
PROPOSED DWIGHT D. EISENHOWER MEMORIAL SITE SELECTION ENVIRONMENTAL ASSESSMENT

Washington, D.C.



Responsible Federal Agency:



NATIONAL PARK SERVICE

Prepared in Association With:



**DWIGHT D. EISENHOWER
MEMORIAL COMMISSION**

JUNE 2006

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Prepared in association with:
Dwight D. Eisenhower Memorial Commission (EMC)

Cooperating Agencies:
National Capital Planning Commission (NCPC)
General Services Administration (GSA)

Abstract:

The National Park Service and the Dwight D. Eisenhower Memorial Commission have prepared an Environmental Assessment (EA) for the establishment of a national memorial to Dwight D. Eisenhower on the preferred site of Maryland Avenue, SW at Independence Avenue between 4th and 6th Streets, SW near the U.S. Capitol in Washington, D.C. This EA identifies the potential impacts associated with the Proposed Alternative, the development of the preferred site of the Eisenhower Memorial (not yet designed), together with a No Action Alternative. Recommended mitigation measures are provided for the Proposed Alternative. The NPS has prepared this EA consistent with the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality (CEQ) regulations implementing NEPA [40 Code of Federal Regulations (CFR) 1500-1508 (1986)], as amended, National Park Service (NPS) Director's Order #12 (DO-12), and Public Law (PL) 99-652 (the Commemorative Works Act of 1986), PL 106-79, and PL 107-117. In conjunction with this EA, this proposed memorial is undergoing a review of potential effects on historic resources consistent with Section 106 of the National Historic Preservation Act (NHPA). The current status of the ongoing Section 106 consultation process is summarized in this EA.

Send direct comments on the EA to:

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PEPC: <http://parkplanning.nps.gov/nama>

JUNE 2006



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SECTION 1.0



PURPOSE AND NEED

1.0 PURPOSE AND NEED FOR PROPOSED ACTION

1.1 Introduction

The National Park Service (NPS) and the Eisenhower Memorial Commission (EMC) propose to establish a national memorial to Dwight D. Eisenhower on a site located at Maryland and Independence Avenues in southwest Washington, D.C. (see Figure 1-1). The EMC, created in October 1999 by Public Law (PL) 106-79, is charged with memorializing Dwight D. Eisenhower's military achievements, Presidential accomplishments, and lifetime of public service.

The preferred site is bounded by Independence Avenue to the north, 4th Street to the east, the U.S. Department of Education (DoEd) Building to the south, and 6th Street to the west (see Figure 1-2). The site is bisected by an altered segment of Maryland Avenue, which extends diagonally from Independence Avenue to 6th Street. The site is located south of the National Mall, and in proximity to the U.S. Capitol Building, which is approximately four blocks to the east.

According to the Commission's authorizing legislation (PL 106-79), the proposed memorial is to be "*an appropriate permanent memorial to Dwight D. Eisenhower to perpetuate his memory and his contributions to the United States,*" and that the "*Commission shall consider and formulate plans for such a permanent memorial to Dwight D. Eisenhower, including its nature design, construction and location.*" The Commission was authorized to establish the memorial on January 10, 2002 upon enactment of Public Law 107-117, Section 8120.

The memorial's location "*within Area I as depicted on the map referred to in section 8908(a) of title 40*" was approved upon the enactment of Public Law 109-220 on May 5, 2006. The NPS, in association with the EMC, has prepared this EA consistent with the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality (CEQ) regulations implementing NEPA [40 Code of Federal Regulations (CFR) 1500-1508 (1986)], as amended, and National Park Service (NPS) Director's Order #12 (DO-12).

The establishment of the Eisenhower Memorial on the preferred site is the subject of this environmental assessment (EA). The NPS is the lead federal agency responsible for this EA's preparation. The National Capital Planning Commission (NCPC) and the General Services Administration (GSA) are cooperating agencies, which are requested or designated by the lead agency. In conjunction with this EA, this project is undergoing a review of potential effects on historic resources consistent with Section 106 of the National Historic Preservation Act (NHPA) of 1966.

This EA identifies the affected environment, potential impacts, and recommended mitigation measures resulting from the implementation of the proposed action, including short-term construction impacts and long-term operational effects. The primary study area for identifying potential environmental impacts in an urban setting is generally within a two-block radius of the preferred site. The urban setting can change dramatically within two blocks, thus, this is the standard of analysis in assessing environmental impacts. However, the study area may vary in size for each resource discipline, depending upon the potential for a specific impact to affect a given geographic area. For instance, potential effects on visual resources will consider distant vistas that may exceed one mile.

Figure 1-1
Project Location Map



Source: EDAW, 2006

Figure 1-2
Preferred Site and Surrounding Area



Source: EDAW, 2006

1.2 Project Background

Local memorials to Eisenhower have been established throughout the country and the world, including schools, roads, bridges, hospitals, and parks named in his honor. However, the need for a permanent national memorial to Eisenhower in Washington, D.C. still exists, 45 years after he left office in 1961, and 37 years since his death in 1969.

In November 1986, Public Law (PL) 99-652, the Commemorative Works Act of 1986, was enacted and found that, “*No commemorative work may be established on Federal lands administered by the National Park Service and the General Services Administration in the District of Columbia and its environs unless specifically authorized by an Act of Congress.*” The purposes of the Act were “*to preserve the integrity of the comprehensive design of the L’Enfant and McMillan Plans, ensure the continued public use and enjoyment of open space in the District...and to ensure that future commemorative works in areas administered by the NPS and GSA in the District of Columbia and its environs (1) are appropriately designed, constructed, and located and (2) reflect a consensus of the lasting national significance of the subjects involved.*” This Act further established the National

Capital Memorial Advisory Commission to “*advise the Secretary of the Interior and the Administrator of GSA, on proposals to establish commemorative works in the District.*” It provided a map depicting two areas (I and II) for location of commemorative work, where Area I is reserved for commemorative work of “**preeminent historical and lasting significance to the Nation.**”

Enabling Legislation

In October 1999, Congress enacted PL106-79, where it found that, “*The people of the United States feel a deep debt of gratitude to Dwight D. Eisenhower, who served as Supreme Commander of the Allied Forces in Europe in World War II and subsequently as 34th President of the United States; and an appropriate permanent memorial to Dwight D. Eisenhower should be created to perpetuate his memory and his contributions to the United States.*” In the law, Congress created the Dwight D. Eisenhower Memorial Commission to lead the effort for establishing such a permanent national memorial. The EMC consists of 12 members: four U.S. Senators, four U.S. Congressmen, and four Presidential Appointees



In 2002, Congress enacted Public Law 107-117, which further found that the Commission ***“may establish a permanent memorial to Dwight D. Eisenhower on land under the jurisdiction of the Secretary of the Interior in the District of Columbia or its environs.”***

In April 2006, Congress enacted Public Law 109-220, noting that, *“the location of the commemorative work to honor Dwight D. Eisenhower, authorized by section 8162 of the Department of Defense Appropriations Act, 2000 (40 U.S.C. 8903 note), within Area I as depicted on the map referred to in section 8908(a) of title 40, United States Code, is approved.”*

Project Approvals

The EMC conducted a site selection process of 26 potential sites and identified the preferred site, across Independence Avenue from the National Air and Space Museum (NASM) and the National Mall, as its preferred location for the memorial. The National Capital Memorial Advisory Commission gave their approval to the preferred site on November 8, 2005, pending the outcome of Area I legislation. As part of the overall project process, including site selection and design, approvals and concurrence will be sought from federal and district agencies as required, including:

- U.S. Department of the Interior- National Park Service
- General Services Administration
- U.S. Commission of Fine Arts
- National Capital Planning Commission
- Advisory Council on Historic Preservation
- District of Columbia State Historic Preservation Office
- District of Columbia Department of Transportation

Physical Memorial and Living Legacy

The EMC has resolved that the commemoration of Dwight D. Eisenhower will combine two elements: a physical memorial and a living legacy. The physical memorial would include a tangible manifestation of Eisenhower’s accomplishments and is the subject of this document. The character and location of the living legacy has yet to be determined. A living legacy could exist with or without a distinct physical structure, but could perpetuate the legacy of a president through ongoing policies or programs. These could consist of an organization or program that would not be located on the memorial site, but near the memorial in occupiable space that is under the jurisdiction of another agency (non-NPS).



1.3 Purpose and Need for the Proposed Action

The purpose of the proposed action is to establish a national memorial for Dwight D. Eisenhower in a place of prominence in Washington, D.C. The purpose of the memorial is to “*reflect his unique contributions to America as a patriot and hero; lifelong public servant; outstanding military officer; and beloved President*” (EMC, 2005).

The proposed action is needed due to the significance of Dwight D. Eisenhower and the lack of a national memorial to him. Eisenhower served as the 34th President of the United States, and he ranks as one of the preeminent figures in global history from the twentieth century.



Eisenhower with Winston Churchill in France, March 1945 (Eisenhower Library)

Eisenhower was a central figure in the victorious resolution of World War II, but his lasting significance in history lies in his deep commitment to freedom, the Constitution and democracy, and his contributions to defining and sustaining an international peace for which many Americans died (EMC, 2005).



Eisenhower with the 101st Airborne Division in England, June 5, 1944

Dwight D. Eisenhower’s life of public service was built around certain basic values that he shared with most Americans. Central to his thought and his public image was a powerful dedication to democracy, and a belief in the right of the people to choose their own government and to judge the policies and the leaders who implemented the nation’s public programs (EMC, 2006).

1.4 Relevance of Eisenhower to the Preferred Site

The preferred site for the national memorial to Eisenhower bears a close and unique relationship to his lengthy career of public service. The legacy of Eisenhower has specific thematic relationships with federal entities and museums that adjoin the Maryland Avenue site, including the U.S. Capitol, DoEd, Department of Health and Human Services, NASM, Federal Aviation Administration, and Voice of America (see Figure 1-3).

Thematic Context

- *U.S. Capitol* – Eisenhower created and maintained close-working relationships with the leadership of both parties who gave him the support needed to govern effectively.
- *U.S. Department of Education (DoEd)* – Eisenhower was responsible for the first breakthroughs on direct federal aid to education and the National Defense Education Act; he started federal student grant/loan programs, graduate fellowships, and grants to improve public school instruction in mathematics, science, and modern languages.
- *U.S. Department of Health and Human Services (HHS) Building* – When the Department of Health, Education, and Welfare (predecessor to HHS) was formed, President Eisenhower appointed Mrs. Oveta Culpa Hobby as its first Secretary. She led the effort to pass Eisenhower's Social Security legislation in 1954, the largest single expansion of Social Security.
- *National Air and Space Museum* – Eisenhower led the effort to create the U.S. Air Force while Chief of Staff of the Army, and he strongly supported aircraft development. He

signed legislation and supported development of the Air Force Academy, and he was the driving force in creating the National Aeronautics and Space Administration.

- *U.S. Department of Transportation* – Eisenhower worked with Congress to create the Interstate Highway System, and he actively promoted airport development with the establishment of the Federal Aviation Administration. He had a personal hand in selecting the site of Washington Dulles International Airport, the first U.S. international airport.
- *Voice of America (VOA)* – Eisenhower established the U.S. Information Agency in 1953 with the Voice of America as its principal component.

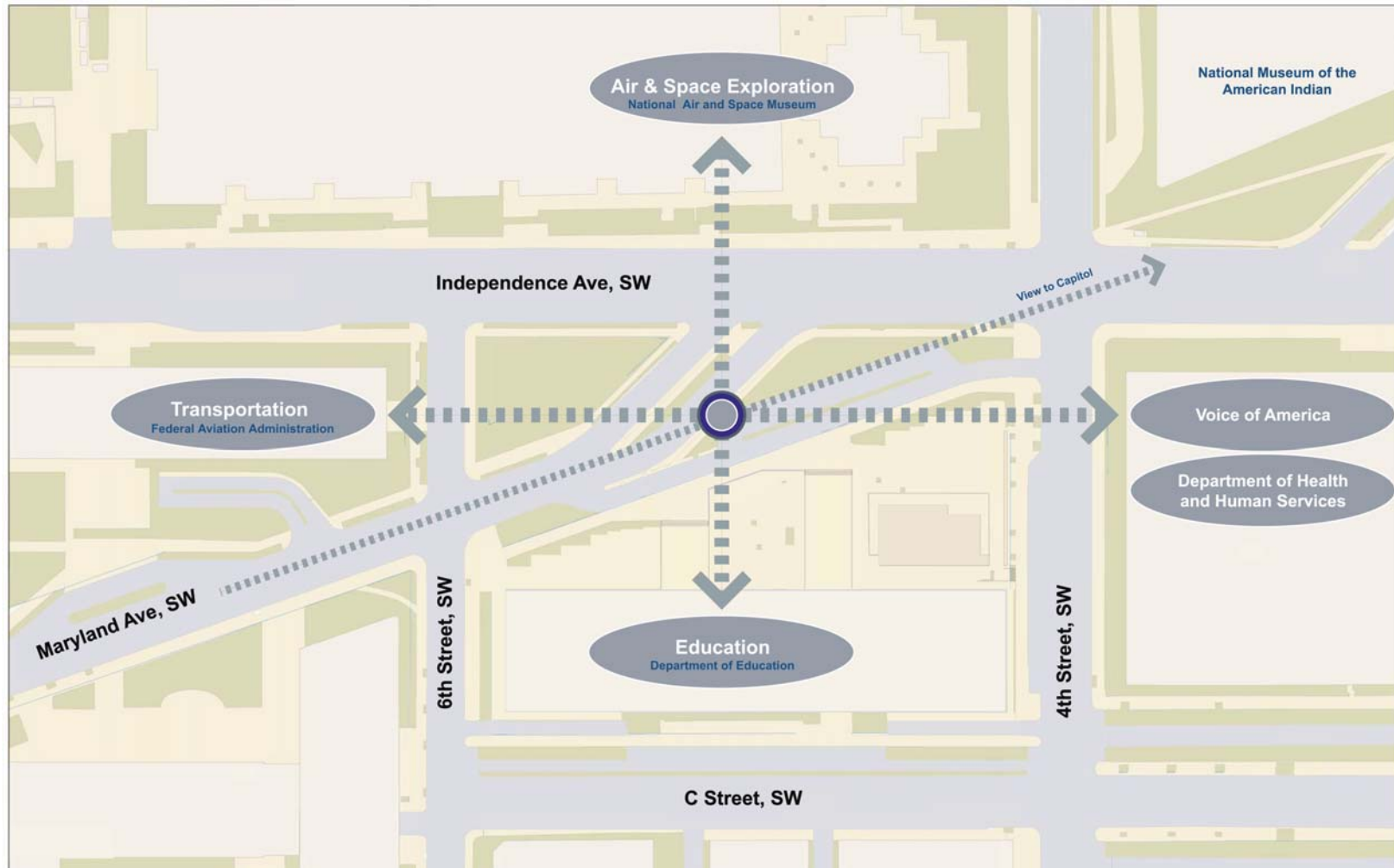
Themes of His Legacy

In addition to the thematic context of the preferred site, Eisenhower's career involved several important attributes and policies that served the Nation well, including cultivation of U.S. leadership, aviation, aerospace, and education.

U.S. Leadership

Passionately devoted to national security through alliances with other nations, President Eisenhower began his first administration when the Cold War's global challenges had gone beyond Europe. To win this war, President Eisenhower sought to contain the Soviet Union militarily while sustaining a prosperous economy and protecting the freedoms Americans cherished. He understood the political economy of warfare better than most of his contemporaries and realized

Figure 1-3
Thematic Context of the Preferred Site



Source: *The Eisenhower Commission, Gensler, 2006*

heavy military expenditures could undermine the nation itself. Knowing that nuclear war was un-winnable and a threat to civilization, President Eisenhower promoted the peaceful uses of atomic energy while deploying the most advanced electronic and photographic technologies available to ensure American security. He inaugurated the policies that guided the nation for the next three decades, leading to the peaceful end of the Cold War in 1989.



President Eisenhower and Nikita Khrushchev at Camp David in 1959

Eisenhower introduced lasting innovations to the institution of the Presidency, creating the first White House chief of staff, the first congressional relations office, the first presidential assistant for national security affairs, and the first presidential science advisor.

He guided the way to policies that dramatically improved the transportation infrastructure of the country with construction of the interstate highway system and the St. Lawrence Seaway. Alaska (January 3, 1959) and Hawaii (August 21, 1959) became states during his administration.

President Eisenhower also made important, although often unrecognized, contributions to the civil rights movement.

In 1956, President Eisenhower submitted to Congress the first Civil Rights bills proposed since Reconstruction. He also integrated the military, established the first regulations prohibiting racial discrimination in the federal workforce, and promoted integration in the Nation's Capital - Washington, D.C.



Eisenhower signs the Civil Rights Legislation in 1957 (Eisenhower Library)

Aviation

During his experience in the military and his two terms as President of the United States, Dwight D. Eisenhower realized the importance and practicality of aviation and aviation regulation. He replaced the Civil Aeronautics Administration (CAA) with the Federal Aviation Administration (FAA), making air travel safer for the people of the United States.

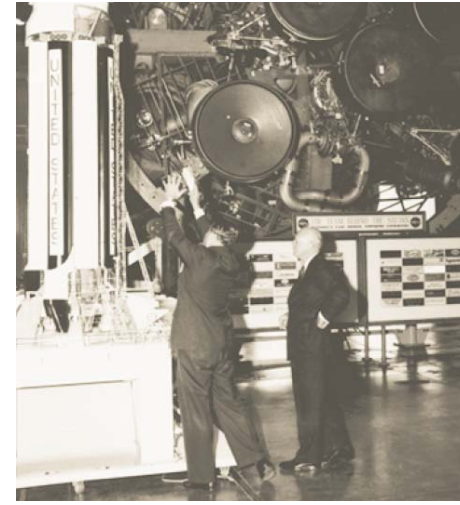
President Eisenhower initiated and was a driving force behind the development of Dulles International Airport, America's first commercial airport designed for jet-propelled aircraft. He established the helicopter as a key mode of Presidential travel, and he was the first President to travel by jet for official transport. He played an important role in creating the U.S. Air Force and was the first President to obtain a pilot's license.

Aerospace

During a lifetime of public service, and especially during his two Presidential terms, Dwight D. Eisenhower supported America's leadership in space flight in very important ways. As early as 1954, Eisenhower established a long-term American military strategy based upon the use of aerial reconnaissance by aircraft and later by spacecraft. He proposed the creation of the National Aeronautics and Space Administration (NASA) and signed the establishing legislation.

He supported the construction of a large new building for the National Air Museum, which evolved into today's National Air and Space Museum, supported the creation of the North American Aerospace Defense Command (NORAD) in 1958,

and established the National Reconnaissance Office (NRO) in the Defense Department to coordinate aerospace surveillance.



Eisenhower tours the NASA Space Flight Center Huntsville, Alabama

Education

Throughout his Presidency, Eisenhower made education a national priority. He established the Department of Health, Education, and Welfare in 1953, and he worked to eliminate segregation in public schools. He was a strong supporter of the National Defense Education Act (NDEA) of 1958 which revolutionized the federal role in both public and private education. While the primary purpose of NDEA was to advance the teaching of science, mathematics, and foreign languages, the legislation has promoted progress in other areas as well. In Eisenhower's honor, the U.S. Department of Education established its *Eisenhower National Clearinghouse for Mathematics and Science Education* in 1992.

1.5 Public Involvement and Agency Coordination

1.5.1 Public/Agency Coordination and Scoping

Scoping Process (NEPA-related)

As part of the preparation of this EA, the NPS has contacted appropriate government agencies, public organizations, and interested citizens. The purpose of the communications was to solicit comments on the proposed improvements, identify potential environmental concerns, and obtain other relevant information. Scoping input was obtained from the following agencies and organizations:

- National Capital Planning Commission (NCPC);
- The Commission of Fine Arts (CFA); and
- D.C. State Historic Preservation Office (DC SHPO).

In addition, a public scoping meeting was held on February 16, 2006 to convene the interested parties and generate further discussion of issues. The NPS and the EMC considered all scoping comments in the preparation of this EA.

Historic Preservation Consultation (NHPA-related)

The Mall and L'Enfant Plan are listed as historic resources in the National Register of Historic Places. As a result, a review of the project's potential effects on historic resources is being undertaken consistent with Section 106 of NHPA. The NPS and the EMC informally began the Section 106 consultation process in February, 2006 and formally initiated the 106 process in June, 2006. Consultation with NCPC, CFA, and the DC SHPO will

continue throughout the planning process and the subsequent design process.

1.5.2 Public/Agency Comments on the EA

Agencies and the public are encouraged to review and comment on the contents of this EA. The agencies, organizations, and individuals included on the notification list in Appendix 5.3 were notified by letter of the availability of the EA for review and comment. Copies of the EA are available for public review at the following locations:

- Martin Luther King, Jr. Memorial Library
901 G. Street, NW
Room 307 (3rd Floor)
Washington, D.C.
(Hours: 10:00 a.m. to 9:00 p.m., Monday – Thursday;
10:00 a.m. to 5:30 p.m., Friday – Saturday)
- National Park Service/ National Capital Region
1100 Ohio Drive, SW
Room 128
Washington, D.C.
(Hours: 8:00 a.m. to 3:00 p.m., Monday - Friday)
- National Capital Planning Commission Library
401 9th Street, NW
North Lobby, Suite 500
Washington, D.C.
(Hours: 9:00 a.m. to 4:00 p.m., Monday – Friday).

The EA is available for review and printing from the NPS Planning, Environmental, and Public Comment (PEPC) site at <http://parkplanning.nps.gov/nama>. Limited hard copies of the EA are available upon request from Glenn DeMarr (NPS) at (202) 619-7027. Comments on the EA must be submitted during the official 30-day comment period from June 16, 2006 to July 17, 2006.

1.6 Environmental Issues Considered

Several key issues were identified during the scoping process including:

- Visual quality due to the Maryland Avenue view corridor toward the U.S. Capitol, and the aesthetic sensitivity of the adjacent National Mall and surrounding monumental areas;
- Historic resources due to the historic importance of U.S. Capitol vistas, the Maryland Avenue corridor, the National Mall, and other L'Enfant Plan streets; and
- Visitation and visitor experience, including the potential need for NPS services such as maintenance and ranger presence, which are dependent on the volume of visitors.

Additional environmental issues were determined to require a more detailed analysis of potential impacts in this EA. These issues included land use, planning policies, community facilities, economic/fiscal resources, archaeological resources, historic resources, roadways, traffic, parking, transit systems, pedestrian/bicycle circulation, air quality, noise, surface water, stormwater, floodplains, wetlands, groundwater, soils, vegetation, wildlife, utilities, solid waste, and hazardous materials.

1.7 Cumulative Relationship of Nearby Projects

Ongoing and planned projects in the vicinity of the preferred site could result in cumulative construction and operational impacts when considered together with the effects of the proposed action. All of the following projects are scheduled for completion in the near-term (within approximately 1-3 years):

- GSA is currently conducting a physical “retrofit” effort of the plaza and façade of The DoEd building;
- NCPC is evaluating existing characteristics of the Monumental Core area and will be developing urban design recommendations as part of the Federal City Framework Plan;
- The NPS is preparing the National Mall Comprehensive Management Plan/Environmental Impact Statement, a 50-year vision for use and management of the National Mall and Pennsylvania Avenue National Historic Park;
- GSA is proposing to develop a conceptual “master plan” for urban improvements and perimeter security for four federal buildings at 3rd and C Streets, SW;
- The Maryland Avenue corridor has been proposed for revitalization by developers, a project that may include reestablishing Maryland Avenue, SW between the U.S. Capitol Building and the Tidal Basin;

- The NPS Visitor Transportation Study for the National Mall and surrounding NPS areas is assessing future visitor transportation by, for, or in partnership with the NPS to continue to provide quality interpretive transportation services to visitor sites;
- The Motor Carrier Threat Assessment Study is assessing the appropriate and safe freight routes in, out, and around the District of Columbia;
- The District of Columbia, in conjunction with NCPC, is addressing impacts and circulation issues associated with visitor tour bus traffic through its Tour Bus Management Initiative;
- The Smithsonian Institution buildings, and the U.S. Department of Agriculture Headquarters complex on the National Mall, are implementing permanent site perimeter security measures;
- The schematic design for the Public Space Renewal project at the National Museum of American History (NMAH) is currently underway. The renewal would include exterior security pavilions, building interior renovations, and site grounds improvements;
- The NPS and the Disabled Veterans' LIFE Memorial Foundation have proposed to establish a national memorial for disabled veterans at Washington Avenue and 2nd Street, SW, which would attract visitors to the area southeast of the National Mall;
- The Architect of the Capitol is expanding the U.S. Botanical Gardens located on 1st Street between Maryland Avenue and C Street, SW on the National Mall, across from the U.S. Capitol Building, by the development of the First Ladies Memorial Garden;
- Private developers have proposed the redevelopment of L'Enfant Plaza at 9th and D Streets, SW including construction in the Plaza of a new office building, and the National Children's Museum; and
- A new office building (The Portals) is nearing completion bounded by Maryland Avenue and D Street at 12th Street, SW.

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from the U.S. Capitol Building, by the development of the First Ladies Memorial Garden;

- Private developers have proposed the redevelopment of L'Enfant Plaza at 9th and D Streets, SW including construction in the Plaza of a new office building, and the National Children's Museum; and
- A new office building (The Portals) is nearing completion bounded by Maryland Avenue and D Street at 12th Street, SW.

SECTION 2.0



DESCRIPTION OF ALTERNATIVES

2.0 DESCRIPTION OF ALTERNATIVES

2.1 Introduction

This section describes the preferred site for the Eisenhower Memorial; summarizes the alternative site locations considered but eliminated by the Commission; describes the design objectives, constraints, and opportunities for developing the preferred site for the memorial; and defines the No Action Alternative. The impacts of the Proposed Alternative on the preferred site and surrounding areas will be assessed on the potential physical development of the site rather than a specific memorial design.

The Proposed Alternative is the establishment of the Eisenhower Memorial on the preferred site, including the potential conversion of the segment of Maryland Avenue on the site from vehicular traffic, the removal of surface structures on the site (e.g., pavement, gardens, exercise station, plaza) and the construction of an open, plaza-focused memorial to commemorate Dwight D. Eisenhower. This EA will focus on the potential design and programmatic alternatives associated with placing a memorial on the preferred site.

Although a design for the memorial has not been determined, it will be limited by the identified development constraints of the site as presented in Section 2.4 of this EA. The ultimate design will seek to emphasize the thematic context of the Eisenhower legacy, as defined in Chapter 1 of this EA. The formal design process for the memorial will be conducted subsequent to this environmental review process.

