3.0 Affected Environment

3.1 Socio-Economics

3.1.1 Land Use

The potential sites for the Vietnam Veterans Memorial Center are both located in the Northwest quadrant of Washington, DC. Site A is located near the northwest corner of the National Mall, directly north of the Lincoln Memorial and one block west of the Vietnam Veterans Memorial, within West Potomac Park. The site is roughly triangular in shape and is bounded by Henry Bacon Drive, 23rd Street, NW, Constitution Avenue, NW and Lincoln Memorial Circle. The site is an open grassy area surrounded by a perimeter of mature trees. The site contains two ballfields with metal mesh fence backstops used for recreational purposes. The site is currently closed off by a large fenced construction staging yard being used for road work and security improvements in the area around the Lincoln Memorial, as well as for the National Park Service food service kiosk currently under construction at the south end of the site. When the current construction is completed, the site will include recreational uses as well as visitor service uses.

Site G is also located within West Potomac Park, near the northwest corner of the National Mall. Site G is northwest of the Lincoln Memorial, two blocks west of the Vietnam Veterans Memorial. It is bounded by 23rd Street, NW, Route 50, Interstate 66, and Lincoln Memorial Circle and its access ramp from Rock Creek and Potomac Parkways. The center of the site is a gently sloping grassy lawn. Mature trees line the perimeter of the site, particularly along 23rd Street, NW. There are currently two ballfields with metal backstops located on the site. The site is currently occupied by a large fenced construction staging yard for road work and security improvements in the area around the Lincoln Memorial. The US Army Corps of Engineers has plans to alter the grading of the site. As part of the approved 1992 DC Flood Protection Project, fill would be placed to a depth of about three feet in a line along 23rd Street.

Land uses within the vicinity of the alternative sites include government buildings, institutional structures, open space, memorials, and roadway infrastructure. North of the alternative sites, across Constitution Avenue, a series of government buildings and institutional headquarters define an area referred to as the Northwest Rectangle. Buildings include the American Pharmacists Association, the National Academy of Sciences, the Federal Reserve Board, the Interior Department South, and the Organization of American States. A new headquarters is planned for the United States Institute of Peace at the northwest corner of 23rd Street and Constitution Avenue, which is expected to include a public education center, research, and administrative offices, a research library and archives, and a conference center.

East of the alternative sites, Constitution Gardens is a landscape characterized by winding paths, groves of trees, sloping grassy lawns, and intimate outdoor spaces. A six-acre curvilinear lake with a small island in the center containing the 56 Signers Memorial, located to the east of the Vietnam Veterans Memorial, is the focal point of Constitution Gardens. The Vietnam Veterans Memorial is located within Constitution Gardens, east of Site A, in an outdoor space created by a man-made slight topographic depression. A major visitor attraction, the Vietnam Veterans Memorial draws approximately 3.79 million people annually to the west end of the National Mall.

South of the alternative sites, the Lincoln Memorial anchors the west end of the National Mall. Moving east from the Lincoln Memorial, the Reflecting Pool articulates the east-west axis, and its accompanying paths allow visitors to traverse the National Mall between the Lincoln Memorial and the Washington Monument, just east of 17th Street. The World War II Memorial is located on the east-west axis, between the Reflecting Pool and 17th Street. Roadway infrastructure connecting the west end of the National Mall with the Lincoln Memorial, Arlington Memorial Bridge, Arlington National Cemetery, and the Theodore Roosevelt Bridge dominates the landscape west of the alternative sites.

3.1.2 Planning Controls and Policies

Zoning

Sites A and G are owned by the federal government and are therefore not subject to local zoning regulations.

Comprehensive Plan for the National Capital

The Comprehensive Plan for the National Capital, Federal Elements (1977-1984, updated 2004) is the principal planning document adopted by the NCPC for the planning of federal facilities. The Plan contains goals, objectives, and planning policies to direct and manage growth throughout the District. Of particular relevance to the proposed project are the Parks and Open Space Element, the Preservation and Historic Features Element, and the Visitors Element.

The Parks and Open Space Element "is designed to generate federal leadership in regional parks and open space planning…by: providing sufficient parks and recreation areas to meet the needs of residents and visitors; preserving for posterity the nature and diversity of our natural and cultural heritage; and using open space to help guide urban growth." Relevant policies in support of these goals state that the federal government should:

- Enhance parks and preserve open green space for future generations;
- Maintain and conserve federal open space as a means of shaping and enhancing urban areas;
- Use monumental parks and landscapes to provide settings for public buildings, monuments, and memorials, and to create special environments for limited activities;
- Site memorials in monumental and designed landscape parks in compliance with the *Memorials and Museums Master Plan*;
- Enhance the great cross-axes of the Mall, and protect them from inappropriate development;
- Maintain East and West Potomac Parks as an extension of the Mall, as a valuable recreational open space, and as a space that can be used for outdoor cultural events, gatherings and celebrations; and
- Establish and preserve historic parks as important legacies of national, historic, architectural, and landscape significance.

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

- Plan carefully for appropriate uses and compatible design in and near the monumental core to reinforce and enhance its special role in the image of the nation's capital;
- Protect and enhance the vistas and views, both natural and designed, that are an integral part of the national capital's image;
- Design exterior lighting to contribute to the capital's nighttime image and suggest an appropriate hierarchy among the symbols and features of the nation's capital;
- Sustain exemplary standards of historic property stewardship;
- Identify and protect both the significant historic design integrity and the use of historic landscapes and open space;
- Protect the settings of historic properties, including views to and from the sites where significant, as integral parts of the historic character of the property;
- Develop the monumental core in accordance with the principles of the *Legacy Plan* and the policies of the *Memorials and Museums Master Plan*. The National Mall's historic open space and monumental character should be respected and preserved for the benefit of future generations. New development should not infringe on the integrity of the National Mall and the surrounding monumental core, and should be excluded from the Reserve (in accordance with the Commemorative Works Act, as amended);
- Promote 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;
- Protect the reservations that contain historic landscapes and features from incompatible changes or incursions;
- Locate memorials, museums, and major federal facilities to support key design features of the L'Enfant Plan, including major streets and avenues, waterfronts, and scenic overlooks;
- Protect and control the visual and functional qualities of L'Enfant rights-of-way; and
- Provide and maintain street trees to help frame axial views and reinforce the historic green character of the nation's capital; and
- Work cooperatively with local agencies to ensure that development adjacent to historic properties not detract from their historic character.

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 these goals state that the federal government should:

- Locate and design new memorials and museums in accordance with the Commission's *Memorials and Museums Master Plan*;
- Support the location of information kiosks and visitor centers at federal facilities and at appropriate locations throughout the monumental core (in accordance with the

Commemorative Works Act), and beyond (e.g., at major transportation centers, in historic district and in neighborhoods);

- Promote a pedestrian friendly Monumental Core and improved pedestrian access to neighborhoods and federal visitor attractions within the nation's capital through the development of sidewalks, streetscape enhancements, and ground level retail or other amenities; and
- Encourage federal visitor attractions within walking distance of public transportation stations and routes.

Commemorative Works Act and Amendments

The Commemorative Works Act 40 USCA S 8901, et seq., provides standards for the placement of commemorative works on certain federal lands in the District of Columbia and its environs, and for other purposes; and requires consultation with the National Capital Memorial Advisory Commission and site and design approval of all commemorative works by the Commission of Fine Arts, National Capital Planning Commission, and (as appropriate) the Secretary of Interior or the Administrator of the General Services Administration.

The Commemorative Works Clarification and Revision Act of 2003, established the Reserve which is defined by the major east-west axis of the National Mall from the US Capitol to the Lincoln Memorial and from the White House and Lafayette Park to the Jefferson Memorial. The Act precludes the construction of new Memorials within this area with the exception of the Vietnam Veterans Memorial Center and any memorials previously authorized with sites approved there, such as the Martin Luther King Jr. Memorial. The Commemorative Works Act also reconfigured the two functional areas for memorials. Area I, immediately adjacent to the Mall, is designated for commemorative works of "preeminent historical and lasting significance to the United States" (40 USCA Sec 8908 (b) (1)). Area II is for "subjects of lasting historical significance to the American people" (40 USC Section 8908 (b) (2)). *Area II* encompasses the rest of the city with emphasis on the important North, South, and East Capitol Street axes, as well as circles and squares on major avenues, waterfront sites, gateways, and scenic overlooks."

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, unifying the city and extending the boundaries of the Monumental Core, preserving open space, and defining opportunities for new museums, memorials, and federal office buildings in all quadrants of the city. The *Memorials and Museums Master Plan*, completed in 2001 and discussed below, was a direct outgrowth of the Legacy Plan.

Memorials and Museums Master Plan

The *Memorials and Museums Master Plan*, prepared by NCPC in 2001, expands on the principles laid out in the Commemorative Works Act and the 1997 Legacy Plan, the plan for the future development of Washington, DC. As a way to preserve the open space and historic vistas

of the National Mall, the Memorials and Museums Master Plan establishes a framework for future memorials. Development of new commemorative works is encouraged within the circles and squares of major avenues, near waterfronts, and at urban gateways and scenic overlooks. The alternative sites are not considered Candidate Sites within the Plan.

