



# Smithsonian Institution

October 19, 2011

Marcel Acosta, Executive Director  
National Capital Planning Commission  
401 9<sup>th</sup> Street NW  
North Lobby, Suite 500  
Washington, DC 20004

RE: National Museum of African American History and Culture – Tier II Record of Decision

Dear Mr. Acosta:

Please find attached the Smithsonian's Record of Decision for the Final Environmental Impact Statement for our project, *Smithsonian National Museum of African American History and Culture*. We are submitting this as a part of our request for Preliminary approval of the project at your commission's meeting on November 3, 2011, as well as Final approval for the Site Utilities and the Support of Excavation/Excavation/Dewatering early construction packages.

We have previously forwarded to you the Tier I and Tier II Final Environmental Impact Statements for the project and the Tier I FEIS Smithsonian Record of Decision (ROD). The Section 106 Programmatic Agreement for the project has also been completed, signed by all parties and previously forwarded to you.

We very much appreciate and thank you for your collaboration in the NEPA process which has resulted in a strong design for the project with appropriate mitigations.

If you have any questions concerning the Record of Decision, please call me at 202.633.6555.

Sincerely,

A handwritten signature in black ink, appearing to read "Ann Trowbridge".

Ann Trowbridge, AIA  
Associate Director for Planning

cc: Lonnie Bunch, Director, Smithsonian National Museum of African American History and Culture  
Bruce Kendall, Director, Smithsonian Office of Facilities Engineering and Operations  
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## **Record of Decision**

### **Tier II Final Environmental Impact Statement for the Smithsonian National Museum of African American History and Culture Washington, DC**

#### **1.0 DECISION SUMMARY**

The Tier II Record of Decision (ROD) documents the decision by the Smithsonian Institution and the National Capital Planning Commission (NCPC) to implement the Preferred Alternative as described in the Tier II Final Environmental Impact Statement (FEIS) for the Smithsonian National Museum of African American History and Culture (NMAAHC) for the purposes of constructing and operating the NMAAHC. This decision reflects the architectural designs developed for the museum and incorporates the mitigation measures that were identified during the project review process. This decision results from the careful consideration of both tiers of environmental impact analysis undertaken with NCPC as the Smithsonian's Joint Lead and responsible federal agency, and the National Park Service (NPS) as a cooperating agency, pursuant to the National Environmental Policy Act (NEPA) and NCPC's Environmental and Historic Preservation Policies and Procedures.

Within this decision all practicable means to avoid or minimize environmental harm have been adopted; however, certain impacts are unavoidable. This ROD incorporates more than 50 mitigation measures for identified impacts relating to the full range of man-made and natural resources. The Smithsonian Institution and NCPC will monitor the implementation of these mitigation measures to ensure they are carried out via an annual mitigation progress report that will be prepared and submitted to appropriate parties, including NCPC, NPS, and other agencies.

The findings in the NMAAHC Tier II FEIS and the decisions of this ROD are based in part upon the extensive consultation process conducted under Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470(f)) and an open and collaborative public engagement process. The Smithsonian Institution selected the Preferred Alternative based on its ability to best satisfy the purpose and need of the NMAAHC. As identified in the Tier II FEIS, and described in Section 3 below, the Refined Pavilion 2 Alternative is the Preferred Alternative for the proposed action.

#### **2.0 PURPOSE AND NEED OF THE PROPOSED ACTION**

The purpose of the proposed action is to fulfill the mandate of the National Museum of African American History and Culture Act, P.L. 108-184 (2003) to construct a world class building for a museum "dedicated to the collection, preservation, research, and exhibition of the African American historical and cultural materials reflecting the breadth and depth of the experience of individuals of African descent living in the United States." Although the NMAAHC currently exists in the form of exhibits displayed within other Smithsonian Museums, there is no permanent exhibition facility dedicated to its collection and programs. The NMAAHC is needed because there is no national museum within the Smithsonian Institution that is devoted to African American life, art, history, and culture.

This Proposed Action would establish the museum on a five-acre parcel on the Washington Monument Grounds and the National Mall. The site is located in the northwest quadrant of the District, bounded by Constitution Avenue on the north, Madison Drive on the south, 14<sup>th</sup> Street NW on the east, and 15<sup>th</sup> Street NW on the west.

