



FINDING OF NO SIGNIFICANT IMPACT

Vietnam Veterans Memorial Center Design

June 2012

The proposed action is for the Vietnam Veterans Memorial Center at the Vietnam Veterans Memorial in Washington, DC as authorized by Public Law 108-126, 117 Stat. 1348 (November 17, 2003), and other applicable requirements. Pursuant to the law, the Vietnam Veterans Memorial Fund (VVMF) is establishing the Memorial Center in compliance with certain provisions of the Commemorative Works Act, 40 U.S.C. ch. 89 (CWA), and it will be located on parkland administered by the National Park Service (NPS). VVMF, in consultation with NPS, is responsible for designing and constructing the Memorial Center. Once construction is complete, NPS will be responsible for operating and maintaining the Memorial Center and pursuant to the authorizing law the Secretary of the Interior shall enter into a written agreement with the VVMF for specified maintenance needs as determined by the Secretary.

As stated in the authorizing legislation, the purpose of the Memorial Center is “to better inform and educate the public about the Vietnam Veterans Memorial and the Vietnam War.” Not long after the Memorial Center was authorized, the NPS and VVMF began planning, starting with a VVMF-led Site Selection Study issued in 2005, followed by NPS compliance with the National Environmental Policy Act (NEPA) comprised of the first Environmental Assessment (EA) in 2006 with the NPS Finding of No Significant Impact (FONSI) in 2007, leading to the second EA in 2012 on the Memorial Center design and resulting in this FONSI. In this FONSI, the term “EA” refers to the 2012 EA.

The NPS conducted its NEPA compliance following the Council on Environmental Quality (CEQ) regulations, at 40 CFR 1500-1508, the Department of the Interior NEPA regulations at 43 C.F.R. Part 46, and NPS Director’s Order #12: Conservation Planning, Environmental Impact Analysis, and Decision – Making, and the accompanying Handbook (DO-12). Concurrently, the NPS has been complying with the National Historic Preservation Act (NHPA) Section 106 using the Advisory Council on Historic Preservation (ACHP) regulations at 36 C.F.R. 800, with a series of consulting party meetings and culminating in the execution of a Section 106 Memorandum of Agreement (MOA) in 2012. NPS prepared this EA to evaluate impacts, or environmental consequences, of two action alternatives for the Memorial Center design and a No Action Alternative. This EA builds on the first EA and what NPS learned from that analysis and process including the public input at that time. Moreover, the design follows the 2006 guidelines produced by the National Capital Planning Commission (NCPC) and the U.S. Commission of Fine Arts (CFA), after the NPS proposed guidelines for the design. That 2006 EA evaluated the potential impacts of locating the Memorial Center at the project site and one other alternative location, and a No Action Alternative, and five additional sites that were considered but rejected essentially because their locations did not support a “continuous” visitor experience with the Memorial itself. The NPS identified the current project site as its selected alternative, and determined that the location of the Memorial Center at the current project site would not significantly affect the quality of the human environment.

The two design concepts in the EA are for an underground facility, as required by law, with a courtyard and skylights, both open-air and enclosed; low berms to minimize visibility; low-impact development techniques; ingress and egress to and from the site; and both existing and newly incorporated trees. Most of the added trees, typically American elms, would be near the perimeter of the project site, along Constitution Avenue, NW, and in the southern corner, consistent with historic, implemented landscape treatment. The existing food service kiosk would remain, as would a smaller multi-purpose recreation area.

SELECTED ALTERNATIVE

The NPS identified Alternative 2 as its preferred alternative in the EA and has selected it for implementation as described on pages 2-14 through 2-23 of the EA. The selected alternative is the refinement of several concept designs that were developed by ENNEAD Architects, winner of the 2004 VVMF design competition (formally known as Polshek Partnership). The selected alternative was refined over the course of several years using the Section 106 consultation process and continued coordination with VVMF, NCPC, CFA, the District of Columbia State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), the National Coalition to Save our Mall, the National Trust for Historic Preservation, and Equal Honor for All.

The Memorial Center will be located on a 2.5-acre site south of Constitution Avenue, NW, east of 23rd Street, NW, west of Henry Bacon Drive, NW, and north of Memorial Circle in Washington, DC. The overall site plan will include the Memorial Center, landscaping, site grading, the existing food service kiosk and playfield, and geothermal wells that will be used for the heating and cooling of the Memorial Center.

Center Design – The design of the Memorial Center that, by law, is located underground, follows the 2006 guidelines to further minimize its visibility to be harmonious with the site. The design serves to welcome visitors and to support the Vietnam Veterans Memorial experience and its emotional impacts. At the same time, the Memorial Center will be secondary to the memorial.

The two-level underground building, considered by VVMF and the NPS to be the minimum size necessary, will consist of approximately 37,000 square feet of space, including exhibit space, an underground courtyard which is a functional requirement of the underground design criteria in the 2006 guidelines, an entry plaza, a bookstore, restrooms, a lobby, and office space for administrative purposes. Under the selected alternative, the entrance will be connected to the Henry Bacon Drive sidewalk. Stairs next to a curvilinear retaining wall will lead visitors from Henry Bacon Drive to the below-grade entry. For those visitors not the using stairs, an elliptical walkway will provide access to the entry from the Henry Bacon Drive sidewalk. Stone seatwalls with recessed lighting will border portions of the elliptical walkway, inside of which will be turf.

The Memorial Center will have a green roof, which will appear as lawn. A horizontal railing will be installed above the entryway at the stair wall and at the building's green roof edge to protect against potential falls from the roof to the entry plaza. In place of the metal grates shown in the EA for the horizontal railing, a system of cords will extend over the concrete waffle slab design to minimize visibility of the railing and to improve safety. This change came in response to comments received from the public and review agencies.

Skylights, including an open-air skylight not covered by glass, will be installed. The large skylight open to the courtyard below will be surrounded by a 30-inch tall concrete barrier wall topped with a twelve-inch guardrail to create a 42-inch combined-height safety rail, consistent with applicable building codes. There will be a paved area and a curb around the skylight, further separating it from the lawn. One of the changes from the EA is that instead of seven additional skylights, one covered skylight will be located over the entry vestibule, providing light to the building. This smaller skylight will be flush with the ground. The reduction in the number of skylights responded to concerns raised by review agencies and the public and will minimize disruption of the turf panel.

Visitors will access the Memorial Center from the east via a depressed entry point. Past a lobby entrance, visitors will take steps and ramps, which will also serve as exhibit space, to the lower level. This will contain additional exhibit space, the courtyard, and restrooms. Elevators and stairs will return visitors to the main entrance, past an interpretive sales area to exit the Memorial Center.

The landscape of Alternative 2 will include the existing trees, as well as approximately 22 new American elm trees; the exact number and placement may be further refined during consultation required by the MOA. Most of the added trees will be near the perimeter of the project site, along Constitution Avenue, NW, and in the southern corner of the site, consistent with the implemented historic planting plans for the

area. Within the perimeter of trees, the site will be a lawn with openings for skylights and the building entrance.

Site Grading—The existing site elevation north of the Memorial Center will continue to be approximately 19 feet above mean sea level (AMSL), while the grade south will continue be 20.5 feet AMSL. The design will use gentle berms to minimize views of the Memorial Center from outside the project site. Changes to the site grading will increase the maximum grade at the site to 22.5 feet AMSL, which will be near the largest skylight directly over the Memorial Center.

Food Service Kiosk and Multi-Purpose Recreation Area—These are existing features of the site. The food service kiosk, which is an NPS concession operation, is located at the southeastern portion of the site and averages approximately 2.5 million visitor trips each year. It is not part of the Memorial Center or this proposal and it will not be combined with the Memorial Center operations. It is a relatively new facility, approved in December 2003 by CFA and January 2005 by NCPC, and opening in late 2006. It will continue to operate, providing for the needs of visitors. Located at the northeast corner of the site, the existing chain link backstop will be removed. The size of this existing open space will be reduced by the Memorial Center, and NPS will continue to manage it as multi-purpose outdoor recreation space.

