
4.0 Environmental Consequences

**Vietnam Veterans Memorial Visitor Center Site Selection
Environmental Assessment**

4.1 Socio-Economics Impacts

4.1.1 Land Use Impacts

Land use impacts attributable to a project can be both direct and indirect. Direct impacts are determined by physical changes to a potential site and the surrounding area, including changes to the use, density, and character of the site. Indirect impacts relate to the surrounding area, including compatibility with the existing character of the contextual area and the potential influence of future uses. In addition, impacts are related to a project's compliance with applicable planning policies and controls.

Alternative Site A

Under Alternative Site A, a portion of the parcel located approximately 325 feet (one block) west of the Vietnam Veterans Memorial would be secured to establish the Center. Constructing the Center on Site A would result in the displacement of the two ballfields that currently exist on the site. However, depending on the design and placement of the Center within the site, a portion of the site would continue to be used as a multi-use recreational field, as well as a gathering space. The loss of formal recreational space would be less than a half acre, including the area occupied by the recessed light well, and building opening. The remaining open space of the site would continue to be used for recreational purposes as a multi-use recreational field. The use of Site A is already in the process of changing with the elimination of the southernmost ballfield for the NPS kiosk that is currently under construction. Thus, the use would change from strictly active recreation to a combination of cultural/educational and multi-purpose recreation. Maintaining the recreational use of the site would be consistent with the recommendations stated in the NPS Lincoln Memorial CLR. The CLR identifies the recreational use of the site as a contributing element to the historic landscape and states that the panel should be preserved as open space.

Although the construction of the Center would result in the loss of a small portion of the existing formal active recreational space, use of Site A for the Center would complement and contribute to the cultural character of the surrounding area. A new visitor center intended to educate the public about a significant event in our nation's history would contribute to the cultural experience of the western end of the National Mall, where other significant memorials are located. It would support and strengthen the existing cultural attractions, memorials, monuments, museums, and facilities located on the National Mall and in the Monumental Core. In addition, the addition of this new educational facility would complement the planned United States Institute of Peace and Public Education Center to be located across Constitution Avenue from the site by providing an additional center dedicated to educating visitors to the National Mall.

Mitigation: Site A would be maintained as an open grassy area by locating the Center underground and appropriately grading and landscaping the site. Active recreational uses such as informal sports activities (i.e., ball playing without metal backstops) would continue to be permitted on the balance of Site A.

Alternative Site G

Under Alternative Site G, a portion of the parcel located approximately 750 feet (two blocks) west of the Vietnam Veterans Memorial would be secured to establish the Center. Constructing the Center on Site G would result in the displacement of two ballfields that currently exist on the site. However, depending on the design and placement of the Center within the site, a portion of the site would continue to be used as a multi-use recreational field, as well as a gathering space. The loss of active recreational space would be less than a half acre, including the area occupied by the recessed light well, and building opening. The remaining open space of the site would continue to be used for recreational purposes as a multi-use recreational field. Overall, the use would change from strictly formal recreation to a combination of cultural/educational and multi-purpose recreation. Maintaining the recreational use of the site would be consistent with the recommendations stated in the NPS Lincoln Memorial CLR. The CLR identifies the recreational use of the site as a contributing element to the historic landscape and states that the parcel should be preserved as open space.

Replacing a portion of the existing active recreational uses with a cultural use would be consistent with the nearby uses within the National Mall and West Potomac Park. The establishment of the Center at Site G would result in the loss of a small portion of the existing formal active recreational space. Locating the Center at Site G would complement and contribute to the cultural experience of the western end of the National Mall; however, the cultural uses on Site G would be separated from the National Mall by the active recreational uses that would remain on Site A to the east. Although the two connected cultural experiences would be interrupted by formal active recreation, overall, a new visitor center intended to educate the public about a significant event in our nation's history, would contribute to the cultural experience of the western end of the National Mall, where other significant memorials are located. It would support and strengthen the existing cultural attractions, memorials, monuments, museums, and facilities located on the National Mall and in the Monumental Core. However, the Center would be located outside of the area dedicated to the cultural attractions within the Mall and would be separated by ballfields. In terms of cumulative impacts, the addition of this new educational facility on Site G would complement the planned United States Institute of Peace headquarters to be located across Constitution Avenue from the site.

Mitigation: Site G would be maintained as an open grassy area by locating the Center underground and appropriately grading and landscaping the site. Active recreational uses such as informal sports activities (i.e., ball playing without metal backstops) would be continue to be permitted on the balance of Site G.

No Action Alternative

The No Action Alternative would not change the land use of the alternative sites or surrounding area. The ballfields would likely remain on both Site A and Site G, and the Vietnam Veterans Fund would not fulfill its need to select a site at or near the Memorial for the purpose of establishing the Vietnam Veterans Memorial Center. Under the No Action Alternative, the purpose and need of the project would not be met.

4.1.2 Planning Policies and Controls Impacts

Alternative Sites A and G

Zoning

As federal land, the National Mall is not subject to zoning regulations. As a result, approval of Site A or G for the establishment of the Center would have no impact on zoning.

Comprehensive Plan for the National Capital

The establishment of the Center on Site A or G would be consistent with several of the policies identified to support the Parks and Open Space Element. Specifically, the siting of the Center on either site would allow the majority of the existing open space to be maintained, with minimal changes to the surrounding historic landscapes, and would conserve the tree canopy within the area.

Pertaining to the Preservation and Historic Features Element, development of the Center would be guided by design guidelines developed by NPS, NCPC, and CFA to ensure that the design of the Center would adhere to the highest aesthetic standards, and it would protect the visual qualities of the L'Enfant Plan rights-of-way through the maintenance of the mature trees at the perimeter of the site. Potential effects to the Lincoln Memorial grounds would be minimized by constructing the building underground.

In support of the Visitors Element of the Comprehensive Plan, selection of Site A or G for the establishment of the Center would place the Center within walking distance of public transportation. The site development would be pedestrian friendly and would maintain existing sidewalks and other streetscape amenities, as compatible with the historic landscape.

Commemorative Works Act and Amendments

As a commemorative work, the Center would be subject to the Commemorative Works Act. Thus, the National Capital Memorial Advisory Committee must be consulted and the Center site and design are subject to review/approval by the NCPC, the CFA, and the Secretary of the Interior. Although the Commemorative Works Clarification and Revision Act of 2003 states that no memorial or visitor center shall be located in the Reserve after the date of enactment, the Vietnam Veterans Center Memorial Visitor Center Act (discussed below) states that this component of the Commemorative Works Act does not apply to the Center.

Memorials and Museums Master Plan

Neither Site A or G are included as Candidate Sites within the Memorials and Museums Master Plan. However, Public Law 108-126 states that the Center can be located within the Reserve. The Center would be “appropriate to (its) subject and respectful of (its) immediate surroundings and neighborhoods” and would be intended to enhance the cultural significance of the existing Memorial and surrounding area. Overall, establishing the Center on Site A or G would be

inconsistent with the Memorials and Museums Master Plan; however, siting of the Center in this location was authorized by Congress.

It is not expected that cumulative impacts on planning policies and controls would result from the selection of either site for the establishment of the Center.

Mitigation: Development of the Center should be guided by consultation with appropriate agencies and identified stakeholders, and should be consistent with the design guidance established for the underground facility. It will also be subject to review and approval of NCPC and CFA.