### **3.0 NEPA REVIEW PROCESS**

After site selection, the Smithsonian Institution and NCPC commenced the NEPA review process. Certain Smithsonian Institution projects in Washington, DC are subject to review by NCPC, the central planning agency for the federal government in the National Capital Region. The Smithsonian Institution is not a federal agency for the purposes of NEPA; NCPC is required to comply with NEPA and has adopted NEPA guidance outlined in Section 4(D) of NCPC's Environmental and Historic Preservation Policies and Procedures. NCPC's guidelines require applicants to prepare the necessary NEPA and Section 106 of the NHPA documents, in conformance with respective CEQ and Advisory Council on Historic Preservation (ACHP) requirements. The Smithsonian Institution and NCPC are acting as joint lead agencies, with NCPC in the role of responsible lead federal agency for NEPA purposes. Because of its role in managing open space and monuments on the National Mall, the National Park Service (NPS) has been a cooperating agency during the entire EIS process and a consulting party in the Section 106 process.

Following consultation with the CEQ, the Smithsonian Institution and NCPC decided to tier the EIS process (40 CFR parts 1502.20 and 1508.28) to address initial programmatic issues and specific design issues, respectively. The Tier I EIS was completed with a Final EIS issued on June 27, 2008, and a Smithsonian Institution ROD issued on August 8, 2008. The identity and description of the action to be addressed in both EIS tiers derive primarily from the language of Public Law 180-184, its legislative history, and the studies by the "National Museum of African American History and Culture Plan for Action Presidential Commission" that led to its enactment, and the Phase II Site Evaluation Study of November 15, 2005.

The Tier I FEIS analyzed a "no build" alternative along with six diagrammatic massing alternatives on the site. These alternatives represented a variety of potential design approaches and were developed prior to the Smithsonian's undertaking of a design competition leading to the selection of a museum architect for the project in April 2009. These conceptual alternatives addressed context, siting and mass, orientation, form, exterior spaces, and profiles. The Tier I FEIS concluded that the Build Alternatives all had comparable effects on the majority of resources analyzed. However, more detailed architectural designs were necessary in order to assess fully the impacts of the NMAAHC on cultural and visual/aesthetic resources as part of the second tier of the NEPA process. Therefore, the Smithsonian Institution chose to express the Tier I Preferred Alternative as a set of physical parameters related to heights, setbacks, and configuration. The physical parameters recommended a Smithsonian Preferred Alternative of about 350,000 to 450,000 gross square feet (GSF) that was bounded between 60 and 105 feet in height, a minimum 50 foot setback from the inside face of the sidewalk of the surrounding streets; and a subsurface volume not lower than 45 feet. The massing parameters ranged from orthogonal and contextual to free-form and non-contextual.

In addition to the physical parameters, the Smithsonian Institution developed a set of design principles to help the design architects minimize adverse effects on historic resources. The principles speak to the

importance of relating to and respecting the character, views, and spatial arrangements of the National Mall; the character, scale, and historic context of the Washington Monument Grounds; and the relationship of the NMAAHC to adjacent architectural and urban contexts. The initial design principles were further refined following the Tier I Final EIS and after an architectural firm was selected with the winning design competition entry.

The Smithsonian Institution and NCPC commenced the Tier II review upon publication of the Notice of Intent for the proposed action in the Federal Register on November 10, 2009. The Notice of Intent described the proposed action and the reasons for preparing a Tier II EIS. In addition, the Notice of Intent identified the Smithsonian Institution and NCPC's continuation of related consultation under Section 106 of the NHPA. The Tier II Final EIS built upon the Tier I Final EIS conclusions as expressed in the ROD and the recommended design principles (as revised). From these findings, several alternatives were developed and subsequently evaluated in the Tier II Final EIS. These alternatives include a "No Action" Alternative and five action alternatives: Alternative 1: Plinth Scheme, Alternative 2: Plaza Scheme, Alternative 3: Pavilion Scheme, Alternative 4: Refined Pavilion Scheme, and the Refined Pavilion 2 Alternative. The action alternatives provide a range of building and landscape configurations, placement within the site, and programmatic amenities.

The design of the NMAAHC has been modified during the ongoing design review process to respond to the concerns of the public agencies and consulting parties and the general public. Specifically, the design modifications reflect input from more than 30 consultation meetings, three public meetings, and continued communication between Smithsonian staff and the museum design team, and staff members of relevant review agencies.

