Expand Maine Avenue to three (3) full travel lanes in each direction to accommodate future traffic volumes Optimize all traffic signals for better progression and increase traffic signal cycle lengths Add a mid-block pedestrian crosswalk on Maine Avenue and traffic signal with dedicated pedestrian phase, crosswalk treatments such as textured pavements, and appropriate signage to inform drivers of pedestrian crossing. The following improvements result in improved operations at most study area intersections: <ul style="list-style-type: none"> » Reconfigure the northbound lanes at the Independence Avenue & 12th Street to one left, one shared left-through, and one shared through-right lanes » Simplify intersections at I-395, 9th Street, G Street, and Banneker Circle into one (1) unsignalized intersection » Use the eastbound parking lane at the 12th Street & C Street intersection as a travel lane during rush hours, and use appropriate signage where needed » Roadway connection maintained between L'Enfant Promenade, Banneker Park and 9th Street

ENVIRONMENTAL RESOURCE		PROPOSED ACTION
Air Quality	Construction	Dust-suppression measures would be used during construction to mitigate fugitive dust emissions Maintenance of traffic measures would be implemented that limit disruption to traffic, especially during peak travel periods, to minimize congestion and related vehicle emissions.
	Operations & Maintenance	A ventilation system would be installed to maintain air quality within the ITC at safe levels.
Noise	Construction	Mitigation measures would be utilized during construction to minimize noise impacts. Construction activities will comply with the District noise regulations
	Operations & Maintenance	N/A
Hazardous Waste	Construction	Phase II Environmental Site Assessment would be completed prior to construction Lead paint removal would comply with the requirements of the DC Lead Based Paint Management program the DC Lead Based Paint Abatement and Control Act
	Operations & Maintenance	N/A

TABLE 4-14: Permit and Regulatory Review Requirements

PERMIT/APPROVAL	ACTION	AGENCY
Design review	Design plans for L'Enfant Promenade and/or Banneker Park improvements	U.S. Commission of Fine Arts and National Capital Planning Commission
Building/construction permit	Construction of L'Enfant Promenade and/or Banneker Park improvements	DC Department of Consumer and Regulatory Affairs (DCRA)*
Public Space Permit	Use or occupancy of the public right-of-way	District Department of Transportation
Temporary Discharge Authorization Permit	Discharging groundwater (e.g., construction/dewatering projects, groundwater remediation systems, etc.) to the public sewer system	DC Water and Sewer Authority (DC WASA)
Fire Hydrant Use Permit	Use of a fire hydrant for construction, demolition, dust control or for any other purpose	DC WASA
Certificate of Water and Sewer Availability	New facilities connected to water and/or sewer system	DC WASA
Sheeting and Shoring Permit	Construction of new sewer lines	DC WASA
Non-point Source Permit	Construction of and discharges to new stormwater management facilities	DC Department of Health
NPDES Construction General Permit	Stormwater runoff from construction sites	U.S. Environmental Protection Agency
Water Quality Certification (Section 401 Permit)	Stormwater discharges associated with the construction or operation of the proposed improvements.	DC Department of Health
Lead-based paint abatement permit	Removal of lead-based paint from L'Enfant Promenade bridge structures	DC Department of Health

*Permit applications and submissions are made through the DCRA Permit Service Center, who circulates the application to the District agency with review/approval responsibilities.

4.18. RELATIONSHIP OF SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The implementation of the Proposed Action would require a short-term investment of construction dollars and materials. In the long-term, maintenance and public safety deficiencies associated with the L'Enfant Promenade bridge structures will be corrected, pedestrian and bicycle circulation between the National Mall and Southwest waterfront will be improved, and the aesthetic quality of L'Enfant Promenade and Benjamin Banneker Park will be enhanced. Implementation of the ITC would also expand District visitor and tour bus parking facilities.

DDOT or another District agency would be responsible for maintenance and operation of the ITC; maintenance and operating costs would be offset by parking revenue generated by the facility's operations. The facility would also require security measures to ensure the safety of visitors and other users such as lighting and signage, security personnel/patrols and security equipment (e.g., locks, gates, surveillance cameras, etc.).