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

The construction of the Center on either Site A or G would comply with the Vietnam Veterans Memorial Visitor Center Act, Public Law 108-126. The Center would be constructed near the Vietnam Veterans Memorial. It would also be located underground; and to prevent interference or encroachment upon open space and visual sightlines on the National Mall, the Center would be limited to the minimum size necessary to provide for the appropriate educational and interpretive functions. The Center would be designed and landscaped in a manner harmonious with the site of the Vietnam Veterans Memorial and consistent with the special nature and sanctity of the National Mall. Design guidance for development of the Center would be established through coordination between the NPS, the NCPC, and the CFA and would ensure that the Center would not encroach upon existing memorials in the area.

No Action Alternative

Under the No Action Alternative, a site for the future establishment of the Vietnam Veterans Memorial Center would not be secured. As a result, the purpose and need for the Center site selection would not be met. According to Public Law 108-126, the Vietnam Veterans Memorial Fund would have to identify another site on federal land near the Vietnam Veterans Memorial.

4.1.3 Community Facilities and Services Impacts

Alternative Sites A and G

Parks and Recreational Facilities

Approval of Site A or G for the purpose of establishing the Center within the grounds of the National Mall would slightly reduce the amount of formal recreational space in the area. Site A currently contains two ballfields (a third ballfield was displaced by the National Park Service kiosk currently under construction). Site G also contains two ballfields. With the construction of the Center on either site, the two remaining ball fields could be combined into one multi-use field for multi-purpose recreational use on the remaining open portion of the site. Overall, approval of either alternative site for the Center would have a minor impact on parks and recreational facilities.

Cultural Facilities

Approval of Site A or G for the purpose of establishing the Center would result in the addition of cultural space supporting the existing Vietnam Veterans Memorial. According to the authorizing legislation, the Center would also fulfill an educational function. The size of the Center is expected to be approximately 25,000 square feet of exhibit and exhibit support space. Display and interpretive features that would enhance the cultural experience of the existing Memorial could also be included.

Approval of Site A would allow the Center to serve as an extension of the Memorial, enhancing the educational and cultural experience of the Memorial. Although across the street, Site A is adjacent to the Memorial and thus would allow for a continuous visitor experience between the Center and the Memorial. Selection of this site for establishment of the Center would complement the existing cultural and educational experience and would provide a positive impact to this area of the National Mall.

Although Site G is located near the Memorial, the Center would be separated from the Memorial by Site A, which would contain two active ballfields and the NPS food service kiosk. Site G is located approximately 425 feet further from the Memorial than Site A, as measured directly to the Flagpole Plaza (although Site G is only 200 feet further than Site A in Walking distance). As two thematically linked cultural sites, the separation of the two could adversely impact the presentation of information and overall cultural experience. Overall, approval of this site for establishment of the Center would complement the existing cultural and educational experience and would provide a positive impact to this area of the National Mall.

In terms of cumulative impacts, the Center, a new educational facility, would complement the planned United States Institute of Peace headquarters to be located across Constitution Avenue from the site, by enhancing the overall cultural experience near the western end of the National Mall, resulting in a positive cumulative impact.

Public Safety

Public safety services would continue to be provided by the United States Park Polices and staffed by the NPS. Fire safety services, medical ambulance, and rescue services would continue to be provided by the District. Given the safety presence already in place for the Lincoln Memorial and Vietnam Veterans Memorial, the proposed Center would not have an adverse impact on public safety. Emergency access to the Center at Site A would be available via the four surrounding roadways, Constitution Avenue, Henry Bacon Drive, Lincoln Memorial Circle, and 23rd Street, NW. Emergency access to the Center at Site G would be available via three surrounding roadways, Constitution Avenue, 23rd Street, and Lincoln Memorial Circle.

Educational Facilities

Locating the Center on Site A or G would not result in impacts to educational facilities in the surrounding area. However, the addition of the Center would provide a positive impact on the

educational experience for visitors to the Center by providing an educational resource to the Memorial.

Mitigation: To the extent possible, the openness of the site should be maintained and passive recreational uses within a multi-use field should be permitted on the undeveloped balance of the site to compensate for the loss of the ballfields.

No Action Alternative

Under the No Action Alternative, neither of the Alternative sites would be secured for the subsequent establishment of the Vietnam Veterans Memorial Center; therefore, no impact on community facilities would result. The Vietnam Veterans Memorial Center would not be located at or near the Memorial and an alternative site would need to be identified. Site A would continue to be used for recreation and the for visitor services from the NPS kiosk. Site G would continue to be used for recreation.

4.1.4 Visitor Experience Impacts

Visitation

Alternative Sites A and G

The number of visitors that the facility would be able to support would be dependent on the programming within the facility, facility size, and the amount of time expected per visitor. Because the Center would be planned as a component of the existing Memorial for the purpose of enhancing the commemorative experience and educating visitors at the Memorial, it is expected that the level of visitor activity would be less than that at the Memorial. Based on the current annual visitation to the Vietnam Veterans Memorial, visitation at the Center is anticipated to average approximately 800 visitors per hour. Visitors to the Center would be expected to primarily include those already visiting the Memorial. It is not expected that the Center would increase visitation to the Memorial. Locating the Center at either Site A or Site G would result in an increase in visitor activity on the site; however establishment of the Center would not be expected to increase the level of visitor activity in this general area of the National Mall.

Alternative Site A

The Center is expected to be designed in a manner that would minimize disturbance to the nearby attractions through appropriate orientation and placement within the site. Under Alternative Site A, placing the entry/exit point on the eastern side of the site, along Henry Bacon Drive, would provide a strong connection between the Center and the Flagpole Plaza of the Memorial and allow for a continuous visitor experience between the Center and the Memorial. Overall, the visitor experience at the Vietnam Veterans Memorial would be enhanced by the addition of the Center.

Additionally, it is expected that the entrance/exit point at either side would consist of a gently sloping entry ramp that would allow all visitors to experience the Center in the same manner,

regardless of disability, and would eliminate the need for an entry elevator to provide access into the Center.

Alternative Site G

Under Alternative Site G, the entry/exit point would also be placed on the eastern side of the site, along 23rd Street. Locating the Center on Site G would not provide a strong connection between the Center and the Memorial as a result of the distance and lack of visibility from the Flagpole Plaza to Site G. Although locating the Center on Site G would minimize disturbance to visitors at the nearby attractions and quiet environs of the Mall, the visitor experience at the Center and the Memorial would not be continuous.

Additionally, it is expected that the entrance/exit point at either side would consist of a gently sloping entry ramp that would allow all visitors to experience the Center in the same manner, regardless of disability, and would eliminate the need for an entry elevator to provide access into the Center.

Noise

Construction of the Center at either site would be in accordance with the Noise Control Act of 1972 (42 USC 4901 et seq.), which directs the NPS to comply with Federal, State, interstate, and local requirements respecting control and abatement of environmental noise to the same extent that any person is subject to such requirements. Through its Noise Control Regulations (Municipal Regulation Title 20, Chapters 30, and 31), the District of Columbia has established maximum permissible sound levels for any sound that emanates from an operation, activity, or noise source at the property line of the site on which the noise source is located. Construction noise levels are addressed in Title 20, Chapter 30, Section 3004.2 of the DC Municipal Regulations, which state that “individual pieces of construction equipment shall be exempt at all time. They shall operate so as to comply with the noise limits established in Section 3102 of this title.” Section 3102 requires that from 7:00 a.m. to 7:00 p.m. on any weekday, construction and demolition noise levels (excluding pile drivers) shall not exceed 80 dB(A) Leq unless granted a variance. From 7:00 p.m. to 7:00 a.m., maximum noise levels of 55, 60, and 65 dB(A) apply for residential, commercial, and industrial areas, respectively, with no averaging time period specified. For construction noise, measurements shall be made 25 feet from the outermost limits of the construction site. No permit for construction or demolition shall be issued until the permit applicant provides written documentation that construction noise will comply with District noise regulations.