Geothermal Wells—A geothermal field will be established in order to provide energy for the Memorial Center. The field will consist of approximately 83 wells extending to a depth of up to 600 feet. The wells will be located around the Memorial Center, outside the exterior limits of the tree root zones, in coordination with the NPS arborist. The existing thermal field for the kiosk will continue to operate.

OTHER ALTERNATIVES

The EA also analyzed the No Action Alternative and one other action alternative, Alternative I, and design alternatives that were considered but dismissed. The No Action Alternative would maintain the existing conditions and management of the site. All features would retain their existing condition and function. There would be no new development or re-configuration of the site. The No Action Alternative was dismissed from consideration because it did not meet the purpose and need of the project as identified in the law to establish the Vietnam Veterans Memorial Center to better inform and educate the public about the Vietnam Veterans Memorial and the Vietnam War.

Alternative I also featured an open courtyard and skylights, but they would be arranged in a more expansive, less compact configuration. Two skylights of varying lengths would extend from the courtyard north; the third skylight would run from the entry plaza north. These skylights, all of which would be four feet wide but vary in length from 120 feet to 160 feet, would be staggered in their placement. The entrance to the site would be along a straight retaining wall that forms an obtuse angle at the Memorial Center's entry. Pathways to the entrance would be from Henry Bacon Drive and Constitution Avenue, NW. This alternative was not chosen due to its multiple access points and lengthy skylights; the design does not complement its surrounding environment to the extent of the selected alternative and does not as effectively address the CFA and NCPC design guidelines. The angled entrance mimics the angle of the Vietnam Veterans Memorial, thereby making the Memorial less distinct. In addition, the sidewalk from Constitution Avenue, NW leading to the site's entrance, while minimal, adds an additional break to the views and vistas along Constitution Avenue.

Three design alternatives were considered but dismissed. Concept A would be very similar to Alternative I, but would use mounds of the surrounding earth to reduce the amount of ramp required to descend the seven feet to the entry, yielding a ramp length of 140 feet at a slope of one foot per 20. This alternative was dismissed because the grade changes would be more environmentally damaging to cultural and historic resources due to changes in view and vistas.

Concept B would also be very similar to Alternative I, but it would not change the existing grade of the site. Instead, the walkway ramps would use a series of switchbacks. The resulting ramp would be 280 feet in length. While it minimizes disturbance to the existing topography, the ramp places an unnecessary burden on visitors and increases the potential for visitor confusion.

Although the existing food service kiosk is not part of this proposal, public comments during the scoping process suggested removing it as part of the Memorial Center installation, to be located elsewhere within the park. The NPS believes this kiosk, which is an NPS concession operation and was approved by NCPC and CFA within the past decade, serves important purposes at this location. It addresses identified visitor needs for refreshments and seating, and moreover, it serves to disperse visitors from previously congested areas.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

DO-12 requires the NPS to identify the environmentally preferable alternative in its EAs as well as in Environmental Impact Statements (EISs). The NPS looks to the Council on Environmental Quality's *NEPA's Forty Most Asked Questions*, to define it as the alternative "that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (Q6a). The NPS has evaluated these impacts resulting from the different alternatives and has determined that the No Action Alternative best meets the conditions that will qualify as the environmentally preferable alternative.

The No Action Alternative would not impact biological, natural resources, or cultural resources. It would not degrade the environment through disturbance of soils or removal of vegetation. Views and other elements of cultural resources would not be affected; the existing cultural and historic resources would continue to be managed similar to existing practices.

MITIGATION MEASURES

The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural, cultural, and historic resources and the quality of the visitor experience, the following protective measures will be implemented as part of the selected action alternative.

The 2007 FONSI for the selection of the site for the Memorial Center included 14 design guidelines, established by NCPC and CFA, "to mitigate otherwise significant impacts of the site selection." The FONSI stated that for the purposes of Section 106, the NPS intended to seek the concurrence of the SHPO that the adverse effects would be mitigated through conformance with the design guidelines adopted in 2006 by NCPC and CFA. NPS satisfied the guidelines and further met its NHPA Section 106 responsibilities by executing a MOA between the NPS, NCPC, DC SHPO, ACHP, and VVMF, which was developed to mitigate adverse impacts to archeological resources, historic resources, and cultural landscapes.

The 2007 FONSI states that, in order to mitigate the loss of the ball fields on the site, the NPS will establish multi-purpose fields south of Independence Avenue and west of the proposed Martin Luther King, Jr. Memorial. Multi-purpose fields exist in this location, and NPS remains committed to maintaining this recreational resource. In addition, the Memorial Center site itself will continue to provide recreational space. Therefore, this EA does not further address the need for additional fields.

The NPS will implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are adequate, are being properly implemented, and achieve their intended results, and will make changes in the construction process and take protective measures as warranted.

Mitigation Measures of the Selected Alternative	
Resource Area	Mitigation Measures
Cultural Resources: Archeology	As described in the EA and further detailed in the MOA, if unanticipated discoveries of archeological resources are discovered, all work in the immediate vicinity of the discovery will be halted until the resources can be identified and documented, through consultation with NPS and the DC SHPO, and an appropriate mitigation strategy developed. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990, and the Secretary of the Interior's guidelines on human remains, will be followed.
	As stipulated in the MOA, VVMF would be responsible for the curation of materials and records resulting from any data recovery for discovered archeological resources in accordance with NPS standards and procedures.
Cultural Resources: Historic and Cultural Landscapes	As stipulated in the MOA, the VVMF will provide funds to the NPS to update documentation of the Lincoln Memorial and Grounds, as described in the 1999 Cultural Landscape Report. Updated documentation will be accomplished in coordination with the NPS and the SHPO. Funds will be provided for (a) a Cultural Landscape Inventory within one year of the issuance of the construction permit for the Center; and (b) an updated National Register nomination for the Lincoln Memorial and Grounds within one year of the opening of the Memorial Center.
	As described in the EA and further detailed in the MOA, the nighttime lighting of the Memorial Center will be designed to meet safety requirements but otherwise minimized so that it does not affect the visual prominence of the Lincoln Memorial at night or the nighttime lighting hierarchy of the museums, other memorials, monuments, and other prominent features on the National Mall. The lighting plan component of the current Visitor Center design, dated April 2012, is intended to exhibit deference to the surrounding context and the NPS and final lighting plans will be submitted for review by the CFA and the NCPD.
	As described in the EA and further detailed in the MOA, the landscape design for the Memorial Center will be revised by the NPS and the VVMF in accordance with the recommendations of the 1999 Cultural Landscape Report, which provides the analysis and evaluation of the series of plans used to implement the landscape concepts proposed by the McMillan Plan and for the development of the area surrounding the Lincoln Memorial. Landscape design will minimize the addition of non-historic plant material (including trees, shrubs, and ground cover) and incorporate elm trees, as needed, in the concentric rows of American elms planted around Lincoln Circle and in the rows of adjacent street trees to reestablish, on two sides (north and south), the original implemented historic planting plan for the Lincoln Memorial Grounds. The NPS and the VVMF will develop the final landscape design and submit it to the SHPO, the CFA, and the NCPD. Additional consultation on the landscape treatment under Section 106 of the NHPA will follow the process outlined in the MOA and the final landscape design will be submitted to CFA and NCPD for review and approval. The fully approved landscape plan will be implemented by the end of construction.
Cultural Resources: Museum Collections	Museum collections would not be impacted by the Memorial Center, thus were not analyzed in the EA. However, due to the plan to display objects from the NPS Vietnam Veterans Memorial Collection in the Memorial Center, the MOA stipulates that the VVMF and NPS will continue to consult on the design and exhibition of objects according to NPS Standards for Museum Collection Management. VVMF will fund an update to the Scope of Collections Statement and Collections Management Plan.
Soils	Prior to construction, an erosion and sediment control plan will be prepared, establishing measures to minimize erosion in cleared areas and the transport of soil and sediments. During construction, soils exposed by clearing, grading, excavation, or construction will be stabilized. Soils will be stockpiled using appropriate best management practices.
	Excavated soils will be subject to sampling and testing should indicators of petroleum-impacted soils present themselves during excavation and construction. If determined to contain petroleum hydrocarbons, the soils will be removed and disposed of in accordance with a DDOE-approved safety plan.
	Appropriate regulatory notification will occur if contaminated soils are identified. Impacted soils will be segregated through field screening, and waste characterization samples will be collected. Any soils found to be contaminated will be disposed of at an appropriate waste disposal facility, with documentation of all removal activities.
Vegetation	The NPS National Capital Region Guidelines for Tree Preservation will be followed during the construction process. When critical root zones are affected by construction activities, they will undergo root pruning and mulch application. In addition, application of growth regulator Cambistat (Paclobutrazol) may be applied, with prior approval of NPS.
	In times of little or no rainfall, and especially during the hot summer months, each tree on the project site will be treated with 25 gallons of water per week.
	After the construction of the Memorial Center, the planting recommendations of the NPS personnel will be implemented, informed by a September 2011 Tree Survey and Assessment and as further defined during the landscape design review process required by the MOA.