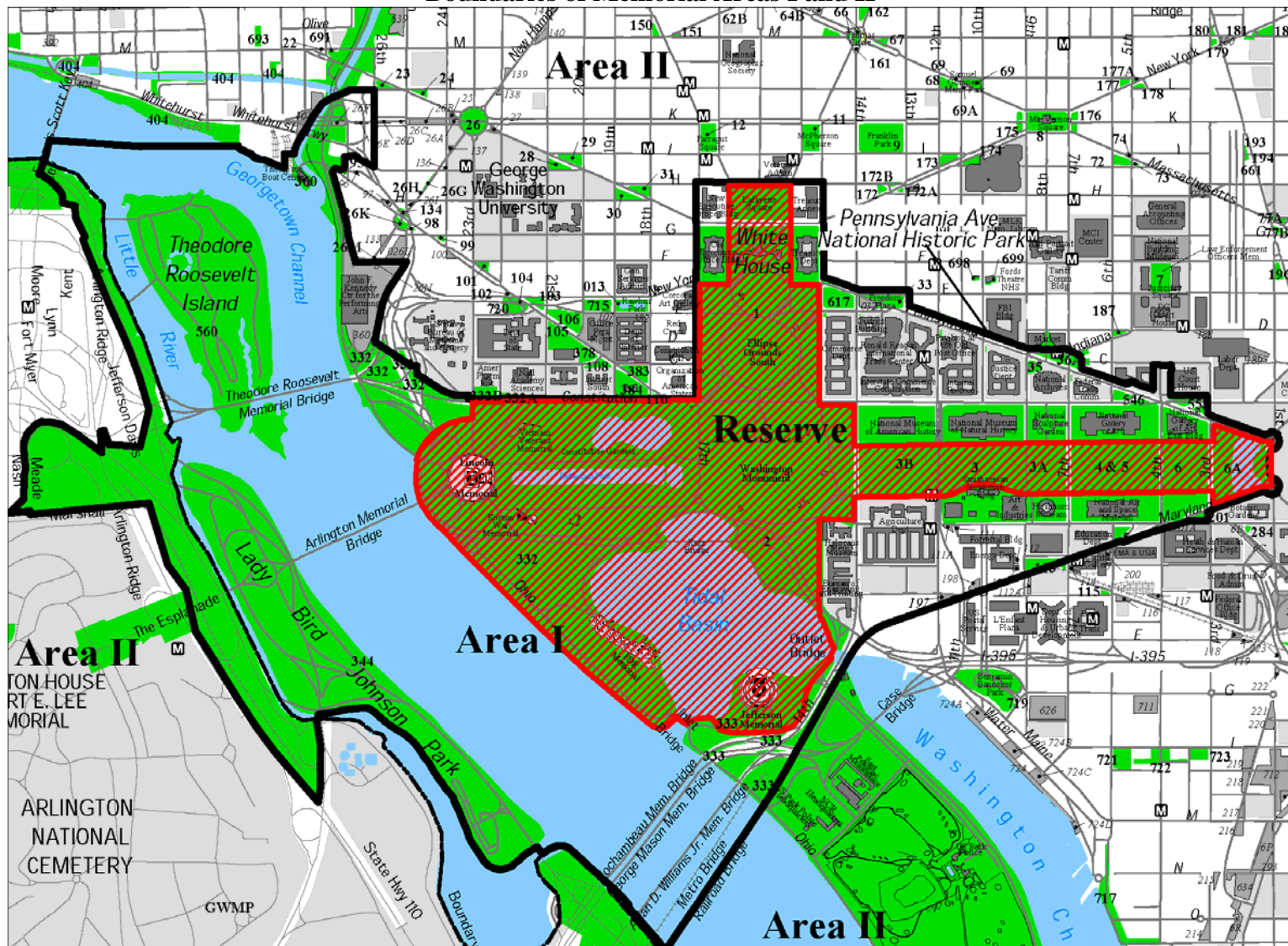
2.2 Background on the Preferred Site Selection

The Dwight D. Eisenhower Memorial Commission was created in 1999 by Public Law (PL) 106-79, Title VIII, Section 8162. This law authorized the Commission to consider and formulate plans for a memorial to Eisenhower in the District of Columbia pursuant to the Commemorative Works Act (Public Law 99-652 of 1986, as amended). PL 107-117, Title VIII, Section 8120, enacted January 10, 2002 authorized the Commission to establish the memorial “on land under the jurisdiction of the Secretary of the Interior in the District of Columbia or its environs.”

Memorial areas in the District of Columbia were delineated into Area I and II by PL 99-652 in 1986. The southern boundary of Area I (as shown in Figure 2-1) is located along Maryland Avenue. Therefore, the preferred site is partially located in Area I.

Area I is designated for memorials “of preeminent historical and lasting significance to the Nation”, and sites in Area I require additional Congressional actions. A recommendation to enable consideration of sites for the Eisenhower Memorial within Area I was provided to Congress on February 2, 2006. House Joint Resolution 78 and Senate Joint Resolution 28 were introduced to authorize the possible location of the memorial within Area I. On May 5, 2006, Public Law 109-220 was enacted, authorizing the Eisenhower Memorial to be located within Area I.

Figure 2-1
Boundaries of Memorial Areas I and II



Source: Public Law 108-126, Commemorative Works Clarification Act of 2003

Site Selection Criteria

The EMC conducted comprehensive comparisons of the locations, physical characteristics, and surroundings of the potential sites for the memorial based on a variety of criteria. The most important criteria were the site's prominence within the District and its accessibility to the public. Thus, the availability of public transportation and pedestrian access were key concerns of the Commission.

In addition to prominence and accessibility, a site's surroundings and thematic appropriateness were important factors. Eisenhower's distinctive life-long commitment to public service focused attention on sites located in proximity to the White House, the U.S. Capitol, areas of national significance with high annual visitor attendance, and relevant departments and agencies of the federal government.

The physical character of the site and the feasibility of site development were also contributing factors in the site review and selection process. Sites that were partially or fully occupied or had significant constraints reduced their feasibility for consideration.

Initial Sites Considered

The EMC worked with the National Park Service, National Capital Region in 2001-2002 to initially identify 24 potential sites in the District of Columbia. These sites were located within Area I, the central Monumental Core, and Area II, outside of the Core. The potential locations were also predominantly listed in NCPC's *Memorials and Museums Master Plan* as candidate sites for memorials. Two additional sites were alternately evaluated between 2002 and 2004 for a total of 26 sites considered and reviewed during a three-year

site selection process (see timeline on next page). The EMC documented its findings in the Commission's *Site Selection Report*, dated November 8, 2005, which is the referenced Appendix 5.4. The list of considered sites is provided in Table 2-1 and their locations are mapped in Figure 2-2. Further information on all of the sites, including those eliminated from further consideration, is provided with the document on the PEPC website at <http://parkplanning.nps.gov/nama>.

In March 2002, sites 9-24 of the original NPS list were eliminated from consideration, leaving eight original sites for consideration in addition to one of the two sites noted above. At that time, nine of the 26 sites (Sites 1-8 + Auditors Building) were recommended for further consideration including:

1. Maryland and Independence Avenues, SW
2. Freedom Plaza, NW
3. Constitution Gardens, NW
4. U.S. Park Police Stables, SW
5. 23rd Street and Constitution Avenue, NW
6. 1st / 3rd Streets, Pennsylvania/Constitution Avenues, NW
7. Constitution Avenue at 17th Street, NW
8. Inlet Bridge at West Potomac Park, SW

The Reserve, established in the 2003 Commemorative Works Clarification Act to prohibit new memorials from the central portion of the Mall, eliminated sites 3, 4, 5, 7, and 8 from consideration. Site 6 was eliminated separately due to its existing use by the Architect of the Capitol (AOC). By the Fall of 2004, the EMC was considering four sites: (1) Maryland Avenue and Independence Avenue between 4th and 6th Streets, SW; (2) Freedom Plaza, Pennsylvania Avenue between 13th and 14th Streets, NW; (3) The Auditors Building (Site #25), and (4) co-location with the United States Institute of Peace (USIP) (Site #26). The EMC further studied these sites in greater detail.

Timeline of Site Selection Process

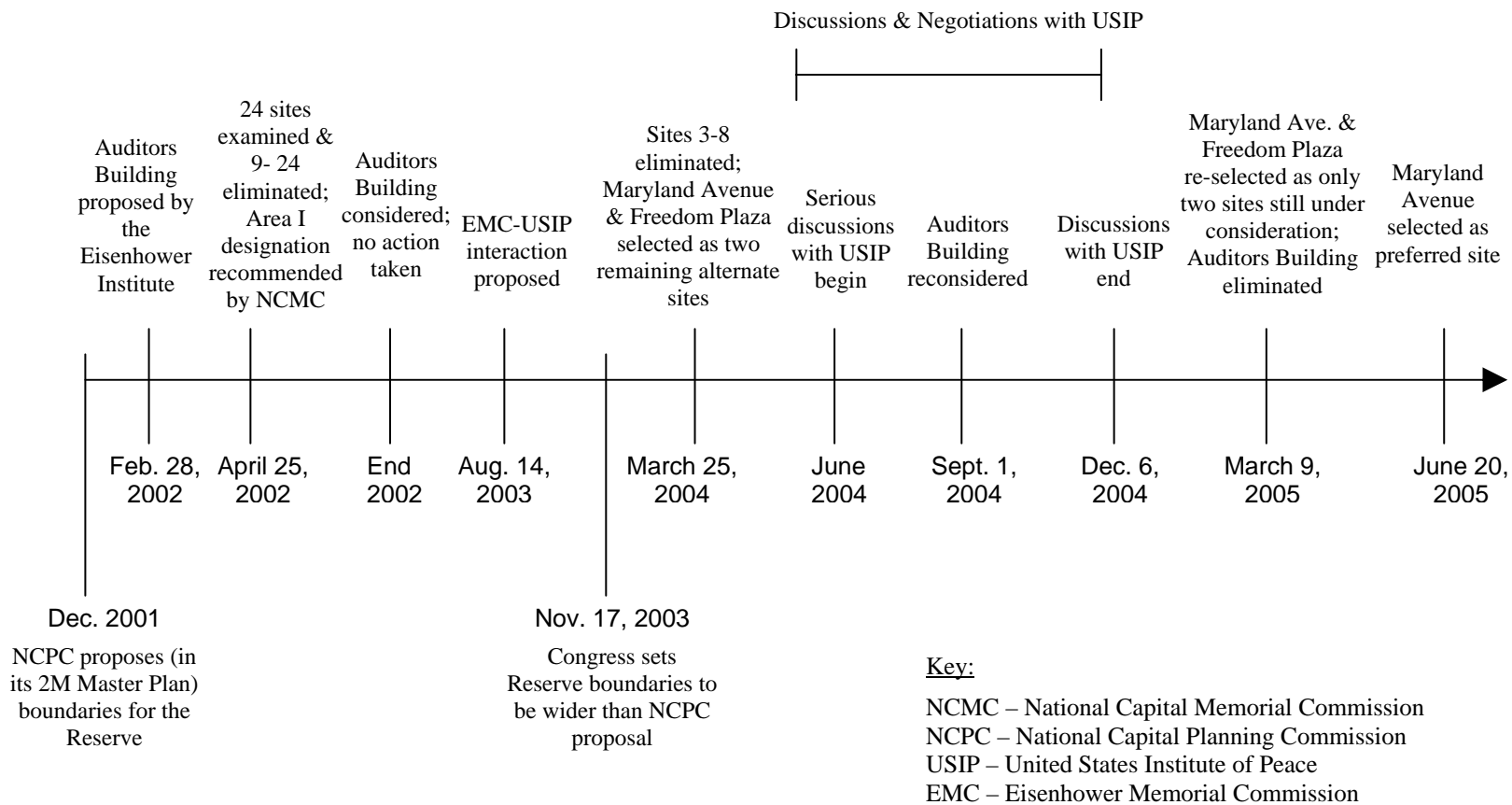
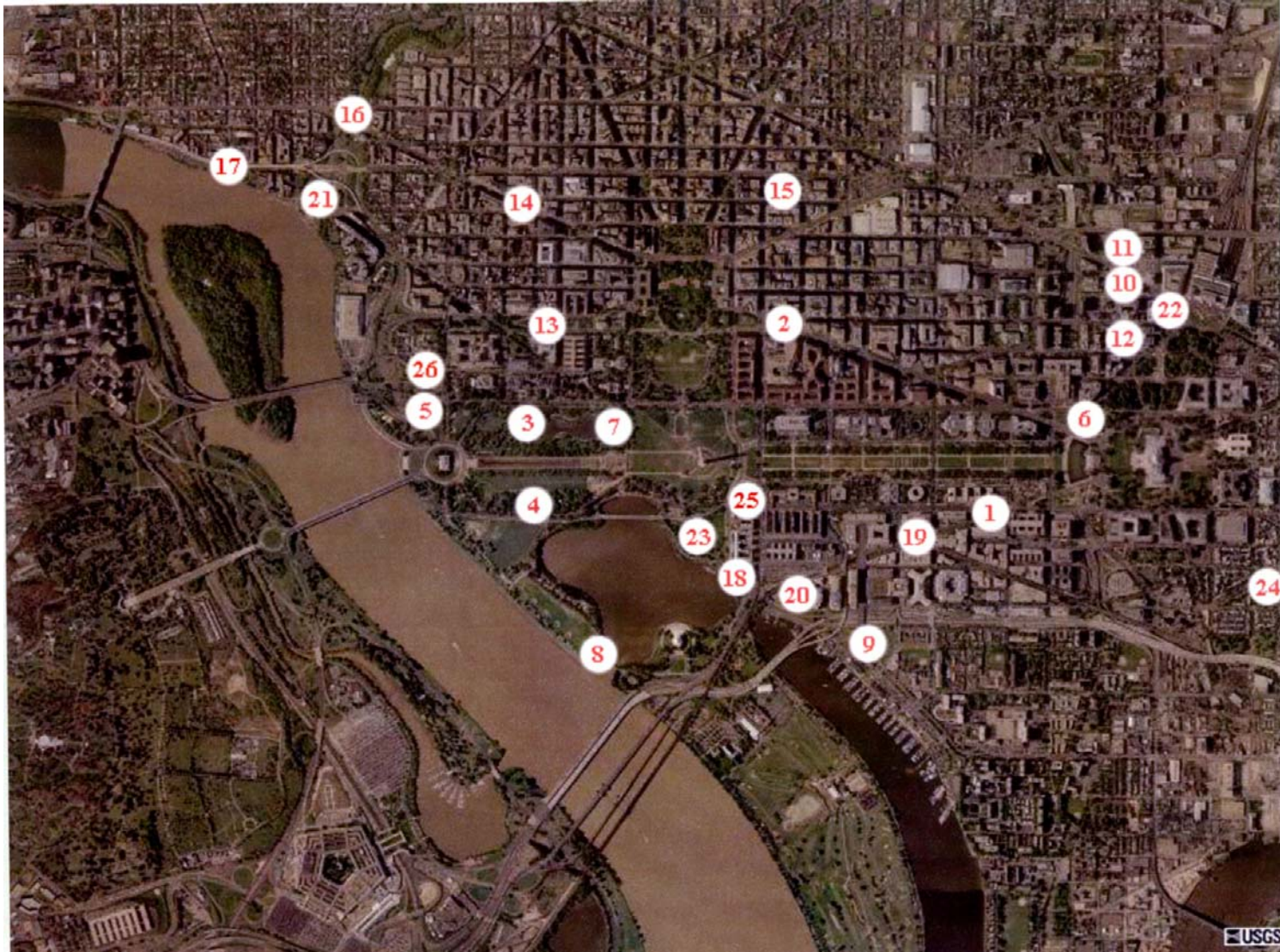


Table 2-1 Sites Considered for the Eisenhower Memorial

Site #	Location (see Figure 2-2)
1	Maryland and Independence Avenues, 4 th and 6 th Streets, SW
2	Freedom Plaza, Pennsylvania Avenue, 13 th and 14 th Streets, NW
3	Constitution Gardens, axis on 20 th Street, NW
4	South of Ash Road, off Independence Avenue, SW (U.S. Park Police Stables)
5	23 rd Street and Constitution Avenue at Rock Creek Parkway, NW
6	1 st and 3 rd Streets, Pennsylvania and Constitution Avenue, NW
7	Constitution Gardens, Constitution Avenue at 17 th Street, NW
8	Inlet Bridge at West Potomac Park, SW
9	10 th Street Overlook at the end of L'Enfant Promenade, SW
10	New Jersey and Massachusetts Avenues, 1 st and G Streets, NW
11	New Jersey and Massachusetts Avenues, 1 st and H Streets, NW
12	New Jersey Avenue, 1 st and E Streets, NW
13	Walt Whitman Park – E Street between 19 th and 20 th Streets, NW
14	James Monroe Park – Pennsylvania Avenue, 20 th and 21 st Streets, NW
15	Franklin Square – Eye and K Streets, 13 th and 14 th Streets, NW
16	M Street and Pennsylvania Avenue at 26 th Street, NW
17	Georgetown Waterfront Park
18	Tidal Basin off Maine Avenue, and 14 th Street, NW
19	Maryland and Virginia Avenues, 7 th and 9 th Streets, SW
20	Maryland Avenue, 12 th and 14 th Streets, SW
21	Virginia Avenue and Rock Creek Parkway (Thompson Boathouse), NW
22	Massachusetts Avenue, North Capitol and E Streets, NE
23	Tidal Basin off Maine Avenue, SW (Paddle Boat Site)
24	D Street between 2 nd and 3 rd Streets, SE (Page School Site)
25	Auditors Building Complex (Yates Building), Independence Avenue and 14 th Street, SW
26	Proposed US Institute of Peace (USIP) Building Site, Constitution Avenue and 23 rd Street, NW

Source: *The Eisenhower Memorial Commission, 2005*

Figure 2-2
Map of Sites Considered for the Eisenhower Memorial



Source: US Geological Survey, The Eisenhower Memorial Commission, 2005

Site Selection

The sites described below represent the four final locations under consideration for the proposed memorial. Both sites #1 and #2 are in the top 20 Prime Sites of the 100 sites identified in the NCPC *Memorials and Museums Master Plan*. Each site is described below, highlighting Eisenhower's thematic relationships to it as well as its potential for public access. Obstacles to the selection process are also noted, providing the rationale behind the final selection of the preferred site.

The Maryland Avenue Site - #1

The Maryland Avenue site at Independence Avenue between 4th and 6th Streets, SW, is an underutilized space with portions under the jurisdiction of GSA, NPS, and the District of Columbia. Pedestrian access is excellent and large numbers of tourists regularly visit the adjacent National Air and Space Museum (NASM) and National Museum of the American Indian (NMAI) on the National Mall. Public transportation and parking are available nearby. There are many surrounding landmarks in addition to the museums on the Mall that provide thematic linkages to Eisenhower, including the US Capitol, the US Departments of Education, Health and Human Services, and Transportation, and the Voice of America.

The Freedom Plaza Site - #2

The Freedom Plaza site at Pennsylvania Avenue between 13th and 14th Streets, NW, was found to be partially occupied and developed as a plaza. Designed as an open, raised plaza on 2 acres of NPS land, the site is located in the heart of the central business district next to the Federal Triangle. The site has

excellent pedestrian access and pedestrian traffic on adjacent streets is high. Much of the pedestrian traffic is generated by workers in the surrounding office buildings. Public transportation and parking is available nearby. This excellent transportation network would enable a large volume of visitors to the memorial via various access options, including Metro buses and trains.

The plaza lies within an active business district, dominated by federal and commercial office buildings. Other vibrant economic activities which draw locals and tourists are also present, including retail, theatres, and hotel uses. Tourists take advantage of these latter uses as supporting activities to their visits to the Mall and/or White House.

The Mall and the White House are located within a couple of blocks but are not highly visible. Visitors to those locations do not necessarily cross into the business district to see Freedom Plaza as a downtown destination. There are some thematic relationships of the site associated with Pennsylvania Avenue, the White House, and the federal agencies in the Federal Triangle. However, these relationships are only generally reflective of Eisenhower's contributions to public service. While the Plaza site would bring a national spotlight to the memorial every 4 years due to its location on Pennsylvania Avenue, the lack of direct correlation between Eisenhower and adjacent federal agencies overshadows this positive point.

Numerous obstacles and difficulties exist for the memorial here, including the relocations of the on-site Pulaski Monument and the Dr. Martin Luther King, Jr. time capsule. Additionally, a constraint would be the accommodation of special events and festivals held on the site.

This would be a less-desirable setting for the memorial because the noisy, crowded streets adjacent to the site would prevent a quiet tranquil space for contemplative reflection of Eisenhower's memory.

Auditors Building - #25

The Auditors Building complex is a federal building which is located on Independence Avenue, between Raoul Wallenberg Place and 15th Street, SW. The building is an important historic resource which has easy public access due to its proximity to the National Mall and major museums. The building was first proposed to the EMC as a potential location for celebrating the living legacy of Eisenhower in conjunction with a physical memorial.

The complex has relevant thematic relationships to Eisenhower, including its proximity to the Holocaust Museum and the World War II Memorial. The existing tenant in the historic building is the United States Forest Service (USFS).

Several obstacles are present for the memorial at this site. The building is already fully utilized by a federal agency and would require relocation for 300-400 employees. Additionally, the complex is already designated as a memorial to Sidney R. Yates. Mr. Yates was instrumental in the development of the Holocaust Museum, thus, the thematic relationships with his life are strongest in the Auditors Building. Lastly, the complex is a historic building listed on the National Register of Historic Places, limiting the possibilities for a memorial to the interior. No precedent currently exists for such placement, and Section 2C of the Commemorative Works Act of 1986 specifically states that no memorials should be located inside of a building.

United States Institute of Peace (USIP) - #26

The proposed USIP site, located at Constitution Avenue and 23rd Street, NW, is in close proximity to several significant memorials. It faces the Lincoln Memorial, is adjacent to the Vietnam Veterans Memorial, and is near the Korean War Veterans Memorial. The proposed site is thematically tied to both wars due to its physical proximity and through USIP's guiding mission to promote peaceful resolution to international conflict.

The EMC originally discussed collocation possibilities with the USIP in developing this potential site. The site's location in relation to significant war memorials would thematically relate to Eisenhower's legacy, encapsulating his passionate devotion to encouraging national security through peaceful alliances. Additionally, the proximity to the Lincoln Memorial would enhance the presidential status of the memorial, elevating it to the level of the country's other memorialized presidents.

The planned building's form and design encourages its use as a conference center and place for furthering the act of diplomacy and negotiation instead of conflict. Inside, there is a focus on conference and meeting space to reflect this intent of collaboration.

Public access to the site is excellent, with multiple transit opportunities nearby. Both Metro train and bus lines are adjacent to or near the site, with excellent pedestrian connections to these other modes.

Serious negotiations occurred between the EMC and staff of the proposed USIP headquarters in 2004. After many hours spent in discussion and meetings, a draft Memorandum of Understanding

was developed between both parties. However, after months of negotiations, the collocation proposal was terminated when USIP obtained funding as a single entity and proceeded with its original plans.

Preferred Site

After comparing the various factors of each site, the EMC selected the Maryland Avenue location as its preferred site. The Maryland Avenue site is a relatively larger site that allows greater flexibility of design for a landscaped plaza and small structures. In addition, a memorial located here has the potential to re-energize the spare and uninviting plaza, and create a new visitor destination. Most importantly, the Maryland Avenue site offers multiple thematic associations with Eisenhower due to its surroundings.

The preferred site was also identified in the National Capital Planning Commission's *Memorials and Museums Master Plan* as a designated location appropriate for a memorial. It is noted as one of the top 20 prime sites in that plan. Developing this site as a memorial would provide consistency with the Master Plan. One potential development issue is the possibility of closing a portion of Maryland Avenue, which diagonally bisects the site.

2.3 Roadway Configuration Alternatives

Once the preferred site was selected, two preliminary alternatives, each with different a configuration for Maryland Avenue, were considered. The first was a design that was included, among others, in NCPC's *Memorials and Museums Master Plan*. The second was an alternative concept proposed by private sector

interests. Each of these preliminary alternatives is described and evaluated below.

2.3.1 Memorials and Museums Master Plan Preliminary Alternative

An early public sector alternative was first included in NCPC's Legacy Plan. The version included in the Legacy Plan envisioned a building on the site that would front to Maryland Avenue. Completed in 1997, the Legacy Plan recognized the importance of the historic L'Enfant and McMillan Plans for the city. Using the historic plans as a foundation, the Legacy Plan provided a framework re-establishing the U.S. Capitol as the center of the city. The Legacy Plan envisioned Maryland Avenue restored to its historic alignment between the U.S. Capitol Building and the waterfront, a wide tree-lined vehicular thoroughfare affording dramatic views northeast to the U.S. Capitol Building. To achieve this, the Legacy Plan called for the relocation of the rail lines that obstruct the avenue southwest of the preferred site.

In 2001, NCPC prepared the *Memorials and Museums Master Plan*, an outgrowth of the Legacy Plan. Further reinforcing the historic L'Enfant and McMillan Plans, the *Memorials and Museums Master Plan* established a framework for future memorials within the circles and squares of major avenues, at scenic overlooks and urban gateways, and along the Potomac and Anacostia Rivers. The preferred site was identified in the Plan as Prime Candidate Site #3.

One of the site configuration concepts included in the *Memorials and Museums Master Plan* suggested an alignment for Maryland Avenue that would enter the site near the parcel's southwest corner, on the historic alignment of the Avenue (See Figure 2-3).

From there, it would angle to the north, intersecting with Independence Avenue at the top of the site near the midpoint of the block between 4th and 6th Streets. This would result in the site being separated into two distinct parcels. The memorial plaza would be located just south of the roadway, on axis with the road's historic alignment.

While the configuration of the site under the *Memorials and Museums Master Plan* alternative would allow for a commemorative use of the parcel, the useful area would be significantly reduced. The northwest corner of the site would be cut off from the balance of the parcel, separated by Maryland Avenue. The separated corner, together with the area devoted to Maryland Avenue, would result in a loss of approximately two acres of the four acre parcel. Not only would there be substantially less land area available for a commemorative purpose, but potential greenspace on the site would be reduced, making it less useful for recreation purposes.