Vietnam Veterans Memorial Visitor Center Act (Public Law 108-126)

The authorizing legislation for the Vietnam Veterans Memorial Visitor Center, Public Law 108-126, states that, "the Vietnam Veterans Memorial Fund, Inc., is authorized to construct a visitor center at or near the Vietnam Veterans Memorial on Federal land in the District of Columbia, or its environs, subject to the provisions of this section, in order to better inform and educate the public about the Vietnam Veterans Memorial and the Vietnam War." It further provides that: "The visitor center shall be located underground." During the design phase, the legislation states that: "The Vietnam Veterans Memorial Fund, Inc., shall consult with educators, veterans groups, and the National Park Service in developing the proposed design of the visitor center."

It further provides that the Commemorative Works Act the provisions relating to the siting, design, construction, and maintenance of memorials shall apply to the visitor center. Moreover, "the visitor center shall be considered a commemorative work for the purposes of the Act, except that final approval of the visitor center shall not be withheld; the provisions of subsections (b) and (c) of section 8908 of title 40, United States Code, requiring further approval by law for the location of a commemorative work within Area I and prohibiting the siting of a visitor center within the Reserve shall not apply; the size of the visitor center shall be limited to the minimum necessary to provide for appropriate educational and interpretive functions, and to prevent interference or encroachment on the Vietnam Veterans Memorial and to protect open space and visual sightlines on the Mall; and the visitor center shall be constructed and landscaped in a manner harmonious with the site of the Vietnam Veterans Memorial, consistent with the special nature and sanctity of the Mall."

The full text of Public Law 108-126 is provided as Appendix A.

3.1.3 Community Facilities and Services

Both alternative sites are located on federal land, administered by the NPS. The NPS provides visitor services through concessionaire operated facilities in the area. A food service kiosk intended to serve visitors to the west end of the National Mall is currently under construction by NPS at the south end of Site A. Additional mobile concession stands are located across Constitution Avenue from the alternative sites. Community facilities within the surrounding area include recreational, cultural, and educational facilities.

Parks and Recreational Facilities

The alternative sites both contain ballfields used for active recreational purposes. They are located near the northwest corner of the National Mall. The National Mall is the largest open park space in the Monumental Core of Washington, DC. The National Mall is a major recreational resource used for both active and passive recreational activities, including walking, jogging, picnicking, frisbee, rugby, football, and softball. It is also an area used for public demonstrations and large gatherings.

Cultural Facilities

There are cultural facilities located on parkland managed by the NPS to the south and east of the alternative sites. The closest include Vietnam Veterans Memorial, the Lincoln Memorial, and the Korean War Veterans Memorial. These include some of the National Mall's most heavily visited attractions. In addition, the Kennedy Center, a national cultural center for the performing arts, is located northeast of the sites, on the banks of the Potomac River.

Public Safety

The United States Park Police serves both Sites A and G. The area is also staffed by NPS personnel. The District of Columbia Fire and Emergency Services Department provides fire safety services, medical ambulance, and rescue services. The local engine companies that serve the area near the alternative sites include: Engine Company 23 located on G Street, NW; Engine Company 1 and Truck Company 2, located on M Street NW; and Engine Company 16, Truck Company 2, located on 13th Street, NW.

The area surrounding the alternative sites is served by the Second District Metropolitan Police Department, Police Service Area (PSA 207). The closest hospital to the site is George Washington University Hospital located on 23rd Street, NW, approximately eight blocks to the north.

Educational Facilities

The George Washington University is located to the north of the alternative sites. The School Without Walls, which serves District residents as a public high school, is located on the George Washington University campus. There are no public schools in the vicinity of the project site.

The closest public school is the Stevens Elementary School located at 1050 21st Street, NW, over one mile from the site.

3.1.4 Visitor Experience

Visitation

Washington, DC is one of the most popular tourist destinations in the United States. The metropolitan area offers both public amenities and commercial attractions, including federal buildings, monuments and memorials; museums, art galleries and cultural institutions; educational attractions; seasonal festivals and special exhibitions and official events; sports and entertainment events; and numerous smaller historic, cultural, and recreational opportunities.

The estimated number of annual visitors to the region reached a level of 26 million in 2004. According to the Washington, DC Convention and Tourism Corporation, the majority of visitors in 2004 came to Washington, DC for leisure. The most popular activity for visitors was touring museums and historic sites.

The western end of the National Mall contains several of the most heavily visited attractions in the District including the Lincoln Memorial and the Vietnam Veterans Memorial. In 2004, an estimated 3.8 million visitors came to the Vietnam Veterans Memorial. Visitation at the Lincoln Memorial and the Korean War Veterans Memorial, both south of the alternative sites, ranged from 3.6 to 4.0 million annually. The National Mall also hosts special events each year, including demonstrations, festivals, and holiday celebrations, including that for the 4th of July Independence Day celebration. These special events can draw hundreds of thousands of people to the area south and east of the alternative sites.

Noise

Noise sources at the alternative sites include construction machinery and workers as well as traffic on the bordering roadways and, currently, construction machinery and activities. Although access to Site A, and a portion of Site G, is currently prohibited, visitors to the ballfields provide an additional source of noise on both sites when in use. Noise sources in the vicinity of the alternative sites also include roadway traffic as well as visitor activity at nearby attractions. Noise levels are punctuated by airplanes taking off from Ronald Reagan Washington National Airport, when the wind is from the north at a frequency of one per minute, and military and other helicopters flying upriver or crossing the river at Arlington Memorial Bridge at 200 to 250 feet above grade.

In terms of time periods, traffic volumes and resulting noise levels are greatest during the morning and evening peak times during rush-hour. Roadway noise sources also include noise from tour buses passing the sites, as well as those dropping off tourists nearby. Visitor activity at the attractions in this area of the National Mall is highest midday, generating higher volumes of visitor noise when traffic noise is lowest. This includes the sounds of voices and sometimes live music.

The National Mall generally offers a tranquil setting, with some areas within the park undisturbed by traffic noise sources. The quietest areas within the park can be found within the center, nearest the Reflecting Pool. Constitution Gardens provides a contemplative space for visitors to the nearby memorials. A network of narrow winding paths enables visitors to experience a series of intimate outdoor spaces within the National Mall. The area near the Vietnam Veterans Memorial is generally quiet, offering a place for contemplation and repose. The Vietnam Veterans Memorial is an area where, by regulation, demonstrations and special events are prohibited, other than the official annual Memorial Day and Veterans Day commemoratives (36 CFR 7.96 (g)(3)(ii)(D)). Noises heard near the Memorial originate from casual visitor conversations, park sounds (i.e., birds), and nearby traffic movement. Conversation is louder than traffic noise in the area immediately surrounding the Vietnam Veterans Memorial.

The western end of Constitution Gardens, between the Vietnam Veterans Memorial and the Lincoln Memorial, is typically more crowded than the eastern end of the Garden. South and west of the Vietnam Veterans Memorial, towards the Lincoln Memorial, the serene landscape gives way to a series of visitor facilities, including an information kiosk, and several booths devoted to Vietnam War information and memorabilia which are temporarily located there under First Amendment demonstration permits. These facilities have the effect of creating an informal gathering space before crossing Memorial Circle and ascending the grand staircase on the east side of the Lincoln Memorial. The Lincoln Memorial and its steps, affording views to the east along the axis of the National Mall, is a major gathering spot for tour groups. Noise heard in this area is a result of casual conversation, tour groups, school music groups, and nearby vehicular traffic.

Lighting

Light sources within the alternative sites include temporary construction lighting provided for the nearby roadway improvements and the construction of the NPS kiosk on Site A. Lighting at the west end of the National Mall is generally restricted to street lighting along Constitution Avenue and uplighting of the nearby memorials. The Lincoln Memorial is the dominant nighttime feature, with light glowing from within the chamber as well as newly installed exterior lighting. Subtle walkway lighting is provided at the Vietnam Veterans Memorial and along pedestrian pathways beneath the tree canopy in the park. The classically designed and landscaped buildings along Constitution Avenue are also lit externally to frame West Potomac Park.

3.2 Cultural Resources

This section documents the historic, archaeological, and visual resources that are present on the proposed sites and within the surrounding area. For the purposes of this section, the Area of Potential Effects (APE) for historic resources includes the area from which the project site is visible. As a result, the APE for historic resources is generally bounded by C Street, NW in the north, 17th Street, in the east, Independence Avenue in the south, and the Potomac River in the west (see Figure 3-1). 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. Thus, the APE for archaeological resources is limited to the boundaries of the proposed sites. The study area for visual resources is identical to the APE for historic resources.

Figure 3-1: Area of Potential Effects for Historic Resources

History of the National Mall

The National Mall was first conceptualized by Pierre Charles L'Enfant in his 1791 Plan for the City of Washington. Prior to the establishment of Washington, DC as the new US capital, the area was sparsely populated, consisting of farms, forests, marshland, and meadows. L'Enfant's Plan transformed the varied landscapes into a comprehensive Baroque city plan, based upon European examples. The National Mall in L'Enfant's Plan, running from Third Street in the east to Fourteenth Street in the west, was a 400-foot wide grand avenue, connecting the US Capitol to the Washington Monument.

The National Mall

Although L'Enfant's Plan would provide the foundation and a point of departure for various designs of the National Mall over the next two centuries, it was never implemented. The axial greensward envisioned by L'Enfant as a grand public park continued to be used for private purposes well into the 19th century. As late as 1850, the National Mall was used for the cultivation of vegetables and for the storage of lumber, firewood, and even trash. Between the founding of the City of Washington and 1873, both Site A and G were located in the waters of the Potomac River.