Alternative Site A

Establishing the Center at Site A would introduce a new noise source from human activity in an area that will already have visitor activity resulting from the NPS kiosk, bus drop-off area, and ballgames on the site. Site A is separated from the Memorial and Constitution Gardens by Henry Bacon Drive. Locating the Center to the west of the Memorial and orienting the facility appropriately would be respectful of the quiet environs of the Vietnam Veterans Memorial grounds and would encourage visitor activity to occur outside of the more sensitive and intimate

areas of the National Mall and the nearby memorials. It is expected that the facility and its site would be designed in such a way that intensive pedestrian flows would be channeled away from quiet areas, such as at the Wall and special areas of Constitution Gardens, in order to preserve their serenity.

Locating the Center at Site A would keep the visitor activity associated with the Center removed from the Memorial and Constitution Gardens; therefore noise impacts to the Vietnam Veterans Memorial would not likely increase. In fact, noise levels at the Vietnam Veterans Memorial may decrease slightly as a result of providing a new gathering space, at the entrance of the Center, for tour groups and visitors to the Memorial. There should be no additional noise due to vehicular traffic, since visitation levels in the general area are not anticipated to increase. In addition, the bus drop-off point on Henry Bacon Drive would be approximately 200 feet from the Wall.

Existing noise levels within the chamber of the Lincoln Memorial are low; however, elevated noise levels already occur near the base of the Lincoln Memorial and around Lincoln Memorial Circle. The number of visitors to the Center would be substantially less than those already within the surrounding area and would likely include visitors that are already accessing nearby attractions. Overall, visitation to the Center would not result in noise impacts to the Lincoln Memorial.

Mitigation: Best management practices (BMPs), compliance with District noise regulations, and other construction procedures should be implemented to minimize construction noise. In addition, construction activities should be temporarily discontinued for ceremonies or special events in the area. Development and orientation of the Center on Site A would be subject to design guidance that would minimize potential visitation, noise, and lighting impacts of the Center. Design guidance for the development of the Center may be provided by NCPC and CFA.

Alternative Site G

Establishing the Center at Site G would introduce a new noise source from human activity in an area that is currently maintained as active open space and already has visitor activity from ballgames on the site. Typical noise on the site includes that from ballgames as well as transportation related noise sources. The site is surrounded by vehicular noise and airplane and helicopter noise is constant. The noise levels at the site would increase slightly as a result of the Center. However, Site G already experiences increased noise levels resulting from vehicular traffic traveling on Interstate 66, Route 50, and 23rd Street, as well as from airplane traffic traveling within the Ronald Reagan Washington National Airport flight path. Because the area immediately east of Site G would be maintained as ballfields, noise levels may increase slightly as visitors leave the Center and pass through this area before reaching the Memorial.

Site G is separated from the Memorial and Constitution Gardens by two roadways, 23rd Street and Henry Bacon Drive, and the NPS kiosk and ballfields on Site A. Locating the Center at Site G would keep the visitor activity associated with the Center away from the Memorial and Constitution Gardens; therefore noise impacts to the Vietnam Veterans Memorial would not likely increase. In fact, noise levels at the Vietnam Veterans Memorial may decrease slightly as a result of providing a new gathering space, at the entrance of the Center, for tour groups and

visitors to the Memorial. There should be no additional noise due to vehicular traffic, since visitation levels in the general area are not anticipated to increase. In addition, the bus drop-off point on 23rd Street would be more than 900 feet from the Wall.

Existing noise levels within the chamber of the Lincoln Memorial are low; however, elevated noise levels already occur near the base of the Lincoln Memorial and around Lincoln Memorial Circle. The number of visitors to the Center would be substantially less than those already within the surrounding area and would likely include visitors that are already accessing nearby attractions. Overall, visitation to the Center would not result in noise impacts to the Lincoln Memorial.

Mitigation: Best management practices (BMPs), compliance with District noise regulations, and other construction procedures should be implemented to minimize construction noise. In addition, construction activities should be temporarily discontinued for ceremonies or special events in the area. Development and orientation of the Center on Site G would be subject to design guidance that would minimize potential noise impacts of the Center. Design guidance for the development of the Center may be provided by NCPC and CFA.

Lighting

Alternative Sites A and G

Lighting for the Center would be limited to internal lighting of the underground facility and subtle walkway lighting near the building entrance that would fulfill safety requirements. The lighting levels of the Center would be minimal and would not compete with nearby memorials. The building and its site would be designed in such a way that lighting would not be visible from the nearby memorials, including the Lincoln Memorial and Vietnam Veterans Memorial. Grading of the site would shield the entrance from view from the Lincoln Memorial, and limit the amount of light that would be visible from outside of the facility.

Mitigation: Development of the Center on Site A or G would be subject to design guidance that would minimize potential lighting impacts of the Center. Design guidance for the development of the Center may be provided by NCPC and CFA.

No Action Alternative

Under the No Action Alternative, the Vietnam Veterans Fund would remain without a site for the establishment of the Center. Therefore, the visitor experience on and around the site, particularly at the Memorial, would not be enhanced and related visitation impacts would not result. Use of site for organized ballgames would continue and the planned NPS visitor services kiosk would be established on Site A.

4.2 Cultural Resources Effects

The evaluation of cultural resources considers two primary regulatory policies, NEPA and NHPA. Section 101(b)(4) of NEPA requires federal agencies to coordinate and plan proposed actions to, among other goals, “preserve important historic, cultural, and natural aspects of our national heritage.” In accordance with the Advisory Council on Historic Preservation’s regulations implementing Section 106 of the NHPA, impacts to cultural resources were identified and evaluated by: (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that were either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the National Register; and (4) considering ways to avoid, minimize or mitigate adverse effects. Under the Advisory Council’s regulations, a determination of either adverse effect or no adverse effect must also be made for relevant National Register-eligible cultural resources.

The National Historic Preservation Act of 1966, as amended, establishes standards for evaluating potential effects on historic resources. The NHPA defines “effect” as an “alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register” (36 CFR 800.16), and requires that the lead agency, in consultation with the SHPO, determine whether the effect is adverse. According to the NHPA, an “adverse effect” occurs “when an undertaking may alter, directly or indirectly, any of the characteristics of the historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association” (36 CFR 800.5).

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

The National Park Service initiated Section 106 consultation with the SHPO on February 17, 2005, requesting comments on the Site Selection Study and Environmental Analysis for the Center. The SHPO responded in writing on March 14, 2005 with both procedural and substantive comments. On the procedural side, the SHPO recommended that NPS and the Vietnam Veterans Fund ensure a measured, balanced, and inclusive consultation process allowing all interested parties a reasonable opportunity to comment before critical project decisions are made. On the substantive side, the SHPO stated that the January 2005 Site Selection Study and Environmental Analysis was not sufficient to fulfill Section 106 requirements.

The consultation process has involved coordination with appropriate agencies and identified stakeholders. On April 27, 2005, NPS invited interested parties to an information meeting on May 3, 2005. NPS held a scoping meeting on June 23, 2005. The proposed Vietnam Veterans Center was also discussed with the public at several meetings of the National Capital Memorials Advisory Commission.