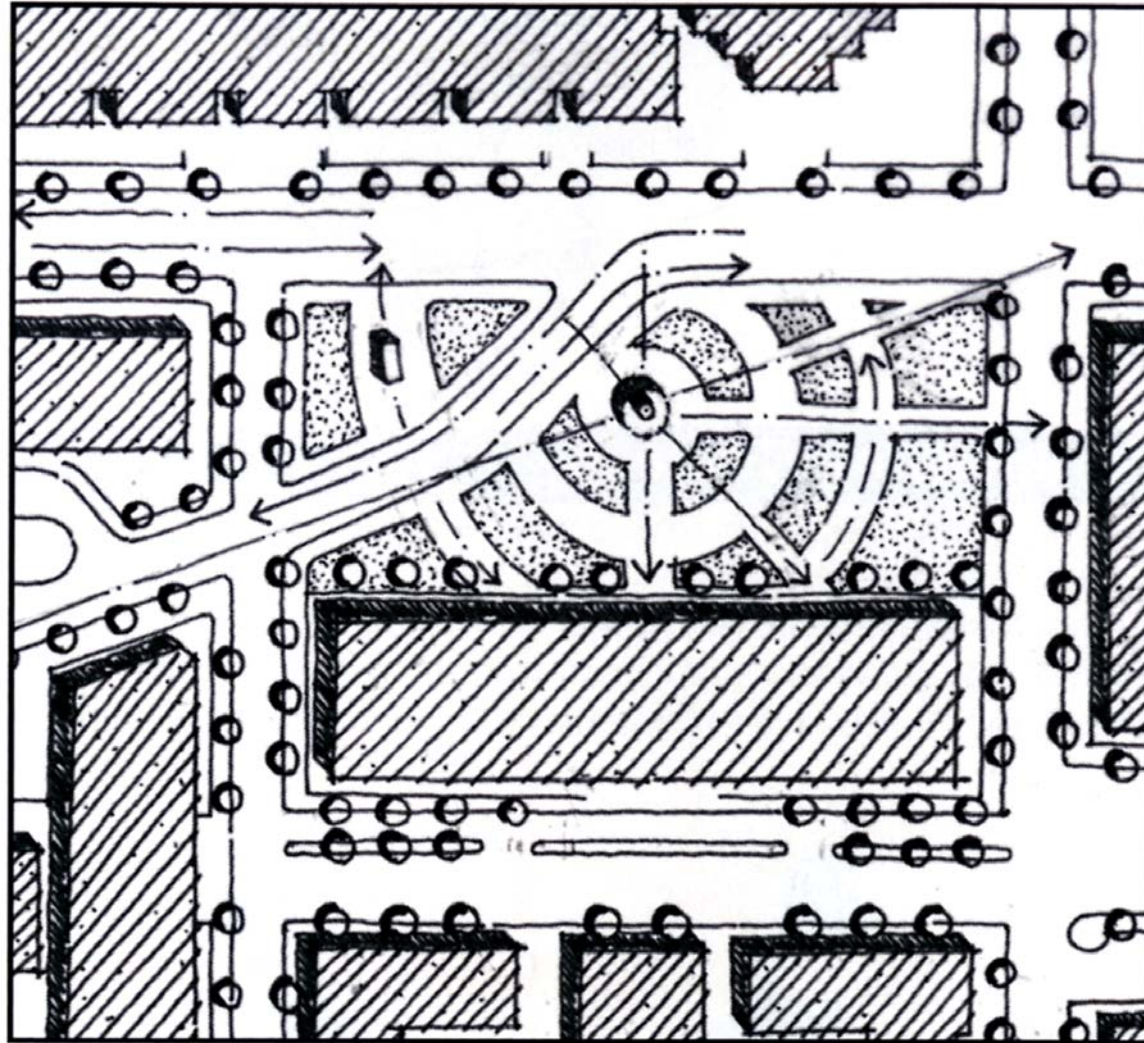
In addition, this alternative would not restore the historic alignment of Maryland Avenue through the site. Under the L'Enfant and McMillan Plans, Maryland Avenue was a wide thoroughfare cutting diagonally through the site. Similar to the current roadway configuration on the site, the alternative would divert the Avenue from its historic alignment to intersect with Independence Avenue at the middle of the block.

Vehicular circulation under this alternative could also be awkward. As conceived, there would be three intersections along the north side of the site. These would include 6th Street and Independence Avenue, Maryland and Independence Avenues, and 4th Street and Independence Avenue. During peak travel times, when the traffic is heaviest on Independence

Avenue, allowing traffic to enter the Avenue twice at a mid-block location could interrupt traffic flow significantly. In addition, allowing traffic from the one-way road to enter Independence Avenue so close to the intersection of Independence Avenue and 6th Street could create a hazardous condition. If the intersection of Maryland and Independence Avenues is not signalized, it would make a left turn from Independence Avenue to Maryland Avenue difficult. Cars waiting to take the left turn onto Maryland Avenue would also interrupt traffic flow along Independence Avenue.

Overall, the *Memorials and Museums Master Plan* alternative would result in a diminished site, limit both greenspace and commemorative functions, would not restore Maryland Avenue to its historic alignment, and would disrupt vehicular circulation around the site. As a result, it was eliminated from further consideration.

Figure 2-3
Memorials and Museums Master Plan Roadway Alternative



Source: Memorials and Museums Master Plan, 2001

2.3.2 MD Avenue Dominant Alternative

Under this alternative, Maryland Avenue would become the dominant roadway in the area. In a manner similar to Pennsylvania Avenue in the northwest quadrant of the city, Maryland Avenue would be a wide tree-lined thoroughfare connecting the southwest waterfront to the U.S. Capitol Building. It would divide the site into two distinct parcels, each triangular in shape. Independence Avenue, bordering the site to the north, would divert from its current east-west alignment to join Maryland Avenue briefly near the intersection with 4th Street (See Figure 2-4). This would have the effect of creating awkward triangular parcels of land, one north of the site across Independence Avenue, and another east of the intersection with 4th Street. A wide median would divide the southwest and northeast-bound travel lanes of Maryland Avenue within the site.

This alternative would significantly alter traffic movement around the site. As the dominant thoroughfare, Maryland Avenue would disrupt traffic on Independence Avenue, which has much greater connections and traffic volumes than Maryland Avenue, even considering proposals to add infill development parcels along Maryland Avenue to the west because traffic from these new parcels would likely utilize 7th, 9th, and 12th Streets for circulation. Assuming that the intersection of Maryland and Independence Avenues is signalized, the proximity of the intersection of Independence and Maryland Avenues with the intersection of Maryland Avenue and 4th Street could create a bottleneck, particularly during peak travel times.

If Maryland Avenue were realigned as indicated with this alternative, the land area available for a commemorative use would be approximately two acres of the four acre site. A small

parcel would be created at the northwest corner of the site, but, due to the fact that it would be separated from the rest of the site by Maryland Avenue, it would not be useable for the Eisenhower Memorial. The balance of the site would be triangular in shape, limiting design options for a memorial. The dominance of the roadway would also limit available greenspace on the site and make it less conducive to passive recreational uses.

A change in configuration, similar to this proposal, was instituted at Constitution and Pennsylvania Avenues. The lesser-traveled Pennsylvania Avenue became dominant over Constitution Avenue due to the former roadway's historical symbolism as the direct connection between two seats of government, and its function as part of the inaugural parade route. However, a portion of Pennsylvania Avenue was eventually realigned in order to create common space at Freedom Plaza, and parade traffic was diverted from Pennsylvania Avenue to E Street. The original street proposal for realigning a portion of Maryland Avenue in front of the preferred site echoes this experience from the past, resulting in new civic spaces in the heart of the public domain.

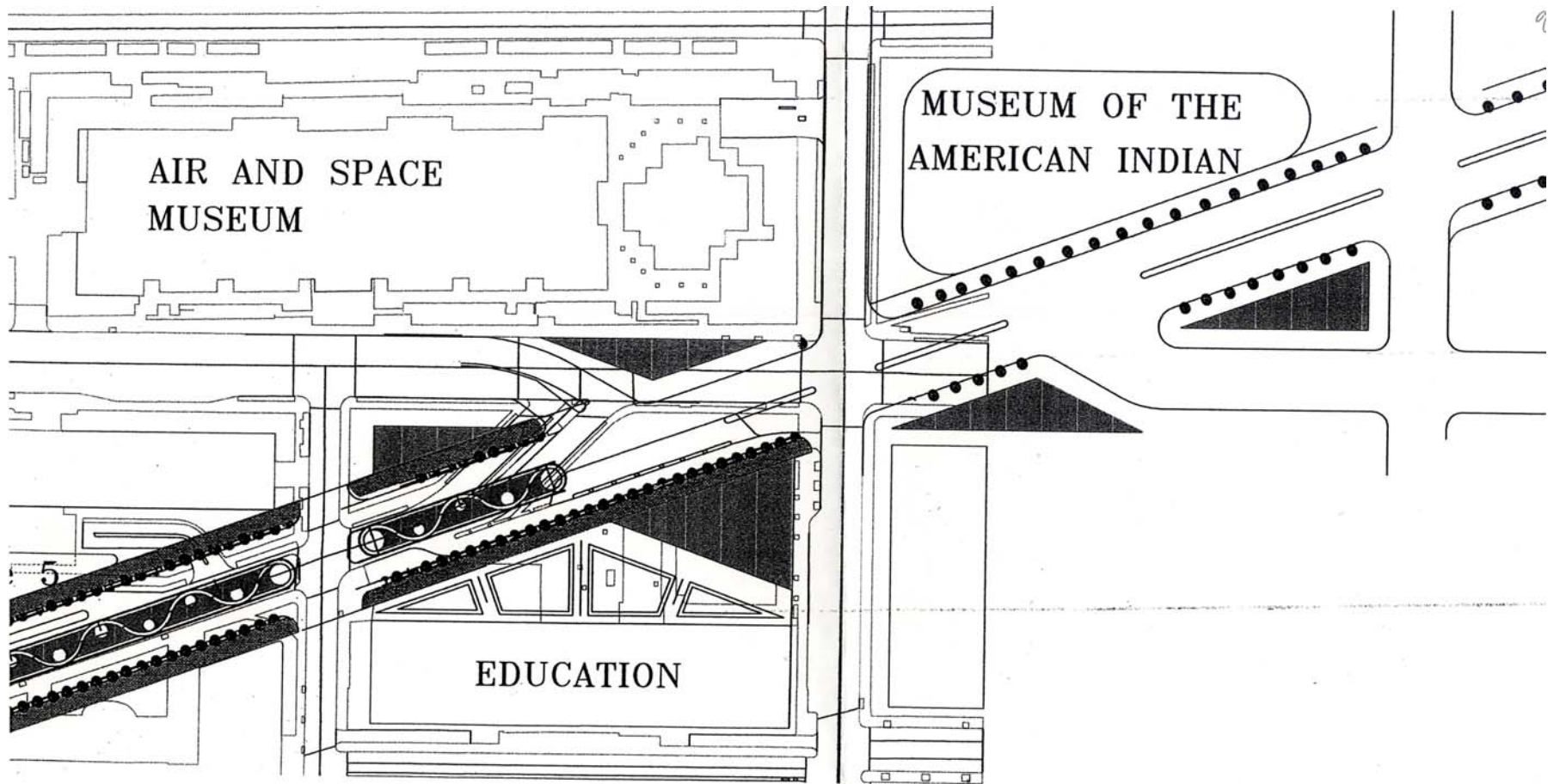
Although the MD Avenue Dominant alternative would restore the historic alignment of Maryland Avenue and strengthen the Maryland Avenue vista to the U.S. Capitol, it would disconnect Independence Avenue at the site. Independence Avenue is considered to be a major street within the McMillan Plan, forming the southern boundary of the National Mall and unifying the Mall east and west of the Washington Monument. In diverting the Independence Avenue roadway, the associated vista, considered to be a contributing element within the historic plan, would also be disrupted.

Due to the potential disruptions to the roadway network, the diminished site size, and the potential effects to historic resources, the MD Avenue Dominant alternative was eliminated from further consideration.

2.3.3 Conclusion

Because of its truncation by an active, submerged rail line two blocks to the southwest at its termination at 14th Street, Maryland Avenue currently does not provide continuous traffic flow in southwest Washington. As a result, there is no transportation or traffic circulation basis for keeping Maryland Avenue open to Independence Avenue. In addition, extending a roadway through the site would split and reduce the available land area. Therefore, after considering the various roadway configuration alternatives, the EMC identified a Preferred Alternative for the proposed Eisenhower Memorial. The Preferred Alternative is described in Section 2.4 of this EA. The District Department of Transportation (DDOT) has noted that it does not object to the conversion of this segment of Maryland Avenue.

Figure 2-4
Maryland Avenue Dominant Roadway Alternative



Source: Maryland Avenue Proposal, 2006

2.4 Proposed Alternative

Site Description

The site proposed for the Eisenhower Memorial is approximately four acres in size and is bordered by Independence Avenue, 4th Street, SW, the DoEd building, and 6th Street, SW (see Figure 2-5). The site contains a mix of uses, with Maryland Avenue passing through it in the southwest-northeast direction, bisecting the site into two triangular parcels of unequal size.

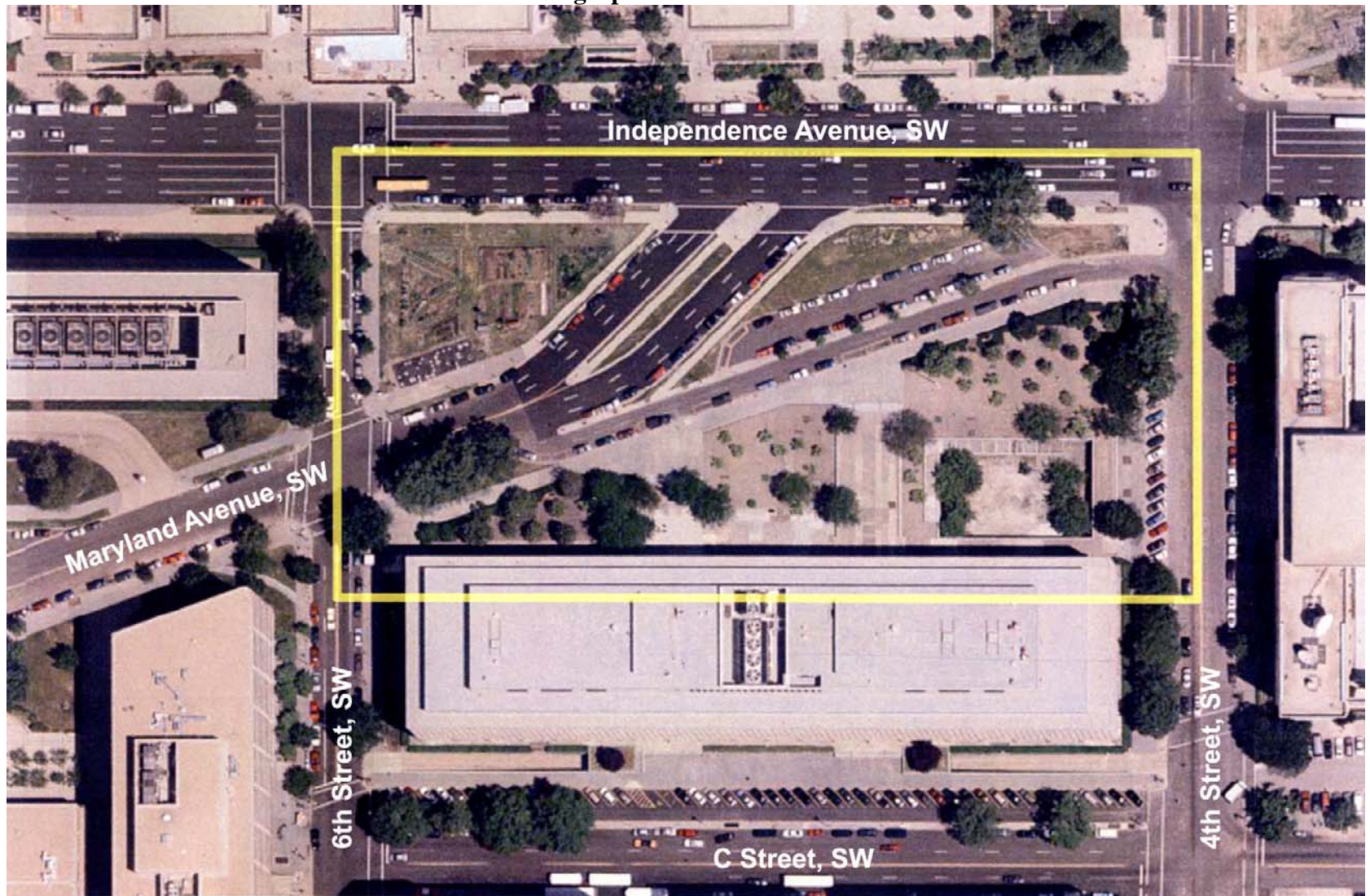
Independence Avenue along the north edge of the preferred site was designated as B Street in the L'Enfant Plan. The roadway was extended and renamed Independence Avenue following the development of the McMillan Plan. Previously, where Independence Avenue is now routed, residential development occurred, a use that existed for many years until the developed blocks were acquired and cleared to make way for the extension of Independence Avenue. Maryland Avenue is one of the grand avenues radiating from the U.S. Capitol Building that was established by the L'Enfant Plan of 1791 for Washington D.C. Maryland Avenue has a 160-foot- wide right-of-way (ROW), with a 60-foot-wide historic cartway/view corridor running through the center of the ROW. Due to its historical significance as a L'Enfant street, the Avenue offers limited development opportunities within the cartway.

The existing configuration of the site includes 15 GSA permitted parking spaces and 54 metered parking spaces that are primarily used by employees of the DoEd in Federal Office Building #6 (FOB#6), which is located adjacent to the site. Metered and permitted spaces are also provided along the curb of the roadways adjacent to the site (See Figure 3-4 in Chapter 3 for more details).

The preferred site also includes a below-grade courtyard associated with the DoEd building. In addition, an existing basement extends into the preferred site from the DoEd building. This basement structure could restrict underground and surface site development within approximately 40 feet of the DoEd building.

The site contains a small area devoted to community gardens where residents, under permit to the NPS, grow vegetables and flowers. Near the gardens, an exercise course exists which serves any visitor to the site.

Figure 2-5
Aerial Photograph of Preferred Site



Source: The Eisenhower Memorial Commission, Gensler, 2006

Eisenhower Memorial Considerations

The Eisenhower Memorial is planned to include typical memorial features such as physical structures, monuments, statues, or other features, such as in the case of the Washington Monument, Lincoln Memorial, Jefferson Memorial, or Franklin Delano Roosevelt Memorial.

The memorial would be located on the preferred site, and is envisioned as a landscaped plaza, providing an open and accessible site for visitors. The memorial could include outdoor shade elements and small visitor support structures.

The goals of the memorial and the development constraints of the preferred site will guide the ultimate design of the plaza and associated elements. A summary of the primary goals for the Eisenhower Memorial include:

- Commemorate the life of Dwight D. Eisenhower by memorializing major themes and events in his life.
- Incorporate commemorative features and interpretive elements to convey multiple themes.
- Capitalize on the thematic connections of surrounding buildings to the preferred site.
- Create an attractive, year-round destination with an inviting physical setting.
- Facilitate a variety of activities on the site that would be accessible to the public.

Site Development Framework

Several factors influence how the preferred site could be developed for the memorial. These are illustrated in Figure 2-6 and summarized below:

Site Context Goals

- Maintain and enhance direct view corridors of the U.S. Capitol.
- Unify the two parcels on either side of Maryland Avenue into a single site.
- Maintain the identity of Maryland Avenue as part of the L'Enfant Plan.
- Extend the character of the L'Enfant and McMillan Plans onto the site and develop the memorial with respect to its setting.

Development Constraints

- Protect Maryland Avenue's 160-foot ROW and 60-foot historic cartway/view corridor by limiting development in the corridor to public spaces, landscaping, sculptures, and artworks.
- Provide approximately 2,500 sf of enclosed space to support the memorial (NPS visitor services, limited retail uses, etc.).
- Conform to the established setbacks of surrounding buildings to maintain the integrity of adjacent L'Enfant streets, including Independence Avenue, 4th Street, and 6th Street.

- Address the relationship between the memorial and the existing and future view of DoEd, including its façade, entrance, and the light well.
- Consider providing an outdoor feature that is sculptural in character and integrally related to the commemoration of Eisenhower that could provide year-round protection from the elements for visitors to the memorial.

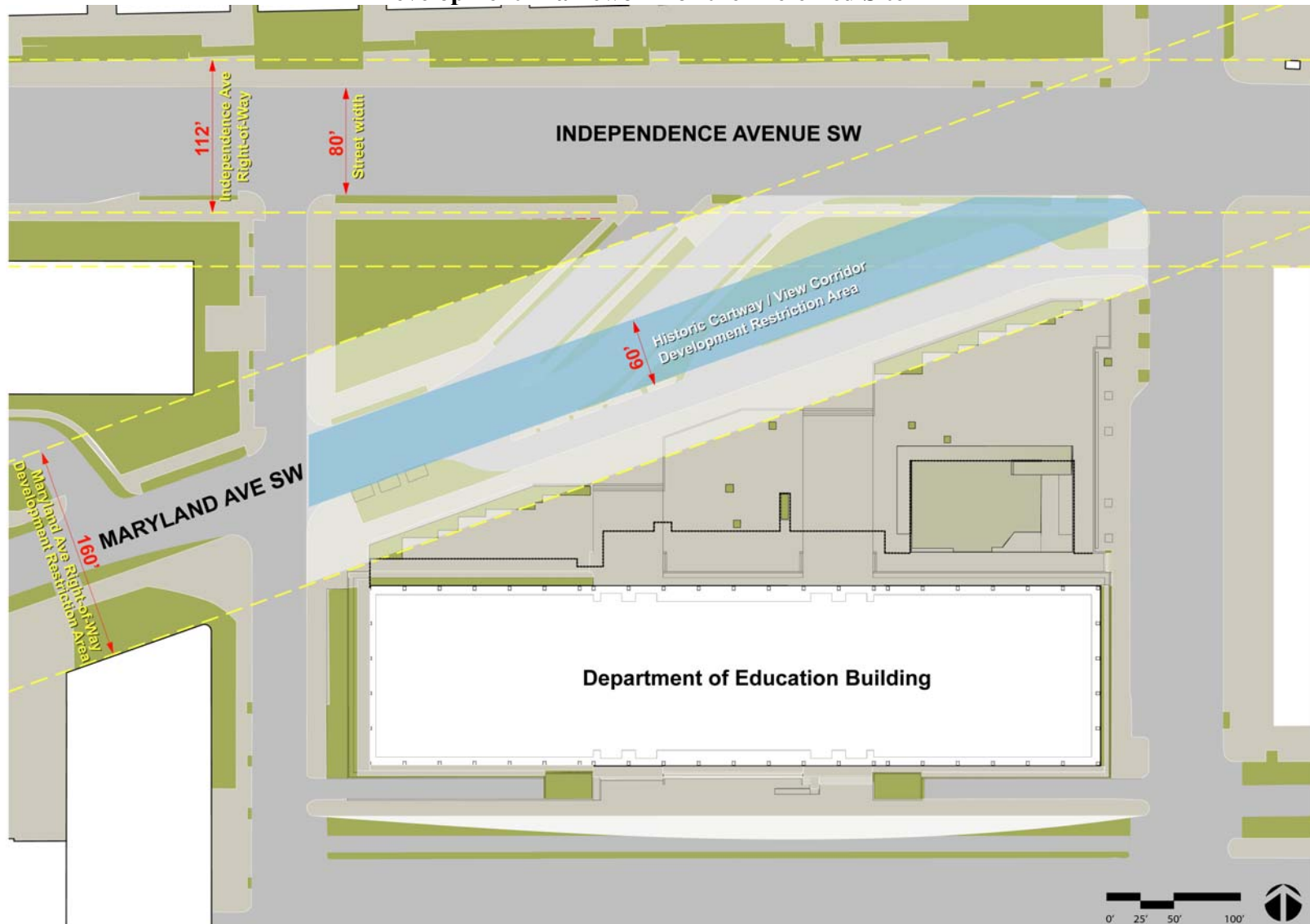
Operational Considerations

- Accommodate areas for temporary vehicle and bus drop-offs away from the Maryland and Independence Avenues view corridors while respecting need for multiple entry points into the memorial site.
- Retain permitted parking for DoEd employees and occupants of the surrounding buildings on surrounding streets to greatest extent practicable.
- Accommodate the pedestrian circulation needs of memorial visitors and employees of adjacent buildings.

Security Considerations

- Support the security requirements of the DoEd building and maintain a security stand-off area as a buffer, or transition zone, between DoEd and the memorial.
- Ensure adequate access for emergency responders and develop coordinated emergency response and evacuation plans for memorial visitors and DoEd building employees.

Figure 2-6
Development Framework for the Preferred Site



Source: *The Eisenhower Memorial Commission, Gensler, 2006*

2.5 No Action Alternative

As part of the environmental analysis process, the consequences of a No Action Alternative are also considered. Under the No Action Alternative, the existing features of the Maryland Avenue site would remain unchanged at this time. There would be no new development or reconfiguration of the underutilized site, and the roadways and parking would be maintained. The site would remain available for development until such time that a subsequent development proposal could be approved and implemented.

Given that Congressional legislation directs the EMC to formulate plans for the memorial's location and construction in the District, under the No Action Alternative, the EMC would need to continue to explore other potential sites for the memorial.

SECTION 3.0



AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

This section documents the affected environment, or existing conditions, of the proposed project. As such, this section describes the contextual setting for the preferred site with respect to the full range of resource disciplines.

3.1 Socio-Economic Resources

3.1.1 Land Use and Ownership

Land Use

The preferred site for the Dwight D. Eisenhower Memorial is located in the southwestern quadrant of Washington, DC (see Figure 3-1). It is bordered by Independence Avenue to the north, 4th Street, SW, to the east, the Department of Education (DoEd) building to the south, and 6th Street, SW, to the west. The site is located one block from the National Mall and is within view of the National Air and Space Museum (NASM), the National Museum of the American Indian (NMAI), the U.S. Botanical Garden, and the U.S. Capitol.

The site is rectangular in shape and bisected by Maryland Avenue. It is approximately four acres in size. Nearly half of the preferred site consists of roadway infrastructure and sidewalks associated with Maryland Avenue. Much of the remaining site is currently undeveloped, consisting of an underutilized entry plaza in front of the DoEd building. Other notable elements include an underground space and below-grade courtyard associated with the DoEd building, as well as a

community garden with multiple plots and an exercise course located towards the northwest corner.

The land uses adjacent to the preferred site are national museums and federal government offices. Open space and limited commercial uses are also located within the area surrounding the site. Museums in the vicinity of the site include: the NMAI located to the northeast of the preferred site; the NASM, located directly north of the site across Independence Avenue; and the Hirshhorn Museum, located to the northwest of the preferred site.

Federal government offices adjacent to the preferred site include the following: the Wilbur J. Cohen Building, to the immediate east, that houses the offices for the Voice of America and the Department of Health and Human Services; the DoEd Building (also known as Federal Office Building No. 6), to the immediate south; and the headquarters of the Department of Transportation's Federal Aviation Administration, immediately west of the preferred site.

In addition to the preferred site, which includes some open space, the primary open space resource within the general vicinity of the site is the public space associated with the National Mall, located to the north of the NASM. One hotel use, the Holiday Inn, is located at the intersection of 6th and C Streets, SW, one block south of the site.

Figure 3-1
Surrounding Uses of the Preferred Site



Transportation systems are the other predominant use within the general vicinity of the site. These include infrastructure associated with the following: the existing street system; the Metrorail, including the L'Enfant Plaza Metrorail station located one block to the southwest at 7th and D Streets, SW, and the Federal Center Southwest Metrorail station located two blocks to the southeast at 3rd and D Streets, SW; the Virginia Railway Express tracks that run roughly in an east-west direction, approximately three blocks to the south; and, Interstate 395, which runs in an east-west direction, approximately five blocks to the south.

Land uses beyond the immediate area include civic uses and memorials on the National Mall to the north; several major agencies of the federal government concentrated in two areas – the L'Enfant Plaza area to the southwest, and the Southwest Federal Center area to southeast; and a mixed-use neighborhood known as the Southwest Waterfront to the south of the preferred site.

Ownership

Three governmental agencies currently control the site which is entirely federally owned (see Figure 3-2). The National Park Service (NPS) controls an approximately one half-acre portion at the northwest corner; the District of Columbia Government has administrative jurisdiction over approximately two acres within the Maryland Avenue right of way corridor (including the historic cartway which is federally-owned but administered by DC); and the General Services Administration (GSA) controls approximately 1.5 acres along the south side of Maryland Avenue in Square 492.