The middle of the 19th century brought a new interest in the National Mall as the nation's public park. A new landscape design for the National Mall was introduced by landscape architect Andrew Jackson Downing. Downing's design proposed a series of six distinct gardens, each illustrating a different garden type and unified by lawns, serpentine paths, and informal plantings. His objectives were threefold: to form a national park that would be an ornament to the Capital; to provide an example of the natural style of landscape gardening; and to form a

public museum of living trees and shrubs. Downing believed that the curving forms put forth in his garden designs complemented the straight lines of L'Enfant's Plan half a century before. Although trees were planted on the Smithsonian Grounds and curvilinear paths cut through the landscape, Downings' design for the National Mall, like L'Enfant's more than sixty years before, would not be fully implemented

In the 1880s, due to the excessive build up of silt in the Potomac River, the US Army Corps of Engineers began dredging operations to keep the shipping channels open. In an effort to keep the silt from returning to the river, the dredged materials were deposited in marshlands, including what is now West Potomac Park. In 1897, Congress recognized 621 acres of reclaimed marsh and flats as public parkland, which was named Potomac Park.

In 1898-1900, with the centennial of the Capital City approaching, the American Institute of Architects solicited and sponsored schemes for the redesign of the capital. Senator James McMillan formed the Senate Park Commission to consider potential design opportunities. After studying European cities and gardens, the Senate Park Commission, also called the McMillan Commission, produced their report in 1902. Senate Report No. 166 included not only a printed document, but also an exhibition of models, drawings, and paintings. The report was divided into two sections. The first section highlighted the need for a comprehensive plan, referencing the original city plan. The second section reviewed Washington's entire system of parks and identified additional opportunities for recreation areas within the District.

The McMillan Plan placed great emphasis on the National Mall as the city's ceremonial core. The plan referenced L'Enfant in its formality, its concept of public spaces, and its concern with spatial relationships and civic art. Yet the Plan departed from that of L'Enfant in its replacement of the grand processional avenue that was the center of the National Mall with a 300-foot wide *tapis verte* lined on either side by rows of regularly spaced trees. The McMillan Plan terminated the vistas established by L'Enfant that connected the Capitol Building and White House with the Potomac River, through the siting of the Lincoln and Jefferson Memorials.

In response to the McMillan Plan, a competition was announced in 1911 for the design of the Lincoln Memorial, with West Potomac Park the selected site. In keeping with the McMillan Plan, the architect, Henry Bacon, working together with Frederick Law Olmsted, Jr., called for a temple to Lincoln with a series of radial roads emanating from it, and a long reflecting pool connecting the new memorial with the Washington Monument to the east. Filling of the park was practically completed in 1908 with final grading continuing until 1912. By 1921, the area of Potomac Park between 17th Street and 21st Street was filled with temporary federal office buildings, up to but not including the area where the Vietnam Veterans Memorial was authorized to be located nearly 60 years later. The potential Vietnam Veterans Memorial Center sites, Site A and Site G, were not developed.

Recent Changes to the National Mall

In conjunction with the American Bicentennial, there was a renewed interest in the grounds of the National Mall and adjacent areas. Constitution Gardens, designed by Skidmore, Owings, and Merrill in 1976, is a fifty-acre designed landscape located north of the Reflecting Pool between

17th and 23rd Streets. The design concept originally extended into what is now Site A. Designed in a romantic style, the dominant feature of the gardens is a curvilinear shaped lake with a small island in the center of it. The gardens also contain masses of trees around open lawn areas and a network of winding paths for pedestrians and bicyclists.

Vietnam Veterans Memorial

Towards the west end of Constitution Gardens, the Vietnam Veterans Memorial is set within a two-acre site. Dedicated in 1982, the memorial's design is starkly modern; two polished granite walls that meet and form a "V" bear the names of all the Americans killed or missing in action in Vietnam between 1963 and 1973. The design maintains the open feeling of the landscape through carefully engineered vistas connecting the site to the Washington Monument and the Lincoln Memorial. A flag, a figurative sculpture, the in Memory Plaque, and the Vietnam Women's Memorial have since been added to the area southwest of the memorial.

The Flagpole Plaza of the Vietnam Veterans Memorial is visible beneath the existing tree canopy from the west end of Constitution Gardens

Korean War Veterans Memorial

Located south of the Reflecting Pool, the Korean War Veterans Memorial was completed in 1995. The memorial is designed to depict 19 soldiers in combat formation, and has a circular plaza and "pool of remembrance." The statues depict fighting men on patrol, representing the army, navy, Marine Corps, and air force working together for a common goal - victory. A granite mural of over two thousand sandblasted photographs honors the supporting services who provided supply, medical, spiritual, and fire support to the frontline units. The United Nations Wall on the opposite side lists the countries that provided troops, medical support, or supplies to help South Korea. All these elements point toward the Pool of Remembrance where the sacrifice of 54,246 American lives can be contemplated. It is here where an inscription summarizes the true meaning of the memorial: "Our Nation honors her sons and daughters who answered the call to defend a country they never knew and a people they never met."

World War II Memorial

On May 29, 2004, the World War II Memorial was dedicated at the east end of Reflecting Pool. On the site of the historic Rainbow Pool, the World War II Memorial is designed as a ring of pillars encircling a plaza and central pool. The pillars break at the east and west ends of the memorial so as not to obscure the historic vista between the Washington Monument and the Lincoln Memorial. The World War II Memorial honors the 16 million who served in the armed forces of the US. the more than 400,000 who died, and all who supported the war effort from home.

Section 106 Process

Pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966, federal agencies are required to consider the effects of a proposed project on properties listed in, or eligible for listing in, the National Register of Historic Places. In the event that an action may affect a historic property, the lead agency must enter into consultation with the State Historic Preservation Officer, and other interested agencies and individuals to identify historic properties that could potentially be affected, assess potential adverse effects, and resolve the adverse effects through mutually agreed upon mitigation measures. The National Park Service is the lead agency for the Section 106 Consultation.

3.2.1 Archaeological Resources

The land, located west of 17th Street that today comprises Sites A and G on the National Mall, was historically marshy and likely supported plants such as cattails, grasses, sedges, and aquatic species prior to being filled. Soils in the area reflect this history; classified as Udorthents, they are deep to moderately deep, well-drained soils that consist of cuts, fills, and otherwise disturbed land. Since being filled in the late 19th to early 20th century, the two alternative sites have remained undeveloped. Given that the soil is primarily fill and that no buildings have been located on these formerly submerged (tidal) flats, prehistoric or historic archaeological remains are unlikely.

3.2.2 Historic Resources

Historic Resources Within the Alternative Sites

The alternative sites are located within several overlapping historic resources within West Potomac Park. East and West Potomac Parks Historic District is listed in the National Register. Sites A and G are both sited within West Potomac Park, a L'Enfant Plan reservation (#332). According to the 1996 Cultural Landscape Report (CLR) for the Lincoln Memorial Grounds, Site A is located within the Lincoln Memorial Circle and Radial Roads component landscape, and Site G is located within the Watergate component landscape, developed as part of the Memorial Bridge Commission's efforts. The two sites are also bordered by Constitution Avenue and 23rd Streets, both contributing elements within L'Enfant's Plan for the City of Washington. Site A is bordered by Henry Bacon Drive, a minor, but planned, vista in Henry Bacon's design for the Lincoln Memorial.

View toward the east from the base of the Lincoln Memorial along the main axis of the National Mall

Lincoln Memorial and its Grounds

The Lincoln Memorial stands at the foot of 23rd Street, NW, south of the two alternative sites. The Memorial is in line with the US Capitol and the Washington Monument, and is bordered by Lincoln Memorial Circle. Completed in 1922, the Lincoln Memorial was established as a tribute to President Abraham Lincoln and the nation he fought to preserve during the Civil War (1861-1865). The Memorial was designed to resemble a Greek temple, with 36 Doric columns, representing the 36 states at the time of Lincoln's death.

Lincoln Memorial

The Memorial is significant as America's foremost memorial to the 16th President, as an original example of neoclassical architecture, and as the formal terminus to the extended National Mall in accordance with the McMillan Commission's plan for the Monumental Core of Washington. A 19 foot tall statue of Lincoln, sculpted by Daniel Chester French, is seated in the center of the memorial chamber.

The grounds of the Lincoln Memorial are also considered to be historic, as documented in the 1996 CLR for the Lincoln Grounds. According to the CLR, the grounds include the Lincoln Memorial Circle and Radial Roads, the Watergate Area northwest and west of the memorial, and the Reflecting Pool. The grounds have significance as an essential part of the McMillan Plan and as an important example of the landscape design of Frederick Law Olmsted, Jr.