Why the Selected Alternative will not have a Significant Effect on the Human Environment

As documented in the EA, the NPS has determined that the selected alternative, Alternative 2, the NPS preferred alternative, can be implemented without significant adverse effects. As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an Environmental Impact Statement (EIS): Cultural and historic resources, park operations and management, visitor use and experience, soils, transportation systems, vegetation, and utilities will experience adverse impacts, however, no significant impacts were identified that will require analysis in an EIS. Visitor use and experience will also experience some beneficial impacts.

The EA provides a detailed analysis on cultural resources for three broad categories of National Register of Historic Places (National Register) properties: archeological resources, historic structures and districts, and cultural landscapes. The cultural resources within the project area are included in the defined NHPA Section 106 Area of Potential Effect (APE). Thirteen historic structures and districts and three cultural landscapes are within the APE and are listed in Chapter 3 of the EA. Implementation of the selected alternative has the potential to result in long-term moderate adverse impacts on archeological resources due to the possible presence of historic and pre-historic resources at the site which requires excavation to a depth of approximately 48 feet and the installation of 83 geothermal wells at a depth of up to 600 feet. This constitutes an adverse effect under Section 106.

With respect to historic buildings and structures, there will be long-term moderate adverse impacts on the L'Enfant Plan of the City of Washington, which includes both the 1791 L'Enfant Plan and the McMillan Plan, through changes to the character of the lawn at the site by installing an entrance, skylights and a horizontal rail and changes to the vistas along Constitution Avenue, NW and 23rd Street, NW as a result of implementation of the selected alternative. The Memorial Center will be sited within a portion of West Potomac Park at Reservation 332, which was identified in the McMillan Plan. No changes will be made to Constitution Avenue, Henry Bacon Drive, or 23rd Street, NW, all contributing roadways that border the project site. The selected alternative will reinforce the tree-lined character of the Constitution Avenue, NW vista and will not alter the character of the 23rd Street, NW vista. In addition, there will be no changes to Lincoln Memorial Circle or the Terminus of Rock Creek because of the selected alternative. There will be an adverse effect under Section 106.

There will be moderate adverse impacts on the Lincoln Memorial due to the potential interference of lighting from the Memorial Center. The Memorial Center will be located at a site that currently has no existing lighting beyond streetlights and that necessary for the food service kiosk. The site is adjacent to the Lincoln Memorial, which is illuminated at night from within and from exterior lights on the east side; it appears much brighter than other structures in the surrounding area at the western end of the National Mall. The Memorial Center will be open primarily during daylight hours, and shortly after dusk during the winter. Interior lighting from the Memorial Center will be minimally visible during early evening hours through the skylights, when the Memorial Center will be open past dusk. The lighting for the Memorial Center will be engineered to minimize interference with other light sources and to minimize dispersion from the site in order to avoid interfering with the dominant Lincoln Memorial lighting. The lighting design will meet appropriate building codes for safety. There will be an adverse effect under Section 106.

There will be long-term minor adverse impacts on the American Pharmacists Association Building across Constitution Avenue, NW due to alterations of views to the site and changes to the setting of the American Pharmacists Association Building by installing skylights, a below-grade entrance, and a horizontal railing, disrupting the solid grass panel. The selected alternative will alter the existing open space at the project site, which is currently viewed as a solid grass panel. There will be an adverse effect on the American Pharmacists Association Building under Section 106.

There will be long-term minor adverse impacts to the Vietnam Veterans Memorial and Vietnam Women's Memorial because the entrance to the Memorial Center would minimally alter views from these

memorials to the project site. There will be negligible impacts on the Arlington Memorial Bridge, the National Academy of Sciences building, and the Harry S. Truman Building of the State Department, both of which are across Constitution Avenue, NW, because of interruptions of the existing solid grass panel by the Memorial Center's entrance, skylights, and horizontal rail. There are no expected impacts to the Lockkeepers House at Constitution Avenue, NW and 17th Street, NW, the Signers of the Declaration of Independence Memorial at Constitution Garden, and the National World War II Memorial because the Memorial Center will not be visible from these vantage points.

The Memorial Center is located within the East and West Potomac Parks Historic District. The selected alternative will alter the character of a portion of the Lincoln Memorial Grounds, considered a contributing element to the historic district. In addition, the construction of the Memorial Center will alter the existing use of the site. However, the new use will be consistent with other attractions within the East and West Potomac Parks Historic District. In addition, its siting below grade will limit its visual impact. These changes will result in long-term moderate adverse impacts on the East and West Potomac Parks Historic District, which constitute an adverse effect under Section 106. Although the Memorial Center would change views from the Northwest Rectangle Historic District, the Memorial Center would not diminish the integrity of the District.

Construction activities at the project site will be visible from historic resources in the vicinity but will not intrude on the L'Enfant and McMillan Plan vistas. The open space character of the site will be temporarily altered, resulting in short-term minor adverse impacts on the L'Enfant Plan of the City of Washington, the Arlington Memorial Bridge, the American Pharmacists Association Building, the National Academy of Sciences, the Harry S. Truman Building, the Lincoln Memorial, and the Northwest Rectangle and East and West Potomac Parks Historic Districts. Because these impacts are temporary, there would be no adverse effect under Section 106.

Regarding cultural landscapes, the selected alternative will result in long-term moderate adverse impacts on the Lincoln Memorial Grounds where it is located, by changing its historic landscape as follows: the grade of the site, installing new trees, and establishing an entry to the Memorial Center from Henry Bacon Drive, thereby impacting the vistas along Henry Bacon Drive. The use of the site for active recreation will be altered because the open space is being reduced by the Memorial Center, thereby limiting the use for simultaneous multi-purpose recreation activities such as softball. The vistas along Henry Bacon Drive, 23rd Street NW, and east from the Lincoln Memorial are contributing features of the Lincoln Memorial Grounds Cultural Landscape. The selected alternative will affect the vista on Henry Bacon Drive because of the slight visibility of the entrance and pathway of the Memorial Center. The existing rows of elms, which are contributing features of the landscape, will remain. New trees installed will be consistent with the implemented historic planting plans for the site. Interior lighting from the Memorial Center will be minimally visible during early evening hours through the skylights, when the Memorial Center will be open past dusk, which could compete with the prominent lighting of the Lincoln Memorial. These changes will result in long-term moderate adverse impacts on the Lincoln Memorial Grounds and an adverse effect under Section 106.