4.2.1 Archaeological Resources Effects

Alternative Sites A and G

The authorizing legislation for the Center requires that the Center be constructed as an underground facility; therefore, excavation of either site would be necessary. It is expected that the depth of the facility would be above groundwater and bedrock level, reaching a maximum depth of approximately 30 feet below the existing grade.

Based on the fact that both sites consist primarily of fill dredged from the Potomac River and that neither site was developed historically, it is unlikely that historic archaeological remains would be affected by construction on either Site A or Site G. It is also likely that both sites have been previously disturbed by construction of the bordering roadways as well as the nearby memorials. Due to the fact that the alternative sites were once beneath the Potomac River, it is unlikely that prehistoric archaeological remains are present below the thick layer of fill.

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

No Action Alternative

Under the No Action Alternative, neither Site A nor Site G would be approved for the future construction of the Center. Therefore, there would be no effects on archaeological resources that would result from this project.

4.2.2 Historic Resources Effects

The construction of the Center on Site A or G would create short-term adverse effects to the site as well as to historic properties in the area surrounding the site, including the Lincoln Memorial and its grounds, the National Mall, West Potomac Park, and the Northwest Rectangle. Temporary effects would be minor and would include visual and noise disturbances during the construction of the Center. In order to minimize long-term effects that could potentially result from construction of the underground building, existing breaks in the treeline at either site should be identified for construction access. In addition, temporary construction fences should be used to separate the dripline of the historic trees from the construction site to ensure that the trees' root systems are not compromised.

Alternative Site A

Historic Vistas

Once constructed on Site A, the Center may affect views along Henry Bacon Drive and 23rd Street. The contributing views along these streets are along their center lines from and to the Lincoln Memorial. Looking north from Lincoln Memorial Circle along the 23rd Street axis, the views are framed by double rows of historic elm trees on either side of the sidewalks. The

Center would be partially visible at the periphery of this view through the established treeline, appearing primarily as a grassy slope, due to the fact that the structure would be located underground. Built elements would not be visible. Mechanical equipment necessary for operation of the underground building would not be visible within this view as it could be contained within a recessed light well. Overall, effects to the northern view along the 23rd Street axis would be minor as the proposed Center would not interfere with the existing view to the Lincoln Memorial and would not alter its character. Additionally, access to this indirect view is limited because the raised terrace on the north side of the Lincoln Memorial that once afforded views up 23rd Street is now closed to visitors, and the trees planted at the base of the Memorial and along Lincoln Memorial Circle encroach upon the view.

Looking north from Lincoln Memorial Circle on Henry Bacon Drive, the view is framed by elm trees that line either side of the street. The food service kiosk, currently under construction in the southern portion of the site, would be visible through the treeline and could shield portions of the Center from view. The portions of the Center that are not obscured by the elm trees would appear as a grassy slope. Mechanical equipment necessary for operation of the underground buildings would not be visible within this view as it could be contained within a recessed light well. Overall, effects to the view along Henry Bacon Drive would be minor.

Looking south on the 23rd Street axis from points north of Site A, the view to the Lincoln Memorial is framed by the lines of existing trees. The underground Center would appear as a grassy slope from this vantage point. No building features would be visible along 23rd Street. Overall, effects to this view would be minor, since the Center would be partially obscured from view by the line of mature elms along 23rd Street and Constitution Avenue, and would continue to give the impression of a grassy landscape.



Looking south on 23rd Street from Constitution Avenue with the Lincoln Memorial in the distance (Site A would be to the left)

Looking south on Henry Bacon Drive, the Center's entrance would be visible at the periphery of views to the Lincoln Memorial from points north of the Center. However, this view is dominated by the lines of elm trees that border the roadway and the Center would be partially obscured by the trees. The entrance pathways and existing sidewalks could be partially visible at the edge of this view through the existing treeline. Built elements would not be visible as a result of the grading of the site. To the extent possible, the building entrance would be shielded from view through the gentle re-grading of the site. Moving southwest on Henry Bacon, the Center would not be included in views to the Lincoln Memorial.



Looking south from the sidewalk on the west side of Henry Bacon Drive (Site A would be to the right)

Historic Features

The Lincoln Memorial is illuminated from within and from newly installed exterior light standards on the east side, and appears significantly brighter than other structures in the surrounding area at the western end of the National Mall. The construction of the Center on Site A would not noticeably alter this impression, as the building would only be open during daytime and early evening hours. The building entrance would not be oriented toward the Lincoln Memorial; therefore, any necessary soft night lighting would not be directed toward the Lincoln Memorial.

Establishment of the Center at Site A would result in adverse effects to the Lincoln Memorial grounds by altering the parcel's formal recreational use as identified in the Lincoln CLR. Adverse effects would be minimized; however, by the construction of the building underground, such that the parcel would continue to appear from most vantage points as open space. Effects could be further mitigated by maintaining a portion of the site for recreation. The establishment of the Center on Site A would not alter the historic roadways that border the site, or the historic sidewalks that encircle it. The Center would sensitively incorporate historic components such as

circulation patterns, vegetation, views and vistas, to preserve the integrity of the historic landscape in accordance with the CLR design guidelines. In addition, construction activities would not encroach upon the dripline of the mature trees at the edges of the site, and thus the historic elms that border the site should not be adversely affected.

The siting of the Center on Site A would affect elements of the L'Enfant and McMillan Plans, and the West Potomac Park Historic District. As previously indicated, the Center would have minor adverse effects on views along Henry Bacon Drive, a contributing element of the L'Enfant Plan. Views along Constitution Avenue are framed by the mature trees that line the roadway. The Center and its entrance would not be visible from these views. Thus, there would be no effects to the Constitution Avenue vista. Overall, effects would be minor, due to the screening of the site by the historic trees at its perimeter.



View toward the east from the sidewalk on the south side of Constitution Avenue (Site A would be to the right)

The siting of the Center on Site A would not adversely affect the West Potomac Park Historic District since the district already includes a combination of monuments, memorials, and open space. Because the Center would be separated from the Vietnam Veterans Memorial by Henry Bacon Drive, the Center would not disturb the tranquil setting of the Memorial. It would not adversely affect the Vietnam Veterans Memorial, a contributing element within the West Potomac Park Historic District. To the extent possible, the Center should be sited, and the entrance configured, so that visitors would enter a gentle hillside to distinguish the arrival experience at the Center from that at the Memorial.

The construction of the Center on Site A would have indirect visual effects on the buildings fronting on Constitution Avenue, particularly the American Pharmacists Association and the National Academy of Sciences. Effects would generally be minor due to the fact that the trees on either side of Constitution Avenue would partially shield the Center from view, and the

Center would appear as a gently sloping grassy landscape. Interior lighting from the building would not be visible because the Center would only be open during daytime and early evening hours. No built elements would be visible.

Mitigation: Where historic elm trees have been lost previously at the periphery of the site, large elms should be replanted to enhance the vistas along 23rd Street and Henry Bacon Drive and further shield the proposed Center from view. To preserve the impression of open space, hardscape should be minimized on the site. In addition, to minimize adverse visual effects, the building should not rise more than ten feet above the elevation of the current groundline.