3.1.2 Planning Policies

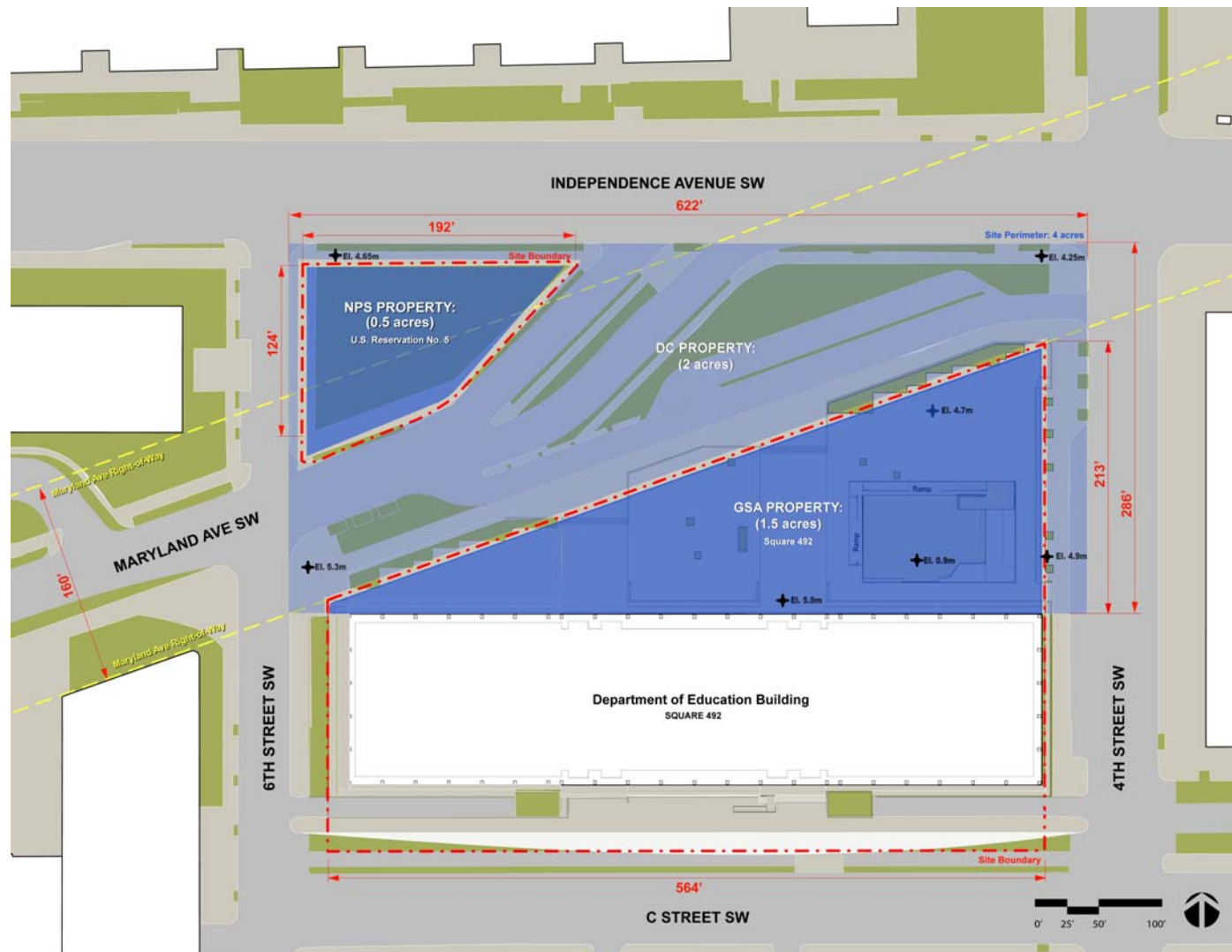
The following section addresses zoning, the NCPC Legacy Plan, the Commemorative Works Act, the NCPC Memorials and Museums Master Plan, the Comprehensive Plan for the National Capital, Federal Elements, and the Ward 2 Plan. The L'Enfant and McMillan Plans are discussed in Section 3.2, Cultural Resources.

Zoning

The preferred site for the proposed Eisenhower Memorial consists of three distinct parcels of land. Although the parcels are controlled by three different entities (NPS, GSA, DC), all controlled by the federal government. As such, the entire site is unzoned and is without specific development restrictions.

As a governmental entity created through a Congressional act of law, the EMC is not subject to D.C. zoning regulations. Development of federal property is under the purview of NCPC pursuant to the District of Columbia Zoning Enabling Act (1938). For federal projects, NCPC has approval authority for use, open space, height and bulk.

Figure 3-2
Property Ownership of the Preferred Site



Source: The Eisenhower Memorial Commission, Gensler, 2006

Legacy Plan

In 1997, NCPC released its framework plan for the Monumental Core, *Extending the Legacy: Planning America's Capital for the 21st Century*. The Legacy Plan builds upon the foundations of the L'Enfant and McMillan Plans, defining opportunities for new museums, memorials, and federal office buildings in all quadrants of the city (www.ncpc.gov). It established the importance of the U.S. Capitol as the center of the city and envisioned a realigned Maryland Avenue that visually connected the U.S. Capitol to the Tidal Basin. The *Memorials and Museums Master Plan*, completed in 2001 and discussed below, was a direct outgrowth of the Legacy Plan.

Commemorative Works Act

In 2003, Congress enacted a Commemorative Zone Policy as public law. Based on the Commemorative Works Act of 1986 (CWA), the Policy is intended to preserve the integrity of the Monumental Core and encourage memorials to be located in all quadrants of the city. The policy provides direction for placing memorials on federal lands in the District of Columbia and surrounding areas.

The Commemorative Works Act, as amended, establishes three memorial zones in the Washington, D.C. area: The Reserve, Area I, and Area II. The Reserve is defined by the major east-west axis of the National Mall and the north-south axis between Lafayette Park and the Tidal Basin and is declared as a substantially completed work of civic art, in which no new memorials can be constructed. Area I is a sensitive area designated for commemorative works of pre-eminent historic and lasting national significance. Area II includes the balance

of the city, where the development of new museums and memorials is encouraged (www.ncpc.gov). On the preferred site, the NPS parcel and the Maryland Avenue right-of-way are located within Area I. The GSA parcel is located within Area II.

Memorials and Museums Master Plan

The *Memorials and Museums Master Plan*, prepared by NCPC in 2001, expands on some of the principles laid out in the Legacy Plan and guided the development of the Commemorative Zone Policy. As a way to preserve the open space and historic vistas of the National Mall and increase the public use of the city's waterfronts, the Master Plan establishes a framework for future memorials within the circles and squares of major avenues, at urban gateways and scenic overlooks, and along the Anacostia and Potomac Rivers. According to the Plan, new memorials should enhance the image and identity of their surroundings.

The proposed site for the Eisenhower Memorial, located at the intersection of Maryland and Independence Avenues, SW, was identified as a prime candidate site (Site #3) for a commemorative work in the *Memorials and Museums Master Plan*. According to the Master Plan, a memorial on Site #3 should respect and reinforce the location's prominence as a civic plaza and incorporate the existing vistas along Maryland Avenue. In addition, the memorial should allow for public gathering while providing adequate space for commemorative reflection and take advantage of the existing transportation infrastructure. Finally, the Master Plan states that the site is not appropriate for a significant building (www.ncpc.gov).

Comprehensive Plan for the National Capital, Federal Elements

The *Comprehensive Plan for the National Capital, Federal Elements* (2004) is the principal planning document adopted by NCPC for the planning of federal facilities. The Plan contains goals, objectives, and planning policies for the growth and development of the Nation's Capital. Of particular relevance to the proposed project are the Preservation and Historic Features Element, the Parks and Open Space Element, and the Visitors Element.

The Preservation and Historic Features Element states that “it is a goal of the federal government to preserve and enhance the image and identity of the Nation's Capital and region through design and development respectful to the guiding principles of the L'Enfant and McMillan Plans, the enduring value of historic buildings and places, and the symbolic character of the capital's setting.” Relevant policies in support of this goal include:

- Planning for appropriate uses and compatible design in and near the Monumental Core to reinforce its special role in the image of the Nation's Capital;
- Protecting and enhancing the vistas and views, both natural and designed, that are an integral part of the National Capital's image;
- Promoting continuity in the historic design framework of the Nation's Capital by protecting and enhancing the elements, views, and principles of the L'Enfant Plan;
- Preserving the historic street rights-of-way and reservations that contribute to the significant system of open space forming the urban design framework of the Nation's Capital;

- Embellishing L'Enfant reservations, avenues, and streets with monuments, fountains and civic art placed to provide views and points of reference;
- Protecting and controlling the visual and functional qualities of L'Enfant rights-of-way; and
- Protecting the open space of the L'Enfant Streets.

The Parks and Open Space Element states that “it is a goal of the federal government to conserve and enhance the park and open space system of the National Capital Region, ensure that adequate resources are available for future generations, and promote an appropriate balance between open space resources and the built environment.” Policies relevant to the proposed project include:

- Siting memorials in monumental and designed landscape parks in compliance with the *Memorials and Museums Master Plan*; and
- Maintaining and conserving federal open space as a means to shape and enhance urban areas.

The Visitors Element states that “it is a goal of the federal government to accommodate visitors in a way that ensures an enjoyable and educational experience, showcases the institutions of American culture and democracy, and supports federal and regional planning goals. Relevant policies in support of this goal include:

- Protecting the Monumental Core by locating and designing new memorials and museums in accordance with NCPC's *Memorials and Museums Master Plan*; and

- Providing visitor attractions within walking distance of public transportation stations and routes.
(www.ncpc.gov)

Ward 2 Plan

The Ward 2 Plan is a component of the District Elements of the Comprehensive Plan. One objective is particularly relevant to the proposed Eisenhower Memorial project. It states that the DC Government should preserve the design quality of historic and special streets and places (www.planning.dc.gov).

3.1.3 Community Facilities

Recreational Facilities

The preferred site includes a small exercise course and a large open plaza. North of the site, the National Mall extends from 3rd Street on the east through the Washington Monument Grounds to the Lincoln Memorial on the west, and Constitution Avenue on the north to Independence Avenue on the south, serving as one of the primary recreational spaces in Washington, D.C. It is used by residents and visitors year-round for both active and passive recreation. Common activities on the National Mall include soccer, volleyball, football, softball, frisbee, kite-flying, picnicking, sun-bathing, walking, jogging, cycling, and in-line skating.

Cultural Facilities

On the National Mall, there are ten museums or galleries operated by the Smithsonian Institution that draw numerous visitors annually. These include the NASM, the NMAI, the National Museum of Natural History, the Freer Gallery of Art, the S. Dillon Ripley Center, the Sackler Gallery, the National Museum of African Art, the Arts and Industries Building and the Hirshhorn Museum and Sculpture Garden. Additional museums in the area include the East and West Buildings of the National Gallery of Art, located north of the preferred site on the Mall, the National Archives on Pennsylvania Avenue, and the Holocaust Memorial Museum on 14th Street.

There are also numerous monuments and memorials along the National Mall and within the larger Monumental Core. Among these are well known memorials such as the Washington Monument and the Jefferson Memorial, northwest and southwest of the preferred site, respectively. There are also other lesser-known memorials within the Monumental Core which are popular visitor destinations year-round. Presidential memorials to Grant and Garfield are three blocks to the east at Maryland and 1st Streets.

Other Facilities

The preferred site includes 24 community garden plots of varying sizes and shapes. These sites are operating under a Special Use Permit which expired in 1993. The permit is held by a group of individuals called the “Independence Garden” which promotes gardening in an urban setting. In the vicinity of the preferred site, there are also several educational facilities. Dedicated to continuing education, the USDA

Graduate School holds classes in the Capital Gallery Building at 600 Maryland Avenue, SW, just west of the preferred site. The Smithsonian facilities north and northwest of the preferred site also fulfill an educational function. There are no religious facilities in the area immediately surrounding the preferred site.

3.1.4 Visitation

The Monumental Core attracts millions of visitors annually. Adjacent to the preferred site, the NASM draws approximately 4.9 million visitors each year, while the newly opened NMAI draws 1.7 million annually (TIS, 2006). The Mall also hosts special events each year, including demonstrations, festivals, and holiday celebrations. These special events can draw hundreds of thousands of people to the area north of the site.

Despite its proximity to adjacent office buildings, the site receives limited visitation from federal employees working nearby. The site primarily attracts employees seeking outdoor space for break times and lunch.

3.1.5 Economic/Fiscal Resources

Food service amenities that are accessible to the public are also available near the preferred site. Both NASM and NMAI cafeterias offer service to museum visitors and the general public. The NASM contains one cafeteria and a museum shop, and the NMAI contains one restaurant and two museum shops. Employee-only services also exist in some of the federal government office buildings surrounding the preferred site. Mobile food vendors have been observed on the surrounding streets. Since the site is owned by the federal and District governments, it does not currently generate tax revenue for the

District. The District does, however, collect a small amount of revenue from the parking meters on the site.

3.2 Cultural Resources

This section describes the archaeological, historic, and visual resources present on the preferred site and within the surrounding area. This information is derived from National Register nominations, historic maps, and site reconnaissance and observation. For the purposes of this section, the Area of Potential Effects (APE) for historic resources is bounded by the southern façade of the NASM to the north, the eastern façade of the FAA building to the east, the northern façade of the DoEd building to the south; and the western façade of the Wilbur J. Cohen building to the east. In defining the APE for archaeological resources, it was determined that the only effects on archaeological resources would occur as a result of ground disturbing activities on the site. Therefore, the APE for archaeological resources is the preferred site itself.

3.2.1 Archaeological Resources

Part of the larger Potomac River watershed, the land surrounding the Mall was historically marsh, draining to Tiber Creek. In the early 19th century, as part of the construction of the Washington Canal, the marsh was filled in. Soils in the area are classified as Udorthents, described as deep to moderately deep, well-drained soils that consist of cuts, fills, or otherwise disturbed land.

During the 19th century, the preferred site was part of a residential community known as Southwest. By the mid-19th century, this community located near the U.S. Capitol Building became attractive to government workers. As residential development increased in the area, commercial development did as well. This portion of Southwest remained a combination of low-scale residential and commercial uses into the mid-20th

century, when slum clearing programs resulted in the demolition of much of the early housing stock. The new Southwest was redeveloped with large-scale federal office buildings and modern residential complexes.

Review of historic Sanborn Fire Insurance maps indicate that, in 1888, the majority of the preferred site was densely developed with residential structures. Near the northeast corner of the preferred site, two industrial structures were located, one a planing mill and the other a lumber shed. The railroad abutted the western edge of the site, running north along 6th Street from the Baltimore and Potomac Railroad roundhouse directly south of the site. Maryland Avenue cut diagonally through the site from the northeast to the southwest. According to the Sanborn maps, the preferred site contained a combination of residential and light industrial uses until the middle of the 20th century, when all the structures on the site were removed.

No archaeological surveys have been completed on the preferred site. Historic archaeological remains dating from the 18th century were documented in a survey completed prior to the construction of the NMAI building on the NMAI site, to the northeast. Although it is possible that similar archaeological resources were once present on the preferred site, it is likely that they have been disturbed due to the realignment of Maryland Avenue, the construction of the DoEd building, and the urban restoration/renewal efforts in the 1950s.

3.2.2 Historic Resources

Preferred site

The preferred site is bordered and bisected by streets originally planned by Pierre Charles L'Enfant in the 18th century. L'Enfant's 1791 Plan for Washington, one of the best American examples of a comprehensive Baroque city plan, defined the physical and symbolic character of the nation's capital through its arrangement of buildings, parks, roadways, and views. At the turn of the century, the McMillan Commission expanded on L'Enfant's Plan in a manner consistent with the City Beautiful movement, extending the National Mall and terminating several visual axes with monuments.

Maryland Avenue, 4th Street and 6th Street were all components of L'Enfant's original design. As planned by L'Enfant, Maryland Avenue was a wide diagonal thoroughfare connecting the U.S. Capitol Building with the Potomac River. Fourth and 6th Streets, SW, which define the eastern and western boundaries of the site, were part of L'Enfant's orthogonal street grid.

The McMillan Commission Plan of 1901 envisioned Maryland Avenue as a broad, tree-lined thoroughfare which provided a visual connection to the U.S. Capitol Building. The Plan also introduced Independence Avenue (formerly B Street) as a continuous east-west axis along the southern boundary of the National Mall, altering the street pattern in the vicinity of the site. According to Sanborn Fire Insurance Maps and a photo in the National Archives, it appears Independence Avenue was added between 4th and 6th Streets, SW between approximately

1940 and 1959, thereby creating a six-way intersection at Maryland Avenue, Independence Avenue, and 4th Street, SW. Later in the century, Maryland Avenue was diverted from its historic axis within the site so that it entered Independence Avenue mid-block. The historic alignment has been closed to vehicular traffic, but L'Enfant's vista remains, visually connecting the site with the U.S. Capitol Building to the northeast.

The L'Enfant Plan is listed in the National Register of Historic Places. A draft National Historic Landmark nomination was also prepared in 2002. The nomination also recognizes components of the McMillan Plan that contribute to the plan of Washington, D.C., and identifies historic streets, reservations and appropriations, and historic vistas. Independence Avenue, which borders the preferred site to the north, is recognized as a Major Street in the plan, while 4th and 6th Streets are also considered to be contributing elements. Both Maryland Avenue corridor and its associated vista that provides views of the U.S. Capitol Building are considered to be contributing features. North of the preferred site, the National Mall is recognized as a contributing element because it was part of the Original Appropriation No. 2. The L'Enfant Plan was also preliminarily listed on the DC Inventory of Historic Sites in 1964. Additionally, the National Mall, which is the greensward from 3rd to 14th Streets, is listed in the National Register individually.

Context Area

The National Mall extends from the U.S. Capitol Grounds and 3rd Street on the east through 14th Street and the Washington Monument Grounds to the Lincoln Memorial on the west, and from Constitution Avenue on the north to Independence Avenue on the south, as defined by the National Park Service. Listed on the National Register in 1966 as an historic site, the nomination identifies “Landscape Architecture” as the Area of Significance. Although the nomination mentions nine buildings on the Mall, it states that the buildings are only provided for reference purposes.

East of the preferred site, the Wilbur J. Cohen Building is a modern five-story limestone-clad structure. Designed by Charles Klauder and constructed in 1939 as the Social Security Building, the building is in the Stripped Classical style and is characterized by bands of vertically oriented steel windows. It has been determined historically significant by its owner because of its role in city planning in the District of Columbia and as the last work of a prominent architect (General Services Administration, *Historic Federal Buildings*). GSA intends to formally nominate the building to the National Register in 2006, according to the GSA Historic Preservation Officer.

Northeast of the preferred site, directly up Maryland Avenue, the U.S. Capitol Building is one of Washington, D.C.’s most important historic structures. Designed by William Thornton in 1793, the structure was expanded and renovated during the 19th century by Benjamin Latrobe, Charles Bulfinch, and Thomas U. Walter. The building is fronted by a columned portico and crowned by a shallow dome 219 feet high. In addition to being significantly taller than the other buildings in

Washington, D.C., it is sheathed in white marble making it lighter and brighter than the other buildings lining the National Mall. The U.S. Capitol Building was listed in the National Register of Historic Places in 1966.



The National Mall

3.2.3 Visual Resources

The area of visual influence for the proposed memorial includes the preferred site, important street corridors, and views of historic and cultural resources surrounding the site. The visual quality is defined by the massing, setbacks, and architectural styles of surrounding buildings, as well as the trees, paved and unpaved surfaces, signage, and street furniture that characterize the surrounding open space.



View of the U.S. Capitol Building from the preferred site.

Preferred Site

The preferred site is relatively flat and open. It consists of roadway infrastructure associated with Maryland Avenue and parking areas located through the middle of the site (see photo below); a paved entrance plaza and a sunken outdoor courtyard related to the adjacent DoEd building towards the southern portion of the site (see photo below and on the following page); and plots of community gardens and an exercise course towards the northwestern corner (see photo on the following page). Several deciduous trees are located on the site, mostly to the south of Maryland Avenue. There are also some turf areas and smaller shrubs scattered throughout the site.



One of two entrances to the Department of Education Building. The main entrance is on C Street, SW.



Sunken courtyard in front of the Department of Education Building



Exercise course



Community Gardens

Street Corridors

The surrounding area is characterized by a combination of streets and public buildings. The pattern of streets and associated visual corridors in this portion of Washington, DC are significant to the city's early development. These corridors were established in the 1791 plan for Washington by Pierre L'Enfant and have been reflected in subsequent plans and development. Of equal importance are views to and from key cultural resources, such as the U.S. Capitol Building and the Washington Monument.

There are three principal streets from the L'Enfant Plan that would influence development of the proposed memorial on the preferred site. Maryland Avenue is a strong diagonal view corridor that extends from the southwest, through the site, and visually terminates at the U.S. Capitol Building (see photo on the following page). Looking to the southwest, the view along Maryland Avenue to the Tidal Basin is partially obscured by buildings on the south side of the railroad alignment (see photo on the following page). The view corridors along Independence Avenue (originally B Street), 4th Street, SW, and 6th Street, SW, the east-west and north-south grid streets on the L'Enfant Plan, define the northern, eastern and western edge of the preferred site.

The eastern portion of Maryland Avenue now intersects Independence Avenue mid-block between 4th and 6th Streets. Currently, Maryland Avenue diverts from the historic L'Enfant axis within the site, as the eastern portion of this avenue bends northwards and away from its focus on the U.S. Capitol Building. The historic visual corridor along Maryland Avenue

is still visible. Portions of the original street have been retained in the form of a smaller access street and parking area.

Independence Avenue is a strong east-west arterial that extends in either direction past the preferred site. Within vicinity of the preferred site, the visual corridor along this avenue is dominated by museums and open space associated with the National Mall, and federal government buildings. The Washington Monument is visible from the site along the corridor, looking towards the west (see photo on the following page).

The two north-south streets, 4th Street, SW, and 6th Street, SW, are smaller collector streets that extend through federal government buildings and connect to residential neighborhoods to the south. The 6th Street, SW, corridor terminates at Independence Avenue in the vicinity of the site. The 4th Street, SW, corridor extends northwards and passes between the museums and open space associated with the National Mall to terminate at the Old City Hall Building and National Building Museum to the north (see photo on the following page).



Maryland Avenue view corridor towards the U.S. Capitol, looking northeast from the preferred site.



View corridor along Maryland Avenue looking southwest.



View corridor along Independence Avenue, looking west.



View corridor along 4th Street, looking north from the preferred site.

Architectural Context

The buildings that surround the preferred site and would be within its area of influence are diverse in style, massing, height, and setbacks. These include buildings that are immediately adjacent to the site, and those that are visible from it. The site is non-descript and bleak in an urban design sense, reflecting the nature of the buildings and hardscape immediately surrounding it. These surrounding buildings include the following:

- U.S. Department of Education Building (DoEd) (dedicated in 1959 by President Eisenhower) – Defining the southern edge of the site, the Department of Education building is a modern, precast building with limestone veneer. It is 104 feet in height that provides a backdrop to the site when viewed from Independence Avenue (see photo on the following page).
- Wilbur J. Cohen Building – Also adjacent to the site, the Wilbur J. Cohen Building juxtaposes modernistic forms with historical Egyptian motifs. It was designed by architect Charles Z. Klauder and completed in 1939. This limestone-clad building was originally called the Social Security Building, and is five-stories tall and 76 feet in height (see photo on the following page).
- National Air and Space Museum – The NASM building a modern building completed in 1976, which was designed by the firm of Hellmuth, Obata & Kassabaum. It is constructed of pink Tennessee marble and bronze acrylic plastic bays. While the primary entrance to the NASM is towards the National Mall, the secondary entrance is on the south. The southern façade facing the preferred site consists of repeating rectangular blocks that are bold yet austere in design (see photo on the following page). The building is 84 feet in height. The original structure was expanded to the east in 1991 to incorporate a dining pavilion of bronze-tinted acrylic.
- Federal Aviation Administration Building – The FAA building is modern in style and six-stories in height. Its façade is a stone veneer (marble). It was completed in the 1960s and is located to the west of the site (see photo on the following page).
- National Museum of the American Indian – The NMAI is an eclectic style building that was completed in 2004. This Kasota dolomite limestone-clad building is five-stories tall, and frames the view along Maryland Avenue toward the U.S. Capitol from the site.
- U.S. Capitol Building – The U.S. Capitol Building is a neoclassical style building with a columned portico and a shallow dome visible looking northeast along Maryland Avenue from the site. The tallest building in Washington, it is 219 feet in height, with a central core and two wings. The building was built of white marble, as well as Aquia Creek sandstone painted to match the marble.



Department of Education Building (south view)



Department of Transportation – Federal Aviation Administration Building
(west view)



Wilbur J. Cohen Building (east view)



National Air and Space Museum (north view)

3.3 Transportation Systems

3.3.1 Roadways and Intersections

Roadways

The preferred site is an assembly of parcels comprising, in total, approximately four acres in southwest Washington, D.C. near the U.S. Capitol Building. The site is bounded by L'Enfant streets on three sides: Independence Avenue to the north, 4th Street, SW to the east, and 6th Street, SW to the west. To the south, the site is bounded by the DoEd, whose south façade faces C Street, SW. Maryland Avenue, SW crosses the site diagonally northeast - southwest, bisecting the site into two triangular parcels; and a spur road from Maryland Avenue, SW, east to 4th Street, SW, further divides the site. One block to the west, 7th Street, SW is an important roadway in vicinity of the site. The roadways on and surrounding the site are shown in Figure 3-3, and are described as follows:

Independence Avenue, SW – a six-lane, two-way arterial running east-west with curb side parking lanes, which convert to two traffic lanes during the peak AM/PM weekday periods. Independence Avenue, SW connects the U.S. Capitol Building and numerous federal buildings including the Departments of Health and Human Services, Transportation, Energy, and Agriculture, as well as several Smithsonian Institution museums on the National Mall.

Maryland Avenue, SW – a truncated collector running between 7th and 1st Streets, SW. From 7th to 6th Street, SW, this collector is four-lanes with parking prohibited during peak periods. On-site between 6th Street, SW and Independence Avenue, the collector is a six-lane urban street with parking prohibited during peak periods, which turns north, northwest mid-site, becomes divided, and intersects with

Independence Avenue mid-block as a yield-controlled (not signalized) “T” intersection. Maryland Avenue, SW continues off-site off of Independence Avenue, mid-block between 4th and 3rd Streets, SW, running diagonally to the northeast to 3rd Street, SW adjacent to the NMAI. Maryland Avenue, SW continues across 3rd Street, SW and terminates at the grounds of the U.S. Capitol. The Avenue is one-way to the southwest from 1st to 3rd Street, SW. This street was historically the location of mainline railroad facilities within a portion of its length where it extends to the Potomac River west of Virginia Avenue. Railroad tracks covered this portion of Maryland Avenue from the mid-1800s to early 1900s, when the development of Union Station resulted in the removal of such tracks.

Spur Road - a one-lane, one-way eastbound road running from Maryland Avenue mid-site along the northern edge of the DoEd Building (with curb side parking). The road provides access to an additional parking lane on-site and intersects with 4th Street, SW just south of Independence Avenue at a stop sign-controlled “T” intersection. The spur road is in alignment with the undivided portion of Maryland Avenue on-site and the Maryland Avenue corridor.

4th Street, SW – a four-lane, two-way collector running north-south along the east side of the site, which intersects with Independence Avenue. To the north, 4th Street, SW, crosses the National Mall and ends at Pennsylvania Avenue. South of the site, 4th Street, SW continues under Interstate (I) 395 to I Street, SW. An additional northbound lane is provided during peak periods.