The CLR identifies major and minor vistas that were implemented in the design of the Lincoln Memorial, as illustrated in Figure 3-2. The most prominent view is the eastern axial vista from the steps of the Lincoln Memorial. This view includes the Reflecting Pool, the Washington Monument, and the US Capitol, and is framed be allees (rows) of large Elm trees. Two minor vistas, one from the north-south midpoint of the Memorial north to 23rd Street and Washington Circle, and another from the east terrace up Henry Bacon Drive to B Street were developed along planted streets. The 23rd Street view to and from the Lincoln Memorial is common to Sites A and

G. The Bacon Drive view to and from the Lincoln Memorial is common to Site A and the existing Vietnam Veterans Memorial. A review of the 1932 planting plan shows that views across either Site A or G were to be significantly screened by foundation plantings within the Lincoln Memorial Circle, or the street tree plantings along the outer edge of the circle. Instead, views along the roadway corridors were emphasized. The planting plans accented the east façade, and with extensive shouldering plantings west of the memorial center line, the Mall vista to the west was closed by a green screen of hollies and magnolias. The plantings west of 23rd Street within Lincoln Memorial Circle were to serve as a visual terminus of the Mall as viewed from the distant eastern areas of the Mall. Although there is a single line of trees along the southern border of the sites, the 1932 plan was never fully implemented. It should be noted that views between the Vietnam Veterans Memorial and the Lincoln Memorial are not considered to be contributing elements with the historic landscape.

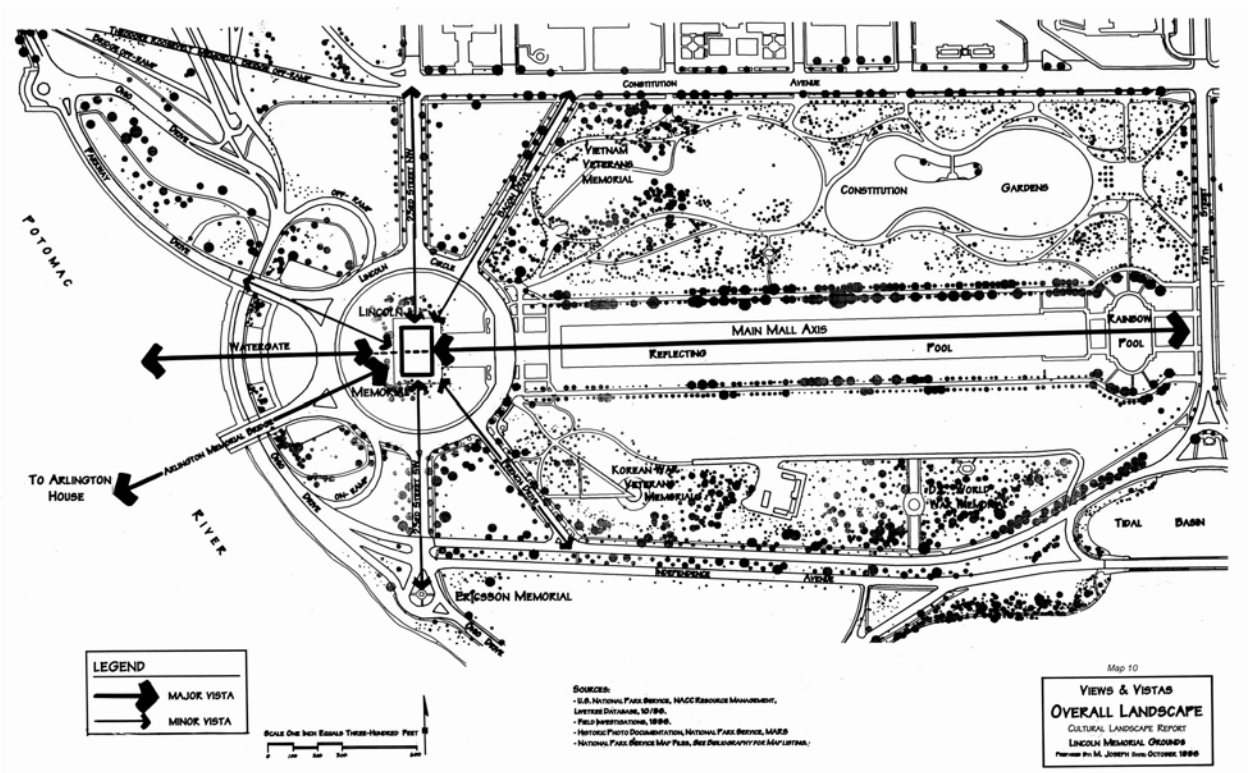


Figure 3-2: Major and Minor Vistas Identified in the Lincoln Memorial Cultural Landscape Report

Site A

According to the CLR, Site A lies within the grounds of the Lincoln Memorial and is identified as a historic grass panel surrounded by elm trees. The CLR considers the use of the panel for active recreation a contributing element to the historic landscape and states that the grassy panel should be preserved and kept free of plantings, structures, and other obstructions. "Future commemorative features should be located in the Lincoln Memorial study area only if they will have a minimal impact on the historic setting. Site design of such features should sensitively

incorporate historic components such as circulation patterns, vegetation, views and vistas and site furnishings to preserve the integrity of the historic landscape and historic structures." Additional contributing features within proximity of Site A include 23rd Street, Constitution Avenue, Henry Bacon Drive, and the Lincoln Memorial Circle, all historic primary roads; the rows of American Elm trees along the west side of Henry Bacon Drive, along the east side of 23rd Street, NW, and on the south side of Constitution Avenue north of Site A; the sidewalks on the east side of 23rd Street, NW, on the west side of Henry Bacon Drive, on the south side of Constitution Avenue, and on the outer edge of the Lincoln Memorial Circle south of the site; and the minor vistas in either direction along Henry Bacon Drive, and to and from the raised north terrace of the memorial along 23rd Street, NW.

The historic, designed views affected by development on Site A are the Henry Bacon Drive corridor and the 23rd Street corridor. The historic planting plan from the north-south midpoint of the Lincoln Memorial was developed by Henry Bacon and Irving Payne to block views across Site A, due to previous development on property north of Constitution Avenue.

Site G

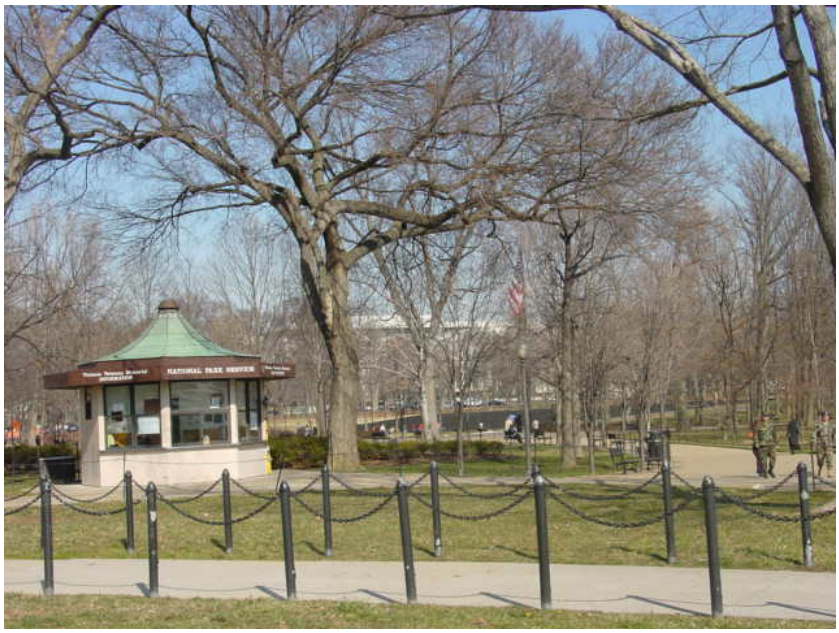
Site G also lies within the grounds of the Lincoln Memorial and is identified in the CLR as a contributing feature to the historic landscape. Defined as a remnant historic grass panel, the CLR considers the use of the panel for active recreation a contributing element to the historic landscape and states that it should be preserved and kept free of plantings, structures, and other obstructions. Additional contributing features within proximity of Site G include 23rd Street, Constitution Avenue, and the Lincoln Memorial Circle, all historic primary roads; the rows of American Elm trees along the west side of 23rd Street, NW; the sidewalks along the west side of 23rd Street, NW, and the outer edge of the Lincoln Memorial Circle; and the minor vistas to and from the raised north terrace of the memorial along the 23rd Street axis, and to and from Parkway Drive.

The historic, designed views affected by development on Site G are the 23rd Street corridor and the formal entry road to Rock Creek and Potomac Parkway. The historic planting plan from the north-south midpoint of the Lincoln Memorial was developed by Henry Bacon and Irving Payne to block views across Site G, due to previous development on property north of Constitution Avenue. Blockage of this view was augmented by additional plantings that were prescribed and implemented by the James L. Greenleaf, Consulting Landscape Architect, on behalf of the Arlington Memorial Bridge Commission in 1932.

West Potomac Park

West Potomac Park encompasses approximately 400 acres of parkland, generally bounded by Constitution Avenue to the north, the Potomac River to the west, 17th Street and the banks of the Tidal Basin to the east, and the Potomac Railroad Bridge to the south. Several major memorials are located within the park, including the Korean War Veterans Memorial, Jefferson Memorial, and the Franklin Delano Roosevelt Memorial. Additionally, Arlington Memorial Bridge, the Lincoln Memorial and grounds, the Reflecting Pool, Constitution Gardens, the Vietnam Veterans Memorial, the Vietnam Women's Memorial, the 56 Signers Memorial, and the Korean War

Veterans Memorial are considered contributing structures or sites to the West Potomac Park Historic District. The park is administered by the National Park Service.