Alternative Site G

Historic Vistas

Once constructed on Site G, the Center could affect views along 23rd Street. The contributing view along this street is along its center lines from and to the Lincoln Memorial. Looking north from Lincoln Memorial Circle along the 23rd Street axis, the view is framed by double rows of historic elm trees on either side of the sidewalks. The Center would be partially visible at the periphery of this view through the established treeline, appearing primarily as a grassy slope from the south, due to the fact that the structure would be located underground. Built elements would not be visible. Mechanical equipment necessary for operation of the underground building would not be visible within this view as it could be contained within a recessed light well. The entrance to the Center would be shielded from view through the gentle re-grading of the site. Overall, effects to this view would be minor, as the proposed Center would not interfere with the existing view to the Lincoln Memorial and would not alter its character. Additionally, access to this indirect view is limited because the raised terrace on the north side of the Lincoln Memorial that once afforded views up 23rd Street is now closed to visitors and the trees planted at the base of the Memorial encroach upon the view.



View from Site G south towards the Lincoln Memorial

Looking south on the 23rd Street, the Center's entrance would be visible at the periphery of views to the Lincoln Memorial from points north of Site G. However, this view is dominated by the lines of elm trees that border the roadway and the Center would be partially obscured by trees. The entrance pathways and existing sidewalks could be partially visible at the edge of this view through the existing treeline. Built elements would not be visible as a result of the grading of the site. To the extent possible, the building entrance would be shield from view through the gentle re-grading of the site. Overall, effects to this view would be minor, since the Center would be partially obscured from view by the line of mature elms along 23rd Street and Constitution Avenue, and would continue to give the impression of a grassy landscape.



Looking south from the sidewalk on the east side of 23rd Street

Historic Features

The Lincoln Memorial is illuminated from within and from newly installed exterior light standards on the east side, and appears significantly brighter than other structures in the surrounding area at the western end of the National Mall. The construction of the Center on Site G would not noticeably alter this impression, as the building would only be open during daytime and early evening hours. The building entrance would not be oriented toward the Lincoln Memorial; therefore, any necessary soft night lighting would not be directed toward the Lincoln Memorial.

Establishment of the Center on Site G would result in adverse effects to the Lincoln Memorial grounds through altering the parcel's use, from active recreation to a combination of cultural/education and multi-purpose recreational uses. Adverse effects would be minimized, however, by the construction of the building underground, such that the parcel would continue to appear as open space. Effects could be further mitigated by maintaining a portion of the site for recreation. The establishment of the Center on Site G would not alter historic 23rd Street east of

the site, or the historic sidewalks on the west side of 23rd Street and the outer edge of the Lincoln Memorial Circle. In addition, construction activities would not encroach upon the dripline of the mature trees at the edges of the site, and thus the historic elms that border the site should not be adversely affected.

The siting of the Center on Site G would affect elements of the L'Enfant and McMillan Plans, and the West Potomac Park Historic District. As previously indicated, the Center would have minor adverse effects on views along 23rd Street, a contributing element of the L'Enfant Plan. Views along Constitution Avenue are framed by the mature trees that line the roadway. The Center and its entrance would not be visible from these views. Thus, there would be no effects to the Constitution Avenue vista. Overall, effects would be minor, due to the screening of the site by the historic trees at its perimeter.

The siting of the Center on Site G would not adversely affect the West Potomac Park Historic District, since the district already includes a combination of monuments, memorials, and open space. Because the Center would be separated from the Vietnam Veterans Memorial by Henry Bacon Drive, Site A, and 23rd Street, and given that Site A is not currently visually connected to the Memorial, the Center would not disturb the tranquil setting of the Memorial. It would not adversely affect the Vietnam Veterans Memorial, a contributing element within the West Potomac Park Historic District. To the extent possible, the Center should be sited, and the entrance configured, so that visitors would enter a gentle hillside to distinguish the arrival experience at the Center from that at the Memorial.

The construction of the Center on Site G would have indirect visual effects on the buildings fronting Constitution Avenue, particularly the American Pharmacists Association. Effects would generally be minor due to the fact that the trees on either side of Constitution Avenue would partially shield the Center from view. Interior lighting from the building would not be visible because the Center would only be open during daytime and early evening hours. No built elements would be visible.

Mitigation: Where historic elm trees have been lost previously at the periphery of the site, large elms should be replanted to enhance the vista along 23rd Street and further shield the proposed Center from view. To preserve the impression of open space, hardscape should be minimized on the site. In addition, to minimize adverse visual effects, the building should not rise more than ten feet above the elevation of the current ground line.

No Action Alternative

Under the No Action Alternative, the Center would not be established at either Site A or Site G. The existing conditions of either site would remain and no visual changes to the area would result. No impacts on nearby historic resources or historic vistas would occur.

4.2.3 Visual Resource Impacts

The visual impact assessment for the proposed action addresses potential changes to views and vistas that can be attributed to selection and approval of a site for the future establishment of the Center. Impacts to views and vistas are determined based on an analysis of the existing quality of the view, the sensitivity of the view (such as important views from historic and cultural sites), and the anticipated relationship of the proposed design elements to the existing visual environment.

Visual impacts were assessed assuming the implementation of the design guidance provided for the Memorial, identified in Chapter 2. To avoid subjective analysis, visual impacts in the proceeding analysis are described according to the following categories:

- **No visual impact** – The proposed action would not result in any visual changes.
- **Minor visual impact** – The proposed action would be visible, but would not interfere with views and would not change the character of the existing views.
- **Moderate visual impact** – The proposed action would be visible and would interfere with existing views, but would not change the character of the existing views.
- **Major visual impact** – The proposed action would be visible as a contrasting or dominant element that interferes with views and substantially changes the character of the existing views.
- **Positive visual impact** – The proposed action would improve a view or the visual appearance of an area.

Alternative Sites A and G

Views from the Lincoln Memorial

The dominant view from the steps of the Lincoln Memorial is toward the east along the main axis of the National Mall toward the Washington Monument and US Capitol building beyond. This view is dominated by linear elements (the Washington Monument, the Reflecting Pool, and walkways) that draw the viewer's eye along the east-west axis. This view is framed by the allees of elms that reinforce the importance of the axis.



View from the upper steps of the Lincoln Memorial looking east along the main axis of the National Mall



View from the upper steps of the Lincoln Memorial looking northeast towards the Vietnam Veterans Memorial

Alternative Site A

View from Lincoln Memorial to Site A

Site A is partially visible as a peripheral view from the uppermost steps of the Lincoln Memorial; however, the peripheral view is partially shaded by trees along the southern border of Site A, the outer edge of Lincoln Memorial Circle. The view of Site A diminishes as one descends the steps of the Lincoln Memorial, and is not visible from the mid-point of the steps. Although the construction of the Center would alter the view slightly, it would not change the quality of the view, due to the fact that the building would have a green vegetated roof and would be oriented to the east. Thus, when viewed from the Lincoln Memorial, Site A would appear as a sloping grassy expanse. Depending on its placement within the site, the Center could also be partially blocked from view by the NPS food service kiosk currently under construction at the southeastern edge of the site.

Although Site A may have once been visible from the raised terrace of the Lincoln Memorial, the terrace is currently closed to visitors and the view partially shielded by trees planted at the base of the Memorial, as well as the designed multiple rows of elm plantings between Henry Bacon Drive and 23rd Street. According to the CLR, the planting plan for this area calls for four rows of trees near the southern border of Site A. Completion of this planting plan would further shade the site from view from Lincoln, virtually eliminating the possibility that the Center on Site A would be visible from this vantage point, should the terrace be open to the public in the future.