Because views from Constitution Gardens to the Lincoln Memorial will continue to be filtered through trees and the limited elevation of the Memorial Center, there will be negligible impacts on Constitution Gardens. In addition, the ceremonies conducted at the Vietnam Veterans Memorial are contributing features of the Constitution Gardens Cultural Landscape. The exhibits of the Memorial Center will augment the ceremonies by providing context and additional information about the Vietnam War and the Vietnam Veterans Memorial, which will result in beneficial impacts for visitor experience. There will be negligible impacts on the Washington Monument Grounds in the form of changes to views of the site from the Washington Monument because additional trees will be installed at the site. In combination with cumulative projects, the selected alternative will result in moderate adverse impacts on the Lincoln Memorial Grounds and will result in overall beneficial impacts on Constitution Gardens due to its augmentation of ceremonies conducted at the Vietnam Veterans Memorial.

The selected alternative will provide visitors the opportunity to learn more about the Vietnam War and the Vietnam Veterans Memorial through an indoor exhibit space and education center that will change the

visitor experience offered at the project site. The selected alternative will augment an existing attraction, the Vietnam Veterans Memorial, on the National Mall, resulting in long-term beneficial impacts because it will provide additional information and context for the Vietnam War and the Vietnam Veterans Memorial. The reduction of multi-purpose outdoor recreation space will result in long-term minor adverse impacts for participants by limiting the opportunities for simultaneous activities, such as multiple organized ball games. Short-term moderate adverse impacts such as interruption of available multi-purpose recreation space will occur due to limited site access during construction.

Changes in NPS funding and staffing will be required due to the addition of the Memorial Center. However, as the park incorporates new operational needs into their annual budget and park staffing, these burdens will decline over time as they are incorporated into the activities of NAMA and NPS park staffing and operations. The VVMF will be responsible for maintenance as identified in an agreement with the Secretary of the Interior, so short-term adverse impacts on park operations and maintenance will be moderate.

The selected alternative will result in short-and long-term minor adverse impacts on soils because a total of 0.12 acres of land will be replaced by impervious surface and 46,800 cubic yards of soil will be removed.

The selected alternative will increase the number of pedestrians in the area. Some visitors to other attractions on the National Mall, who would otherwise not visit the project site, will incorporate the Memorial Center into their visit, thereby adding to the number of pedestrians at the site. It is not anticipated that vehicular traffic will increase because on-site parking is not provided and public transit is available near the site, thereby enabling and encouraging the use of transit for visits. Bus parking, including the existing bus drop-off area along Henry Bacon Drive next to the site, and public transportation services will not change so long-term adverse impacts on transportation will be negligible-to-minor.

Under the selected alternative, a portion of the lawn will be removed. The disturbance of the existing vegetation will be limited to the construction phase, although the results of the disturbance would be long-term. Mitigation measures, such as root pruning and other treatment consistent with the NPS National Capital Region Guidelines for Tree Preservation, will be used to ensure the trees not proposed for removal survive the construction process. The design for the Memorial Center shows that lost trees will be replaced by 25 trees with a net gain of 22 trees; the exact number and placement may be further refined during consultation required by the MOA. The long-term adverse impacts on vegetation are considered minor because the overall quality and quantity of trees at the site will increase and the changes to the lawn would be confined to a portion of the project site rather than a wide area.

The selected alternative will connect to the existing utility system and the majority of the utility lines that serve the project site, including sanitary sewer lines and storm drains, are located on the perimeter of the site. The Memorial Center will be located on a portion of the project site where utility lines do not currently exist so existing utility lines will not need to be rerouted. Short-term negligible impacts to utilities could occur during construction because of potential brief service interruptions while construction connects the Memorial Center's utility lines to the existing system. After construction is complete, no further impacts to utilities are anticipated, and long-term negligible changes to the site will occur due to energy efficiency and stormwater management techniques deployed on the site.

Degree of effect on public health or safety: The selected alternative could result in impacts on both visitor and employee safety during construction and implementation because construction activities will be occurring and heavy equipment may be on site along with other construction-related equipment. To negate risks to the public and employees, during construction, the entire site will be fenced off and closed to the public and personnel not associated with the construction. In addition, there will be signage and public announcements will be made on the park website and in the media to alert the public to the construction schedule and locations.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, wetlands, prime farmlands, wild and scenic rivers, or ecologically critical areas: No wetlands,

prime farmlands, wild and scenic rivers, ecologically critical areas, or significant ethnographic resources occur within or adjacent to the site and none will be impacted by the actions associated with this alternative. The site is outside the 100- and 500-year floodplains.

The NHPA Section 106 process was conducted concurrently and in coordination with the two EAs and culminated in the execution in 2012 of an NHPA Section 106 MOA. At the May 24, 2011 consulting party meeting, the parties provided a preliminary assessment of historic properties, the findings of which were included in the impact analysis and mitigations in the EA.

Degree to which effects on the quality of the human environment are likely to be highly controversial:

No highly controversial effects in terms of scientific uncertainties because of the establishment of a center for the Vietnam Veterans Memorial were identified during the preparation of either EA or by the public during the respective public scoping and comment periods.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks: No highly uncertain, unique, or unknown risks were identified during either preparation of either EA or through public scoping or comment.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration: The selected alternative neither establishes a NPS precedent for future actions with significant effects nor represents a decision in principle about a future consideration. Moreover, the selected alternative was developed pursuant to a specific law authorizing the establishment of this one Memorial Center.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts: Implementation of the selected alternative will have no significant cumulative impacts. As described in the EA, future actions and projects within the project area that could affect cultural resources, visitor use and experience, park operations and management, soils, transportation, vegetation, and utilities include the Potomac Park Levee (Phases 1 and 2); the Lincoln Memorial Reflecting Pool and Grounds Rehabilitation; the Constitution Avenue Street Improvements; the Mall Turf Rehabilitation, the Jefferson Memorial Vehicular Security Barrier project; the Arlington Memorial Bridge Repairs; the President's Park South Improvements; further implementation of the National Mall Plan; and the Redesign of Union Square, Sylvan Theater Area, and Constitution Gardens; and the construction of other buildings on or near the National Mall, including the National Museum for African American History and Culture (NMAAHC), the American Veterans Disabled for Life Memorial, the Dwight D. Eisenhower Memorial, the National Women's History Museum, the National Aquarium Renovation at the Department of Commerce building, and the National Museum of the American Latino. It will not compound the effects of previous projects in this area.

The selected alternative has the potential to have long-term moderate adverse impacts on archeological resources; however, none has been identified to date. In order for the selected alternative to contribute to cumulative impacts on archeological resources, similar types or classes of archeological sites would need to be impacted by multiple projects. Based on the current available information for projects in the vicinity of the National Mall and the classes of archeological sites, there would be no cumulative impacts on archeological resources.

There will be negligible to moderate adverse cumulative impacts on both the historic structures and districts and cultural landscapes associated with the implementation of the Memorial Center design. There could be moderate long-term adverse cumulative impacts on the L'Enfant and McMillan Plans, the Lincoln Memorial, and the East and West Potomac Park Historic District as a result of changes to views to and from these resources caused by the entrance, skylights, and horizontal rail of the selected alternative when combined with the Potomac Park Levee Project and Lincoln Memorial Reflecting Pool Rehabilitation. The selected alternative, through changes to the existing grass panel, could also result in minor adverse cumulative impacts on the Vietnam Veterans and Vietnam Women's Memorials and moderate adverse impacts on the East and West Potomac Parks Historic District. When combined with the Lincoln Memorial Reflecting Pool and Grounds Rehabilitation, the selected alternative will result in

moderate adverse cumulative impacts on the Lincoln Memorial and Grounds because the Memorial Center would alter views to and from the Lincoln Memorial and Grounds.

The impacts on visitor use and experience associated with the construction of new facilities in the vicinity, when added to the impacts that will occur from the implementation of the selected alternative, will result in overall long-term beneficial cumulative impacts on visitor use and experience as a result of providing an additional visitor experience opportunity even though it will result in minor adverse cumulative impacts on those other visitors who use the site for multi-purpose recreation when combined with the NMAAHC, which will further reduce multi-purpose recreation space.