View from Henry Bacon Drive towards the Vietnam Veterans Memorial, a contributing element within the West Potomac Park Historic District

The original nomination for East and West Potomac Parks was prepared in 1972 and accepted into the National Register of Historic Places on November 30, 1973 as a Historic District. A revised nomination was commissioned by the National Capital Region office of the National Park Service in 1996, and listed in the National Register. Contributing elements within the Historic District include: the Lincoln Memorial and its grounds, the Reflecting Pool, the Rainbow Pool, the Dutch Elm trees that line the walkways along the Reflecting Pool, Constitution Gardens, the Vietnam Veterans Memorial, the Korean War Veterans Memorial, and the Arlington Memorial Bridge.

L'Enfant and McMillan Plans

Recognized as one of the country's most notable achievements in urban planning, L'Enfant's 1791 Plan includes a coordinated system of radiating avenues, vistas, and parks overlaid upon an orthogonal grid of streets. Circles and rectangles formed by the intersection of avenues and streets were to be sites for monuments, memorials, and key civic buildings. The Senate Park Commission of 1901, also known as the McMillan Commission, expanded on the L'Enfant Plan in a manner consistent with the City Beautiful movement. The McMillan Plan is significant because it represents the first effort to conduct systematic, comprehensive urban planning for a major city. The Plan terminated several key vistas by the placement of new memorials and extended the National Mall to the west and south to form Potomac Park, the future site of the Lincoln Memorial and the Reflecting Pool.

The National Park Service prepared a National Register nomination for the L'Enfant Plan, which was listed on the National Register. This nomination also recognizes components of the

McMillan Plan that contribute to the plan of Washington, DC. The nomination identifies historic streets, reservations and appropriations, and historic vistas. Constitution Avenue, north of the alternative sites, is recognized as a Major Street in the Plan, and the vista along the avenue to the Capitol is a contributing vista. Twenty-Third Street, which borders the two alternative sites, is considered to be a contributing element and the view along the avenue a contributing vista. Reservation 332 (West Potomac Park), within which both alternative sites are located, is also a contributing element within the plan. The L'Enfant Plan was also preliminarily listed on the DC Inventory of Historic Sites in 1964.

The L'Enfant Plan

The McMillan Plan

Other Historic Resources within the APE

Northwest Rectangle

The Northwest Rectangle, located north of the Lincoln Memorial and the alternative sites, encompasses the area bounded by Constitution Avenue to the south, 17th Street fronting the Ellipse to the east, and New York Avenue to North E Street, inclusive of Square 143 and the southern portion of Square 104 to 21st Street at Virginia Avenue where it extends west on South E Street and back to Constitution Avenue. The area covers approximately 15 city blocks, with the boundaries visually defined on the north by the residential and commercial development at the edge of the Foggy Bottom neighborhood, on the east and south by the open spaces of the Ellipse and National Mall (Potomac Park), and on the west by the walled embankment of the Old Naval Observatory compound.

The Public Buildings Commission, created in the Appropriations Act of July 1, 1916, and extended in the Act of March 1, 1919, was active in the development of this area. On May 25, 1926, the Public Buildings Commission was authorized to establish suitable approaches to the buildings, and beautify and embellish their surroundings as nearly in harmony with the plans of L'Enfant as possible. Each of the buildings from 23rd to 19th Street follows an established building line 246 feet from the curb of Constitution Avenue, and has a formal street front that includes a wide sidewalk and uniform tree planting space. This also conforms with the McMillan Commission's vision.

Architecturally, the buildings range in date from 1897 to 1975, illustrating the classically inspired architectural principles adopted by the federal government in the 20th century. Architecture, community planning, and landscape architecture are listed as the areas of significance of the Northwest Rectangle. Contributing buildings within the Northwest Rectangle include the American Pharmacists Association, the National Academy of Sciences, the Federal Reserve Board, the American Red Cross DC Chapter, the Civil Service Commission, the War Department Building, the Public Health Service (now Interior South), the US Department of the Interior, the Corcoran Gallery of Art, the American Red Cross National Headquarters, the American Red Cross Administration, Memorial Continental Hall, Constitution Hall, and Pan American Union (now Organization of American States). Other contributing elements include statues and several small parks. The Northwest Rectangle was determined eligible for listing in the National Register by GSA but is not yet listed.

American Institute of Pharmacy (American Pharmacists Association)

Designed by John Russell Pope, the American Pharmacists Association, located north of the alternative sites, is perched at the summit of a long sloping lawn, a position that mimics the siting of the Lincoln Memorial. The building was constructed in 1933-1934 and dedicated in May 1934. The American Pharmacists Association building is listed in both the National Register of Historic Places and the DC Inventory of Historic Sites.

American Pharmacists Association from Constitution Avenue

National Academy of Sciences

Buildings that were constructed to the west of the White House during the second decade of the 20th century (1912-1922) were focused on framing the Lincoln Memorial, Constitution Avenue, and Potomac Park. Under the direction of the Commission of Fine Arts, the National Academy of Sciences Building was the first of these buildings to be constructed in 1922-1924. Set topographically higher than the other buildings along Constitution Avenue, the National Academy of Sciences Building lacks the ceremonial garden space that the other buildings along Constitution Avenue possess. Designed by Bertram Grosvenor Goodhue, the building has both Neo-Classical Revival and Art Deco elements. A memorial to Albert Einstein, situated in an Elm and holly grove in the southwest corner of the Academy grounds, was unveiled in 1979 in honor of the centennial of the great scientist's birth. The National Academy of Sciences Building is located northeast of the alternative sites and is listed in the National Register and the DC Inventory.

National Academy of Sciences

Federal Reserve Board

The Federal Reserve Board, located northeast of the alternative sites, was designed by Paul Cret in the "Stripped Classical" style and constructed in 1937. While the forms are classically inspired, nearly all stylistic ornament is omitted on the exterior of the building. The structure is surrounded on either side by landscaped gardens and broad marble walks. The Federal Reserve Board is listed in the DC Inventory of Historic Sites.

Federal Reserve Board

Interior Department South

The United States Public Health Service (now known as Interior South) is located northeast of the alternative sites. This building was constructed during 1935-1936 and dedicated in April 1936. The E-shaped building stands three stories high with a basement and rests on a terraced platform that visually raises the structure. The Interior Department South has been determined to be eligible for listing in the National Register.

Interior Department South

Pan American Union

The Pan American Union (also known as the Organization of American States) was constructed between 1908 and 1910 and is located on 17th Street between Constitution Avenue and C Street. The building incorporated classical principles of design, including the Corinthian pilasters and articulated cornices. The Pan American Union Building is listed individually in both the National Register and the DC Inventory. It is also a contributing element within the 17th Street Historic District.

3.2.3 Visual Resources

This section documents the existing visual character of the alternative sites and the surrounding area. The study area for visual resources was determined by estimating the visibility of the proposed Memorial Center to viewers from identified historic and cultural resources. The area of visual influence for the proposed Memorial includes the alternative sites, important street corridors, and views of historic and cultural resources within the surrounding area.

Visual Character of Alternative Sites

Alternative Site A

Site A is a grassy panel encircled by a perimeter of mature trees. Ballfields are located at the northern end of the site and an NPS food service kiosk is currently under construction at the southern end of the site. Roadway improvements are also being undertaken along Henry Bacon Drive, Lincoln Memorial Circle, and 23rd Street. These two projects have resulted in a large proportion of the site being temporarily shielded from view behind construction fences. Once the construction fences are removed, views of Site A will be provided through lines of street trees along Constitution Avenue, Henry Bacon Drive, 23rd Street, and Lincoln Memorial Circle. Site A is visible from the Vietnam Veterans Memorial Flagpole Plaza.

Site A is also partially visible from the upper steps of the Lincoln Memorial through the line of mature trees that border the southern edge of the site. The dominant view from the Lincoln Memorial is to the east, toward the Washington Monument and US Capitol, along the linear axis of the National Mall. A view of Site A is available within the peripheral view from the Lincoln Memorial. As one descends the steps of the Lincoln Memorial, Site A becomes less visible as it moves out of view and is obscured by the dense plantings at the base of the Lincoln Memorial.

View from Constitution Avenue along the western boundary of Site A, looking south on 23rd Street towards the Lincoln Memorial (Site A is on the left)

View of Site A looking east from across 23rd Street

View towards Site A looking north/northeast from the uppermost point on the Lincoln Memorial steps

View towards Site A, looking north from the mid-point of the Lincoln Memorial steps

View towards Site A, looking north from the base of the Lincoln Memorial steps

Alternative Site G

Site G is a grassy panel encircled by a perimeter of mature trees. Ballfields are located on the site and a portion of Site G is currently occupied by a large fenced construction area serving road work and security improvements for the Lincoln Memorial. Roadway improvements are being undertaken along Lincoln Memorial Circle and 23rd Street, resulting in the southern portion of the site being temporarily shielded from view behind construction fences. Once the construction fences are removed, views of Site G will be provided through lines of street trees along Constitution Avenue, 23rd Street, and Lincoln Memorial Circle. Site G is not visible from the Vietnam Veterans Memorial Flagpole Plaza. Site G is not visible from the upper steps of the Lincoln Memorial.