6th Street, SW – a two-lane, two-way collector running north-south along the west side of the site, which temporarily ends at Independence Avenue adjacent to the site due to the Mall.

Figure 3-3
Roadways of the Preferred Site



Source: The Eisenhower Memorial Commission, Gensler, 2006

To the south, 6th Street, SW, intersects Maryland Avenue, SW and ends at I-395. Curb side parking converts to two more traffic lanes during peak hours.

7th Street, SW – a four-lane, north-south collector, which intersects Independence and Maryland Avenues one block west of the site, and operates as six lanes during peak periods.

Regional roadway access from the site is provided to I-395 (0.3 miles to the south) via 14th, 12th, 9th, or 3rd Streets, or Washington Avenue. I-395 provides access to Virginia and I-295, which provides access to Maryland and the Capital Beltway (I-495) of the Washington Metropolitan Area.

Intersections

Intersections for the site roadways (previously described) are controlled by electronic traffic signals or signage, and include:

- Maryland Avenue, SW at Independence (yield sign);
- Maryland Avenue, SW at 6th Street, SW (signalized);
- Maryland Avenue, SW at 7th Street, SW (signalized);
- Spur Road at 4th Street, SW (stop sign);
- Independence Avenue at 6th Street, SW (signalized);
- Independence Avenue at 4th Street, SW (signalized).

The unsignalized yield-controlled intersection of Maryland Avenue, SW at Independence Avenue requires traffic movements crossing Independence Avenue at this intersection to wait for a break or opening in the traffic flow to turn onto Independence Avenue, which can create delays and driving hazards during peak traffic periods. In addition, this intersection is mid-block between the intersections of 4th and

6th Streets, SW at Independence Avenue, creating additional vehicle turning movements (unsignalized) in proximity to the turning movements at the two signalized intersections.

3.3.2 Vehicular Traffic

In general, traffic on the roadway network around the site operates efficiently and has excess capacity under most circumstances. However, traffic can be constrained due to the intermittent movement of taxis, buses, service vehicles, and police, and from visitors searching for parking spaces, particularly before and after events on the National Mall.

The District of Columbia Department of Transportation (DDOT) provides District roadway traffic volume maps on its website (<http://www.ddot.dc.gov>) as Annual Average Weekday Traffic (AAWT) for most District roadways. Traffic data is collected in both directions of the roadways by human counters and machines over a 24-hour period, and averaged annually. The most recent AAWT volumes from DDOT for the roadway segment near the site were:

Table 3-1 Roadway Traffic Volumes

Roadway	AAWT Volumes
Independence Avenue	23,400
Maryland Avenue	2,800
6th Street, SW	(not available)
4th Street, SW	14,400

Source: DDOT, 2002

Transportation Studies

A preliminary study of vehicular and pedestrian traffic, and parking for the site was prepared for the Commission in October 2005, as part of the due-diligence assessment of the site for the proposed Eisenhower Memorial. The study identified the existing roadways, and vehicular traffic and parking on and adjacent to the preferred site.

In order to determine the area traffic demand, manual traffic turning movement counts were taken on September 7th and 8th, 2005 during a mid-week day for three, two-hour peak periods (AM peak, Mid-Day peak, and PM peak) at the four major intersections on and adjacent to the site. Traffic volumes and movements are summarized in Table 3-2.

According to the preliminary study, vehicular traffic volumes on the Maryland Avenue segment on-site are comparatively low and substantially below the capacity of its existing configuration. The traffic signals and unsignalized intersections typically operate with very little delay or stacking of vehicles. Traffic volumes are heaviest on Independence Avenue, with the heaviest traffic headed west in the peak AM, and conversely, headed east in the peak PM (Earth Tech 2005).

A more detailed Traffic Impact Study (TIS) was prepared by the EMC in February 2006. The TIS studied traffic patterns, volumes, and level-of-service. Supplemental traffic counts were taken on January 7th, 11th, and 12th, 2006 at the intersections of 7th Street, SW with Independence and Maryland Avenues during the same periods as the October 2005 study, and added a Saturday peak period (11:00 a.m. –

2:00 p.m.) for these two new intersections and the four site intersections.

Peak Traffic Volumes

Traffic volumes from the September 2005 and January 2006 traffic counts were balanced and adjusted to provide consistency with the study area (Earth Tech, 2006). The TIS traffic volumes indicated the highest traffic volumes occurred during four peak periods (see Table 3-2 below):

- weekday AM (7:45-8:45 a.m.);
- weekday mid-day (12:15-1:15 p.m.);
- weekday PM (4:45-5:45 p.m.); and
- weekend peak hour (Saturday 1:00-2:00 p.m.).

Table 3-2 Existing Peak Traffic Volumes

Roadway Segments (between intersections)	Peak AM	Peak Day	Peak PM	Peak Sat.
Independence Ave (MD Ave – 4 th St)	2,350	1,433	2,804	1,023
Independence Ave (6 th St - MD Ave)	2,168	1,352	2,516	975
Independence Ave (7 th St – 6 th St)	2,361	1,526	2,679	1,033
Maryland Ave (6 th St – Independence Ave)	236	101	279	77
Maryland Ave (7 th St – 6 th St)	259	64	197	65
7 th St (Independence – Maryland Ave)	1,058	793	984	531
6 th St (Independence Ave – MD Ave)	273	213	240	101
6 th St (Maryland Ave – C St)	290	251	400	103
4 th St (Independence Ave – C St)	346	286	447	207

Source: Earth Tech, 2006

The heaviest traffic movements occur on Independence Avenue, with the highest volumes of 2,804 vehicles during the peak weekday PM between Maryland Avenue and 4th Street, SW. Volumes are approximately half of the peak PM period

during the peak mid-day (1,433 vehicles), and further reduced on the peak Saturday period (1,023 vehicles). The predominant direction of flow is eastbound during the peak PM period, and westbound in the peak AM period (2,350 vehicles).

Maryland Avenue on-site experiences its highest volumes (279 vehicles) during the peak PM period in the eastbound direction, entirely turning right (east) at the yield-controlled intersection to join the predominant eastbound traffic on Independence Avenue during the peak PM period.

The second highest traffic volumes in the site vicinity are observed on 7th Street, SW between Independence Avenue and Maryland Avenue during the peak AM period (1058 vehicles) and the peak PM period (984 vehicles). During the peak mid-day, the volumes reduce slightly to 793 vehicles.

Volumes on 6th Street, SW are more balanced between the peak AM (273 vehicles) and peak PM periods (240 vehicles) from Independence Avenue to Maryland Avenue. However, the highest volumes (400 vehicles) occur during the peak PM period from C Street, SW, to Maryland Avenue, which drops to 240 vehicles north of the Maryland Avenue intersection. This is a likely indication of vehicles turning northeast onto Maryland Avenue on-site to turn right (east) at the yield-controlled (unsignalized) intersection on Independence Avenue, rather than utilizing the 6th Street, SW signalized intersection at Independence Avenue during the peak PM period.

Traffic volumes on 4th Street, SW are higher than on 6th Street, SW, and are highest during the peak PM period (447 vehicles),

predominantly headed northbound, and turning right (east) onto Independence Avenue.

Average Daily Traffic Volumes

Average Daily Traffic (ADT) Volumes for the site roadway segments were derived from DDOT 2002 traffic volumes adjusted to Year 2006, which are based on the 2002 DDOT predictions that traffic volumes will grow annually by one percent for minor roadways (DDOT, 2002). Projected ADT volumes, threshold capacity volumes, and the percentage (%) of capacity used for the project roadway segments in 2006 are shown in Table 3-3 below:

Table 3-3 2006 ADT Volumes and Roadway Capacity

Project Roadway Segments (between cross streets)	2006 ADT Volumes	Threshold Capacity Volumes	% used
Independence Ave (6 th St - MD Ave)	28,600	45,000	63
Independence Ave (7 th St – 6 th St)	24,000	45,000	53
Maryland Ave (7 th St – 6 th St)	2,900	10,000	29
7 th St (Independence – Maryland Aves)	13,400	20,000	67
6 th St (Maryland Ave – C St)	3,000	10,000	30
4 th St (Independence Ave – C St)	7,000	10,000	70

Source: Earth Tech, 2006

Roadway threshold capacity is a function of traffic lanes in service. The project roadways operate with all lanes (no parking) during peak AM and PM periods. However, the project TIS assumes the conservative approach for capacity that the outside roadway lanes are used for parking (e.g., Independence Avenue is six-lane, major arterial with parking lanes and has a threshold capacity of 45,000 vehicles).

Level of Service Analysis

Using existing peak and ADT traffic volumes, the intersections near the preferred site were analyzed using procedures in the *Highway Capacity Manual (HCM)* (Transportation Research Board 2000) and the HCM - SYNCHRO 6 traffic modeling program to determine operational Level of Service (LOS) for roadways during peak traffic hours.

LOS is a quality measurement of traffic flow in terms of speed and travel time, freedom to maneuver, comfort, and convenience. LOS is designated as A through F (best to worst) operating conditions based on traffic delays ranging from less than 10 seconds (LOS A) to greater than 80 seconds (LOS F). LOS C or better is desired; however, in major urban areas such as the District, LOS D is considered acceptable. LOS E and F are considered at or exceeding capacity, and unacceptable.

Based on the TIS analysis, all of the intersections studied operate at LOS C or better, except for the unsignalized intersection of Independence Avenue and Maryland Avenue, which operates at LOS D. At the intersection of Maryland Avenue and 6th Street, SW, the eastbound approach operates at LOS D. At the four project intersections at Independence Avenue, at least one traffic movement operates at LOS D during peak periods including:

- peak AM northbound 4th Street;
- peak AM northbound Maryland Avenue;
- peak AM northbound 6th Street;
- peak mid-day north bound 6th Street;
- peak mid-day southbound 7th Street; and
- peak PM southbound 7th Street.

3.3.3 Parking

A total of 69 on-street parking spaces are provided on the preferred site along Maryland Avenue, SW and its spur road including 15 permitted spaces for GSA employees during workdays, and 54 metered spaces for the general public (see Figure 3-4). There are an additional 31 on-street metered parking spaces provided along the curb of the three perimeter roadways of the site, and 25 metered and 46 permitted spaces along C Street, SW, between 6th Street, SW and 4th Street, SW.

Additional metered and permitted curb parking is available on surrounding streets (within one block) for a total of 344 on-street parking spaces. On-street parking is restricted during peak AM/PM traffic hours (Monday-Friday from 7:00 a.m. to 9:30 a.m., and 4:00 p.m. to 6:30 p.m.).

Commercial public parking garages are located in the vicinity of the site including a public garage one-half block southwest of the site at 6th and C Streets, SW with a capacity of 634 vehicles in stacked, attendant parking. Hours of garage operation are 6:00 a.m. – 9:00 p.m. on weekdays, and 9:00 a.m. – 6:00 p.m. on weekends.

Parking Demand and Supply

A parking field study was performed for parking occupancy (number of parked cars) in the vicinity of the site. The study was conducted between 11:00 a.m. and 1:00 p.m. on Tuesday January 17, 2006 based on field observations during previous site visits, which showed peak parking demand around noon.

Figure 3-4
Parking and Roadway Circulation



Source: The Eisenhower Memorial Commission, Gensler, 2006

The parking study revealed that metered parking spaces were available within the site (approximately 70 percent were occupied), and more were available along the north perimeter of the site (approximately 58 percent were occupied), where parking along Independence Avenue is underutilized. South of the site, on-street parking is at capacity (100 percent occupied). Total on-street curb parking demand in proximity to the site is 271 of 334 spaces including metered, permitted, government, taxi and bus spaces; therefore, the overall parking space demand is 80 percent, and the available curb parking supply is 60 spaces.

In addition, the parking garage on 6th Street at C Street, SW has 634 parking spaces and operates at 63 percent occupancy during weekdays and much lower on weekends, according to garage records. Therefore, the parking garage demand is 398 spaces, and the available garage supply is 236 spaces.

3.3.4 Transit Systems

The preferred site is located within an area well-served by public transit systems including the Washington Metropolitan Area Transportation Authority's (WMATA) Metrorail and Metrobus systems, commuter and national rail lines, and tourist-oriented shuttle buses.

Metrorail is accessible within approximately a half-mile radius of the preferred site at four Metrorail stations: Federal Center SW, L'Enfant Plaza, Smithsonian, and Archives-Navy Memorial. The Federal Center SW and L'Enfant Plaza stations are located within two blocks of the preferred site to the southeast and southwest, respectively. The Smithsonian and Archives-Navy Memorial stations are located within four blocks of the site to the east and north, respectively (see Figure

3-5). The site is served by four Metrorail routes (green, blue, orange, and yellow lines), providing access to destinations within the District including Union Station, as well as within suburban Northern Virginia and Southern Maryland.

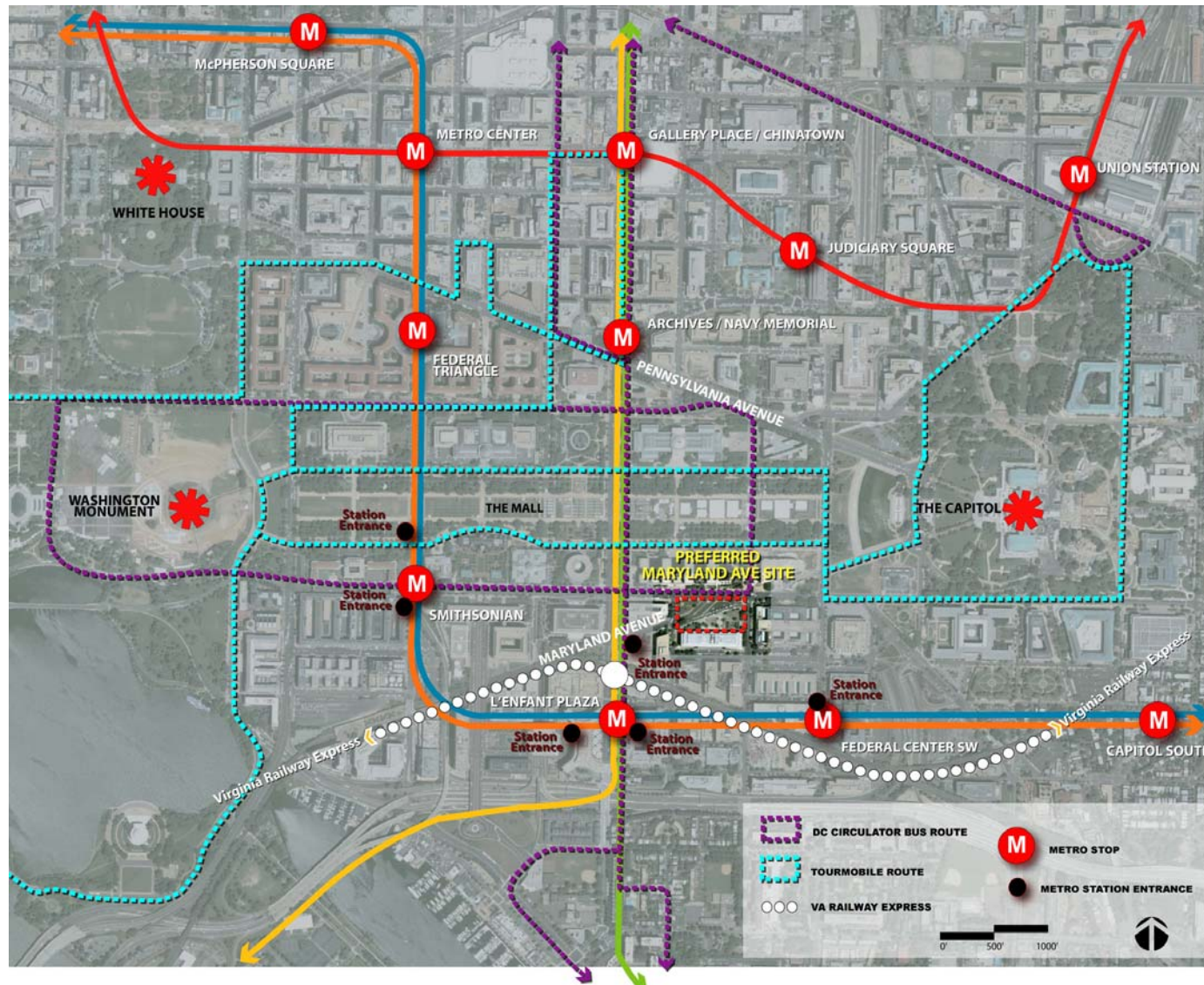
Union Station, located almost one mile northeast of the site, provides access to Metrorail system, the Maryland Rail Commuter Service (MARC) and Virginia Railway Express (VRE) commuter rail lines, and the nationwide rail system (Amtrak). The L'Enfant Plaza Metrorail station includes VRE service during peak AM and PM hours only.

WMATA provides Metrobus service from major roadways in the District to nearby Metrorail stations. There is bus service in proximity to the preferred site on 7th Street, SW (ten bus routes), Independence Avenue (eight bus routes), 4th Street, SW (three bus routes), 6th Street, SW (one bus route) (WMATA, 2006). There is no Metrobus service on Maryland Avenue between Independence Avenue and 6th Street, SW.

Metrobus drop-off zones for visitors are located along the street curb of Independence Avenue near the preferred site. Handicapped access is provided on Metrorail trains and buses, and at their pick-up and drop-off locations at Metrorail stations.

The tourist-oriented shuttle buses include the Circulator, the Tourmobile, and Old Town Trolley. The Circulator is a DC bus service provided by DDOT and WMATA, which connects southwest DC with Downtown DC along 7th Street, SW and NW. There are Circulator bus stops along 7th Street, SW at its intersections with Independence Avenue and Maryland Avenue, SW. The Tourmobile is a sightseeing open-air bus

Figure 3-5
Transit Access to the Preferred Site



Source: The Eisenhower Memorial Commission, Gensler, 2006

authorized by the NPS to provide an interpretive shuttle between tourist attractions within the Monumental Core of the District. There is a Tourmobile route within the National Mall along Jefferson Drive which stops approximately every 30 minutes daily between 9:30 a.m. and 4:30 p.m. at the NASM, one block from the preferred site. Old Town Trolley provides tourist bus service for NASM and NMAI along Independence Avenue, approximately every 30 minutes daily between 9:00 a.m. and 4:30 p.m.

3.3.5 Pedestrian/Bicycle Circulation

Pedestrian Circulation

The preferred site is located in a pedestrian-friendly environment, which includes sidewalks, crosswalks, pedestrian signals, proximity to the trails of the National Mall, open park space, museums and other pedestrian attractions. Sidewalks exist along all streets of the study area, except along the north side of the preferred site, which is fenced off at the curb line for construction. Pedestrian signals exist at all crosswalks except at the intersection of Maryland Avenue and 6th Street, SW.

The preferred site is primarily accessed by employees of the surrounding buildings, in particular the adjacent DoEd Building. Visitors in the southeast area of the National Mall also regularly cross the site. The GSA employee parking and public metered parking on and adjacent to the preferred site provides a source of available parking in the immediate area, which generates moderate pedestrian traffic on and off the site.

Pedestrian circulation on-site is provided by paved sidewalks along Independence and Maryland Avenues and 4th and 6th

Streets. Pedestrian crosswalks with automated signals and marked roadway crosswalks are provided at signalized intersections of Independence Avenue with 4th and 6th Streets, respectively. However, there are no pedestrian signals at the crosswalk at the intersection of Maryland Avenue and 6th Street, SW. Pedestrian pathways on the site include wide sidewalks and signage to meet Americans with Disabilities Act (ADA) requirements and include curb access at the crosswalks directly connected to the Department of Education Building.

Pedestrian Study

According to the preliminary pedestrian circulation study, existing pedestrian volumes are relatively low. Additional pedestrian capacity is available with the existing pedestrian facilities (i.e., crosswalks, sidewalks) (Earth Tech 2005).

As part of the TIS undertaken for the EMC, pedestrian counts were initially taken on September 7 and 8, 2005, with supplemental counts taken on January 7, 11, and 12, 2006, during the peak AM (6:45 a.m.-8:45 a.m.), peak mid-day (11:45 a.m.-1:45 p.m.), peak PM (3:45 p.m.-5:45 p.m.), and peak Saturday (11:30 a.m.-2:30 p.m.) periods.

Pedestrian accident records for the 1997-1999 period shows two locations with safety concerns: Independence Avenue at 4th Street, SW, and C Street, SW at 4th Street, SW, where approximately three to four pedestrian accidents have been observed at each location.

Off-site Circulation

Across Independence Avenue from the site, museums, monuments, galleries, and gardens of the National Mall generate visitors and employees. Adjacent to the site, the NASM generates approximately 4.9 million visitors annually and the NMAI, approximately 1.7 million annually. In proximity to the site, the east-west axis of the National Mall is the most popular route for pedestrian traffic in the area. High pedestrian activity corridors in the vicinity of the site include the sidewalks along both sides of Independence Avenue.

Walkways on the Mall also bring visitors from areas outside of the greensward of the Mall, including the Ellipse and White House to the northwest; the U.S. Capitol Building to the east; the Holocaust Memorial Museum, Bureau of Engraving and Printing, Washington Monument, Lincoln Memorial, and the Korean, Vietnam, and World War II Veterans Memorials to the west.

Pedestrian activity in the vicinity of the site is also generated by nearby Metrorail stations (i.e., L'Enfant Plaza, Federal Center SW, and Smithsonian stations), parking garages and on-street parking, tour bus visitor drop-off areas, and other area attractions near the Mall. Key pedestrian entry points to the site include Maryland Avenue from the L'Enfant Plaza parking garage and Metrorail/VRE stations to the southwest; and from 4th Street from the Federal Center SW Metrorail station to the southeast.

Bicycle Circulation

There are designated bicycle circulation patterns in the vicinity of the site. Designated on-street bikeways are provided on Massachusetts, Pennsylvania, Constitution, and Independence Avenues. Jefferson and Madison Drives within the National Mall have been designated bikeways by the Metropolitan Council of Governments and are included in *The Bicycle Element of the Long-Range Transportation Plan of the National Capitol Region* (MWCOC 1991). These bikeways continue west to the Rock Creek Trail and cross the Potomac River via several bridges to the Mount Vernon or George Washington Trails along the Potomac River in Virginia. There are also pathways on the National Mall that are designed for off-road bicycles.

According to the TIS, a signed bike route along 4th Street, SW provides direct bicycle access to the preferred site. This bike route connects to a nearby bike trail located on the National Mall, which runs along Jefferson Drive, one block north of Independence Avenue. Bicycle riding on sidewalks is restricted in downtown Washington, DC.

The DC Bicycle Master Plan proposes 4th Street, SW to include a bike lane shared with vehicular traffic, and to incorporate a signed bicycle route on Independence Avenue east of 4th Street, SW.

3.4 Physical and Natural Resources

3.4.1 Air Quality

In response to the Clean Air Act (CAA) of 1970 and the CAA Amendments of 1977 and 1990, the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for the protection of human health and welfare. NAAQS are set for the criteria pollutants of carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), particulate matter equal to or less than 10 microns in size (PM₁₀), and fine particulate matter (PM_{2.5}). The EPA assesses NAAQS compliance for geographic regions throughout the United States. Regions that do not meet the NAAQS are classified as non-attainment areas to the degree of “marginal,” “moderate,” “serious,” “severe,” or “extreme.”

The proposed project is located within the Metropolitan Washington air quality region, which includes Washington, D.C. and 10 surrounding counties in Virginia and Maryland. The region currently meets NAAQS for all criteria pollutants except for ozone (one-hour standard) (EPA, 2005). In 2003, the EPA redesignated the area from a “serious” to “severe” non-attainment area for ozone.

The EPA requires air quality regions to prepare attainment plans to reduce ozone-causing emissions to achieve attainment with the NAAQS for the criteria pollutants. Federal agencies responsible for an action in a non-attainment area are required to determine that the action either conforms with the attainment plan or is exempt from determining conformity.

EPA has determined that federal actions are exempt from conformity determinations where the total of all reasonably foreseeable direct and indirect emissions of non-attainment pollutants: (1) would be less than their specified emission rate thresholds, known as *de minimis* limits, and (2) would be less than 10 percent of the area’s annual emission budget. The *de minimis* limits for “severe” non-attainment of ozone are 25 tons per year each for emissions of volatile organic compounds (VOC) and oxides of nitrogen (NO_x), the primary constituents in the formation of ozone.

3.4.2 Noise Levels

Noise levels are usually measured and expressed in decibels (dB) that are weighted to sounds perceivable by the human ear (A-weighted sound level (dBA)). Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of frequencies from distant sources, which create a relatively steady background noise in which no particular source is identifiable. Noise sources are typically measured over a period of time since noise levels vary depending on the source, and they are usually expressed as dBA L_{eq}, the equivalent noise level for that period of time.

District noise regulations establish maximum permissible sound levels for an operation, activity, or noise source on a property. Institutional zoned areas have a maximum allowable noise limit of 65 dBA (daytime) and 60 dBA (nighttime). For construction activities, the regulations require that from 7:00 a.m. to 7:00 p.m. on any weekday, construction and demolition noise levels (excluding pile drivers) shall not exceed 80 dB(A) L_{eq} unless granted a variance from the District. In addition,

from 7:00 p.m. to 7:00 a.m., maximum noise levels apply for the area's land use, which for the preferred site would be 65 dBA for institutional zoned areas.

The noise limits of these regulations are designed to protect human activities or land uses that may be interfered with by noise levels. These uses are considered to be sensitive noise receptors, which include residential dwellings, hotels, hospitals, nursing homes, educational facilities, and libraries. Sensitive noise receptors also include threatened or endangered biological species and habitat, especially during breeding seasons. The NASM and NMAI would be considered potential sensitive noise receptors since they serve an educational function. Commercial (office buildings) and industrial land uses are generally not considered to be sensitive to noise.

The predominant existing noise source on the site is vehicle traffic on the roadways adjacent to the site. Periodic elevated noise levels are generated by special events or concerts on the Mall and the U.S. Capitol Grounds (e.g., Presidential inaugurations).

3.4.3 Water Resources

Water resources include surface water, stormwater, wetlands, floodplains, and groundwater.

Surface Water

The preferred site is located within the Potomac River drainage basin, a sub-basin of the Chesapeake Bay Watershed. The site drains towards the Tidal Basin and the Washington Channel, which drain to the Potomac River. There are no permanent bodies of surface water located on or near the preferred site. The surface water bodies closest to the preferred site are the Tidal Basin (approximately 0.3 miles to the southwest) and the Washington Channel (approximately 0.4 miles to the south), which drain to the Potomac River (approximately 0.7 miles to the southwest).

Stormwater

Approximately 70-80 percent of the site is made up of structures, streets, walkways, and parking areas, and is thus impervious. The permeable surfaces of the area are a combination of open space and grassy and vegetated areas on the NPS parcel. Surface water may exist temporarily on land as ponded stormwater, which infiltrates at varying rates into soil not covered by impervious surfaces. Once saturated, these surfaces may behave as impervious surfaces. Stormwater runoff drains down slope, and requires stormwater collection systems to manage the runoff.

There are no stormwater detention facilities on the preferred site. Stormwater is collected through five stormwater drains

along the curbside of the roadways within and adjacent to the site, and discharged either to the District's combined storm and sanitary sewer system, or directly to the Potomac River.