4.19. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The implementation of the Proposed Action would result in the irreversible and irretrievable commitments of federal and/or District funds by DDOT for the planning, design, and construction of the proposed improvements. Additional funds would need to be committed for the ongoing operation and maintenance of the proposed improvements. Resources in the form of construction materials and labor, fuels and other energy sources for vehicles and equipment also would be committed with the implementation of the Proposed Action. While the existing park and open space use of Benjamin Banneker Park will remain, a parking use will be added to the site as represented by the ITC.

The District economy, visitors and residents will benefit from the commitments of resources for the implementation of the Proposed Action through parking revenues, increased visitation in the study area and visitor spending at area businesses, increased property values, enhanced neighborhood quality as a result of the reduction in tour bus and visitor vehicle traffic, noise and exhaust emissions on neighborhood streets and aesthetic and safety improvements.

5. PUBLIC INVOLVEMENT

5.1. PUBLIC MEETINGS AND INPUT

Public involvement and input has been a component of the L'Enfant Promenade and Banneker Park rehabilitation planning process from the initial Urban Planning Study phase. Two public information meetings were held during the Urban Planning Study phase, in January and March 2003 to solicit ideas for improvements to L'Enfant Promenade and Banneker Park from residents and other interested parties and to present the recommendations of the Urban Planning Study.

A public meeting was held at the time of the initiation of this EA, in July 2003, for scoping purposes, to generate public interest and receive comments from local residents and members of the general public regarding preferences for improvement alternatives. Public meetings were advertised in advance in *The Washington Post*. The July 2003 meeting was also advertised in the *Southwester* community newspaper published by the Southwest Neighborhood Assembly, a private, non-profit citizens organization in southwest DC. A notice was mailed prior to the meeting to the individuals, agencies, or organizations on the project's mailing list, developed based on the list used for the Anacostia Waterfront Initiative. Names were also added at DDOT or stakeholder request throughout the planning process. The meeting was held in an open-house format with no formal presentation.

Property owners within the study area, neighborhood organizations, local bicycle and pedestrian advocacy organizations, and other community organizations as identified by FHWA and/or DDOT, were contacted, by letter inquiry, to inform them of the initiation of the EA, solicit input, and to assess interest in the outcome of the investigations. Project team members also provided information about the rehabilitation options to local residents at two meetings (January 2003 and August 2003) of the Southwest Neighborhood Assembly. Additionally, FHWA and DDOT have made information on the proposed improvements and alternatives available through the distribution of newsletters and on their respective web sites on the Internet.

Verbal comments from attendees at the various public meetings and presentations as well as written comments received included requests for the following improvements and amenities as part of the Promenade and Banneker Park rehabilitation plans:

- ◆ Bicycle path along the Promenade
- ◆ Improved lighting
- ◆ Better accommodation of pedestrians by widening sidewalks, adding crosswalks (especially on the I-395 Bridge), and repairing loose and uneven pavement
- ◆ Improved maintenance of the Promenade (snow and ice removal, litter pickup, and repairs to paving, lighting and other facilities)
- ◆ Addition of landscaping (trees or shrubs)

- ◆ Re-establishment of views to the Mall by eliminating the center section of the Forrester Building
- ◆ Improved pedestrian connections from Banneker Park to Maine Avenue
- ◆ Addition of a crosswalk on Maine Avenue, at the bottom of the proposed Banneker Park public stairway
- ◆ Maximizing the amount of parking at a Banneker Park ITC

Other comments supported retaining all or parts of the current Promenade and Banneker Park design, including:

- ◆ Retaining on-street parking along the Promenade
- ◆ Avoiding the addition of publicly accessible elevators to the Promenade and/or Banneker Park (thought to be an invitation to vandalism and crime)
- ◆ Preserving Banneker Park as it currently exists

Of meeting attendees and others who expressed a preference for a specific L'Enfant Promenade or Banneker Park design alternative, opinion was about evenly split between those who preferred the narrow median option with a Maryland Avenue roundabout and those who wished the existing median width would be retained. Opinion was also about evenly split between those who supported the construction of the ITC at Banneker Park and those who preferred the construction of a pedestrian stairway or ramp connection only. All of those supporting the ITC indicated a preference for a parking facility built below-grade or underground. Those opposing the construction of the ITC expressed concern that it would greatly increase traffic congestion in the vicinity of Banneker Park, especially at the intersections of 7th Street and 9th Street with Maine Avenue.