The selected alternative will result in minor adverse cumulative impacts on park operations and maintenance because the NPS will require additional staffing and maintenance responsibilities to operate the Memorial Center even with the VVMF performing some maintenance pursuant to an agreement. Over the long-term, the cumulative projects above will improve NAMA's facilities and require additional staffing. Budgets will be adjusted over time to support additional resources.

The selected alternative will result in long-term negligible-to-minor adverse cumulative impacts on vehicular transportation due to changes in the number of people that will visit the site when the Memorial Center is operational and expected traffic increases that will occur with or without the project. Beneficial impacts for pedestrian connections will result from streetscape improvements on Constitution Avenue, including new street lighting. Short-term cumulative impacts on vehicular traffic will be adverse and minor due to construction of the Memorial Center, Constitution Avenue Improvements, and the Arlington Memorial Bridge Repairs due to the temporary closure of travel lanes and sidewalks.

The selected alternative will result in minor adverse cumulative impact on soils and vegetation as a result of the disturbance of soils, the removal of vegetation, and the increase in impervious surface at the site and in the vicinity. The selected alternative will result in long-term negligible cumulative impacts on utilities.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources: As articulated in the EA, the project area is within and adjacent to a multitude of historic resources and objects that are listed on the National Register and other cultural resources such as the newer memorials. The Section 106 process was used to define the APE and identify cultural resources within it, analyze the alternatives and determine effects of the selected alternative, and identify minimization and mitigation actions. The project will alter the grass panel that is considered an important element of the Memorial's landscape design. This change will be mitigated by planting elm trees to restore the rows of elms around the perimeter of the site as originally designed. Potential conflicts in lighting of the Memorial Center will be mitigated through lighting design. All adverse impacts to historic properties, including National Register resources, can be mitigated to the negligible to moderate level through the implementation of the Section 106 MOA, which was signed by the NPS, SHPO, ACHP, NCPC, and VVMF, and executed on June 25, 2012 (see attached). If archeological resources are found during construction, impacts to these will be mitigated by a program of archeological documentation during construction according to procedures stipulated in the MOA.

The MOA also stipulates that in approving any changes to the April 2012 design (attached to the MOA), the NPS shall review the proposed changes and make a determination as to whether the changes result in a new adverse effect that has not already been taken into account and/or an intensification of a known adverse effect that has already been considered and minimized. The NPS will then forward its determination and documentation to the signatories and consulting parties for review and comment.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat: As described in the EA, the selected alternative will be located entirely within previously disturbed and maintained landscape, which is heavily used by park visitors. Due to its urban nature and the existing site conditions, no rare, threatened, or endangered species or habitat known or expected to occur in the project area.

Whether the action threatens a violation of federal, state, or local environmental protection law: The selected alternative violates no federal, state, or local environmental protection laws. The Memorial Center will be consistent with all laws, regulations, and requirements and is in furtherance of laws authorizing its establishment.

PUBLIC INVOLVEMENT

Public involvement in this proposal spans many years, starting with the initial planning steps and NEPA process for the first EA including public scoping and commenting, now culminating with this EA which was made available for public review from February 17, 2012, to March 21, 2012.

Notification for this EA was done using the methods that NPS has found to be most effective here including via email to those who were on the original public scoping mailing list and to those added throughout the NEPA and NHPA Section 106 processes. The NPS mailed copies of the EA to federal and District of Columbia government offices, to members of the public who requested copies, and hard copies of the EA were made available for public review. A digital copy was placed on the NPS Planning, Environment, and Public Comment (PEPC) website. As a result, the NPS heard from three federal agencies: the Environmental Protection Agency, NCPC, and the U.S. Department of State. NPS responses are attached. No comments were received from the public. Although the NPS considered the comments it received, and those comments that resulted in changes or additions to the EA are contained in the errata section, the comments prompted no changes to the selected alternative or the impact analysis. This EA process had been kicked off by public scoping which ran from August 30, 2011 to October 3, 2011, with a public scoping meeting on September 15, 2011. The public was notified, by mail and email using both NPS and VVMF mailing lists, and online via the PEPC website, and two members of the public attended.

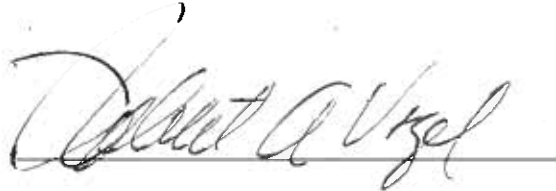
The NHPA Section 106 process also afforded the NPS the chance to hear from organizations and members of the public and government agencies starting in 2005 through consulting party meetings held on May 3, 2005; June 8, 2006; September 12, 2007; May 4, 2009; May 24, 2011; and March 5, 2012. The NPS consulted with parties including representatives from NCPC, CFA, SHPO, the ACHP, and the National Coalition to Save Our Mall, the National Trust for Historic Preservation, Equal Honor for All, and other individuals. In addition, there were other opportunities for public involvement because the law authorizing the Memorial Center used the CWA process, which calls for a series of reviews and approvals made in meetings open to the public by NCPC, CFA, and the National Capital Memorial Advisory Commission, also following public notice.

CONCLUSION

The NPS has selected Alternative 2 for implementation in furtherance of the law authorizing the establishment of the Memorial Center. The impacts that will result from the selected alternative will not impair any park resources and values (see attached). This determination is based on the information gathered and the knowledge gained in considering this proposal through both this EA and also the first EA and FONSI that served as a foundation to this EA. The selected alternative does not constitute an action that normally requires preparation of an EIS; it will not have a significant effect on the human environment. Negative environmental impacts that could occur are negligible to moderate in intensity. There are no significant impacts on cultural or historic resources, visitor use and experience, park operations and maintenance, transportation, soils, vegetation, or utilities. Moreover, the NPS has executed an NHPA Section 106 MOA containing mitigation for effects on the historic resources. The proposed action will not cause highly uncertain or controversial impacts, unique or unknown risks, or significant cumulative effects. Implementation of the selected alternative will not violate any federal, state, or local environmental protection law.

Based on the foregoing, an EIS is not required for this action and thus will not be prepared. Based on the findings of the 2012 EA, as well as all of the previous planning that has occurred, this is a finding of no significant impact.

Recommended:



Robert Vogel

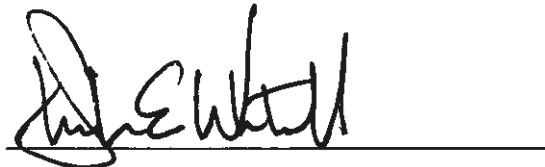
Superintendent,

National Mall and Memorial Parks

6/25/12

Date

Approved:



Stephen E. Whitesell

Regional Director

National Capital Region

6.25.12

Date

ERRATA SHEET

This Errata Sheet contains clarifications for and corrections to the 2012 Memorial Center Design EA. The following changes do not alter the analysis in the EA. Note that the potential depth of geothermal fields has increased, which is based on regulatory requirements of permitting the wells. There are no additional environmental concerns posed by this increased depth, which would extend into bedrock.