The District's combined sewer interceptor lines lead to the Blue Plains Treatment Facility where combined stormwater and sewage are treated to standards in accordance with the Facility's National Pollutant Discharge Elimination System (NPDES) permit prior to release as treated effluent to the Potomac River.

Wetlands

Wetlands are defined by three characteristics: hydrophytic vegetation, soils inundated or saturated for greater than 12.5% of the growing season, and hydric soils. The preferred site is located in an urban setting with minor level grassed areas used for community gardens. As such, the site would not exhibit the indicators for the presence of wetlands. Wetlands may be present in the vicinity of the site along the Tidal Basin, Washington Channel, and Potomac River.

Floodplains

The preferred site is not located within the 100-year floodplain boundary of the Potomac River. In proximity to the site, the NMAI is not located within the floodplain boundary (U.S. Army Corps of Engineers, 1992), however, the NASM is located immediately adjacent to the 100-year floodplain boundary (Smithsonian Institution, 2004).

On the northwestern side of the National Mall, the National Museum of American History and the National Museum of Natural History are located within the 100-year floodplain of

the Potomac River. The Smithsonian Institution buildings on the National Mall are protected by an Army Corps of Engineers Federal Control Project of permanent and temporary levees. During a flood disaster, a series of temporary closures must be completed by the NPS at 17th Street and the intersection of 23rd and Constitution Avenue, NW. Another closure, at P Street and Canal Street, SW is the responsibility of the D.C. Office of Emergency Preparedness. The system has a 24-48 hour advance flood warning period. Constructed in 1939, the system will contain a 185-year interval for coincident tidal flood and river discharge of 700,000 cfs with 1.0 foot of freeboard, or a coincident tidal flood and river discharge of 575,000 cfs (100 year return interval) with 3.5 feet of freeboard. Existing protection is set at 19.1 feet. Thus, the preferred site and other buildings in the area are potentially subject to flooding from unexpected flooding of the Potomac River.

Groundwater

Regionally, the groundwater aquifer system under the preferred site is composed of unconsolidated Coastal Plain sediments, through which groundwater flows to the southwest.

Groundwater levels may fluctuate seasonally and yearly with variations in precipitation, evaporation, surface absorption (and groundwater recharge), and groundwater pumping from soil dewatering for construction and facility operation. Locally, groundwater migration may be altered by proximity to underground Metrorail tunnels and pipelines that often act as barriers to flow, raising the groundwater level on the up gradient side of the obstruction and lowering the level on the down gradient side. This may cause variation in the local depth to groundwater (DC WRRC, 1993).

On the NMAI site, adjacent to the preferred site, groundwater levels were estimated at approximately 22 to 26 feet below the ground surface (Smithsonian Institution, 1993). Groundwater levels on the preferred site are not anticipated to be encountered within the first 15 feet below grade (EarthTech, 2005). While the DoEd building has three stories below-grade housing mechanical systems, the precise groundwater level on the preferred site is not known. In addition, seasonal and annual fluctuations of groundwater levels should be expected with variations in precipitation, surface temperature, stormwater runoff, groundwater pumping, evaporation, and vegetation transpiration.

3.4.4 Geophysical Resources

Geophysical resources include geology, soils, and topography.

Geology

The preferred site is regionally located within the geological province of the Atlantic Coastal Plain Region, where natural sedimentary materials of sand, clay, and silt overlay crystalline bedrock. The surrounding area has been historically developed by the placement of fill material upon a geologic terrace above the Potomac River floodplain. The terrace deposits have been encountered at depths of 32 to 44 feet below the ground surface (Smithsonian Institution, 1993).

Soils

The surface soils of the area are classified as Urban Land Association, which are soils that have been previously disturbed, cut, or filled, and may be covered by impervious

surfaces. Existing fill material may be present on the preferred site at varying depths and, based on previous investigations on at the adjacent NMAI, may contain foreign materials and trace petroleum odors due to historical use of the area (Smithsonian Institution, 1993).

The majority of the site soils, as well as those surrounding the site, have been altered and covered with grassed areas and impervious surfaces such as asphalt streets and concrete sidewalks and plazas. The NPS parcel of the site is predominantly grassed in the form of open space and community gardens. The majority of the GSA parcel of the site consists of a paved plaza and sidewalks to the DoEd building.

A preliminary soil investigation was conducted by the EMC. Upon reviewing limited soil data available from WMATA soil borings (additional soil information pending from GSA for NMAI), the study found that there appears to be no geotechnical findings that would limit the construction of the Eisenhower Memorial (Earth Tech, 2005). The study extrapolated that the soil condition at the preferred site consists of approximately 15-25 feet of fill material over original ground, which is typically mixed sands and gravels with silt traces, with interbedded layers of silty clays and some debris. The original ground is likely to consist of 10-20 feet of silts over stiff sandy clay of Cretaceous Age as deep foundation material (EarthTech, 2005).

Topography

The topography of the preferred site is relatively flat and level due to the existing roadways, open spaces, and plaza areas. Surface elevations on the site range from approximately 15 feet

above mean sea level (AMSL) on the ground surface to approximately 17 feet AMSL for the plaza. Maryland Avenue divides the site into two parcels. There are no substantive slope changes within each parcel. A below-grade courtyard currently exists near the south edge of the site adjacent to the DoEd Building.

3.4.5 Biological Resources

The preferred site is located in an urban environment, in which the natural environment has been previously disturbed, developed, and partially restored with some grassed landscaping on the NPS parcel. Therefore, the area does not provide a natural habitat for plant and animal species.

Vegetation

Limited vegetation on the site consists of landscaped grasses, shrubbery, trees, and community gardens. The NPS parcel consists primarily of grassed, open space, occupied primarily with clusters of community gardens plots of varying shapes and sizes, and a few small to medium trees.



Looking west at the NPS parcel in the northwest corner of the site

The DC parcel consists of the site roadways with open, grassed area between Maryland Avenue and the spur road parking lane, and a narrow strip of grassed area on the traffic island of Maryland Avenue. The GSA parcel contains minimal grassed areas with an open paved plaza with planters, and a below-grade, grassed patio. There is a narrow grass strip between the curb of Independence Avenue and the associated sidewalk on the northern perimeter of the site.

There are 58 trees on the preferred site, of which 24 trees are comparatively large, 24 trees are medium-sized, and 10 trees are comparatively small. Six large trees line 4th Street, SW, and 12 large trees line the south side of the Maryland Avenue sur road adjacent to the DoEd Building. There are 14 small, medium, and large trees along Independence Avenue, and 6th Street between curb and sidewalk, totaling 32 perimeter trees.



Large tree along Independence Avenue northwest of the Maryland Avenue corridor

Within the preferred site, there are 26 trees: four medium-sized trees within the NPS parcel, six small trees within the DC parcel, and 16 medium-sized trees within in the paved plaza area, 12 of which are located within the below-grade patio. A majority of the trees appear to be in good health. The dominant tree species identified along Independence Avenue is the American Elm. The dominant species identified along Maryland Avenue, 6th Street, and 4th Street is the Willow Oak (Casey Tree Foundation Inventory, 2006).

Wildlife

The existing wildlife community on-site likely includes common urban species of small mammals and birds, such as gray squirrels (*Sciurus carolinensis*), Norway rats (*Rattus norvegicus*), house sparrows (*Passer domesticus*), pigeons (*Columba livia*), and starlings (*Sturnus vulgaris*).

Rare, Threatened and Endangered Species

Due to the lack of vegetative habitat, it is highly unlikely that rare, threatened, or endangered species, or critical habitat for such species, are located on or adjacent to the preferred site.

3.5 Urban Systems

3.5.1 Utilities

Utilities on and adjacent to the preferred site include sanitary sewer systems, water supply systems, stormwater management systems, and energy systems.

A preliminary utilities evaluation was undertaken for the preferred site. To determine existing underground utility information, the following providers were contacted: The District of Columbia Water and Sewer Authority (DC-WASA), Washington Gas Company, Potomac Electric Power Company (PEPCO), Comcast Cable Washington, AT&T, MCI, and Verizon. In addition, DDOT, GSA, and WMATA were also contacted to provide information. The recorded utility data was compiled and reviewed, and a site visit was performed to visually verify locations. A composite utility plan was created using the available utility data (see Figure 3-6). This plan does not include the DoEd building's concrete patio and sunken garden. Based on the collected information, the following utilities/facilities were found: sanitary sewer, water supply, storm sewer, natural gas, electric, telephone/communication, steam tunnel, air intake vents, street lighting, and traffic control. The composite plan indicates that the majority of the trunk lines are located at the perimeter of the site.

Sanitary Sewer Systems

DC-WASA provides wastewater management in the District that includes the collection and treatment of wastewater (sewage) and the discharge of treated effluent to the Potomac

River. A majority of the sewage systems in DC are comprised of combined storm and sanitary sewer lines. Sewage and stormwater are collected and transported in this combined sewer system for treatment at DC-WASA's Blue Plains Wastewater Treatment Plant (WWTP). Treated effluent is then discharged into the Potomac River.

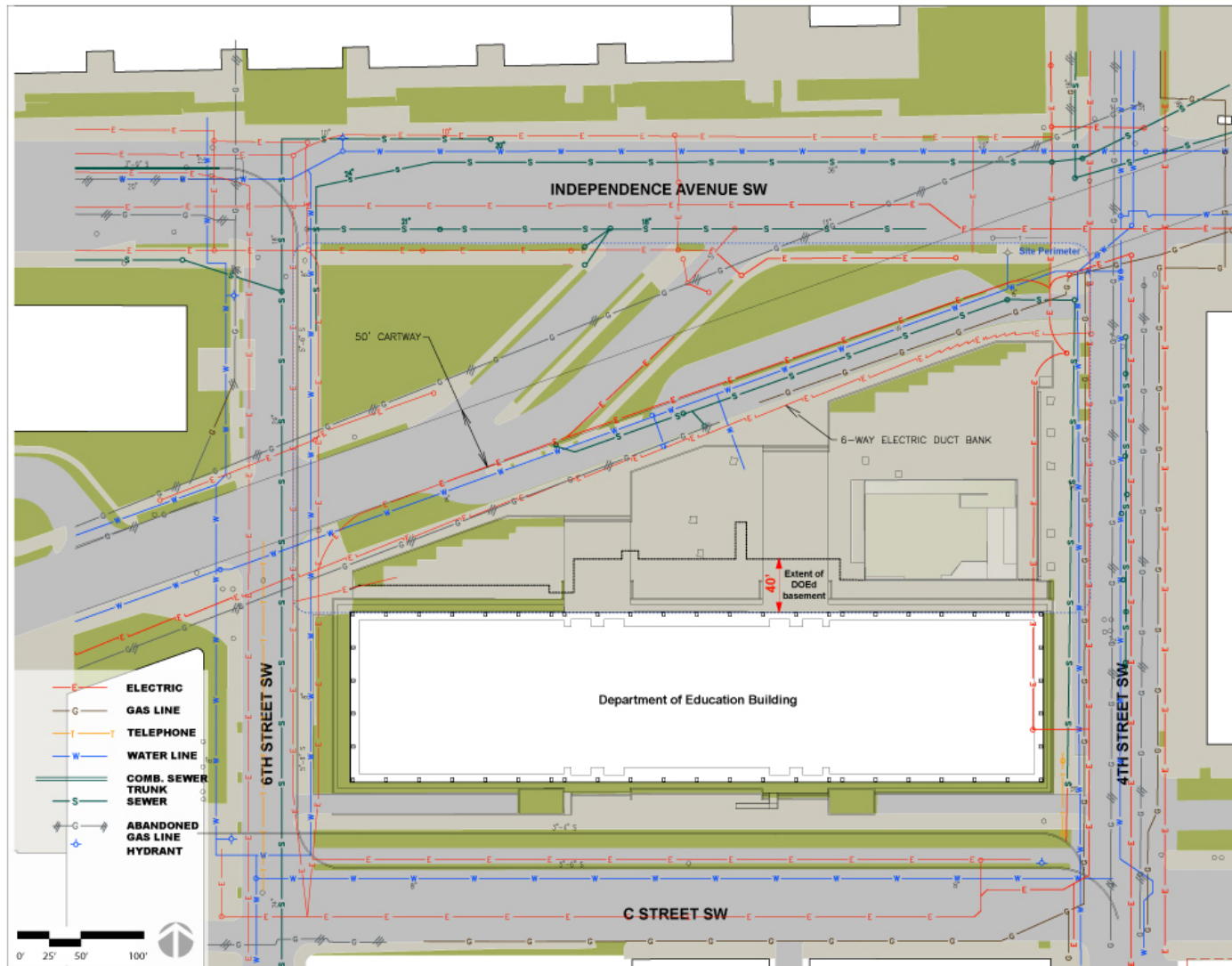
Under extreme stormwater events, combined sewer overflow (CSO) may be released from the system directly into the Potomac River due to the combined flows exceeding the hydraulic capacity of the system. Even though CSOs contain an untreated wastewater component, their release into the river occurs for a short duration and the wastewater is diluted by the stormwater component of the discharge and the stormwater-laden river.

Wastewater from the DoEd building is collected and transported to the Blue Plains WWTP for treatment and disposal. There is no wastewater generated on-site.

Water Supply

The DC-WASA provides water supply to the District. The source of the raw water comes from the upper reaches of the Potomac River, which is treated via the Dalecarlia and McMillan Reservoirs (for sedimentation) and DC-WASA water treatment plants. Pump stations within the distribution system deliver water through mains and laterals to the buildings and facilities (fire hydrants) within the District.

Figure 3-6
Utility Diagram of the Preferred Site



Source: The Eisenhower Memorial Commission, Gensler, 2006

Water mains are located along the roadways on and adjacent to the preferred site. Distribution pipes connect the water mains to the DoEd building. Water supply is provided on the preferred site for irrigation of the community gardens and the grassed open space area of the NPS parcel.

Stormwater Management Systems

Stormwater on the preferred site drains to stormwater collection systems (e.g., storm drains) surrounding the building and the adjacent roadways. Stormwater collector pipes connect to main pipelines along the curb of the site roadways. Stormwater flows are combined with wastewater and transported to the Blue Plains WWTP for treatment and subsequent treated effluent discharge to the Potomac River.

In general, stormwater runoff can become contaminated by pollutants from impervious surfaces such as fuel, oil, antifreeze, grease from moving and parked vehicles, sediment from disturbed or exposed soil, and solid waste collected in catch basins or storm drains.

As such, contaminated stormwater can adversely affect the treatment process at the District's WWTP. In addition, under extreme stormwater events, such as a 50-year storm event or greater, CSOs and their untreated wastewater component may be released directly into the Potomac River.

Energy Systems

The Potomac Electric Power Company (PEPCO) provides electricity, steam, and natural gas to the District. Electricity and

natural gas lines are located along the roadways on and adjacent to the preferred site.

3.5.2 Solid Waste

The preferred site provides vehicle access and parking, pedestrian access, and recreational garden and fitness areas. The site does not contain operations which produce solid waste. Limited solid waste from pedestrians is collected in trash receptacles for removal by District services.

3.5.3 Hazardous Materials and Waste

Site Conditions

There is limited subsurface data on the preferred site. Historically, the site and surrounding area was marsh, which was filled with materials of unknown origin to elevate the area above flood conditions for the development of the city. In the 1800s, the preferred site was densely developed as residential with several light industrial facilities in the corners of the site. In the mid-1900s, the site was cleared, and the DoEd Building was constructed.

Based on the presence of unknown fill material, and historic industrial uses on the site and within the surrounding area, there is the potential for contaminants within the soil. Contamination could be from natural sources such as trace amounts of arsenic, copper, chromium, or zinc; or manmade sources such as volatile organic compounds from hydrocarbon-containing products (fuels, oils, solvents). These elements may not meet the EPA definition of hazardous materials, but may

instead be evaluated based on EPA risk-based human exposure for specific land uses.

Off-site Conditions

Soil borings were performed for the recent development of the NMAI northeast of the preferred site. These borings confirmed the previous placement of fill material on the NMAI site (Smithsonian Institution, 1993). In addition, the NMAI site has a history of varied uses including a petroleum storage tank and gasoline station on-site. The soil borings identified soils with hydrocarbon odors, which were field-confirmed using photo-ionization detection and laboratory testing. However, the resulting levels were well below the District threshold requiring soil remediation.

A previous historical database search of the National Mall and surrounding areas identified various parts of the Mall as a

Resource Conservation and Recovery Act (RCRA) site. RCRA sites generate hazardous waste regulated by RCRA including solvents, paints, paint removers, glues, inks, cleaning fluids, and pesticides. The NASM paint shop, photographic lab, exhibit workshops, engineer mechanical room, building management division, audio-visual unit, silk-screen operation, and store generate wastes made up of the types of materials listed above.

In addition, the National Mall contains sites where hazardous wastes have been previously deposited or spilled, as recorded by EPA, as part of the Superfund Program under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). However, these sites have since been corrected, and EPA requires no further action.

SECTION 4.0



ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

This section describes the potential environmental impacts of the Proposed Alternative (development of the preferred site for the Eisenhower Memorial) on the resource disciplines identified in Section 3.0. Recommended mitigation measures are provided to avoid, minimize, or offset the impacts of the Proposed Alternative. In addition, this section describes the potential environmental impacts of the No Action Alternative for each resource discipline.

4.1 Socio-Economic Resources

4.1.1 Land Use and Ownership

Proposed Alternative

Land Use

The proposed Eisenhower Memorial would combine the multiple existing elements of the preferred site into a single, unified parcel. An open, landscaped memorial would replace and improve upon the existing uses on the preferred site, including the roadway infrastructure, an underutilized entry plaza, approximately 24 community garden plots, an exercise course, and (potentially) the below-grade courtyard. A relocation site is needed for these facilities. As stated earlier, the gardens may be displaced, and the overall substantial increase in green space provided by the newly landscaped plaza would serve to mitigate this change in use. While the displacement of the community gardens and the exercise course from the site would disrupt current users, the resulting open and commemorative space

would be a more appropriate long-term public use for the preferred site.

Under the proposed alternative, the memorial would complement and contribute to the cultural character of the surrounding area. Specifically, it would support and strengthen the existing cultural attractions, memorials, monuments, museums, and facilities located on the National Mall and in the Monumental Core. In addition, the memorial would establish a thematic relationship to the adjacent and directly visible land uses, including the NASM, the FAA headquarters, the DoEd headquarters, the VOA offices and the U.S. Capitol that are each related to Dwight D. Eisenhower's legacy.

As an additional new project in the area, the proposed memorial may contribute to a cumulative impact on land use in conjunction with several other projects located immediately south of the National Mall. Examples include the planned National Children's Museum at L'Enfant Plaza and the planned American Veterans Disabled for Life Memorial. If under construction simultaneously, these projects may cause temporary inconveniences by displacing existing parking and disrupting pedestrian and vehicle routes. Once completed, however, the proposed memorial would be compatible with surrounding uses and, in conjunction with the other Mall projects, would enhance the cultural character of the area and result in a positive cumulative impact.

Ownership

The preferred site currently consists of three parcels that are under the jurisdiction of the District of Columbia, NPS and GSA, respectively. Jurisdiction of the D.C. and GSA properties would

be transferred to NPS, and NPS would manage and operate the proposed memorial as it manages all presidential memorials in D.C. (except for the Kennedy Center). This change in ownership is not anticipated to result in an adverse impact. D.C. controls approximately two acres that encompass the Maryland Avenue right of way (ROW), as well as the existing on-street parking within the preferred site. Since vehicular traffic on Maryland Avenue would terminate at 6th Street, SW, DDOT would transfer the roadway to NPS for establishing the proposed memorial. The conversion of this historic road is addressed in Section 4.2.2 of this document. Similarly, the changes in traffic patterns and parking due to the road conversion are discussed in Section 4.3.

GSA controls approximately 1.5 acres adjacent to the DoEd building, as well as the building itself. This 1.5 acre portion of the preferred site includes an entrance plaza for the north face of DoEd, underground parking that extends for nearly 40 feet beyond the building into the preferred site, and a below-grade courtyard. The primary entrance into the DoEd building is on the south of the building; the entrances to the north, facing the preferred site, are secondary exits. Pedestrian movement from this building through the preferred site is discussed in Section 4.3.5 of this document.

The preferred site is directly adjacent to, and in some respects, in front of the DoEd building, which has approximately 1,400 federal employees. The design of the memorial must consider the functional needs of the DoEd building, including access, emergency egress, and the need for employee gathering space. Thus, potential impacts on this adjacent land use would be avoided. As part of the jurisdiction transfer, NPS and GSA would identify the responsibilities and measures necessary to manage the underground areas that relate to the DoEd building.

Cumulative Impacts

The expansion of green space on the site would have a positive effect on open space in the area. In conjunction with the American Veterans Disabled for Life Memorial, the proposed Eisenhower Memorial would contribute to efforts to extend the character of the National Mall to the south and provide open space amenities to visitors and employees in the area.

Mitigation

During construction of the proposed memorial, proper signage, detour routes, and way-finding measures should be placed around the site so that pedestrians and traffic can be redirected to alternate routes during the construction of the memorial. Construction barriers, such as fences, can be used to ensure that pedestrians do not enter the site during construction.

No Action Alternative

Under the No Action Alternative, the proposed Eisenhower Memorial would not be constructed at the preferred site. Therefore, the existing elements of the site would continue to function similar to current conditions. The opportunity to unify the site and improve the area with a cohesive, open and commemorative space would be lost until such time that a subsequent memorial could be established on the site.

4.1.2 Planning Policies

Proposed Alternative

The proposed memorial would be in compliance with the relevant requirements and guidelines established by federal and local planning policies. These include the following:

Zoning

Building heights would be well below the allowable 90 feet and the Floor Area Ratio would be much less than the permissible maximum of 6.5 even though zoning does not apply to federal property.

Commemorative Works Act, Commemorative Zone Policy and NCPC Memorials and Museums Master Plan

The construction of the proposed memorial on the preferred site would be consistent with, and help implement, the 2002 Commemorative Zone Policy (based on the 1986 Commemorative Works Act and authored by the Joint Task Force for Memorials) and the NCPC *Memorials and Museums Master Plan*. The memorial would be located, in part, within Area I, which is designated for commemorative works of pre-eminent national and historic significance. The memorial would also be located on Prime Candidate Site #3 of the *Memorials and Museums Master Plan*. Consistent with these guiding documents, the memorial would establish a public space that would respect and reinforce the location as a civic plaza and incorporate existing vistas on Maryland Avenue.

Comprehensive Plan for the National Capital, Federal Elements

The proposed memorial would be consistent with goals established in the *Comprehensive Plan for the National Capital, Federal Elements*. Specifically, it would protect and enhance the elements, views, and principles of the L'Enfant and McMillan Plans; preserve the historic street right-of-way by re-establishing the historic alignment of Maryland Avenue as an important visual element on the site; embellish the adjacent L'Enfant avenues and streets with a memorial; maintain and conserve federal open space, thereby enhancing the southwest neighborhood; and locate the memorial in proximity to public transportation.

Ward 2 Plan

The proposed memorial would be consistent with the DC Ward 2 Plan, as it would preserve the design quality of the adjacent historic streets and avenues.

No Action Alternative

Under the No Action Alternative, the Eisenhower Memorial would not be constructed on the preferred site. The site would continue to include roadway infrastructure, an entry plaza, several small garden plots, and an underutilized, below-grade courtyard, which operates solely as a lightwell for the library on the first below-grade level. This would be inconsistent with the *Memorials and Museums Master Plan* which identifies the site as a prime location for a memorial.

4.1.3 Community Facilities

Proposed Alternative

The memorial will include visitor-related facilities such as restrooms, a NPS ranger station, and bookstore. If these are developed, visitors would benefit from easy access to these facilities during their visits to the memorial. Visitors would also have access to nearby restrooms at the NASM and the NMAI.

As discussed above under impacts to land uses, the proposed memorial would displace approximately 24 existing community garden plots of various sizes and the exercise course from the site. The gardens occupy a portion of the 0.5-acre NPS parcel, representing a small percentage of the preferred site. These community resources will be displaced, and the NPS will seek an alternative site in the neighborhood, potentially land owned by the District of Columbia. The mitigation for this effort is the creation of additional open space on the preferred site, benefiting all visitors. Additionally, the design of the memorial should consider providing features or amenities that would benefit day-to-day users of the area, including office employees in the adjacent buildings, so that their experience of the site is enhanced.

No Action Alternative

Under this alternative, the proposed Eisenhower Memorial would not be constructed at the preferred site. Therefore, there would be no impact on existing community facilities at this time.

4.1.4 Visitation

Proposed Alternative

The vast majority of visitors to the memorials and museums of Washington, D.C. view the National Mall and its environs, rather than the individual facilities, as their destination. As a result, it is not expected that the proposed memorial would substantially alter the total amount of visitation to the Monumental Core. As a distinct destination and novel attraction within the Monumental Core, the memorial would likely experience greater than average visitation in the first few years before becoming stabilized at a more typical visitation level.

The EMC projects that after the initial years, the memorial is expected to draw approximately 600,000 visitors on an annual basis. This would translate to an average of approximately 50,000 visitors on a monthly basis, or approximately 1,500 people per peak weekday, and 3,000 on a peak weekend day. According to the EMC, nearly 90 percent of the visitors would come to the site as part of their experience of the adjacent The NASM and NMAI. Including the dedication of the memorial, an annual remembrance event, and potentially activities associated with DoEd, the proposed memorial is anticipated to be an occasional venue for special events. Overall, the proposed memorial would not significantly increase visitation to the immediate area.

The construction of a commemorative landscaped plaza on the preferred site would enhance the visitor experience of the immediate area and would extend the visitor experience of the Mall. Since the site currently offers limited opportunities for visitors, the proposed memorial would result in a long-term

benefit by creating a new destination with a balanced landscape of natural elements and urban design at this location.

No Action Alternative

Under the No Action Alternative, the preferred site would not be developed as the Eisenhower Memorial. Therefore, the visitor experience on and around the site would not be enhanced at this time. The site's potential as an area of interest to visitors within the Monumental Core would not be realized until such time that a subsequent memorial could be established on the site.

4.1.5 Economic and Fiscal Resources

Proposed Alternative

Since the proposed memorial is not anticipated to draw large numbers of new visitors to the area, but instead rely primarily on individuals already visiting nearby destinations, it should not significantly increase sales at restaurants and museum shops in the area. If a bookstore is included as part of the memorial development, sales could be reduced slightly at the NMAI and the NASM museum shops.

Mobile food vendors may be able to operate outside the perimeter of the site, and thus would not be adversely impacted by the construction and operation of the proposed memorial. Vending would not be permitted on Independence Avenue, however, it remains in question on 4th and 6th Streets. The revenue currently generated for the District by the parking meters on the preferred site would be largely relocated to the perimeter of the site if it is developed as a memorial. If the memorial is constructed, the preferred site would continue to be government

property and thus would not generate property taxes for the District of Columbia.

No Action Alternative

Under the No Action Alternative, a memorial would not be developed on the preferred site at this time. Thus, there would be no impact on economic or fiscal resources.

4.2 Cultural Resources

This environmental review effort is occurring concurrently with the Section 106 effort. This EA will incorporate the results of the 106 process, ensuring consistency in the evaluation of the historic resources.