View of Site G, looking west from across 23rd Street

View from center of Site G, looking east towards 23rd Street and Vietnam Veterans Memorial

Surrounding Visual Environment

The existing visual characteristics of the areas surrounding the alternative sites were determined through field reconnaissance. The surrounding area is characterized by a combination of streets, federal and institutional buildings, and open spaces. The pattern of streets and associated visual corridors in this area 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 maintained in subsequent plans and development.

Visual Corridors

The project sites are located at the west end of Constitution Avenue, a strong east-west visual axis which provides views of the Washington Monument to the east. Although the grand avenue terminates at 23rd Street, the axis continues west to Rock Creek and Potomac Parkways to the historic terminus of Constitution Avenue at the Belvedere in the form of large rows of trees and pedestrian sidewalks. East of the alternative sites, the Constitution Avenue corridor is visually dominated by architecturally diverse buildings fronted by generous lawns on the north side and by the open space associated with the National Mall and West Potomac Park to its south. Constitution Avenue affords views of the capital's most significant memorials and open space, national museums, and prominent federal and institutional buildings, along its entire length in the northwest quadrant of the city. Both alternative sites are partially visible along this corridor through lines of trees on the south side of Constitution Avenue.

Sidewalk along the southern edge of Constitution Avenue (Site A on right)

Twenty-Third Street is a main roadway and major visual corridor that borders the two alternative sites, running in the north-south direction and sloping downward dramatically as it approaches Constitution Avenue from the north. Within the vicinity of the alternative sites, the visual corridor is dominated by buildings associated with the Navy campus and federal government buildings north of Constitution Avenue, and by open space south of Constitution Avenue. The visual corridor associated with 23rd Street terminates at Lincoln Memorial Circle, revealing a side view of the Lincoln Memorial and the vegetation on the northern side of the Memorial.. Both sites are partially visible as peripheral views along the corridor.

Looking from Constitution Avenue, south on 23rd Street, with Site A to the east (left) and Site G to the west (right)

Henry Bacon Drive is another important visual corridor, providing a key view to the southwest that terminates at the Lincoln Memorial. The oblique view of Lincoln Memorial along Henry Bacon Drive replicates the classical view of temples understood by McMillan-era architects and classicists. The alignment of this roadway highlights this classically inspired approach to the Lincoln Memorial. This view is framed by a double line of mature elm trees that flank the sidewalks on either side of the street. Views to the northeast along Henry Bacon Drive are again framed by mature elm trees, terminating at the intersection with Constitution Avenue (formerly B Street). Site A is partially visible at the edge of views in either direction on Henry Bacon Drive.

Looking from Constitution Avenue, southwest on Henry Bacon Drive, with the Lincoln Memorial in the distance; the Vietnam Veterans Memorial is located to the east (left), and Site A is located to the west (right)

Visual Character Areas

North: Northwest Rectangle and the Potomac Annex

The area to the north of the alternative sites, east of 23rd Street, is dominated by the buildings that comprise the Northwest Rectangle. These building are set on a topographic incline that rises from the south to the north. Primarily federal buildings and institutional headquarters, the structures range in date from 1897 to 1975 and illustrate the classically inspired architectural principles adopted by the federal government in the 20th century. The buildings that front Constitution Avenue respect a consistent building line that frames views east towards the Washington Monument and the US Capitol.

West of 23rd Street, the Navy's Potomac Annex rises up a steep hill that ultimately leads to the Old Naval Observatory. At the southern end of the Annex, adjacent to the access drive to the Roosevelt Bridge, there is a tiered surface parking lot that provides parking for approximately 240 vehicles. The parking lots are the proposed site for the new United States Institute of Peace Headquarters. Turn-of-the-century administration buildings and residential quarters are sited north of parking lot climbing up the hill.

The National Academy of Sciences Building, one of the buildings within the Northwest Rectangle

East: Constitution Gardens

Constitution Gardens is a fifty-two acre designed landscape located within West Potomac Park, east of the alternative sites, and north of the Elm allee that frames the Reflecting Pool between 17th and 23rd Streets. The gardens were specifically designed to provide quiet, intimate spaces. Winding paths traverse the landscape providing access to a combination of open grassy areas and dense groves of trees. The dominant feature of the gardens is a curvilinear shaped lake with a small island in the center of it, located at the east end of the gardens. Towards the west end of Constitution Gardens, the Vietnam Veterans Memorial is set within a two-acre site. Dedicated in 1982, the memorial's design is distinctly modern; two polished granite walls that meet and form a "V" bear the names of Americans killed or missing in action in Vietnam between 1963 and 1973. The design maintains the openness of the landscape through carefully engineered vistas connecting the site to the Washington Monument and the Lincoln Memorial. A flag, a figurative sculpture, and the Vietnam Women's Memorial are located in a treed area south of the memorial.

View towards Constitution Gardens looking east from the Vietnam Veterans Memorial grounds

South: Lincoln Memorial grounds and the National Mall

The area south of the alternative sites is dominated by the Lincoln Memorial and its grounds, anchoring the western end of the National Mall. The Lincoln Memorial visually terminates the east-west axis that begins at the US Capitol. Designed as a Greek temple, the massive masonry structure is set upon a rectangular platform with a raised terrace. The principal access to the Memorial is provided via a monumental flight of steps, located on the Memorial's east side, facing the Washington Monument. An access drive, Lincoln Memorial Circle, encircles the site and is partially closed to vehicular traffic. Steps descend from this circle to the Reflecting Pool and its associated walkways, providing access to attractions along the National Mall.

View from the Lincoln Memorial to the Washington Monument

West: Potomac River

The area to the west of the alternative sites is dominated by major roadways that connect Washington, DC to the broader Washington metropolitan area. Access ramps associated with Rock Creek and Potomac Parkways, Route 50, and Interstate 66 are adjacent to Site G, and just west of Site A. The Kennedy Center is located northwest of the alternative sites, across Interstate 66 on the bank of the Potomac River. The Potomac River is west of the roadway infrastructure.

Arlington Memorial Bridge is located west of the Lincoln Memorial, connecting Washington, DC to Virginia. Memorial Bridge symbolically links North and South in its alignment between the Lincoln Memorial and Arlington House, The Robert E. Lee Memorial. Arlington Memorial Bridge and its related architectural, engineering, sculptural and landscape features are significant as important elements in the neoclassical urban design of the National Capital as it evolved during the first third of the 20th century. The adjacent Rock Creek and Potomac Parkway terminus, Watergate steps, and monumental equestrian statuary join with the bridge in constituting a formal western terminus of the great Washington Mall composition at the edge of the Potomac.

The entrance to Rock Creek Parkway, located west of the Lincoln Memorial and south of Site G

3.3 Transportation Systems

3.3.1 Location and Access Consideration

The two alternative sites under consideration are both located in the northeast corner of the National Mall. The area is served by a comprehensive network of arterial and collector roadways, which serve commuter traffic accessing the Central Employment Area, as well as the access and circulation needs of visitors to the National Mall in general, and to West Potomac Park.

Consideration of the access needs of the two alternative sites recognizes the fact that there will be little or no visitation of a site-specific nature. Visitors to the Center will be primarily derived from visitors to the Vietnam Veterans Memorial, as well as other attractions on the National Mall. It can therefore be stated that the general access needs of the proposed use is well-served by the existing roadway network, which is shown in Figure 3-3. This exhibit also shows the functional classification of the key area roadways. For background, the functional and user characteristics are discussed below.

Figure 3-3: Vietnam Veterans Memorial Visitor Center – Local Area Roadway

Source: O.R.George and Associates, Inc., 2006.

3.3.2 Roadways and Traffic Pattern Characteristics

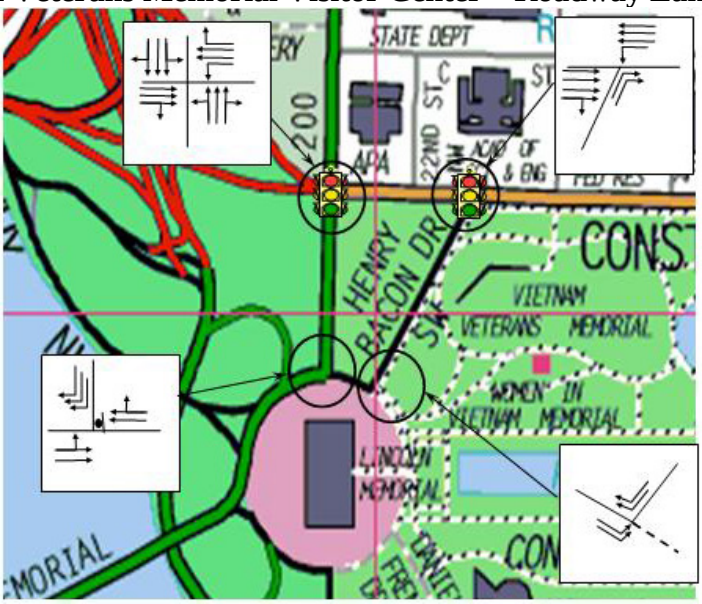
Constitution Avenue, NW is an eight-lane undivided principal arterial under the jurisdiction of the District of Columbia. It is a primary commuter corridor linking the District with the northern Virginia suburbs to the west. Within the District, Constitution Avenue is designated as US Route 50, and is part of the National Highway System, linking with Interstate 66 to the west. All intersections within the local area are signalized, and parking along the south and north sides are prohibited during the morning and afternoon peak periods (respectively) in order to better accommodate the dominant traffic flows. The posted speed along Constitution Avenue is 25 MPH and this roadway services Average Daily Traffic (ADT) volumes of 42,000 on a typical weekday, with substantially fewer vehicles on weekends.