1. Page 2-4, second sentence under the heading Geothermal Wells: Replace “The field would consists of approximately 83 wells to a depth of 300 feet” with “The field would consist of approximately 83 wells to a depth of up to 600 feet.”
2. Page 4-11, second paragraph, third-to-last sentence: Replace “boring holes in each well location to a depth of 300 feet” with “boring holes in each well location to a depth of up to 600 feet.”
3. Page 4-30, first paragraph under the heading Soils Impacts of Alternative 1, second-to-the-last sentence: replace “diameter wells to a depth of 300 feet. This would displace approximately 800 cubic yards of soil” with “diameter wells to a depth of up to 600 feet. This would displace approximately 1,600 cubic yards of soil.”
4. Page 4-51, second sentence under the heading Conclusion: Replace “About 46,800 cubic yards of soil would be removed from the site” with “About 47,600 cubic yards of soil would be removed from the site.”
5. Page 4-52, first paragraph, last line: Replace “would displace approximately 800 cubic yards of soil” with “would displace approximately 1,600 cubic yards of soil.”
6. Page 4-53, second line: Replace “about 46,800 cubic yards of soil would be removed” with “about 47,600 cubic yards of soil would be removed.”
7. Page 4-70, second paragraph under the heading *Energy Systems*, first line: Replace “to a depth of 300 feet” with “to a depth of up to 600 feet.”
8. Page 4-13, third paragraph, first sentence: Replace “prior to project construction” with “during project construction.”
9. Page 4-13, third paragraph, second and third sentences: Replace “These stipulations would include a phased approach to the identification and evaluation of archeological resources, beginning with geoarcheological consultation. Mitigation of adverse effects would be accomplished by archeological documentation and in-place preservation, followed by publication of results to the scientific community and the public” with “Because the construction area is located in a portion of the site that was covered by Potomac River and formed by fill, the MOA stipulation would focus on provisions for unanticipated discoveries.”

IMPAIRMENT DETERMINATION

The NPS has determined that implementation of the selected alternative will not result in impairment of park resources and values of the National Mall and Memorial Parks (NAMA). In reaching this determination, the design of the Vietnam Veterans Memorial Center EA was reviewed to reaffirm the Park's purpose and significance, resource values, and resource management goals and desired future conditions. Based on a thorough analysis of the environmental impacts described in this EA, the public comments received, and the application of the provisions of the NPS Management Policies 2006, the NPS concluded that the implementation of the selected alternative will not result in impairment of any of the resources and values of the National Mall and Memorial Parks. Although the action alternative entails physical changes and would add a new memorial to the existing the National Mall and Memorial Parks, the selected alternative would have beneficial impacts to the project area's natural resources, would not alter historic fabric, and would be in keeping with NPS management policies and goals. In making this determination, the NPS followed its interim July 6, 2010 impairment guidance.

According to *NPS Management Policies 2006*, Section 1.4.5, *What Constitutes Impairment of Park Resources and Values*, impairment is "an impact that, in the professional judgment of the responsible NPS Manager, will harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values." Section 1.7 explains the prohibition on impairment of park resources and values:

"While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the Nation Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them."

An impact to a park resource or value may, but does not necessarily, constitute impairment. In addition, not all impacts in parks are under the control of NPS. In this instance, in November 2003, Congress authorized: the establishment of the Memorial Center (PL 108-126), and some decisions for this memorial are, by law, made by other federal entities such as the National Capital Planning Commission (NCPC) and the U.S. Commission of Fine Arts (CFA). An impairment determination is made for all resource impact topics analyzed for the selected alternative. As described in the EA, implementation of the selected alternative will not result in impairment of park resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or (3) identified in the park's management plan or other relevant NPS planning documents as being of significance.

NAMA contains some of the oldest elements of the National Park System that, in 1933, were put under the management of NPS, and some of the newest, such as the Martin Luther King, Jr. Memorial, dedicated in October 2011. NAMA includes the National Mall, many but not all of the memorials on federal land in Washington, D.C., the Pennsylvania Avenue NHS, and also named parks and parkland circles and triangles. NAMA and its areas are governed by the laws, regulations and policies for the National Park System, and those specific to some or all of these park areas, such as for the Memorial. In 2010, the NPS issued the *National Mall Management Plan/Environmental Impact Statement*. It provides that the Park's purposes include but are not limited to its roles in preserving and maintaining its historic open spaces and vistas, museums and memorials and other government buildings, the National Mall as a completed work of civic art, and providing a "monumental, dignified, and symbolic setting." *National Mall Plan*, page 10. The National Mall's significance is articulated as, among other things, the home to our enduring national symbols, the center of our cultural heritage, the heart of our nation's capital, reflecting the historic L'Enfant and McMillan plans. *Id.*

In deciding there is no impairment, the NPS reviewed the location and design of the Memorial Center in light of laws specific to it as well as the Park's purpose and significance, resource values, and resource management goals and desired future conditions as identified in the *National Mall Plan*. This was based on a thorough analysis of the environmental impacts described in the two EA's for the Memorial Center, public comments, and information gained through extensive consultation and coordination with the National Capital Planning Commission (NCP), Commission of Fine Arts (CFA), Washington D.C. Historic Preservation Office, and the Advisory Council of Historic Preservation (ACHP). The selected alternative will result in impacts to some of the Park resources analyzed for the selected alternative. These impacts are short-term to long-term, beneficial, or negligible to moderate adverse, and are described below for each of the analyzed resources. These impacts are not key to the overall natural or cultural resources of the Park, nor would these impacts hamper opportunities to enjoy the Park. An impairment determination is not made for visitor use and experience or Park management and operations because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values.

Cultural Resources

Archeology

There will be no impairment to archeological resources as a result of implementing the selected alternative. The Potomac River Valley has a history of human occupation dating back at least 13,000 years, and the northern portion of the site, in particular, may contain archeological remains related to the 19th century Washington Glass Works, or the eastern extension of the C & O Canal. The majority of the excavation will occur in the middle of the site. Dredged river materials were used as fill to create the project site, beginning in the 1880s. Archeological resources provide information about the history of the area, and are therefore necessary to the purpose and cultural integrity of the park. Implementation will involve mass excavation to a depth of approximately 48 feet, with an additional 13 feet of excavation required for building construction. In addition, geothermal wells will require drilling to a depth of up to 600 feet. At the current time, impacts to archeological resources cannot be fully evaluated because an archeological study has not been conducted, and no archeological sites have yet been identified. If archeological resources are encountered unexpectedly, all work will be halted and the NPS, in consultation with the SHPO, will ensure compliance with 36 C.F.R. 800.13. Work in the resource area shall not proceed until either: (a) the development and implementation of an appropriate data recovery or other recommended mitigation procedures; or (b) the determination is made that the located archeological remains are not eligible for inclusion on the National Register. All work will follow the "Guidelines for Archaeological Investigations in the District of Columbia" (1998, as amended), the "Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation" (1983), and Director's Order 28: Cultural Resource Management.

Historic Structures and Districts

There will be no impairment to any historic structures or districts as a result of implementing this project. The Memorial Center site is bordered by streets identified in the historic L'Enfant Plan. The American Institute of Pharmacy, National Academy of Sciences, the Harry S. Truman Building, Arlington Memorial Bridge, the Vietnam Veterans Memorial, and the Vietnam Women's Memorial, all of which are listed, eligible, or likely to be eligible for listing in the future in the National Register of Historic Places, have visual connections to the site. The site is within the grounds of the Lincoln Memorial. The project site lies in the East and West Potomac Parks Historic District and borders the Northwest Rectangle Historic District, which runs along the northern side of Constitution Avenue.

Overall, the selected alternative will result in moderate adverse impacts on the L'Enfant and McMillan Plans from changes to views and vistas along Constitution Avenue and Henry Bacon Drive and alterations to the solid turf panel of the site. The installation of the building entry and skylights will change the existing turf panel, resulting in indirect moderate adverse impacts on the Lincoln Memorial and minor adverse impacts to the American Institute of Pharmacy. Minor adverse indirect impacts on the

Vietnam Veterans and Vietnam Women's Memorials will occur due to the limited changes in views. Since the Memorial Center will not noticeably alter the visual context of the Arlington Memorial Bridge and National Academy of Sciences, impacts to these resources will be negligible. Due to changes in the visual context, there will be negligible impacts on the Harry S. Truman Building. Overall, the selected alternative will result in negligible to moderate adverse impacts to cultural resources. The project will be implemented in accordance with the stipulations of the MOA in order to take into account the effects on historic properties and to minimize and mitigate that effect. These impacts will not impair the natural or cultural integrity of the park or inhibit opportunities for enjoyment of the park.