The National Historic Preservation Act (NHPA) of 1966, as amended, establishes standards for evaluating potential effects on historic and archaeological resources. The NHPA defines an “effect” as an “alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register” (36 CFR 800.16). According to the NHPA, an undertaking is considered to have an adverse effect when it may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association (36 CFR 800.9).

Potential effects to archaeological and historic resources include direct and indirect effects. The alteration, physical displacement, or demolition of a resource is a direct effect; changes in the use, operation or character of a resource can be either direct or indirect effects; and changes to the visual context are considered indirect effects. ‘Impacts’, as defined in the CEQ regulations, and ‘effects’, as used in NHPA, are synonymous.

If an undertaking is determined to have an adverse effect on properties included in, or eligible for, the National Register, the lead federal agency and the SHPO enter into consultation to identify ways to avoid or reduce adverse effects. The Advisory Council on Historic Preservation and other interested parties can also participate in the consultation. The first of several

anticipated 106 consultation meetings on the proposed Eisenhower Memorial was held on February 16, 2006.

4.2.1 Archaeological Resources

Proposed Alternative

Under the Proposed Alternative, the Eisenhower Memorial would be constructed on the preferred site. This would require the demolition of the majority of the existing roadway and parking areas, and hardscape and landscape elements, and the potential construction of a plaza, structures, and small service buildings. Archaeological resources were documented on the NMAI site to the northeast of the preferred site. However, since the construction of the plaza and small support building would not require extensive excavation of the site, and since the site has been disturbed by past demolition and construction activities, it is unlikely that intact prehistoric or historic archaeological remains would be encountered during the construction of the Eisenhower Memorial.

Mitigation

In the event that archaeological resources are uncovered during ground-disturbing activities, construction should stop while appropriate archaeological studies are completed in accordance with Section 106 of the NHPA.

No Action Alternative

Under the No Action Alternative, the Eisenhower Memorial would not be constructed on the preferred site. Thus, there would be no effects on archaeological resources at this time.

4.2.2 Historic Resources

Proposed Alternative

Overall, the memorial would transform a divergent group of parks and plazas into a unified memorial concept consistent with the character of a L'Enfant reservation, which can be defined as key open space features at the intersection of major L'Enfant streets. However, the establishment of the Eisenhower Memorial could affect several individual elements of the historic L'Enfant Plan.

Maryland Avenue, as envisioned by L'Enfant, was an important diagonal thoroughfare, providing symbolic views of the U.S. Capitol Building to the northeast. The historic alignment of Maryland Avenue has been altered and is not currently open to vehicular traffic, although off-street parking is available on this segment of the roadway. Instead, a new alignment of Maryland Avenue diverges north from the historic alignment to connect with Independence Avenue at a less pronounced angle. Maryland Avenue is also closed to vehicular traffic one block to the southwest due to railway lines, and it diverges from its historic alignment between 4th and 3rd Streets adjacent to the NMAI. Thus, the vista to the southwest of the preferred site is primarily available from higher vantage points.

With the construction of the proposed memorial, the Maryland Avenue vista would be enhanced. Parking would no longer be allowed within the historic cartway and landscaping elements would be added to frame the historic vista. If a memorial feature is to be located within the historic cartway, it should be consistent in character with other L'Enfant squares or circles,

allowing for an open plaza and continuing the historic view corridor to the northeast and southwest on Maryland Avenue.

Since the current operational alignment of Maryland Avenue is not the historic alignment, further redirecting traffic around the preferred site would not represent an adverse effect. If the treatment of Maryland Avenue within the preferred site is consistent with the principles of the L'Enfant Plan, the implementation of the Proposed Alternative could result in positive effects on this historic resource. The memorial would respect and maintain the historic building line on Independence Avenue, 4th Street, SW, and 6th Street, SW. Thus, the views along these streets would be preserved. The memorial would, therefore, not adversely affect these elements of the historic L'Enfant Plan.

The proposed memorial could potentially affect the west elevation of the Wilbur J. Cohen Building, which is located immediately east of the preferred site and determined to be historically significant by the owner (GSA, 2005). The memorial would respect the historic building line along 4th Street, SW, and the height of the memorial elements would be compatible with the height of the surrounding buildings. As a result, the effects should be minor, if any. If the memorial is primarily a landscaped plaza, affording enhanced open views from Independence Avenue of the Cohen Building's west façade, the effects may be positive.

The proposed memorial could positively affect the National Mall north of the site by replacing the current diverse collection of outdoor elements with a unified memorial space and consistent open space treatments. Additionally, the proposed memorial would be located in proximity to a planned museum, The

National Children's Museum, and a new memorial, the American Veterans Disabled for Life Memorial. The combination of new commemorative memorials and a museum, coupled with the redevelopment of the Botanic Gardens, would enhance the quality of the area surrounding or adjacent to the National Mall.

Mitigation

The memorial should be designed consistent with the principles of the L'Enfant Plan. Specifically, the historic vista from the site to the U.S. Capitol Building should be maintained and enhanced.

No Action Alternative

Under the No Action Alternative, the Eisenhower Memorial would not be constructed on the preferred site. The opportunity to enhance the Maryland Avenue corridor would be lost until such time that a subsequent memorial could be established on the site.

4.2.3 Visual Resources

Proposed Alternative

The area of visual influence provides the context for assessing visual impacts. As described in Section 3.2.3, the area includes the preferred site, important street corridors, and the views of and from the historic and cultural resources that surround the site. While the memorial has not yet been designed, some of the parameters developed to guide the design of the memorial specifically address the visual relationship that the memorial should have with the adjacent area. These include the following:

- maintain the direct vista to the U.S. Capitol along Maryland Avenue, SW;
- strengthen the view corridor and create a welcoming entrance along Independence Avenue, SW; and
- enhance the overall visual quality of the area.

For the purpose of this visual analysis, the proposed memorial is assumed to be a landscaped plaza, primarily open in character, with two support buildings. The memorial would potentially have shade protective elements on some part of the site, undetermined in size or height at this point. Additionally, the existing sunken courtyard in front of DoEd must be addressed in the design. Lastly, there would be no parking within the Memorial site.

Due to the current extent of roadway infrastructure, the limited landscaped areas on the preferred site, and the existence of somewhat ordinary and bleak architecture from the 1960s, the existing visual character of the site is generally poor. A unified landscaped plaza would considerably improve the site's visual quality by replacing the roadway infrastructure and underutilized plaza areas with commemorative features, abundant vegetation and ornamental paving. Crosswalks across Independence Avenue could be designed (if agreed to by DDOT), improving the appearance on the northern edge of the site. Additionally, a memorial would likely introduce a consistent theme for the entire site, where materials such as plantings and site furniture would be coordinated and potentially reflective of materials that exist in the surrounding area.

The enhancement of the preferred site with a memorial, a landscaped plaza and possibly two small visitor services structures has the potential to improve the four view corridors that would be affected by the memorial. These vistas include Maryland and Independence Avenues, and 4th and 6th Streets. The vista of the U.S. Capitol along Maryland Avenue would be maintained and enhanced, as required by the design parameters, because the current roadway infrastructure (including Maryland Avenue, the smaller access street, and parking areas) would be replaced with a more cohesive landscaped plaza. The location of the visitor services buildings is currently unknown, however, they would be located outside the Maryland Avenue view corridor so that they do not interfere with the vista, especially when viewed from a distance. If any other symbolic structure, such as an obelisk, a column, or other feature is included as part of the memorial within this view corridor, it should be designed and sited where the view of the U.S. Capitol Building would not be adversely impacted. Overall, if the memorial design is consistent with the established parameters, there would be no adverse impact on Maryland Avenue.

An additional design parameter is to enhance the view corridor along Independence Avenue and create a welcoming entrance across from the NASM. A landscaped plaza, and possibly two small visitor services buildings would enhance the quality of open space in front of the NASM and would improve the visual experience along the Independence Avenue corridor. Visual improvements associated with the memorial would include coordinated street trees, lampposts, and other street furniture along the corridor. In addition, any support buildings on the preferred site would be required to respect and maintain the setback line of the corridor established by adjacent buildings.

Along the 6th Street, SW, view corridor, the memorial would be visible either as part of the street's termination at Independence Avenue, or as part of the experience for visitors turning from Independence Avenue on to 6th Street, SW. A unified, landscaped plaza would enhance this area by providing a more consistent street edge and improved visual experience in the area where Maryland Avenue currently crosses 6th Street, SW.

Similarly, along 4th Street, SW, a landscaped plaza would enhance the quality of open space in the area and add a consistent street edge that would improve the visual experience along the corridor. Nevertheless, the open space quality of the preferred site should remain the dominant feature.

The view within the historic cartway from 6th Street to the Capitol could be slightly diminished by the increased number of tour buses and parked cars on streets surrounding the preferred site. The final location of permitted parking for buses in the design would impact the extent of the impact. Impacts from cars would be less due to their reduced body profile.

The memorial is likely to be lit at night. Depending upon the design of the memorial, lighting could include accent lighting (focused on a structure or feature), and/or ambient lighting throughout the landscaped plaza area. If excessive, such lighting could potentially compete with the lighting focused on the other buildings in the area, including the NASM and the NMAI. In addition, the memorial could diminish the night-time dominance of the U.S. Capitol from views along Maryland Avenue. Lighting of the proposed memorial must be adequate to provide security for visitors while not negatively impacting the views or surrounding resources noted above.

Mitigation

To ensure that the proposed memorial enhances the visual quality of the project area, the design parameters established for the memorial should be used to guide design selection and refinement. Parking for tour buses around the site should be carefully considered, and parking and drop-off areas should be restricted to spaces outside the view corridor that extend southwest along Maryland Avenue from the Capitol. In addition, the lighting scheme for the memorial should be muted to minimize spillage and avoid competing with night-lighting at the U.S. Capitol Building and other important buildings while also providing a reasonable level of safety and security.

No Action Alternative

Under the No Action Alternative, the Eisenhower Memorial would not be located on the preferred site. The visual quality of the site would remain poor with limited landscaped areas and dominated by roadway infrastructure at this time. The opportunity to enhance the visual quality of the area would be lost until such time that a subsequent memorial could be established on the site.

4.3 Transportation Systems

This section evaluates the impact of: (1) the conversion of the segment of Maryland Avenue that is located within the preferred site, including the conversion of the spur road, associated intersections, on-site parking, and re-diversion of vehicular and pedestrian traffic; and (2) the future transportation impacts of developing the site as a visited memorial. The following analysis summarizes a more detailed TIS prepared for the EMC in February 2006.

4.3.1 Roadways and Intersections

Proposed Alternative

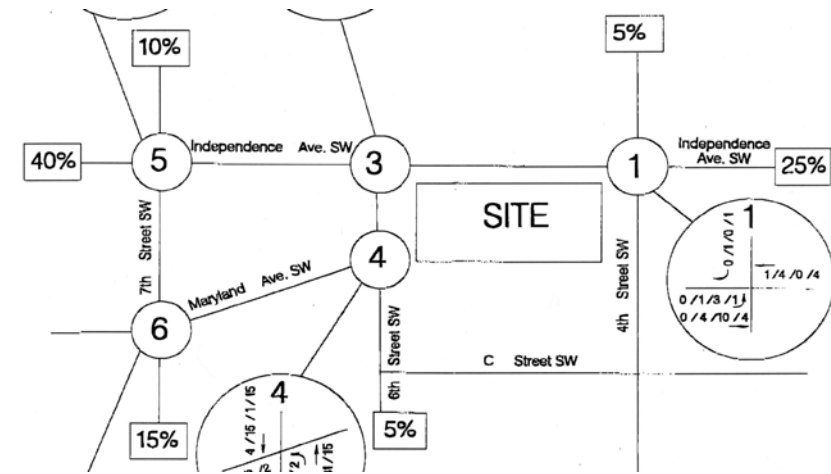
The segment of Maryland Avenue, SW that is located within the preferred site, (extending between 6th Street, SW and Independence Avenue, SW) and the Maryland Avenue spur that connects the Maryland Avenue segment to 4th Street on-site, would be realigned as a result of the proposed Eisenhower Memorial. The pavement of the roadway would be demolished, and vehicles would be re-routed onto 6th Street and Independence Avenue.

As part of the road conversion, the adjacent intersections of Maryland Avenue with Independence Avenue, 6th Street, SW, and 4th Street, SW, would be modified.

Conversion of the on-site roadway segments would require the current on-site traffic to be diverted around the site onto adjacent roadways. Traffic which would have accessed Maryland Avenue on-site would logically utilize the roadways on the perimeter of the site. Traffic diverted by the conversion of the Maryland

Avenue segment on-site would be distributed and assigned as shown in Figure 4-1: 25-40 percent along Independence Avenue, SW; 10-15 percent along 7th Street, SW; and five percent each along 4th Street and 6th Street, SW (Earth Tech, 2006).

Figure 4-1 Trip Distribution and Assignments



Source: Earth Tech, 2006

No Action Alternative

Under the No Action Alternative, the Maryland Avenue segment and associated spur road would not be converted at this time. These roadways would continue to provide vehicular access via the intersections at 4th and 6th Streets, SW and Independence Avenue, and the site would continue to provide curb edge parking opportunities for GSA and visitors of the DoEd Building until such time that a subsequent memorial could be established on the site.

4.3.2 Vehicular Traffic

Proposed Alternative

Impacts to Existing Traffic

Conversion of the Maryland Avenue segment would eliminate vehicular traffic and parking on the preferred site. However, according to the 2006 TIS, average daily traffic volumes of approximately 2,900 vehicles (identified in Section 3.3.2) utilize the segment, which has a capacity of 10,000 vehicles (Earth Tech, 2006). The 2006 peak traffic volumes that would be eliminated on the segment are provided in Table 4-1:

Table 4-1 Peak Traffic on Maryland Avenue Segment

Peak Traffic Period	Peak Volumes
Weekday AM	236 vehicles
Weekday Noon	101 vehicles
Weekday PM	279 vehicles
Weekend (Saturday)	77 vehicles

Source: Earth Tech, 2006

Most vehicles use the segment to park at the 69 parking spaces on-site, 54 of which are short-term metered public parking spaces. With the conversion of the segment, these parking spaces would be eliminated, thereby reducing the traffic attracted to the site in search of available parking. Therefore, without these on-site parking spaces, traffic demand to the site would be reduced.

The vehicular traffic patterns on roadways adjacent to the preferred site would be minimally affected with the redirection of traffic given the low traffic volumes on the segment of Maryland

Avenue within the site. While there would be a slight traffic reduction for some turning movements, and a slight traffic increase for other turning movements, the combined increase in distance and delay would be minor (Earth Tech, 2006).

Based on the level of service (LOS) analysis, all of the intersections studied currently operate at LOS C or better, except for the unsignalized intersection of Independence Avenue and Maryland Avenue, which operates at LOS D. It is not signalized and the LOS reflects the delay (29 seconds) for side street traffic (Maryland Avenue) attempting to enter the mainline (Independence Avenue). It is not as efficient as a signalized intersection assigning the right of way. Conversion of the Maryland Avenue segment would eliminate this LOS D intersection. Despite the loss of this intersection, and a minor increase in vehicles due to diverted traffic, the other intersections in the area would be LOS C or better.

Particularly during the peak PM period, some eastbound traffic west of the site utilizes Maryland Avenue on-site to access eastbound Independence Avenue at a yield sign, rather than at the 6th Street, SW, signalized intersection. Under the Proposed Alternative, this traffic movement option would be eliminated, and the traffic would be diverted to the signalized 6th Street, SW intersection. Therefore, conversion of this intersection as part of the proposed memorial would provide a safer vehicle access route to Independence Avenue during peak traffic periods.

Overall, the proposed conversion of Maryland Avenue within the preferred site is not, by itself, anticipated to have any major adverse impact on existing vehicular volumes and traffic patterns (Earth Tech, 2005). In addition, conversion of the Maryland Avenue and Independence Avenue intersection would have a

positive impact on traffic safety at the intersection. Subsequent portions of this section address the impact of future traffic volumes.

Memorial trip generation, distribution, and assignment traffic trip generation data for a memorial is not included in the *Institute of Traffic Engineers (ITE) Trip Generation Manual*, the typical source for determining trip generation. Therefore, assumptions are required to determine trip generation for the proposed Eisenhower Memorial.

To consider the “worst case” trip generation in the TIS analysis under the Build scenario, daily visitor trips were estimated. The following assumptions were made:

- daily visitor trips would be one percent of the annual visitation;
- hourly visitor trips would be 10 percent of the daily trips;
- visitor trips by vehicle would make up 16 percent of all visitor trips; and
- the average vehicle occupancy would be three visitors.

The additional trips that would be generated by the proposed memorial were distributed and assigned in the same pattern that existing traffic was distributed and assigned with the conversion of Maryland Avenue: 25-40 percent along Independence Avenue, SW; 10-15 percent along 7th Street, SW; and five percent along 4th and 6th Streets, SW (see Figure 4-1) All additional trips were assumed to begin or end at the existing parking garage on 6th Street, SW at C Street, SW.

Projected Year 2013 Traffic Volumes

Since the proposed Eisenhower Memorial is scheduled to be completed in 2012, traffic volumes for the memorial operational year of 2013 were projected under both the No-Build (no-memorial) and Build (memorial) conditions. The Year 2013 No-Build volumes were calculated by applying the DDOT annual growth rate of one percent to current traffic volumes. The Build traffic volumes were calculated by adding traffic generated by the proposed memorial to the Year 2013 No-Build volumes, and redistributing these volumes on the future roadway network.

Level of Service Analysis

Using the Year 2013 No-Build and Build traffic volumes, the site intersections were analyzed for level of service (LOS) using the HCM module of the SYNCHRO traffic simulation program and existing DDOT traffic signal timings.

Under the Year 2013 No-Build condition, the resulting LOS is similar to existing conditions, with slightly more delay, consistent with normal traffic growth. All site intersections for this condition would operate at an LOS C (acceptable) or better, except for the unsignalized intersection of Independence Avenue and Maryland Avenue, with some approach movements operating at LOS D (acceptable), as identified for existing conditions in the TIS.

Under the Year 2013 Build condition, which includes memorial-generated trips, the resulting LOS is similar to the Year 2013 No-Build condition with all site intersections operating at LOS C or better (although some individual intersection approach movements would operate at LOS D). In addition, the Maryland

Avenue, SW and Independence Avenue intersection, which would operate at LOS D, would be eliminated under the Build condition.

Comparison of Year 2013 No-Build vs. Build Conditions

A comparison of the Year 2013 No-Build and Build traffic analyses results reveals no degradation in overall LOS rating for the intersections, and very minor increases in delay for some individual traffic movements (Earth Tech 2006). Highlights of LOS rating changes at key intersections include the maintenance of a C rating at Independence Avenue and 4th Street, indicating no significant impact. A slight impact under the Build condition would occur at Independence Avenue and 6th Street, with an LOS increase from A to B. Lastly, LOS ratings would improve at the intersection of Maryland Avenue and 6th Street, indicating a positive impact from the proposed memorial. The specific effects of the proposed memorial (2013 Build condition) on the analyzed intersections, are presented in the TIS and summarized below. See the referenced Appendix 5.5 for a detailed chart of impacts.

Independence Avenue and:

- Maryland Avenue, SW – during the peak AM hour, the northbound right turn approach of this unsignalized intersection operates at LOS D (acceptable). The proposal (Build condition) would eliminate this intersection, thereby removing a conflict point with through traffic (and pedestrians crossing the intersection);
- 4th Street, SW – there would be a slight increase in traffic through this intersection, but the delay and LOS with the memorial would essentially be the same as the pre-memorial (No-Build) condition;
- 6th Street, SW – closing the unsignalized intersection of Independence and Maryland Avenues as part of the proposed memorial would divert a large amount of traffic through this intersection, thereby causing a slight increase in delay and minor degradation in LOS rating from A to B; and
- 7th Street, SW – The number of vehicles on 7th Street, SW would increase due to the traffic that would be diverted from the closing of Maryland Avenue east of 6th Street, SW, as well as the traffic that would be generated by the proposed memorial. However, there would be no degradation in the LOS rating.

Maryland Avenue and:

- 6th Street, SW – traffic volumes would be greatly reduced here as a result of the conversion of the Maryland Avenue segment on the preferred site. This intersection

configuration would change from four approaches to three in a “T” shaped configuration, which would eliminate a vehicle/pedestrian conflict point. The LOS would improve from B to A with the proposed memorial, except during the PM peak hour, where LOS would remain B, which is the same as the No-Build (pre-memorial) condition; and

- 7th Street, SW – traffic diverted to 7th Street, SW from the conversion of Maryland Avenue within the preferred site, would reduce the amount of traffic turning to and from Maryland Avenue, and increase the amount of through traffic on 7th Street, SW. This would result in a slight increase in delay due to the memorial, but the overall LOS would remain the same as without the memorial (the No-Build condition).

No Action Alternative

Under the No Action Alternative, the segment of Maryland Avenue, SW and the associated spur road within the preferred site would not be converted and would remain open to vehicular traffic and parking. Therefore, traffic volumes and patterns on the Maryland Avenue segment and surrounding roadways would remain unchanged and would continue to be below the capacity of the roadway. Traffic volumes are estimated to increase annually by one percent, according to the District’s projected traffic growth rate. The LOS of intersections adjacent to the site would remain unchanged with minimal delays and excess available capacity. The intersection of Maryland and Independence Avenues would continue to be the only roadway operating at LOS D, although, only during the AM peak period.

4.3.3 Parking

Proposed Alternative

Within Site

The conversion of the Maryland Avenue segment and associated spur road between 4th and 6th Streets, SW would result in the elimination of 69 parking spaces within the preferred site, including 15 permitted and 54 metered parking spaces. Along the perimeter of the site, curbside parking on Independence Avenue, and 4th and 6th Streets, SW could remain with opportunities for 14 additional parking spaces due to the conversion of the Maryland Avenue segment. Therefore, there would be a net loss of 55 parking spaces, including 40 metered spaces. Additionally, these lost metered spaces would represent lost revenue for D.C. Mitigation could include payment to D.C. for these lost revenues.

Perimeter of Site

With the introduction of a memorial on the preferred site, the perimeter curbside parking would be subject to review to accommodate vehicle and pedestrian access to the site. Therefore, the amount of future perimeter metered parking may be further reduced in favor of visitor drop-off/pick-up zones, bus lay bys, no parking/standing zones, or special use parking areas for operations, maintenance, and security.

Fifteen GSA permitted spaces within the preferred site would also be lost and require replacement. GSA has requested that the lost spaces be replaced near FOB-6, although not necessarily within the building’s security perimeter. Solutions for the

replacement of these spaces will be sought as the design for the site progresses.

Parking Analysis

As part of the TIS, a future parking analysis was performed including future parking supply, demand, and analysis. With a total of 334 existing on-street parking spaces in the immediate area and 69 lost and 14 spaces gained on-site, the net future supply in the project area is 289 curb side spaces in addition to the 634 available garage spaces in the area. Therefore, the total future supply of parking in the area would be 923 spaces.

Parking characteristics in this area were included in the 2003 NPS Visitor Transportation Survey for the central D.C. area. The survey included the following:

- approximately 16 percent of visitors used vehicles to access downtown attractions;
- approximately 11 percent of visitors used vehicles to access the NASM;
- Survey responders visited an average of five attractions per day; and
- 87 percent traveled with family members, friends, or business associates.

Therefore, for 600,000 annual visitors, the peak daily visitors (one percent) would be 6,000 visitors, and the peak hour visitors (10 percent) would be 600 visitors. The modal split (16 percent by vehicle) would be 96 visitors, the number of vehicles (three per vehicle) would be 32 cars, and shared parking (2.5 vehicles per space) would be 13 parking spaces needed. An additional five spaces would be needed for NPS employees, totaling 18

spaces needed (demanded) for the memorial. Therefore, the future demand for the site area includes 669 existing spaces, 18 needed spaces, and an annual growth rate of one percent, for a total future demand of 735 spaces.

With a total future supply of 923 garage and curb-side parking spaces and a future demand of 735 spaces, there would be a net surplus of 188 parking spaces, with the largest component being the surplus of parking garage spaces. Therefore, the development of the proposed memorial on the preferred site would not have an adverse impact on parking.

Cumulative Impacts

The net supply of parking spaces around the preferred site is forecast to adequately meet demands of the Memorial. As noted above, some demand would be met in surrounding parking garages while the remainder would fill existing on-street parking spaces. Vehicles bringing visitors to the Memorial would slightly increase traffic around the preferred site, creating minor cumulative impacts on the increased numbers of pedestrians through the increased traffic volumes on surrounding roads. Mitigation of these impacts could include increased signage to surrounding parking garages as well as better visibility at pedestrian intersection points.

No Action Alternative

Under the No Action Alternative, the roadway configuration, on-site metered and permitted parking spaces, and curb-side spaces along the perimeter of the site would remain unchanged at this time. Therefore, the site would continue to provide a limited amount of parking opportunities to GSA employees and visitors

of the adjacent DoEd Building and the nearby museums of the National Mall until such time that a subsequent memorial could be established on the site.

4.3.4 Transit Systems

Proposed Alternative

Under the Proposed Alternative, public transit systems in proximity to the preferred site would be utilized to access the proposed memorial. These systems would include the L'Enfant Plaza, Federal Center SW, and Smithsonian Metrorail stations; Metrobus service along 4th, 6th, and 7th Streets SW, and Independence Avenue; and tourist-oriented buses such as the Circulator on Independence and Constitution Avenues between 3rd and 17th Streets, SW, the Old Town Trolley along 7th Street, SW, and the Tourmobile along Jefferson Drive on the Mall.

Anticipated visitation to the memorial would come primarily from the visitors already in the area for the NASM and NMAI across Independence Avenue to the north and northeast, respectively. Therefore, ridership on the transit systems in proximity to the site would not measurably increase as a result of the memorial, except for possibly an initial surge in visitation to the area due to the newness and publicity of the memorial's opening.

No Action Alternative

Under the No Action Alternative, the underutilized site would not be developed as a memorial. Thus, there would be no public attraction on-site to generate transit ridership. Therefore, there would be no impact on transit systems.

4.3.5 Pedestrian/Bicycle Circulation

Proposed Alternative

Under the Proposed Alternative, pedestrian circulation on the preferred site would greatly increase as a result of visitation to the proposed memorial. The source of memorial visitors is anticipated to come primarily from the existing visitors to the NASM (4.9 million annually) and the NMAI (1.7 million annually) across Independence Avenue from the site. It is assumed that the memorial would draw approximately 10 percent from each of the two museums (approximately 600,000 visitors) across Independence Avenue. Memorial visitors from NMAI are anticipated to cross 4th Street, SW west from the NMAI, and then cross Independence Avenue using the 4th Street crosswalks. Memorial visitors from the NASM would cross Independence Avenue using the 6th Street, SW crosswalks. As part of the memorial, crosswalks on Independence Avenue may be upgraded at the preferred site in order to ease the journey to and from the other major memorials on the Mall. It is anticipated that this effort will help attract visitors to the memorial.

From the nearby transit stations, visitors would approach the site along the sidewalks of 4th Street, SW from the Federal Center SW Metrorail station and along the sidewalks of 6th Street and Maryland Avenue, SW from the L'Enfant VRE and Metrorail stations. From the Smithsonian Metrorail Station on the Mall, visitors would approach the site along the sidewalks of Independence Avenue.