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

View from Site A to the Lincoln Memorial

The view from Site A looking south towards the Lincoln Memorial is currently dominated by the trees and vegetation at the base of the Lincoln Memorial, with the Lincoln Memorial in the background. A portion of the Lincoln Memorial is visible beyond the trees that are located at the southern perimeter of the site and the base of the Memorial. The NPS food service kiosk, currently under construction, is within this viewshed. Views from the south portion of the site would be unchanged as a result of the establishment of the Center on Site A. Views from the north edge of the site, including the sidewalk along Constitution Avenue, towards the south would be altered with the construction of the Center. The current grassy open space would be replaced by a gently raised grassy mound. Based on the 1932 Planting Plan, however, it appears views from the north edge of the site, near Constitution Avenue, were intended to be significantly screened by foundation plantings within Lincoln Memorial Circle, or the street tree planting along the outer edge of the circle. Instead, views along the radial roads were emphasized.



**View across from northern portion of Site A,
across site towards the Lincoln Memorial**

Views between the Lincoln Memorial and the Vietnam Veterans Memorial

Looking to the northeast from the steps of the Lincoln Memorial, the Vietnam Veterans Memorial is largely shaded by tree cover. The construction of the Center on Site A would not affect this view, as the Center would be located west of the Vietnam Veterans Memorial, across Henry Bacon Drive. It would thus be beyond the limits of the current view toward the Vietnam Veterans Memorial.



View from the Lincoln Memorial looking northeast towards the Vietnam Veterans Memorial

Looking southeast from the Vietnam Veterans Memorial Flagpole Plaza towards the Lincoln Memorial, the Lincoln Memorial is only partially visible due to the dense tree cover. The construction of the Center on Site A would not affect this view.



View from the Vietnam Veterans Memorial Flagpole Plaza looking southwest towards the Lincoln Memorial

Views between Site A and the Vietnam Veterans Memorial

When looking west from the Vietnam Veterans Memorial, the Center would be visible but partially shaded by the trees along Henry Bacon Drive and the plantings at the west end of Constitution Gardens. Since the Center would be underground and grading of the site would allow the entrance to disappear from view, the effect on the view would be minor. The Flagpole Plaza would be visible through the trees from the Center entrance along Henry Bacon Drive.



View from Site A looking east towards the Vietnam Veterans Memorial

Vista along Henry Bacon Drive

These views are discussed in Section 4.2.2, Historic Resource Impacts.

Vista along 23rd Street

These views are discussed in Section 4.2.2, Historic Resource Impacts.

Vista along Constitution Avenue

These views are discussed in Section 4.2.2, Historic Resource Impacts.

Alternative Site G

Views from the Lincoln Memorial to Site G

Site G is not visible from the steps of the Lincoln Memorial. Although Site G may have once been visible from the raised terrace of the Lincoln Memorial, the terrace is currently closed to visitors and the view partially shielded by trees planted at the base of the Memorial, as well as the designed multiple rows of elm plantings along the southern border of the site. Should the terrace be open to the public in the future, the Center on Site G would be visible from this location.



Dense plantings around the base of the Lincoln Memorial (on north side of steps)

View from Site G to the Lincoln Memorial

The view from Site G looking south towards the Lincoln Memorial is currently dominated by the trees and vegetation at the base of the Lincoln Memorial, with the Lincoln Memorial in the background. Views from the south portion of the site would be unchanged as a result of the establishment of the Center on Site G. Views from the north edge of the site, including the sidewalk along Constitution Avenue, towards the south would be altered with the construction of the Center. The current grassy open space would be replaced by a gently raised grassy mound.

Views between the Lincoln Memorial and the Vietnam Veterans Memorial

Looking to the northeast from the steps of the Lincoln memorial, the Vietnam Veterans Memorial is largely shaded by tree cover. The construction of the Center on Site G would not affect this view, as the Center would be located west of the Vietnam Veterans Memorial beyond the limits of the view.

Looking southeast from the Vietnam Veterans Memorial towards the Lincoln Memorial, the Lincoln Memorial is only partially visible due to the dense tree cover. The construction of the Center on Site G would not affect this view.

Views between Site G and the Vietnam Veterans Memorial

The Vietnam Veterans Memorial and Flagpole Plaza is not currently visible from Site G. Similarly, looking west from the Vietnam Veterans Memorial, Site G and the proposed Center would be shielded from view by lines of mature elm trees on Henry Bacon Drive and 23rd Street, and plantings at the western end of Constitution Gardens. When looking west from the Vietnam Veterans Memorial, the Center would not be visible, due to the distance separating the two attractions and the visual interruption of Site A which would contain the NPS kiosk and active ballfields and would be located between the Center and the Memorial.



Looking east from Site G towards the Vietnam Veterans Memorial

Vista along 23rd Street

These views are discussed in Section 4.2.2, Historic Resource Impacts.

Vista along Constitution Avenue

These views are discussed in Section 4.2.2, Historic Resource Impacts.

No Action Alternative

Under the No Action Alternative, the Center would not be established at either Site A or Site G. No changes in the visual quality or character of the area would result.

4.3 Transportation Systems

4.3.1 Background Considerations Impacts

Implementation of the proposed Center is anticipated for the year 2008. The physical and operational characteristics of the transportation systems are expected to be the same as the existing situation, except for the following:

- Traffic on the local roadways is expected to increase slightly due to general growth patterns for commuter and other traffic. Based upon data obtained from the District Department of Transportation, daily traffic flows along the local area roadways have been quite stable over the most recent five-year period. As a result, significant growth is not expected.
- Planned roadway system changes within the area include geometric improvements and signalization at the Lincoln Memorial Circle at 23rd Street and at Henry Bacon Drive. These improvements should enhance both vehicular and pedestrian circulation within the local area, particularly pedestrian access and circulation appreciably.

Other significant roadway projects are also planned for the broader area. These include: rehabilitation of Constitution Avenue between 15th and 23rd Streets; rehabilitation of the Theodore Roosevelt Bridge and to local streets to the north in the vicinity of the State Department. These are positive changes from a general perspective; but are not likely to have a direct bearing on the potential environmental consequences of the Center.

4.3.2 Roadway and Traffic Pattern Impacts

Roadway and Site Access Impacts

Alternative Site A

Site A is bordered by Constitution Avenue, Henry Bacon Drive and 23rd Street, NW. Development of this site will include wayfinding signage to inform and organize pedestrian movements to and from the Center. A curbside lane along the southbound travel-way of Henry Bacon Drive would serve as the drop-off point for this portion of the National Mall.

The roadway improvements planned for 23rd Street and Henry Bacon Drive, while not implemented specifically in connection with the proposed Center, will complement the access needs of Site A extremely well. These improvements are currently being constructed, and would be in place prior to the implementation of the proposed Center.

Alternative Site G

Site G is bordered by US Route 50 and Interstate 66, 23rd Street and the access drives to Rock Creek and Potomac Parkway. Within the District of Columbia US 50 is coincident with Constitution Avenue. These roadways currently serve primarily as commuter and regional travel

routes; but they also provide access to the area for various trip purposes, including visitor traffic. Development of this site will include wayfinding signage that would inform and organize pedestrian movements to and from the Center. A curbside lane along the west (southbound) travel-way of 23rd Street would be designed and designated as a drop-off area that could serve the Center during non-peak hours.

The roadway improvements planned for 23rd Street, while not implemented specifically in connection with the proposed Center, will complement the access needs of Site G. These improvements are currently being constructed, and would be in place prior to implementation of the proposed Center.