#### **4.0 NHPA REVIEW PROCESS**

The Smithsonian Institution led the Section 106 consultation process under NHPA for the design and construction of NMAAHC. Through this consultation with the District of Columbia State Historic Preservation Officer and other consulting parties the Smithsonian Institution determined that the construction of NMAAHC would have an adverse effect on historic properties. The list of consulting parties consists of the following agencies and organizations: Smithsonian Institution, NCPC, CFA, NPS, General Services Administration, District of Columbia Historic Preservation Officer, Advisory Council on Historic Preservation, National Trust for Historic Preservation, DC Preservation League, National Coalition to Save Our Mall, Committee of 100 on the Federal City, U.S. Capitol Historical Society, Afro American Historical and Genealogical Society, and Association for the Study of African American Life and History.

The Smithsonian Institution, together with signatories, has executed a Programmatic Agreement that identifies steps that will be taken to avoid, minimize, or mitigate adverse impacts on historic resource, including minimization and mitigation commitments. The PA also outlines the process by which consultation will continue as the design is finalized and approved. While the conclusion of the EIS process will coincide with the completion of the schematic design phase of the museum, design review meetings with the consulting parties and review agency staff will continue as designs are finalized in accordance with the Programmatic Agreement.

## **5.0 PROPOSED ACTION AND ALTERNATIVES**

### **5.1 Proposed Action**

Since the publication of the Tier II Draft EIS, design modifications have occurred that demonstrate a continued evolution of the four action alternatives that were analyzed in the Tier II Draft EIS. The design that resulted from that evolution is the Refined Pavilion 2 Alternative. The Refined Pavilion 2 Alternative best meets the purpose and need of the proposed action.

The Smithsonian's selection of the Refined Pavilion 2 as the Preferred Alternative reflects the superiority of this alternative in accommodating the Museum's programmatic requirements and embodying its architectural and symbolic aspirations while also addressing the significant design challenges and opportunities of its location. The Preferred Alternative –Refined Pavilion 2 evolved from the Pavilion and Refined Pavilion alternatives with broad input from within the Smithsonian as well as from the public through the NEPA and Section 106 processes and consultation with commissions and other agencies, including the NCPC, CFA, NPS, DCHPO, DC Office of Planning and DC DOT.

As the preferred alternative, the Refined Pavilion 2 Alternative would be a singular, three-tiered museum building. There are three primary features of the Refined Pavilion 2 Alternative: the Corona, the Corona base, and the south-facing porch. Consistent among all of the build alternatives is a tiered Corona. The Corona would be the defining form of the visible building structure and a primary location for the museum's galleries. The concept of a Corona is derived from the crown or capital in Yoruban art and architecture. The Corona would be clad with a bronze-colored panel system that would be perforated to provide natural light into the museum and gallery spaces and that would not be particularly reflective or dark. The three-layer Corona would be located near the southeastern portion of the project site behind the 445-foot building setback line from the centerline of the Mall, established by the McMillan Commission, and would sit atop a glass base at the ground floor level.

The Refined Pavilion 2 Alternative assumed construction of up to 372,000 gross square feet on the project site; however, ongoing design efforts have slightly increased the building program by approximately 2.25% to 382,000 gross square feet. Since the majority of this increase would be located below grade, the increased building program would have no additional adverse impacts on visual or historic resources. The Refined Pavilion 2 Alternative would feature seven full levels, two of which would be located below grade. The increased amount of below-grade space would extend the depth of the building below the level recommended in the Tier I EIS but would not result in additional adverse impacts because the support of excavation (SOE) system would reach bedrock and avoid geological and groundwater impacts. Maximum building coverage for this alternative would be approximately 59,100 square feet, which would cover approximately 25 percent of the site.

While the evolution of the concept design generally resulted in a smaller building mass, as the concept design has advanced into a more detailed schematic design the maximum size of the Corona has increased to accommodate development of structural and functional systems that respond to wind loads, support the glass curtain wall and skin, drain water, and incorporate access and maintenance between the curtain wall and metal exterior skin. The result was increased footprint dimensions relative to previous designs of up to 5 feet on each side of the building. The resulting dimension of 220 feet x 220 feet was analyzed in the Final EIS as a maximum size that shall not be exceeded. Continuing design efforts are exploring the

building's structural system in an effort to reduce the size of the Corona to no more than 216 feet x 216 feet.