Based on the TIS, several pedestrian accidents have occurred (from 1997 – 1999) at two intersections in the vicinity of the preferred site: Independence Avenue at 4th Street, SW, and C Street, SW at 4th Street, SW. The conversion of Maryland

Avenue within the preferred site, would eliminate neither of these accident points.

The removal of roadways along the segment of Maryland Avenue within the preferred site would allow for uninterrupted sidewalks along Independence Avenue between 6th Street, SW and 4th Street, SW, and along 6th Street, SW between Independence Avenue and C Street, SW. These continuous sidewalks would enhance pedestrian access to the proposed memorial, as well as to the DoEd building.

Cumulative Impacts

As noted above, the construction of the Memorial on the preferred site is anticipated to attract museum visitors across Independence Avenue. Pedestrian volumes would be greater than currently exist on Independence Avenue at 4th and 6th Streets SW, creating additional confluence points of vehicles and Memorial visitors on foot. Vehicular traffic turning from Independence Avenue on to 4th and 6th Streets would likely encounter pedestrians crossing from the NASM to the Memorial. Proposed infill development on Maryland Avenue to the west would likely use 7th and 12th Streets to travel north and, thus, would not contribute to traffic volumes near the preferred site. Construction of raised crosswalks on 4th and 6th Streets and increased signage would help more clearly alert drivers to an increased pedestrian volume near the Memorial. In addition, longer crosswalk signals would provide additional time for pedestrians to cross roadways in the area.

No Action Alternative

Under the No Action Alternative, pedestrian volumes and circulation would remain unchanged. Maryland Avenue within the preferred site would remain open to vehicular traffic, and its intersections with Independence Avenue, and 4th and 6th Streets, SW would remain. The 6th Street, SW intersection would remain without pedestrian signals at the crosswalk. The Maryland Avenue, SW intersections on-site would continue to provide pedestrian/vehicle conflict points.

4.4 Physical and Natural Resources

4.4.1 Air Quality

Proposed Alternative

Under the Proposed Alternative, short-term construction-related impacts to air quality could occur as a result of:

- *construction emissions* from equipment for soil excavation and construction/installation of memorial features and from trucks hauling construction materials to the site and excavated soil and broken pavement from the site;
- *vehicle emissions* from construction worker vehicles driven to and from the site; and
- *fugitive dust* from soil excavation and site disturbance.

Emissions produced during construction would vary daily depending on the type of activity. Given that the memorial has not yet been designed, the specific types of equipment that would be used for the excavation, soil removal, and construction have not been determined.

Construction emissions can be estimated based on the type of land use, the gross surface area of facilities to be built, and the area to be excavated, using the U.S. Environmental Protection Agency, Compilation of Air Pollution Emission Factors (commonly referred to as AP-42). Construction emission factors are provided for the square feet to be constructed as well as numerous other minor emission factors used for the commuting of construction crews, equipment, and materials. Since air quality thresholds are based on emission tons per year, only maximum annual

construction emissions are needed, even though construction may occur over more than one year.

Since the memorial has not been designed, project emissions cannot yet be estimated. However, due to the limited potential grading area of the preferred site, and the few operational vehicle trips that would be generated by the memorial, the project-generated emissions would be expected to be below the annual project *de minimis* threshold levels of 25 tons per year each for VOC and NO_x, and less than 10 percent of the projected annual D.C. area emissions allotment. Therefore, the Proposed Alternative would be exempt from an air conformity determination.

Implementation of the Proposed Alternative, in combination with the ongoing and planned projects identified in Section 1.7, would generate minor short-term cumulative impacts for air quality during construction. The memorial and other projects would add to the current pollutant emissions within the District, which is designated as a “severe” non-attainment area for ozone. Since there would be a minimal amount of employees or visitors driving to the site, or buildings burning natural gas for heating, the actual project-generated contributions to cumulative, operational air quality impacts would be negligible.

Mitigation

Appropriate best management practices should be implemented during construction to reduce, minimize, or eliminate construction vehicle and equipment emissions (e.g., electric power sources for construction equipment, instead of portable fuel-combustion generators, would reduce construction emissions).

No Action Alternative

Under the No Action Alternative, the preferred site would not be developed as a memorial at this time. Thus, there would be no construction-related emissions generated, and there would be no resulting impact on air quality.

4.4.2 Noise Levels

Proposed Alternative

The District of Columbia limits weekday construction and demolition noise to 80 dBA Leq from 7 a.m. and 7 p.m., unless granted a variance. The construction equipment anticipated to be used on-site under the Proposed Alternative would not likely reach this noise level since foundation pile driving is not expected. Construction noise levels would be expected to be below the District limits due to the type of construction and equipment anticipated and the planned time of day for construction.

During the workday, pedestrians, motorists, office workers in surrounding buildings, and visitors would be subject to construction noise in proximity to the project. Office workers in the adjacent DoEd Building would likely be sensitive to noise due to their proximity to the site. Visitors to The NASM and NMAI, which are considered to be sensitive noise receptors due to the learning and interpretive activities that occur within those museums, may be affected by demolition and construction activities. The removal of pavement, soil excavation, hauling of materials, and construction of memorial elements would generate a moderate increase in daytime noise levels on the preferred site.

Therefore, minor, short-term, construction noise impacts are anticipated within adjacent buildings.

The movement of heavy trucks transporting materials could create an adverse noise impact on noise receptors adjacent to the designated travel routes. However, the use of haul routes would occur within the construction hours specified above, and the routes would comprise major traffic roadways and interstate highways. Independence Avenue, 4th, 6th, and 7th Streets, SW, and Washington Avenue would carry the greatest volumes of construction-related vehicle traffic accessing nearby I-395 to the south. Given that these roadways are characterized by high-density commercial structures, there would be minor noise impacts anticipated associated with haul routes under the Proposed Alternative.

Since visitation to the area by vehicle is anticipated to only slightly increase as a result of the proposed memorial, there would be minimal long-term increase in traffic or traffic generated noise. Therefore, there would be no operational noise impacts due to the Proposed Alternative.

Implementation of the Proposed Alternative, when considered with the ongoing and planned projects identified in Section 1.7, would generate minor, short-term cumulative impacts to noise levels during construction. There would be no cumulative operational impacts to noise levels due to the contemplative nature of the proposed memorial.

Mitigation

Short-term construction-related noise would be minimized by controlling noise at its source through implementation of appropriate best management practices and NPS contractor performance oversight, as necessary, to ensure the District's construction noise standards are not exceeded. Construction specifications should require the selection of truck routes that would minimize the potential for noise impacts to residences.

No Action Alternative

Under the No Action Alternative, the preferred site would not be developed for a memorial at this time. Thus, there would be no construction or operational noise impacts as a result of the proposed Eisenhower Memorial.

4.4.3 Water Resources

Proposed Alternative

There are no surface water bodies located on, adjacent, or in proximity to the preferred site. The nearest surface water body is the Washington Channel, located one-half mile west of the site, which connects to the Tidal Basin and the Potomac River.

There are no wetlands on or in proximity to the preferred site. Therefore, there would no impacts to wetlands with the implementation of the Proposed Alternative.

In terms of stormwater, construction activities such as excavation and pavement removal would temporarily disturb some vegetation, and thus, expose soil under the roadway, curbs,

sidewalks, and paved plazas in the area of the preferred site. Exposed soils would potentially be subject to erosion due to stormwater runoff. The topography of the preferred site, including the construction area, is relatively level. The lack of surface grade would result in lower velocities of stormwater flow, minor soil erosion, and therefore, a minor potential for conveyance of sediment into the stormwater collection system.

Collected stormwater is discharged to either the District's combined sewer system or directly to the Potomac River. Therefore, there would be potential for minor negative impacts to surface water from project construction. Implementation of appropriate Best Management Practices (BMPs) to control sedimentation and stormwater would avoid or minimize the potential for impacts on water bodies in the District.

Based on FEMA floodplain maps, the preferred site is not located within the designated 100-year floodplain boundary. However, the 100-year floodplain boundary includes the northwest corner of the Mall. The NMAH and the NMNH are located within the floodplain, and the NASM is located immediately outside the floodplain. In addition, the area west of the preferred site has a history to flooding from the Potomac River during extreme storm events. While there is a slight potential for minor flooding at the preferred site from extreme storm events (e.g., high-category hurricanes), the Proposed Alternative would not increase the potential for, or the severity of, impacts from flooding.

Under the Proposed Alternative, the pavement of Maryland Avenue, the road spur, and its parking lane, plus sidewalks and plazas of the site would be removed and replaced with a memorial that is anticipated to be predominantly a landscaped

plaza. While the extent of new permeable surface area is not known, there would likely be a net decrease in impervious surface area on the preferred site. Therefore, the Proposed Alternative would likely result in positive water quality impacts by reducing stormwater runoff and potentially increasing groundwater recharge.

Groundwater levels at the NMAI adjacent to the preferred site have been previously encountered at a depth of 22 to 26 feet below the ground surface (Smithsonian Institution, 1993). The potential for groundwater is likely to be approximately 15 feet or more below grade (Earth Tech, 2005). While the precise soil profile would be determined as part of the memorial design effort, the potential impacts to groundwater resources would likely be negligible.

Implementation of the Proposed Alternative, when considered with the ongoing and planned projects identified in Section 1.7, could generate minor, short-term cumulative impacts to water resources during construction due to the potential for sediment loading in stormwater runoff. Once constructed, there would be no cumulative operational impacts to water resources.

Mitigation

Prior to beginning construction activities, an erosion and sedimentation control plan and a stormwater management plan should be prepared. An erosion and sedimentation control plan includes measures to prevent erosion of cleared areas and the transport of soil and sediment. The stormwater management plan addresses stormwater runoff and potential pollutant discharge. Implementation of mitigation measures specified in the

sedimentation control plan and the stormwater management plan would avoid or minimize impacts on water resources.

No Action Alternative

Under the No Action Alternative, the preferred site would not be developed as a memorial at this time. Therefore, site soils would not be disturbed and subject to erosion and sedimentation from stormwater events until such time that a subsequent memorial could be established on the site.

4.4.4 Geophysical Resources

Proposed Alternative

The construction of the proposed Eisenhower Memorial would disturb soil during site demolition and the removal of pavement from roadways, curbs, sidewalks, and plazas, as well as during the potential grading and excavation of the preferred site. However, the memorial would not alter the geology of the preferred site because potential soil excavation for the memorial would not likely exceed the approximate depth to bedrock of 25 to 45 feet below surface (Earth Tech, 2005).

The topography of the preferred site may potentially change with sufficient soil grading, fill, or excavation for the proposed memorial. Based on previous excavations on and in the vicinity of the National Mall, the excavated soil could contain previous fill materials possibly including petroleum hydrocarbons and heavy metals from natural and man-made sources (Smithsonian Institution, 1993). Approximately 15-25 feet of fill material is likely over the original ground surface (Earth Tech, 2005). Therefore, excavated soil may not be an appropriate source of

material for re-use as fill on the preferred site. Environmental soil sampling and laboratory testing would determine whether soils to be excavated are contaminated, in order to address site worker safety and soil reuse and/or disposal requirements.

According to the preliminary *Underground Conditions Assessment, Soils Investigation*, prepared for the preferred site in October 2005, further study of underground conditions will include:

- collecting additional exiting soils data (coordinate with NMAI); and
- performing subsurface exploration program, including test pits, soil borings and testing, to determine site-specific soil properties.

Implementation of the Proposed Alternative, when considered with the ongoing and planned projects identified in Section 1.7, would not likely generate minor short-term cumulative impacts to geophysical resources. Once the memorial is constructed, there would be no expected cumulative operational impacts to geophysical resources due to the proposed memorial.

Mitigation

Soil exposed by clearing, grading, excavation, or construction and stockpiled excavated soils should be stabilized using appropriate BMPs. Potential erosion and sedimentation should also be minimized by the implementation of the mitigation measures identified for water resources. If localized perched groundwater is encountered during excavation, appropriate dewatering techniques should be implemented for the duration of the subsurface installation. Environmental soil testing is

recommended to identify contaminated soils in the areas to be excavated. If excavated soils are contaminated, as determined by the laboratory testing results, the soils should be disposed of at an appropriate facility.

No Action Alternative

Under the No Action Alternative, site soils would not be disturbed and the topography of the site would not be altered at this time. Therefore, there would be no impacts to geophysical resources until such time that a subsequent memorial could be established on the site.

4.4.5 Biological Resources

Proposed Alternative

The proposed memorial would disturb the existing vegetation (i.e., grass and trees) on the preferred site. Development of the memorial would likely avoid and preserve the existing healthy trees of desirable species (mostly along the site perimeter) to the greatest extent practicable. However, in some instances, impacts to existing trees may be unavoidable due to their location.

Of the 58 trees on the preferred site, 26 trees are located within the central portion of the site. Due to the removal of the segment of Maryland Avenue, SW, the spur road and parking lane, associated sidewalks, and the paved plaza and below-grade patio, these 26 small to medium-sized trees would be located in the area of pavement demolition and site grading and may be affected by the proposed memorial.

The remaining 32 trees on the preferred site, and a majority of the large, healthy, desirable tree species, are located along the site perimeter between the perimeter sidewalk and the perimeter street curb. These trees are more likely to be preserved due to decreased soil disturbance anticipated at the perimeter of the site, especially adjacent to the DoEd building.

Healthy trees located in sensitive areas could potentially be relocated within the preferred site. Due to the maturity of some of the healthy trees, transplanting them elsewhere would require a large excavation area for the tree's root structure. Therefore, the transplanting of trees may not be cost-effective, on a case-by-case basis.

To create more consistent, continuous landscaping character and streetscape treatment, the proposed memorial would introduce new trees. These new trees would replace and supplement the trees that may be removed. Thus, there is a likely potential for increasing the number of trees on the preferred site. However, if mature trees are removed and replaced with younger trees, there would be the potential for an initial net decrease in tree diameter and canopy, resulting in the temporary loss of tree canopy.

In addition to trees, other vegetation such as grass, shrubs, and flowers would also be disturbed during construction. This disturbed vegetation would be replaced and enhanced as part of the proposed memorial.

The limited wildlife (common urban species) on the preferred site would be disrupted by the proposed memorial. Construction activities would produce noise and vibrations that would temporarily disrupt natural behaviors of wildlife in proximity to

the preferred site. Some species may return once the memorial is constructed.

Implementation of the Proposed Alternative, when considered with the ongoing and planned projects identified in Section 1.7, could generate minor cumulative impacts to biological resources due to the potential reduction of mature trees.

Mitigation

Appropriate BMPs should be implemented to minimize the short-term reduction of tree canopy and ground-level vegetation. Memorial landscaping should replace and enhance the existing vegetation with native and specimen trees, shrubs, flowers, and other materials.

Mitigation will be required to replace any of the 58 trees lost in the memorial construction process to ensure no net loss of tree spaces. A palette of tree/shrub species compatible with surrounding street tree plantings, site soil, and environmental conditions is available. In addition, the NPS guidelines on tree protection should be followed during construction to limit impacts to the root systems of existing trees.

No Action Alternative

Under the No Action Alternative, the site would not be disturbed for memorial development at this time. Site vegetation would remain unchanged and there would be no tree loss. Therefore, there would be no impacts to biological resources.

4.5 Urban Systems

4.5.1 Utilities

Proposed Alternative

The utility service lines on the preferred site are primarily located underground along the curb line of the segment of Maryland Avenue that crosses the site, as well as adjacent to, the associated spur road and parking area and corresponding sidewalks or along the curb line of the site perimeter roadways (Earth Tech, 2005). Implementation of the Proposed Alternative could potentially require excavation and construction in these areas, particularly along the Maryland Avenue segment and the spur road within the preferred site. The utility lines are located at varying depths; therefore, utility lines may be located within the excavation or construction of the proposed memorial and may need to be removed and realigned.

The preliminary *Underground Conditions Assessment, Utilities Investigation*, prepared for the preferred site in October 2005, identified that the majority of the utilities lie within the perimeter streets and sidewalk, except for the service laterals and the DoEd building plaza/garden service lines. Based on the information obtained for the preliminary investigation, there would be limited facilities affected by the proposed memorial. The majority of the utilities within the preferred site, not including those within the 50-foot stand-off zone, should not pose a relocation issue. Pending further analysis, the known utility conflicts are not anticipated to limit memorial construction (Earth Tech, 2005).

The utilities of concern on the preferred site that may require relocation or removal, include:

- a 6-inch active gas line;
- an 8-inch water main with fire hydrants;
- a 15-inch sewer line along the spur road;
- associated drainage structures;
- street lighting and wiring;
- the air intake structure (re-setting only); and
- the 6-way electrical duct bank traversing the site diagonally between 4th and 6th Streets.

Further development of the *Underground Conditions Assessment, Utilities Investigation* (Earth Tech, 2005), will include:

- coordination with utility owners to review potentially impacted facilities;
- implementation of Subsurface Utility Engineering to determine depths of cover for selected utilities to verify conflict; and
- development of utility relocation scheme, if necessary;

Utility demands for the proposed memorial may include potable water supply, wastewater and stormwater collection, electricity, and communication. However, utility demands are not anticipated to greatly increase based on limited services likely to be provided on the memorial site. Therefore, the capacity of the existing utility systems of the preferred site would not be impacted.

Energy Sources

Given that small visitor service buildings would likely be included as part of the proposed memorial, various forms of non-traditional energy sources exist for providing power to such structures or buildings. However, many are not suitable for the small-scale urban context present at the preferred site. Wind and water power would not be optimal for this site, as the small parcels can not sustain the harnessing of both forms of energy adequately enough to effectively produce power. Sustainable methods of providing power to these structures or buildings could include uses such as photovoltaics (PV). A PV system can provide electricity to operate the power and air conditioning needs of small buildings while also having the potential to power water pumping or aerating systems. Typically, PV systems require a minimal footprint, as little as 50 square feet for a small system and up to 1,000 square feet for a larger one. While NPS does not currently operate such a system, the maintenance requirements are typically reasonable with a 30-year lifecycle. Costs associated with PV systems include solar cell installation and energy usage. The average range of cost per watt for solar energy in commercial applications is approximately \$7-10/watt. Many PV systems are compatible with architectural features often used in memorial design, such as walls and roof elements.

Impervious Surfaces

Under the Proposed Alternative, there would likely be a decrease of impervious surfaces on the preferred site during construction with the removal of pavement from the segment of Maryland Avenue, SW, and the associated spur road and parking lane, corresponding sidewalks, and the paved plaza in front of DoEd. These impervious surfaces comprise most of the impervious

surfaces on-site. Reduction of impervious surfaces provides additional permeable ground surface, which reduces stormwater runoff by soil absorption and assimilation by vegetation.

Development of the memorial as a paved plaza would create new impervious surfaces, which are not likely to exceed the large amount of existing impervious surfaces (approximately 75 percent of the site). Therefore, there would be no net increase in impervious surfaces, resulting in no increase in stormwater volumes on the preferred site. With the relocation of paved surfaces of the memorial on the preferred site, stormwater management systems would be reconfigured to accommodate the collection of stormwater flows on the memorial site.

Sustainable Design

Tools such as permeable or semi-permeable pavers, plantings, and drainage features could allow for a low impact approach to resolving potential stormwater impacts on parts of the site. Use of these tools will have to be assessed in relation to the requirement for emergency access, particularly relevant to the larger parcel adjoining DoEd.

If appropriate, a new structure that may be incorporated into the memorial design could also utilize sustainable design techniques on the roof which would reduce stormwater runoff. Incorporating green roof technologies would enhance the absorption of rainfall events, lessening the amount of runoff onto the actual memorial site itself.

Implementation of the Proposed Alternative, when considered with the ongoing and planned projects identified in Section 1.7, would not contribute substantially to cumulative utility impacts

in the area. With underground construction and the need for facility relocation and realignment, the potential for cumulative impacts could be avoided with close coordination among the utility providers and users.

Mitigation

To minimize the potential for encountering utility lines during the construction, the locations of utilities should be verified prior to excavation. Utility pipes may need to be relocated, depending on the eventual design implemented on the preferred site.

No Action Alternative

Under the No Action Alternative, the site would not be developed for the Eisenhower Memorial, and utility lines would not be disturbed at this time. Therefore, there would be no impacts to utility systems on the preferred site.

4.5.2 Solid Waste

Proposed Alternative

Construction of the Proposed Alternative would generate moderate amounts of non-hazardous solid waste such as used and broken asphalt and concrete. This generation of solid waste would have a short-term impact on the method and frequency of collecting, hauling, and disposing of solid waste. Additional collection facilities designed for demolition and construction waste would be required in the vicinity of the construction activity. Since few employees and limited visitor activities would generate solid waste, there would be a minimal long-term

increase in solid waste with the implementation of the Proposed Alternative.

Implementation of the Proposed Alternative, when considered with the ongoing and planned projects identified in Section 1.7, could generate minor short-term cumulative impacts for solid waste during demolition and construction. There would be no long-term, cumulative impacts to solid waste as a result of the implementation of the Proposed Alternative.

Mitigation

To minimize potential adverse impacts to solid waste systems, demolition materials could be recycled, where possible, to promote cost-effective waste reduction and recycling activities.

No Action Alternative

Under the No Action Alternative, site demolition would not occur and paved areas of the site would remain. Therefore, there would be no impacts to solid waste disposal.

4.5.3 Hazardous Materials and Waste

Proposed Alternative

Implementation of the Proposed Alternative would involve demolition of the pavement and structures on the preferred site. However, materials removed during demolition (asphalt and concrete) would not contain hazardous materials.

Construction would involve the grading and excavation of soil, which would be composed of fill material of unknown origin.

Due to the previously identified EPA Resource Conservation and Recovery Act of 1976 (RCRA) sites on the Mall, there is potential for impacts from the disturbance. Excavation of site soil would create potential impacts to workers during construction from exposure to contaminated soil. If contaminated, excavated soil may require appropriate treatment prior to disposal.

Implementation of the Proposed Alternative, when considered with the ongoing and planned projects identified in Section 1.7, could generate minor short-term cumulative impacts with respect to hazardous materials, since there is the potential for contaminated soils on the site, as well as at other locations on or adjacent to the National Mall. There would be no cumulative operational impacts with respect to hazardous materials and waste disposal.

Mitigation

Random soil sampling and laboratory testing is recommended in the areas of excavation to identify the level of soil contamination, if any. Appropriate mitigation measures are recommended for the handling, collection, containment, accumulation, transport, treatment, and disposal of hazardous waste, if encountered.

No Action Alternative

Under the No Action Alternative, the site would not be disturbed or excavated and there would be not potential to encounter hazardous wastes. Therefore, there would be no impacts to hazardous materials and waste disposal.

SECTION 5.0



APPENDICES

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Appendix 5.4: Traffic Impact Study Eisenhower Memorial Preferred Site, Washington, D.C.

Traffic Analysis Results: Comparison of Scenarios Peak Hour LOS

Note: Change in Level of Service from existing conditions are highlighted in color for related intersections under 'No Build' and 'Build' Scenarios.

Intersection		Scenario	Year	AM Peak Hour		Mid-Day Peak Hour		PM Peak Hour		Saturday Peak Hour		Remarks	
#	Location			v/c ratio	Delay(secs)	LOS	v/c ratio	Delay(secs)	LOS	v/c ratio	Delay(secs)		LOS
1	Independence Avenue with 4 th Street SW	Existing	2006	0.55	18	B	0.37	24	C	0.66	19	B	PM LOS same as No-Build
		No-Build	2013	0.60	18	B	0.40	24	C	0.72	20	C	
		Build	2013	0.60	18	B	0.40	24	C	0.72	22	C	
2	Independence Avenue with Maryland Avenue	Existing	2006	0.13	29	D	0.10	17	C	0.18	11	B	Conflict points eliminated
		No-Build	2013	0.14	31	D	0.11	17	C	0.19	11	B	
		Build	2013	*	*	*	*	*	*	*	*	*	*
3	Independence Avenue with 6 th Street SW	Existing	2006	0.35	11	B	0.32	13	B	0.36	8	A	PM LOS changes to B
		No-Build	2013	0.38	11	B	0.34	14	B	0.39	8	A	
		Build	2013	0.49	13	B	0.43	16	B	0.50	10	B	
4	Maryland Avenue with 6 th Street SW	Existing	2006	0.17	14	B	0.19	11	B	0.23	20	B	Mid-Day, AM LOS improves
		No-Build	2013	0.19	14	B	0.21	11	B	0.25	20	B	
		Build	2013	0.12	8	A	0.20	9	A	0.23	20	B	
5	Independence Avenue with 7 th Street SW	Existing	2006	0.48	15	B	0.45	16	B	0.59	20	C	
		No-Build	2013	0.51	15	B	0.49	17	B	0.64	21	C	
		Build	2013	0.59	16	B	0.52	18	B	0.70	22	C	
6	Maryland Avenue with 7 th Street SW	Existing	2006	0.33	13	B	0.26	8	A	0.22	11	B	
		No-Build	2013	0.36	13	B	0.28	8	A	0.24	11	B	
		Build	2013	0.28	12	B	0.27	8	A	0.24	11	B	

*Intersection eliminated during Build Scenario

- **Peak hours** were determined to be the four highest consecutive 15-minute traffic volume counts.
- **v/c ratio** is a comparison between the volume of traffic entering the intersection from one or all approaches and the possible capacity of one or all approaches.
- **Level of Service (LOS)** is a quality measurement of traffic flow in terms of speed and travel time, freedom to maneuver, comfort, and convenience.

Signalized Intersections	
Level of Service (LOS)	Vehicle Delay (Secs.)
A	Less than 10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	More than 80

Unsignalized Intersections	
Level of Service (LOS)	Vehicle Delay (Secs.)
A	Less than 10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	More than 50

5.5 List of Acronyms

ADA – Americans with Disabilities Act
ADT – Average Daily Traffic
AMSL – Above Mean Sea Level
APE – Area of Potential Effect
BMP – Best Management Practices
CAA – Clean Air Act
CAA – Civil Aeronautics Association
CEQ – Council on Environmental Quality
CERCLA - Comprehensive Environmental Response,
 Compensation, and Liability Act
CFA – Commission of Fine Arts
CSO – Combined Sewer Overflow
Db - Decibels
DC-WASA – District of Columbia Water and Sewer Authority
DDOT – District of Columbia Department of Traffic
DoEd – Department of Education
EA – Environmental Assessment
EMC – Eisenhower Memorial Commission
FAA – Federal Aviation Administration
FEMA – Federal Emergency Management Agency
FOB – Federal Office Building
GSA – General Services Administration
HCM – Highway Capacity Manual
HHS – Health and Human Services
ITE – Institute of Traffic Engineers
LOS – Level of Service
NAAQS – National Ambient Air Quality Standards
NASA – National Aeronautics and Space Administration
NASM – National Air and Space Museum
NCPC – National Capital Planning Commission

NDEA – National Defense Education Act
NHPA – National Historic Preservation Act
NMAI – National Museum of the American Indian
NMAH – National Museum of American History
NMNH – National Museum of Natural History
NORAD – North American Aerospace Defense Command
NPS – National Park Service
NPDES – National Pollutant Discharge Elimination System
NRO – National Reconnaissance Office
PEPCO - Potomac Electric Power Company
PL – Public Law
RCRA – Resource Conservation and Recovery Act
SHPO – State Historic Preservation Office
TIS – Transportation Impact Study
USFS – United States Forest Service
USIP – United States Institute of Peace
WMATA – Washington Metropolitan Area Transit Agency
WWTP – Wastewater Treatment Plant