Traffic Volumes and Levels of Service Impacts

Alternative Sites A and G

Trip generation for the Center at Site A and G is a function of the proposed use of the site for a facility that is intended to be complementary to the Vietnam Veterans Memorial.

It is anticipated that the Center would not generate a “bump” in persons attracted to the immediate area within the months immediately following its opening. However, even if a marginal increase occurs initially, it would not be sustained. The daily access patterns would approximate those of the Vietnam Veterans Memorial, whose primary hours of visitation are 9:00 am to 6:00 pm daily, including weekends.

Based upon the characteristics of the Center and the background conditions of the area, this assessment concludes that the vehicular traffic volumes and patterns within the area will not change as a result of the Center being established at Site A or Site G. The bus drop-off that is proposed along Henry Bacon Drive is planned as part of general improvements to the area would provide substantial benefits to the local area. Therefore, the future levels of service for the local area intersections are anticipated to remain unchanged as shown in Table 4-1.

Table 4-1: Anticipated Site A and G Levels of Service, 2008

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

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

Safety Considerations Impacts

Alternative Sites A and G

The local area does not currently experience notable safety deficiencies, particularly with respect to pedestrian safety. The data showed that one accident involving non-vehicular (i.e., pedestrian) traffic occurred over the most recent three-year period for which data is available.

The roadway improvements that are planned as part of the Lincoln Memorial Circle project will enhance pedestrian access within the local area. In particular, pedestrian crossing locations with state-of-the-art signals will be included at the modified intersections of Lincoln Memorial Circle at 23rd Street and at Henry Bacon Drive. This should increase opportunities for safe pedestrian linkages between Site A and G and the Vietnam Veterans Memorial and other memorials to the east and south within the National Mall.

No Action Alternative

Under the No Action Alternative, neither of the alternative sites would be developed. As such, there would be no change in the physical or operational characteristics of the local roadway network from the proposed Center. However, it can be stated that the implementation of the roadway improvements that are part of the Lincoln Memorial Circle Project would enhance access, circulation and safety within the local area.

4.3.3 Vehicular Parking Impacts

Alternative Sites A and G

No additional parking facilities would be provided for the Center at either site. Because visitor activity already exists at nearby attractions, the establishment of the Center would not be expected to increase the demand for parking in the area.

No Action Alternative

Under the No Action Alternative, neither of the alternative sites would be approved for the establishment of the Vietnam Veterans Memorial Center. Therefore, no impacts to vehicular parking would result.

4.3.4 Public Transportation Service Impacts

Alternative Site A

Developing proposed Center on Site A would not increase the demand for public transportation services within the local area. The bus drop-off area under construction along the west side of Henry Bacon Drive abuts Site A was planned to enhance visitor access to the area. The bus drop-off will operate during non-peak hours and utilize timed tickets to manage and minimize bus

traffic. In this way, the bus drop-off facility would complement the potential use of Site A and enhance public transportation service in the area.

Alternative Site G

Developing the proposed Center on Site G would not increase the demand for public transportation services within the local area. However, a bus drop-off may be necessary along the west side of 23rd Street to serve Site G. This drop-off would be provided outside of the southbound travelway of 23rd Street and would facilitate access to the site. This proposal was not part of the Lincoln Memorial Circle project and its design and implementation would need to be carefully coordinated between the NPS and DDOT.

No Action Alternative

Under the No Action Alternative, neither of the alternative sites would be developed. As such, there would be no change in the demand for public transportation service. Nevertheless, the bus drop-off being constructed on Henry Bacon Drive would provide access to the area.

4.3.5 Pedestrian Circulation Impacts

Alternative Site A

Development of the Center on Site A would extend the current pedestrian access and circulation patterns associated with the Vietnam Veterans Memorial one block to the west, across Henry Bacon Drive. Surveys of current access patterns indicate that most pedestrians approach the Memorial from the east and south, and the access is associated with major pedestrian thoroughfares within this portion of the National Mall. This pattern is expected to increase with the operation of the NPS concessions kiosk currently under construction on Site A. Since the Center is intended to serve as a place of introduction, orientation and assemblage, it is anticipated that these conditions would result in the grouping of pedestrians between the Center and the Memorial. From this perspective, there is a high potential for guiding pedestrians along the favored route between the Center and the Memorial.

The entrance to the Center on Site A would be located along Henry Bacon Drive. Access into the Center would be provided via appropriately designed ramps, with gradients and other amenities serving all classes of users. The bus drop-off area located on Henry Bacon Drive adjacent to Site A would allow visitors to move directly from the drop-off area into the Center without crossing roadways. Upon exiting the Center, visitors would be required to walk a total of approximately 900 feet and cross a single 45-foot wide roadway to reach the Vietnam Veterans Memorial via a designated pedestrian crossing. This is not substantially different from the situation which exists today. The proposed changes (particularly the signalization) at the Lincoln Memorial Circle intersections would serve to create gaps in the traffic flow along Henry Bacon Drive.

Current data shows that current traffic volumes along Henry Bacon Drive are in the range of 300 - 500 vehicles per hour during typical weekday off-peak periods, and appreciably fewer on

weekends. Visitation to the Vietnam Veterans Memorial and to the proposed Center is expected to be the highest during these off-peak periods and will alter the functional characteristics of Henry Bacon Drive. The substantial pedestrian flows that will occur on Henry Bacon Drive will likely divert vehicular traffic onto 23rd Street and further enhance the pedestrian environment on Henry Bacon Drive.

Mitigation: A signalized pedestrian crosswalk across Henry Bacon Drive at Lincoln Memorial Circle is currently under construction. Appropriate pedestrian signage should be erected to guide pedestrian movement in the area.

Alternative Site G

Development of the Center on Site G would extend the current pedestrian access and circulation patterns associated with the Vietnam Veterans Memorial two blocks to the west, across Henry Bacon Drive and 23rd Street, NW. Surveys of current access patterns indicate that most pedestrians approach the Memorial from the east and south, and the access is associated with major pedestrian thoroughfares within this portion of the Mall. This pattern is expected to increase with the operation of the NPS concessions kiosk currently under construction on Site A. Since the Center is intended to serve as a place of introduction, orientation and assemblage, it is anticipated that the configuration of a kiosk and Center on separate parcels would disrupt the flow of pedestrians between the Center and the Memorial. From this perspective, there is limited potential for guiding pedestrians along the favored route between the Center and the Memorial.

The entrance to the Center on Site G would be located along 23rd Street, NW. Access into the Center would be provided via appropriately designed ramps, with gradients and other amenities serving all classes of users. The plan for Site G may include a bus drop-off located on 23rd Street. This would allow visitors to move directly from the drop-off area into the Center without conflicting with roadway traffic. However, upon exiting the Center, visitors would be required to walk a total of approximately 1,100 feet and cross one 60-foot wide roadway and one 45-foot roadway to reach the Vietnam Veterans Memorial via designated pedestrian crossings. The proposed signalization of both 23rd Street and Henry Bacon Drive at Lincoln Memorial Circle would help create gaps in the traffic flow along 23rd Street and Henry Bacon Drive. However, under Alternative Site G, the additional roadway crossing (and distance) would extend a pedestrian's journey by more than two minutes (assuming a vehicle light cycle of 100 seconds and a pedestrian crossing signal of approximately 32 seconds for the additional crossing at 23rd Street).