Twenty-Third Street, NW is a five- to six-lane divided NPS roadway, a principal arterial in the District of Columbia. Parking is restricted along the section between Constitution Avenue and the Lincoln Memorial Circle, where three travel lanes are provided in the northbound direction and two lanes are provided southbound. The roadway accommodates Average Daily Traffic (ADT) volumes of 23,700 during the week, and much lower volumes on weekends.

Henry Bacon Drive, NW is a four-lane undivided "connector roadway" running diagonally between Constitution Avenue and the Lincoln Memorial Circle. The roadway is under the NPS's jurisdiction and is considered a principal arterial. This roadway serves Average Daily Traffic (ADT) volumes in the range of 17,400 on weekdays, with appreciably less traffic on weekends and public holidays. The posted speed is 25 MPH. It is relevant to note that this roadway is adjacent to the Vietnam Veterans Memorial.

Figure 3-4 shows the configuration of the local impact area roadway network defined above. The exhibit shows the roadway lane configuration and traffic control devices, which are relevant to the traffic operations, safety, and pedestrian accessibility.

Figure 3-4: Vietnam Veterans Memorial Visitor Center – Roadway Lane Configuration

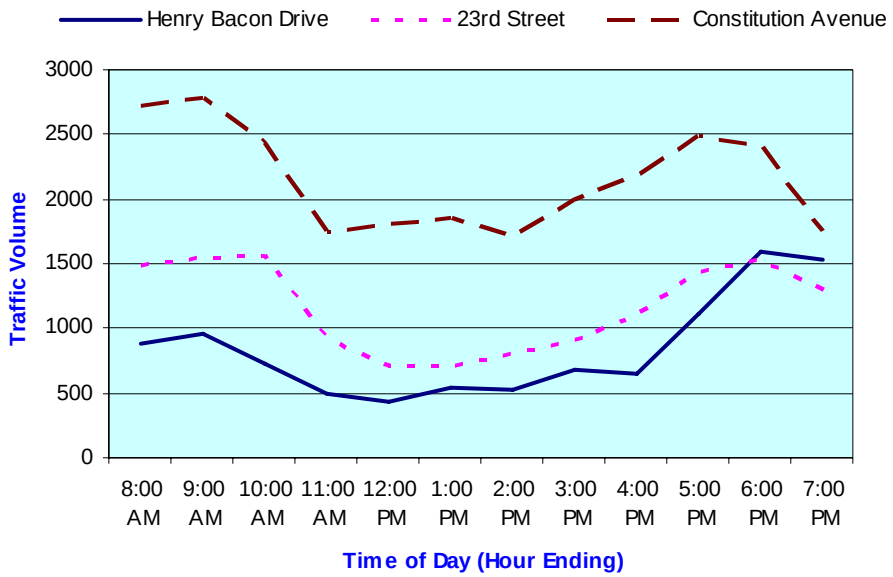


Source: O.R.George and Associates, Inc., 2006.

Traffic Volumes

Figure 3-5 presents typical weekday hourly volumes along the three critical roadway sections serving the proposed action. These data are based on surveys conducted during October 2005. Table 3-1 presents capacity analysis results performed for the peak morning, mid-day and afternoon peak hours

Figure 3-5: Vietnam Veterans Memorial Visitor Center – typical weekday hourly volumes



Source: O.R.George and Associates, Inc., 2006.

Table 3-1: Intersection Level of Service Results (2006)

Location	AM Peak Hour		Mid-Day Peak Hour		PM Peak Hour	
	LOS	Average Critical Delay	LOS	Average Critical Delay	LOS	Average Critical Delay
Constitution Avenue at 23rd Street, NW	C	25.1	B	18.1	D	36.3
23rd Street, NW at Lincoln Memorial Circle	D	28.9	A	9.4	F	100.3
Constitution Avenue at Henry Bacon Drive	B	16.8	A	5.9	B	17.4

Source: O.R.George and Associates, Inc., 2006.

Level of Service is defined as a qualitative measure describing operational conditions within a traffic stream or at an intersection, and the perception of these conditions by road users. Current practice defines six (6) levels of service ranging from A to F. Level of Service A represents the best (free flow) conditions, where drivers are unaffected by the presence of others in the traffic stream and are free to change speeds and maneuver, etc., at will. Level of Service F represents the worst (forced flow) conditions, where road users experience considerable delay and inconvenience.

Safety Considerations

Traffic accident data has been collected for the intersection of 23rd Street and Constitution Avenue within the local environment. Accident data from DDOT is categorized as "property damage", "hit and run", "with pedestrian", and "with injury". Accidents at the Constitution Avenue/23rd Street, NW intersection have declined since 2003, as shown in Table 3-2, which summarizes the available data on reported accidents. The majority of these accidents are classified as "property damage" and only one (in 2004) was "with pedestrian."

Table 3-2: Traffic Accident Data in Area

Intersection	Reported Accidents		
	2003	2004	2005
Constitution Avenue / 23rd Street, NW	75	59	35

Source: US Park Police, 2006.

3.3.3 Vehicular Parking

Vehicular parking is prohibited on either of the alternative sites. In addition, given that the closest public garage (with a capacity of 202 spaces) is located at 24th Street and Virginia Avenue, there are no existing public parking facilities with convenient access to either of the alternative sites. Considering the "multi-purpose" and "linked trip" aspects of trip making, as well as the dominant modes of travel (i.e., taxi, tour bus, walking, etc.), it is also relevant to note that previous studies of visitation to the National Mall have shown that there are approximately 2,000 spaces within, and in convenient distance from the National Mall.

The current on-street parking conditions in the area can be summarized as follows:

Constitution Avenue, NW (20th Street to 23rd Street): Metered parking is provided along both sides of the roadway except during the peak periods and peak directions of flow (i.e., south side between 7:00 - 9:30 am; and north side between 4:00 - 6:00 pm). Outside of the 7:00 am to 6:30 pm period, weekday parking is free of charge.

23rd Street, NW north of Constitution Avenue to C Street: Metered parking is provided along both sides of the roadway except during the peak periods and peak directions of flow (i.e., east side between 7:00 - 9:30 am; and west side between 4:00 - 6:00 pm). Outside of the 7:00 am to 6:30 pm period, weekday parking is free of charge.

23rd Street, NW south of Constitution Avenue: Parking is prohibited along both sides of the roadway.

Henry Bacon Drive, NW: Parking is prohibited along both sides of the roadway.

3.3.4 Public Transportation Service

The alternative sites are not within easy walking distance to Metrorail Stations. The Foggy Bottom/George Washington University station is located approximately 3,500 feet to the north along 23rd Street, and the Federal Triangle Station is located approximately 1.2 miles to the east, off Constitution Avenue (C3A, B, F, G). Both stations are served by the Blue and Orange lines. However, the sites are linked to both stations by three Metrobus routes along 23rd Street (H1, C1, and N3) and four Metrobus routes along Constitution Avenue (13A,B, F, and G). Additional transit service is available through Metrobus routes with stops in the vicinity of the State and Interior Departments just to the north. The sites are also along the general routes of Tourmobile service, with stops conveniently located to serve the Lincoln Memorial and the Vietnam Veterans Memorial.

Charter tour buses currently drop off visitors to this area of the National Mall along Constitution Avenue just north of the Vietnam Veterans Memorial and along Daniel French Drive, south of the alternative sites. The bus drop-off area under construction along the western side of Henry Bacon Drive, near the NPS food service kiosk, would serve this area of the National Mall during non-peak hours. In addition, Tourmobile, which provides narrated shuttle tours around Washington, DC, has two stops nearby the alternative sites: at the Lincoln Memorial and the Vietnam Veterans Memorial. All of the public transportation services cited above operate at headways that continue to provide for a good level of service in terms of accessibility. There are no known deficiencies in terms of seating capacities.

3.3.5 Pedestrian Circulation

Pedestrian Activity

There is currently fenced off construction activity within the block bounded by 23rd Street, Constitution Avenue, Henry Bacon Drive, and Lincoln Memorial Circle (Site A). Therefore, there is no pedestrian activity on Site A. There is little pedestrian activity on Site G, with the exception of persons entering the site to use the ballfields, typically during the late afternoons and on weekends. In any case, it is noted that there are sidewalks along all street block faces bordering the sites. These are separated from the adjacent streets by wide tree lawn areas, which enhance pedestrian safety.

South and east of the alternative sites, there is an extensive network of pedestrian paths connecting the Lincoln Memorial to the Reflecting Pool, the Washington Monument, the Vietnam Veterans Memorial, Korean War Veterans Memorial, World War II Memorial, and other attractions within West Potomac Park. Primary visitor access is by private bus service, with pedestrian circulation generally moving from south to north. Extensive walkways wind

through Constitution Gardens, across Henry Bacon Drive from Site A, with entry points into the gardens provided at the middle of Henry Bacon Drive adjacent to the Vietnam Veterans Memorial; at the corner of Henry Bacon Drive and the Memorial Circle; and at 21st, 20th, and 19th Streets on the south side of Constitution Avenue.