Cultural Landscapes

There will be no impairment to any cultural landscapes as a result of implementing the selected alternative. A 1999 Cultural Landscape Report for the Grounds of the Lincoln Memorial documents significant landscape elements and key views and vistas. Constitution Gardens is a fifty-two acre designed landscape located within West Potomac Park. The 106 acres of the Washington Monument Grounds is also a cultural landscape. These resources are fundamental to the purpose of the Park, as NPS is charged with preserving and managing memorials and monuments within the L'Enfant and McMillan Plans. These cultural landscapes represent key elements of the parks' cultural integrity and the visitor experience.

The selected alternative will establish an underground education facility that, among other things, will complement ceremonies held at the Vietnam Veterans Memorial. The underground design and landscape restoration will minimize visibility of the Memorial Center. Lighting will be controlled to minimize any effect on the night lighting hierarchy, including the visual prominence of night lighting of the Lincoln Memorial. Multi-purpose recreation areas will continue at the project site, although the area available for recreation will be smaller. The selected alternative will not result in impairment of park resources because the adverse impacts on the Lincoln Memorial Grounds will be minor to moderate; the impacts on Constitution Gardens will be negligible. The adverse impacts to these resources will not prohibit the park from fulfilling its specific purposes identified in the park's establishing legislation or deny opportunities for its visitors to enjoy the park.

Soils

The selected alternative will not result in an impairment of soils. The soils present in the project site are artificial, having been placed over 100 years ago when the Tiber Creek valley was drained and filled. Green space, areas with vegetation, makes up approximately 90 percent of the site. Because one of the purposes of NAMA is to preserve, interpret, and manage federal park lands in the national capital, including green spaces, soils are a resource necessary to fulfill the purposes of the park, as they are a key component of a functional green space. As such, they are an element of the opportunity for enjoyment of the park. The selected alternative will increase the amount of impervious surfaces by 0.12 acres and will remove and replace approximately 46,800 cubic yards of soils, which will improve the soil matrix and drainage at the site. The changes will result in long-term minor impacts to soils in the project area. Although the proposed Memorial will result in soil disturbance and excavation, short-term impacts will only occur during construction and will not harm the long-term integrity of the soils in the project area.

Vegetation

The selected alternative will not result in impairment to vegetation in the project area. The selected alternative will replace all but 0.12 acres of the existing turfgrass with new turfgrass and will add approximately 22 additional trees, resulting in overall long-term minor adverse impacts on vegetation. The selected alternative will result in the removal of existing turfgrass during construction, but these impacts will be short-term and will not harm the long-term viability of vegetation in the project area.

Water Resources

The selected alternative will not result in impairment of water resources. There are no permanent bodies of surface water at the site. Approximately 0.5 acres of the existing site is covered by impervious surfaces. Groundwater has been detected between 6 and 13 feet below surface grade at the site.

The selected alternative will increase the amount of impervious surface by 0.12 acres, which will increase the amount of stormwater on-site. Stormwater will be retained on site and will be reused for irrigation and toilet flushing. Groundwater will be encountered at the site, and a slurry wall will be used to displace groundwater from the existing site. Overall, the impacts on water resources will be negligible and will not affect the natural or cultural integrity of the site.

PUBLIC COMMENTS/NPS RESPONSE

COMMENTS	COMMENT	NPS RESPONSE
US Environmental Protection Agency	<p>Page 1-25 states, "Construction of the Memorial Center would disturb existing soils that are potentially contaminated by heavy metals, lead, and volatile organic compounds that are not suitable for reuse, as discussed in the Vietnam Veterans Memorial Center Site Selection EA (VVMF and NPS, 2006)." EPA did not receive nor review the 2006 EA referenced. However, having perused through the 2006 EA on the National Park Service website, it did not appear to provide an extensive discussion of soil contamination, sampling information, etc. What is the source of contamination? The EA should discuss the historical use of the study area to determine potential contaminants. The EA should also discuss sampling history of the area as well as findings, if applicable.</p>	<p>In the 1880s, the US Army Corps of Engineers began dredging the Potomac River and depositing the dredged materials in marshy zones such as the project site. This reclaimed marsh and flats were later designated as Potomac Park. The project site, unlike other areas of West Potomac Park that housed Department of Defense facilities, has been used for recreation purposes since its creation through the use of dredged material as fill. Therefore, the potential for contamination is limited to that from the dredged fill materials.</p> <p>The borings taken at multiple locations on the project site have not yielded indications of contaminants. The VVMF project team will closely monitor the project site during the course of construction and excavation operations, and will immediately take measures to remediate any contaminated materials, should they be encountered.</p>
US Environmental Protection Agency	<p>Soil disturbance for Alternatives 1 and 2 are similar in that approximately 2.35 acres of soil and vegetation will be disturbed, removing approximately 46,000 cubic yards of top-and subsurface soil. A geothermal field would involve drilling 83 six and a quarter-inch diameter wells to a depth of 300 feet which would displace approximately 800 cubic yards of soil. The wells would be positioned around the exterior of the Education Center, with a spacing of 20 feet between boring holes. What types of drilling equipment will be used? What types of controls will be in place to prevent groundwater contamination? If water is contaminated, what controls will be in place for capture and secure safety?</p>	<p>A truck mounted drilling unit will be set up within the limits of disturbance on the project site for the drilling and installation of the geothermal wells. Each of the geothermal well shafts will be lined with a casing and filled with bentonite grout. A closed-loop system is the first level of control to prevent ground water contamination from the geothermal system heating/cooling mixture. The bentonite grout would seal off a leak should the casing fail. Should both layers fail, and there is a leak, a pressure drop in the system would be detected and an alert sounded, and that specific well would be isolated from the system and repaired.</p> <p>In the event that contaminated ground water is discovered, the project team will solicit the services of a hygienist to test and inspect the groundwater. Upon discovery of a contaminant, the water would be pumped and treated in an on-site holding tank prior to being</p>

		discharged off the project site in accordance with the authorities having jurisdiction.
US Environmental Protection Agency	EPA appreciates the construction-related measures that would be taken to mitigate impacts on soils some of which are: excavated soils would be subject to sampling and testing should indicators of petroleum-impacted soils present themselves during excavation and construction; if determined to contain petroleum hydrocarbons, the soils would be removed and disposed of in accordance with a DDOE-approved safety plan; appropriate regulatory notification would occur if contaminated soils are identified; impacted soils would be segregated through field screening; waste characterization samples would be collected; contaminated soils would be disposed of at an appropriate waste disposal facility; and removal activities would be documented.	As indicated in this FONSI and the EA, these mitigation measures will take place as part of the selected alternative.
US Environmental Protection Agency	However, EPA questions whether sampling and testing should occur prior to excavation. The EA states, "excavated soils would be subject to sampling and testing should indicators of petroleum-impacted soils present themselves during excavation and construction." As stated in the 2006 EA, existing soils are potentially contaminated by heavy metals, lead, and volatile organic compounds, thus sampling and testing prior to excavation would identify the presence of contaminants and would help to plan for proper handling. Please specify how soils will be sampled and if a geoprobe will be useful. Will there be an enclosed space on site for analyses? Please specify if a Sampling and Analysis Plan, Quality Assurance/Quality Control Plan and a Health and Safety Plan will be prepared. What type of on-site screening and sample analysis equipment is planned?	<p>Should the site be suspected of containing contaminated materials during on-site monitoring of the excavation and construction operations, an independent testing firm / hygienist would be commissioned to investigate and test the onsite soils.</p> <p>If it is determined that the project site contains contaminants, the VVMF project team will work with the hygienist to establish approved methods of removing contaminants from the project site, including, if necessary, the establishment of dedicated on-site space for review and investigation of contaminated soils.</p> <p>At this point, there has not been a requirement to establish a Sampling and Analysis Plan or a Quality Assurance/Control Plan for the Project Site relating to contaminated soils. A site-specific Health and Safety Plan will be prepared by the contractor for the entire project site prior to the commencement of construction operations.</p> <p>Currently there are no plans to actively</p>