This EA will be made available for review to the interested and affected public, including affected agencies and tribes, for a minimum of 30 days. A public meeting is scheduled for April 2006 in Washington, DC. The purpose of the meeting is to inform the public of the actions that have taken place since the prior public meetings and to review the improvement alternatives evaluated by the FHWA and DDOT.

5.2. AGENCY COORDINATION

Consultation and coordination has occurred with a number of agencies and organizations having jurisdictional approval authority relative to proposed actions or having a vested interest in the project plans and decision process.

The following agencies and organizations were contacted, by letter inquiry, for information to assist in identifying important issues, developing alternatives, analyzing impacts and assessing interest in the outcome of the investigations.

- ◆ U.S. Department of Interior, National Park Service, National Capital Region
- ◆ Washington Interdependence Council
- ◆ U.S. Department of Transportation, Federal Highway Administration, DC Division Office
- ◆ U.S. Fish and Wildlife Service
- ◆ U.S. Environmental Protection Agency
- ◆ U.S. General Services Administration, Public Buildings Service, National Capital Region
- ◆ National Capital Planning Commission
- ◆ Metropolitan Washington Council of Governments
- ◆ District of Columbia, State Historic Preservation Office
- ◆ District of Columbia, Office of Planning
- ◆ District of Columbia, Department of Parks and Recreation
- ◆ District of Columbia, Department of Health
- ◆ District of Columbia, Department of Consumer and Regulatory Affairs
- ◆ District of Columbia Department of Housing and Community Development
- ◆ District of Columbia Office of Local Business Development
- ◆ District of Columbia Water and Sewer Authority
- ◆ The Honorable Sharon Ambrose, Ward 6 Councilmember
- ◆ The Honorable Jack Evans, Ward 2 Councilmember
- ◆ ANC Representatives Ward 6D
- ◆ ANC Representatives Ward 2C
- ◆ Virginia Railway Express
- ◆ Washington Metropolitan Area Transit Authority
- ◆ Redevelopment Land Agency Revitalization Corporation
- ◆ National Capitol Revitalization Corporation

Replies to scoping letters were received from the following agencies. Their comments have been addressed, where applicable, in the EA.

- ◆ U.S. Fish and Wildlife Service
- ◆ District of Columbia Department of Parks and Recreation
- ◆ District of Columbia Water and Sewer Authority
- ◆ District of Columbia State Historic Preservation Office
- ◆ Metropolitan Washington Council of Governments
- ◆ Virginia Railway Express

Finally, meetings were held throughout the alternatives development and evaluation process with representatives of the organizations listed below, to keep them informed of the planning and preliminary engineering progress and solicit informal comments on the various improvement alternatives.

- ◆ U.S. Department of Interior, National Park Service, National Capital Region
- ◆ Washington Interdependence Council
- ◆ U.S. Department of Transportation, Federal Highway Administration, DC Division Office
- ◆ National Capital Planning Commission
- ◆ District of Columbia, Office of Planning
- ◆ U.S. Department of Energy

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7. REFERENCES

_____. National Historic Landmark Nomination: The Plan of the City of Washington. Date unknown.

District of Columbia Convention and Tourism Corporation and Travel Industry Association of America. 2003 Visitor Statistics Press Briefing. Washington, DC. June 8, 2004.

District of Columbia Department of Employment Services, Office of Labor Market Research. Wage and Salary Employment by Industry and Place of Work. December 2004.

District of Columbia Department of Housing and Community Development. The Economic Resurgence of Washington, DC: Citizens Plan for Prosperity in the 21st Century. November 1998.

Parsons Brinckerhoff Quade and Douglas, Inc. Draft Architectural/Historic Resources Preliminary National Register Eligibility Assessment, Proposed South Capitol Street Corridor Improvements. February 2005.

Volpe National Transportations Systems Center. District of Columbia Tour Bus Management Initiative Final Report. October 2003.