Current data shows that existing traffic volumes along 23rd Street are in the range of 700 - 1500 vehicles per hour during typical weekday off-peak periods, and appreciably fewer on weekends. Visitation to the Vietnam Veterans Memorial and to the proposed Center is expected to be the highest during these off-peak periods. Given the functional classification and vehicle volume along 23rd Street, pedestrian circulation under Alternative Site G would be considered inadequate for families with small children, large groups, and mobility-challenged visitors.

Mitigation: Signalized pedestrian crossings across 23rd Street and Henry Bacon Drive at Lincoln Memorial Circle are currently under construction. Appropriate pedestrian signage should be erected to guide pedestrian movement in the area.

4.4 Natural Resource Impacts

4.4.1 Geophysical Resource Impacts

Alternative Site A

Development of Site A for the Center would require slight grade changes to the existing topography of the site to accommodate the construction of an underground facility. The topography would be graded with a gradually sloping mound rising to a maximum height of ten feet above the existing grade. The maximum depth of the Center would reach 30 feet, which would be above the level of bedrock at 35 feet below the existing grade.

Site work would be necessary to regrade and retain soils during the construction phase of the project. Soil disturbance would occur during land clearing, grading, and excavation activities. Site soils would temporarily be disturbed and exposed to wind and stormwater erosion during the clearing of the site, placement of fill, soil grading activities, facility construction and site landscaping. Overall, site preparation and construction activities would have minor impacts on soils due to soil disturbance and compaction.

Construction activities would disturb soils to a maximum depth of approximately 30 feet. It is expected that excavated soil would contain foreign materials including heavy metals, lead, and volatile organic compounds that are not suitable for reuse. Where feasible, excavated soils would be treated and reused on-site. Remaining excavated soils would be transported to an appropriate off-site treatment and disposal facility in compliance with federal and District regulations. Construction activities could contribute to erosion through runoff of soils as they are excavated, filled, and recompressed. A contamination monitoring and mitigation program should be implemented during the soil excavation and transport process.

Mitigation: Appropriate best management practices would be implemented during clearing, grading, excavation, and construction activities to minimize potential erosion and sedimentation. Contaminated soils would be excavated, treated, and disposed of at an appropriate facility.

Alternative Site G

Development of Site G for the Center would require topographical changes to accommodate the construction of an underground facility as well as for flood protection. It is expected that the topography of the site would be altered to conceal the underground structure. The topography would be regraded with a gradually sloping mound rising to a maximum height of ten feet. The maximum depth of the Center would be reach 30 feet, which would be above the level of bedrock at 35 feet below the existing grade. The topography of the site would require alterations in order to conceal the building while keeping it at an elevation that is above the floodplain. Flood protection measures for Site G are planned by the USACOE and include the placement of a three foot tall berm along 23rd Street, on the eastern border of the site.

The Center would be constructed under ground; however, the maximum depth of 30 feet would be above the level of bedrock at 35 feet below the existing grade. A significant amount of site

work would be necessary to regrade and retain soils during the construction phase of the project. Soil disturbance would occur during land clearing, grading, and excavation activities. Site soils would temporarily be disturbed and exposed to wind and stormwater erosion during the clearing of the site, placement of fill, soil grading activities, facility construction and site landscaping. Overall, site preparation and construction activities would have minor impacts on soils due to soil disturbance and compaction.

Construction activities would disturb soils to a maximum depth of approximately 30 feet. It is expected that excavated soil would contain foreign materials including heavy metals, lead, and volatile organic compounds that are not suitable for reuse. Construction activities could contribute to erosion through runoff of soils as they are excavated, filled, and recompressed. Where feasible, excavated soils would be treated and reused on-site. Remaining excavated soils would be transported to an appropriate off-site treatment and disposal facility in compliance with federal and District regulations. A contamination monitoring and mitigation program should be implemented during the soil excavation and transport process.

Mitigation: Appropriate best management practices would be implemented during clearing, grading, excavation, and construction activities to minimize potential erosion and sedimentation. Contaminated soils would be excavated, treated, and disposed of at an appropriate facility.

No Action Alternative

Under the No Action Alternative, the alternative sites would remain in their current state; therefore, impacts to geophysical resources would not occur as a result of the establishment of the Center.

4.4.2 Water Resource Impacts

Alternative Site A

Development of Site A for the Center would not result in impacts to surface water and stormwater, wetlands, or groundwater resources. Establishment of the site would be in compliance with applicable regulations, including Executive Order 11988, Flood Plain Management. The maximum depth of the facility would reach 30 feet below the existing grade; therefore, impacts to groundwater would not result. A Statement of Findings will be included in subsequent environmental documentation related to the project. Such documentation may include a Finding of No Significant Impact for the project.

Floodplains

Site A is not located within the 100-year floodplain; therefore, there would be no impact to the 100-year floodplain. The Center would not be placed in the northernmost portion of the site in order to keep it out of the 500-year floodplain.

Alternative Site G

Development of Site G for the Center would not result in impacts to surface water and stormwater, wetlands, or groundwater resources.

Floodplains

The Center would not be located at the northernmost portion of Site G to avoid the 500-year floodplain. Placement of the Center within the favored central portion of the site would be affected by the USACOE's federally approved plans to modify the site as a flood protection measure for the downtown area of Washington, DC. According to the USACOE's plans for protecting the downtown area of Washington, DC, the entire site would be protected by creating an earthen berm of approximately 900 feet in length and three to four feet in height, consistent with the approved ACOE flood protection project.

No Action Alternative

Under the No Action Alternative, the alternative sites would remain in their current state; subject to current proposals such as that of the USACOE for Site G. Therefore, impacts to water resources from this project would not occur.

4.4.3 Vegetation and Wildlife Habitat Impacts

Alternative Sites A and G

Approval of Site A or G and the subsequent establishment of the Center would require preservation of the existing tree groves. Tree protection zones would be established during construction activities to ensure preservation of existing trees. As stated in the design guidance provided for the Center, the buildable area would be limited by the existing trees and no part of the building footprint would be within the drip line of the trees. Analysis of Site A indicates that a large, central area of the site could accommodate the construction of an underground building and required grading without affecting the existing elm trees on the site. Therefore, the use of Site A for the purpose of the Center would not result in impacts on vegetation. Analysis of Site G indicates that a large area of the site, close to 23rd Street would allow the construction of an underground building and required grading without affecting the existing elm trees on the site.

No Action Alternative

Under the No Action Alternative, the alternative sites would remain in their current state, therefore impacts to vegetation and wildlife habitat would not occur as a result of this project.

4.4.4 Air Quality Impacts

Alternative Sites A and G

As previously discussed in Section 4.3, establishment of the Center at Site A or G would not result in a noticeable increase in traffic. Therefore, project-generated emissions would be below *de minimus* levels and there would be no impacts to air quality as a result of establishing the Center at either Site A or G.

Emissions produced during construction would vary daily depending on the type of activity. Construction emissions can be estimated based on the type of land use, the gross surface area of facilities to be built, and the area to be excavated, using the U.S. Environmental Protection Agency, Compilation of Air Pollution Emission Factors (commonly referred to as AP-42). Construction emission factors are provided for the square feet to be constructed; as well as numerous other minor emission factors used for the commuting of construction crews, equipment, and materials. Since air quality thresholds are based on emission tons per year, only maximum annual construction emissions are needed, even though construction may occur over more than one year.

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

No Action Alternative

Under the No Action Alternative, the alternative sites would remain in their current state; therefore, impacts to air quality would not occur as a result of this project.