		<p>monitor and test the in-situ soils for contamination. Previous site inspections involved geotechnical borings, and there were no indicators of petroleum contamination.</p>
US Environmental Protection Agency	<p>As noted on page 1-26, "Groundwater would be encountered during construction because the depth of excavation for the Memorial Center would be approximately 35.5 feet." Excavation 2 for the Memorial Center is planned to make use of a slurry-wall system. "This method would require excavation of a 3-foot wide trench at the perimeter of the limits of disturbance for the building to the depth of bedrock. This is estimated to be an additional 13 feet below the depth of excavation otherwise required for the building and slabs. During construction, the trench would be filled with a bentonite slurry mix, which would ensure adjacent soils do not collapse into the excavation. In addition, this would limit groundwater from entering the project site. Later, cast-in-place concrete would be pumped into the trench and the slurry mix would be pumped out." What is the depth to groundwater? Is the water table below the depth of slabs? Has seasonal water table data been studied and for how long? Can groundwater come from the bottom as a result of pumping? Will pumping need to be maintained to keep the building dry? What is the depth to bedrock and how will the depth of slurry wall be determined? Could there be a problem with determining depth of bedrock? Are there other foundations at the depth proposed and were there any problems for construction?</p>	<p>A geotechnical study conducted at the project site found that groundwater is encountered between 6 and 13 feet below the ground surface. Groundwater levels are expected to follow water levels in the nearby Potomac River, although variations may occur due to precipitation, tides, seasonal conditions, and runoff. Complete records of Potomac River elevations are available through the USGS. Due to the proximity of the Potomac River, it is noted that the 25 and 100-year flood levels are at about El +8.6 and El +13.4, respectively. The maximum hurricane flood level in the area is considered at El +15.4 (Schnabel, 2011).</p> <p>The building is being designed with the slurry wall support of excavation system. This slurry wall is intended to cut off the majority of groundwater from accessing the footprint beneath the building.</p> <p>The project is being designed with an active dewatering pumping system which is intended to limit the build-up of hydrostatic pressure beneath the building slab. However, the building is designed to resist the forces of the hydrostatic pressure in the event there is a pressure build-up.</p> <p>Through site, boring analysis (Schnabel, 2011) the depth of bedrock has already been determined. The elevation is fairly consistent at approximately El -25.0</p> <p>The slurry wall is being designed with the intention of being keyed into the bedrock at approximately an elevation EL -25.0. The intention is to prevent groundwater from entering the building foundation area, as well as provide lateral stability for the foundations. Upon completion of the excavation of the project site, a hydrostatic matt foundation (basement slab) will be installed and keyed into the slurry wall in an effort to reduce the quantity of</p>

		<p>water leakage into the building.</p> <p>The American Pharmacists Association Building across Constitution Avenue from the project site has a foundation elevation of approximately El -7.00. No problems were encountered during construction. Slurry wall construction has been an established means of construction, for in excess of 25 years. It is typically used for support of excavation and foundation methods by engineers when a high water table, or adjacent water source. Slurry wall construction is a more expensive support of excavation system than conventional sheeting and shoring, but it utilized for its abilities to provide a water cutoff from adjacent water tables.</p>
US Environmental Protection Agency	<p>The EA states, "As a result, the displacement of the soil, plus the hydrostatic pressure sent outward from the bentonite coated subsurface walls, could possibly raise the groundwater level of the project site. The slurry wall construction process would not contaminate ground water and the use of pumping would minimize changes to the groundwater level." However, because the soils have the potential to be contaminated, it can be assumed then that the groundwater can also be contaminated. Is there an intention to sample the groundwater for contaminants? Does the groundwater have the potential to be impacted as a result of drilling for the 83 wells?</p>	<p>Monitoring of the onsite soils or groundwater conditions for potential contaminant will occur during construction. If determined to contain petroleum hydrocarbons, the soils will be removed and disposed of in accordance with a DDOE-approved safety plan. Appropriate regulatory notification will occur if contaminated soils are identified. Any soils found to be contaminated will be disposed of at an appropriate waste disposal facility.</p> <p>Because of the spacing and narrow profile of the geothermal wells, impacts to groundwater levels are not anticipated. There is no intention to sample groundwater for contaminants unless it is determined that any disturbed soil-related contamination may have affected ground water. Regarding the construction of the geothermal wells, a casing would be utilized through the depth of soils until bedrock is encountered. Upon encountering bedrock a casing would no longer be utilized as the hole opening is stable enough to allow for the drill rig to continue to the desired depth.</p>

US Environmental Protection Agency	Page 2-14 states, "The largest skylight would be depressed approximately one foot from the grass surface, with stone edging and metal edging providing a four-inch barrier from the grass." Because the Memorial Center will be underground and the green roof/skylight will be level with existing topography, please provide more details (either visual or written) to ensure public safety protection from pedestrian activities through exclusion from area of the skylight or structural integrity of skylight.	The design of the large skylight to the courtyard has changed since the publishing of the EA. As currently designed, the skylight would be open-air, without a grate. Pedestrians approaching from the open grass area would encounter a stone curb, and a slightly depressed paved area, followed by a 30-inch tall concrete barrier wall topped with a twelve-inch guardrail to create a 42-inch combined-height safety rail, consistent with applicable building codes.
National Capital Planning Commission	Visual Resources – While visual resources are addressed in the cultural resources sections of the EA, additional information is regarding impacts to the view sheds of the American Pharmacists Association (APhA) and the National Academy of Sciences Building as the VVMC will be visible from both buildings. Photo renderings of the views from these two locations should be included.	Photo renderings of views to the site from the American Pharmacists Association Building and the National Academy of Sciences were created in response to this request and that of the Section 106 consulting parties, and shared with the consulting parties and agencies. These renderings are available online at www.parkplanning.nps.gov/NAMA , under VVMC, document list. At a subsequent Section 106 meeting, the SHPO concurred that there would be an adverse effect on the American Pharmacists Association Building. This is now reflected in this FONSI.
National Capital Planning Commission	Based on discussions during the Section 106 meeting held on March 5, 2012 and the DC SHPO's letter of March 13, 2012 additional analysis and visualizations are needed to confirm that the impact on the APhA and NAS buildings is minor. Analysis regarding the integrity of APhA and NAS and how the VVMC would not diminish the integrity of these resources would be helpful. While the VVMC would alter the setting of APhA and NAS, it appears the basic character of the setting and feeling for both resources would remain intact. If additional adverse effects were identified through the Section 106 process, the EA would need to reflect these impacts accordingly.	Photo renderings of views to the site from the American Pharmacists Association Building and the National Academy of Sciences were created in response to this request and that of the Section 106 consulting parties, and shared with the consulting parties and agencies. See above for the link to these photos. At a subsequent Section 106 meeting, the SHPO concurred that there would be an adverse effect on the American Pharmacists Association Building. This is now reflected in this FONSI.

National Capital Planning Commission	Additional analysis should be provided regarding how the VVMC will "...augment the existing experience offered by the Memorial." During Section 106 meetings, consulting parties have expressed concern that the VVMC will take away from the contemplative experience of the Memorial. This topic should be addressed in Visitor Use and Experience.	The Memorial Center would supplement and augment the visitor experience offered by the Vietnam Veterans Memorial by providing additional context for the Memorial itself, as well as the Vietnam War. This information would continue the contemplative experience of the Memorial, as well as offer an opportunity for greater understanding of the sacrifice of those honored at the Memorial.
U.S. Department of State	This office has reviewed the proposed project in relation to the Harry S Truman Building. Both below grade Action Alternatives are quite impressive in their scope. However, we find no significant impact or concern about the proposed project and therefore have no comments.	Noted.