Pedestrian Safety and Crossings

Information on pedestrian provisions and usage at the signalized intersections was provided previously in Section 3.3.1. That section also included information on accident occurrences over the period 2003 - 2005. Crosswalks are provided at each of the intersections along Constitution Avenue and at Henry Bacon Drive near the intersection with Constitution (and will be provided at both Henry Bacon Drive and 23rd Street on Lincoln Memorial Circle). Pedestrians accessing the local area fall into many age groups, from small children to large youth groups to elderly persons, and frequently include the physically challenged. Available crossing times at signalized intersections are therefore an important consideration. Table 3-3 below presents relevant data on available vs. required crossing times for the existing signalized intersections closest to the alternative sites. It is noted that the signals in question operate with cycle lengths of 100 seconds for vehicular traffic, and are equipped with pedestrian countdown signals.

Table 3-3: Pedestrian Intersection Crossing Times: Vietnam Veterans Memorial Area

Intersection	Crossing Distance (Feet)	Crossing Time Period (Seconds)	Crossing Time Required, - Adult (Seconds)	Crossing Time Required - Senior/ Elderly/Large Group (seconds)
Constitution Avenue at 23rd Street, NW				
- East Side Crossing	80	40	20	32
- West Side Crossing	80	40	20	32
Constitution Avenue at Henry Bacon Drive, NW				
- South Side Crossing	45	25	11	18
23rd Street, NW at Constitution Avenue				
- East Side Crossing	60	31	15	24
- West Side Crossing	60	31	15	24

3.4 Natural Resources

3.4.1 Geophysical Resources

The western end of the National Mall was created by use of fill over 100 years ago and has little topographic variation. Constitution Gardens features carefully sculpted topography, unlike the majority of the park, and the Vietnam Veterans Memorial was carefully conceived to take advantage of this quality of the park. The topography of the area is influenced by the flood protection berm that extends along the north side of the Reflecting Pool between 23rd Street, NW and 17th Street, NW and has been incorporated in the landscaping of Constitution Gardens.

The topography of the alternative sites is relatively flat. North of the alternative sites, across Constitution Avenue, the natural topography rises fairly dramatically. South of the alternative sites, the Lincoln Memorial rests at a higher elevation, affording views of the National Mall to the northeast, east, and southeast.

Soils at the western end of the National Mall are classified as Urban Land Association, which are soils that have been previously disturbed, removed, or filled with unknown imported materials. Fill material may be present on the alternative sites to a depth of up to 14 feet. Based on the fact that the soil is fill, it may contain foreign materials. Bedrock occurs at a depth of approximately 35 feet below grade.

3.4.2 Water Resources

Surface Water

The alternative sites are located within the Potomac River drainage basin, a sub-basin of the Chesapeake Bay watershed. There are no permanent bodies of surface water located on or near the alternative sites. The sites are located between 1,000 and 1,200 feet east of the Potomac River, which is a jurisdictional Waters of the United States, subject to the jurisdiction and regulatory control of the US Army Corps of Engineers (USACOE). The District of Columbia, along with the federal government, Pennsylvania, Maryland, and Virginia, are subject to the 1983 Chesapeake Bay Agreement. The District ordinances for erosion, sediment control, and stormwater management support the mission of the Chesapeake Bay Program by protecting surface runoff to the Potomac River.

Stormwater

The alternative sites are currently undeveloped and thus naturally pervious. Surface runoff follows the natural topography of the alternative sites, pooling slightly at the center of each of the sites where the topography is lowest. Storm drains are located along the street curbs at the perimeter of the alternative sites. Stormwater that enters the sewerage system flows to the Tiber Creek Interceptor and then to the Blue Plains Treatment Center. Surface water that does not flow into storm drains would generally flow over land, into the Potomac River, and subsequently into the Anacostia River.

Floodplains

Both Site A and Site G are located outside of the 100-year floodplain of the Potomac River. The northernmost portion of each of the alternative sites is located within the 500-year floodplain. Federal projects are guided by Executive Order 11988, Flood Plain Management which states that "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains." Under Executive Order 11988, the NPS is responsible for evaluating the potential effects of any actions proposed within a floodplain and proposing mitigation to avoid adverse effects resulting from development within a floodplain. Should the proposed project be determined to potentially result in an adverse impacts to a regulated floodplain, a statement of findings would be included with the finding of no significant impact (FONSI).

Modifications to Site G are planned as part of the flood protection measures necessary to protect the downtown area of Washington, DC. As part of the flood protection project, NPS is responsible for constructing emergency closures at 23rd Street and Constitution Avenue, as guided by the Army Corps of Engineers' (USACOE) "Modifications to Washington, DC and Vicinity Flood Protection Project Environmental Assessment (1992)." According to this report, temporary closures necessary as a result of flooding would consist of "an embankment constructed across Constitution Avenue (immediately west of 23rd Street) and extending south (parallel) along 23rd Street. The embankment consists of 4,000 sandbags extending for a distance of about 400 feet, with a height of between 1.0 and 2.5 feet."

The USACOE Flood Protection EA determined that the permanent closure of 23rd Street at Constitution Avenue would be necessary to provide flood protection. Closure of this roadway segment would require raising the existing grade to the west of 23rd Street, and consist of two earth embankments separated by the eastbound ramp to Constitution Avenue for Theodore Roosevelt Bridge. The northernmost embankment would fill an existing low area between this ramp and the westbound ramp. The fill would extend a distance of about 55 feet between the ramps with an 8 foot rest at a minimum elevation of 20.6 NGVD. The maximum height of fill for this reach is about 3 feet.

The other embankment extends approximately 150 feet parallel to Constitution Avenue before turning south parallel to 23rd street for approximately 400 feet. According to the USACOE Flood Protection EA, in order to minimize impacts to the existing mature trees along 23rd Street and existing ballfields, the area of the athletic fields would be re-graded with an average of 3.0 feet of fill shifted approximately 50 feet west of 23rd Street, NW. This USACOE flood protection project has been approved as a necessary measure to protect the downtown area of Washington, DC but currently remains unfunded.

Flood protection measures already in place in the area include the berm along Constitution Avenue, north of the Reflecting Pool. The Reflecting Pool levee extends along the north side of the Reflecting Pool between 23rd and 17th Streets, NW and has been incorporated in the landscaping of Constitution Gardens. According to the USACOE's flood protection plans, the crest of the levee is to be brought to a consistent elevation of 19.1 feet NGVD by filling in low

spots. In an attempt to minimize impacts on Constitution Gardens, plantings would be avoided, and the existing ground contours would be used as much as possible.

Wetlands

The alternative sites are located in an urban setting and there are no wetlands located within these sites or in the immediate area surrounding them. According to the National Wetlands Inventory of the US Fish and Wildlife Service and the US Army Corps of Engineers (USACOE), the nearest wetland is part of the Potomac River system, located west of the alternative sites.

The NPS is also guided by Executive Order 11990, Wetland Protection.

Groundwater

Fluctuations in the level of the water table may result from seasonal variations in precipitation, surface runoff, and evaporation. Based on area topography, the natural direction of groundwater flow is to the west/southwest (toward the Potomac River); however, potential man-made subsurface structures in conjunction with urban development affect the localized groundwater flow. The groundwater level at the alternatives sites would be reached at approximately 35 feet below the existing grade.

3.4.3 Vegetation and Wildlife Habitat

Vegetation on the project site is limited to grass across the centers of the sites, and mature trees clustered along the site's edges. Animals such as gray squirrels, rats, pigeons, starlings, and sparrows are common to the urban environment, and may exist at the sites. There are no plant or animal species identified as threatened or endangered by the US Fish and Wildlife Service or the District of Columbia within the alternative sites or in the surrounding area. There are no known unique conservation areas, wildlife refuges, or natural areas nearby.

Tree groves critical to preserve line the perimeter of both alternative sites. These trees are historic, include specimen-quality trees, or are intrinsic to the experience of adjacent protected areas of the park. The line of trees require preservation and help define the developable area within the sites.

3.4.4 Air Quality

The US Environmental Protection Agency (EPA) established the Clean Air Act (CAA) of 1970, and the CAA Amendments of 1977 and 1990. Regional NAAQS limits have been established for the criteria pollutants of carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), particulate matter equal to or less than 10 microns in size (PM_{10}), and fine particulate matter ($PM_{2.5}$).

The EPA assesses regional compliance with NAAQS, and regions not in compliance with the NAAQS are identified as "non-attainment areas." The Washington metropolitan region is in non-attainment for ozone. The region is currently in compliance for CO, but has violated NAAQS for

CO in the recent years and therefore, has been designated by EPA as a CO maintenance area. The region has concentrations of the remaining criteria pollutants of NO_2, SO_2, Pb, PM_{10}, and $PM_{2.5}$ well below their NAAQS. Therefore, ozone and CO are the emissions of concern in the region.

Attainment plans for reducing ozone-causing emissions and achieving attainment with the NAAQS for the criteria pollutants are required by the EPA. 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. 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.

There are no emissions sources on the two alternative sites. The predominant source of vehicle emissions in proximity to the project site is vehicular traffic on Constitution Avenue, and 23rd Street, Henry Bacon Drive, and the access roads to Interstate 66, Route 50, and Rock Creek and Potomac Parkways.