The continued design evolution of the Refined Pavilion 2 Alternative has enhanced the building and the landscape. The Refined Pavilion 2 Alternative incorporates a more refined design of the Corona, including the pattern of the openings in its exterior enclosure to relate to both the internal public spaces, as well as to views of the Washington Monument. These relationships were enhanced through the relocation of the main internal public circulation from the east to the west side of the building. Its interior has been refined to enhance the transparency and openness of the building at all levels to fully take advantage of its unique location and the views this affords to features with special significance to African American history and culture, such as the Lincoln Memorial.

The landscape design of the Refined Pavilion 2 Alternative has similarly evolved from that of the Pavilion and Refined Pavilion alternatives. On the north and west, its rolling topography is more subtle, relating better to that of the Washington Monument Grounds and improving views of the monument for those approaching from the northeast. The water feature on the north has been reduced in size and located to allow continuity of the double row of elms along Constitution Avenue. The configuration and landscaping of the service access ramp along 14th Street have been refined to reduce impacts to traffic along 14th Street and to provide better screening of the ramp opening from pedestrian view. Along the south side, the landscape design has been simplified in keeping with its location within the larger National Mall landscape, with its paths and water feature shaped to relate to the trapezoidal forms of the Washington Monument grounds and the more elegant form of the porch above which incorporates a tapered green roof intended to blend with the landscape of the Mall when seen from higher elevations.

For the NMAAHC, the top of the Corona, which projects outward from the building, is equivalent to a cornice line. In addition, because the habitable 5<sup>th</sup> floor penthouse would be set back from the edge of the building, the Corona would represent the dominant visible portion of the museum from ground-level views on adjacent sidewalks. Thus, the Refined Pavilion 2 Alternative would have an apparent height of approximately 96.5 feet above grade and on-going efforts are being made to further reduce the Corona height to 94'4".

A penthouse level, or fifth floor, is included above the Corona to maintain the program while minimizing the impacts of the building's above-grade mass. A terrace would run the entire length of the penthouse level on the south side of the building. The terrace would support special events and would not be open to the general public. The roof of the building would be treated as a fifth facade and will be designed to be seen from above, with mechanical equipment carefully contained and roof surfaces detailed to be recessive and regular in pattern when viewed from the top of the Washington Monument.

The maximum structure height for the Refined Pavilion 2 Alternative reflects the 6.5 feet of space required for elevator overruns, photovoltaic panels, and skylights; space that was not included in earlier action alternatives. As a result, the top of the Refined Pavilion 2 Alternative, including the penthouse and roof structure, would extend approximately 19 feet above the Corona, to a maximum height of approximately 115.5 feet above grade or approximately 132 feet above sea level. However, the intent of the Smithsonian Institution is to further reduce the height of the building to approximately 109'5" above grade so that the top of the museum roof is 125'10" and no higher than the top of the Herbert C. Hoover Commerce Building (126'3" above sea level).

In addition to the apparent building height discussed above, the design parameters included in the Tier I EIS called for a mean or average building height of 105 feet above grade. Because architectural embellishments can exceed the overall building height, the mean height of the building would be the average of the occupied levels. The mean building height of the Refined Pavilion 2 Alternative would be approximately 107 feet above grade. This minor deviation of 2 feet from the Tier I design parameters was primarily the result of efforts to ensure a more elegant profile for the building by creating a more uniform and symmetrical roof that conceals and avoids the expression of mechanical air intakes, elevator overrides, and similar elements. While the increased building height was studied in the EIS and there were no additional adverse impacts on views as a result of the additional 2 feet, efforts are underway to reduce the mean building height to 105'2".

The Refined Pavilion 2 Alternative would be set back approximately 221 feet from the curb on Constitution Avenue, the setback distance to 14th Street would be approximately 76 feet and the setback to 15th Street would be approximately 127 feet.

The Corona would be approximately 19 feet north of the 445-foot setback line for buildings on the Mall that was established by the McMillan Plan. The attenuated tapered supporting piers of the porch would also be located north of the McMillan setback line. The cantilevered porch overhang on the south side of the Corona would extend approximately 32 feet beyond the setback line. Continuing design efforts are exploring reducing the porch area by 20 percent by narrowing its depth and shortening its length. The porch would then extend across the McMillan line by approximately 24'5" rather than the 32' extension of the Refined Pavilion 2. In addition, design efforts are being made to locate the occupiable area of the Porch entirely behind the McMillan line.

## **5.2 Other Alternatives Considered**

The Smithsonian Institution and NCPC considered a number of alternatives, some of which were dismissed from further study as explained in the Tier II Final EIS. The selected alternative shares elements from each of the action alternatives considered in the Tier II Final EIS. There are also elements common to all of these alternatives.

### **No Action Alternative**

With the No Action Alternative no construction would occur and the project site would continue to be parkland managed and maintained by NPS as part of the Washington Monument Grounds. The area would continue to be designated as a location for public gathering. The existing NPS refreshment pavilion at the southwest corner of the site would be assumed to continue to operate until replaced by new and improved permanent facilities in other locations as provided for in the Mall Plan.

### **Plinth Concept**

Alternative 1, the Plinth Concept evolved from the original competition winning scheme and is consistent with the Contextual Massing Alternative from Tier I. There are five primary features of the Plinth Alternative: a Corona, a Corona base, a north entryway, a ground-floor cafeteria, and a plinth. The Plinth Alternative would locate the Corona in the central portion of the project site. The two-layer Corona would sit atop the plinth that accommodates a large ground floor program and frames the ground floor glass enclosure.

The Plinth Alternative would feature 6 above grade levels and involve construction of approximately 360,000 gross square feet on the project site. Because the average site grade is 13 feet above sea level, the height of the Plinth Alternative would translate to 118 feet above sea level to the top of the Corona and 134 feet 6 inches above sea level to the top of the penthouse (6<sup>th</sup> floor). Approximately 65 percent of the programming would be located above ground with the Plinth Alternative.

The base of the Corona at the ground floor would measure approximately 233 feet by 233 feet. The Corona would nearly align with the southern façade of NMAH, located directly to the east. The cantilevered plinth would extend south towards the National Mall and would extend approximately 6 feet beyond the historic 445-foot McMillan Plan setback.

### **Plaza Concept**

Alternative 2, the Plaza Concept, would divide the exhibit functions and administrative functions of NMAAHC into two distinct buildings on the site: the Corona and the northern building. The primary purpose of this two-part concept is to preserve views of the Washington Monument from the intersection of Constitution Avenue and 14th Street. There are four primary features of the Plaza Alternative: the Corona, the Corona Base, the plaza, and the northern building. The Corona would be located at the southern portion of the site and would sit atop a glass base at the ground floor level. The northern building would be positioned near Constitution Avenue. The Plaza Alternative would involve construction of up to 370,000 gross square feet on the site and, approximately 55 percent of the programming would be above ground.

The Corona building would extend five stories above ground with the penthouse level (5<sup>th</sup> floor) occupying a portion of the roof. Because the average site grade is 13 feet above sea level, the height of the building would extend to 118 feet above sea level to the top of the Corona and 132 feet above sea level to the top of the penthouse. With the Plaza Alternative, the Corona would measure approximately 225 feet by approximately 225 feet.

The northern building would extend three stories above ground level for a total building height of approximately 43 feet above the average site grade. The northern building would cover approximately 29,934 square feet measuring approximately 110 feet by approximately 272 feet.

### **Pavilion Concept**

Alternative 3, the Pavilion Concept, is a simplified design intended to establish the Corona as an object in the landscape. There are two primary features of the Pavilion Alternative: the Corona and the Corona base. The three-layer Corona would be located in the central portion of the project site and would sit atop a glass base at the ground floor level.

The Pavilion Alternative would feature five levels above grade and would involve construction of approximately 330,000 gross square feet on the project site. A penthouse level (5<sup>th</sup> floor) would occupy a portion of the roof. Because the finished site grade would be 15 feet above sea level, the height of the Pavilion Alternative would translate to 118 feet above sea level to the top of the Corona and 132 feet above sea level to the top of the penthouse. Approximately 50 percent of the programming would be located above ground under the Pavilion Alternative. The Corona would measure approximately 237 feet by approximately 237 feet.



In the Pavilion Alternative, the Corona would align with the primary mass of NMAH located directly to the east and would be within the east and west alignments of the Herbert C. Hoover Commerce Building's south-facing portico. Neither the Corona nor the porch of the Pavilion Alternative would cross the McMillan setback line.

**Refined Pavilion Concept**

Alternative 4, the Refined Pavilion Concept, is intended as an object in the landscape; however, the Refined Pavilion Concept would feature a Corona with reduced above-grade dimensions and it would include entries on both the north and south sides of the site. There are three primary features of the Refined Pavilion Alternative: the Corona, the Corona base, and the south-facing porch. The three-layer Corona would be located near the southeastern portion of the project site and would sit atop a glass base at the ground floor level.

The Refined Pavilion Alternative would feature five above ground levels and would involve construction of approximately 308,000 gross square feet on the project site. A penthouse level (5<sup>th</sup> floor) would occupy a portion of the roof. The finished site grade would be 16 feet 6 inches above sea level at this location, the height of the Refined Pavilion Alternative would translate to 112 feet 6 inches above sea level to the top of the Corona and 122 feet 6 inches above sea level to the top of the penthouse. Approximately 43 percent of the programming would be located above ground. The Corona would measure approximately 210 feet in by approximately 210 feet.

With the Refined Pavilion Alternative, the Corona would be within the east and west alignments of the Herbert C. Hoover Commerce Building's south-facing portico and the historic 445-foot setback line from the McMillan Plan; however, the porch on the south side of the Corona would extend approximately 28 feet beyond the 445-foot line.

**Environmentally Preferred Alternative**

The CEQ regulations for implementing NEPA require the Decision Document to specify the alternative or alternatives which were considered to be environmentally preferable (40 CFR 1505.2(b)). The environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment. The environmentally preferred alternative is also the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. In this case, the No Action Alternative is the environmentally preferred alternative, given that there would be no change to existing conditions and it would involve the fewest adverse impacts on environmental and historical resources.

## **6.0 PUBLIC INVOLVEMENT**

The November 10, 2009, Notice of Intent initiated the Tier II public scoping period, a process that allows the public to identify issues or express their concerns about the development of the NMAAHC alternative. The scoping comment period for this project began on November 10, 2009, and concluded on December 24, 2009. Comments were accepted in writing or by email. An evening public scoping meeting was conducted on December 10, 2009 at the Smithsonian Institution Building. Announcements about the scoping meeting were published in seven local newspapers and distributed to more than 2,600 individuals, organizations, and federal and local agencies.

During the scoping process, and prior to conducting the public scoping meeting, the Smithsonian Institution and NCPC initiated coordination and consultation with Federal and local agencies.

On November 12, 2010, the Notice of Availability (NOA) for the Tier II Draft EIS for this proposed action was published in the Federal Register, opening a 60-day public review period, which ended January 11, 2011. Over 90 agencies, organizations and individuals were notified of the availability of the Draft EIS. The Draft EIS was also made available in local libraries, on NCPC's website, and on the project website [www.nmaahceis.com](http://www.nmaahceis.com). Written comments on the Draft EIS were received from public agencies, organizations, and individuals during the review period. Oral comments on the Draft EIS were received during two public meetings held on November 17, 2010, at the National Museum of American History and on January 6, 2011, at NCPC.

All Tier II Draft EIS comments received during the review period were reviewed to identify relevant and substantive comments, including comments that provided different opinions or conclusions than those documented in the Draft EIS. All comments were taken into consideration in preparing the Final EIS.

The NOA for the Tier II Final EIS for this proposed action was published in the Federal Register on August 19, 2011, opening a 30-day public wait period that ended on September 19, 2011. Over 90 agencies, organizations and individuals were notified by mail of the availability of the Final EIS. The Final EIS was also made available in three local libraries, on NCPC's website, and on the project website [www.nmaahceis.com](http://www.nmaahceis.com).

## **7.0 IMPACTS AS A RESULT OF THE PREFERRED ALTERNATIVE**

### **Land Use and Planning Policies**

The Refined Pavilion 2 Alternative, the Preferred Alternative, would create an additional cultural and aesthetic destination on the National Mall, which is inconsistent with NCPC and CFA's Monumental Core Framework Plan and the goal of increasing destinations beyond the Mall. However, due to its proximity, the new museum could contribute to an overall increase in visitation to the Federal Triangle.

The proposed landscaped areas and vegetation features would provide physical open space and visual buffering on the site; however the loss of recreational and demonstration space would be inconsistent with the overall goals of the NPS's National Mall Plan. The Preferred Alternative would involve implementation of pedestrian and visitor improvements consistent with the National Mall Plan such as improved intersection crossings, upgraded walking surfaces, and park furniture. Perimeter security would comply with the Smithsonian Institution's requirements and provide long-term security from vehicular borne threats. The alternative would be consistent with the District's Center City Action Agenda.

### **Visitor Experience**

Providing two entrances would ensure a high level of accessibility to the museum by allowing visitors to enter when traveling from the National Mall or from Constitution Avenue. Transportation resources would remain in their current state and would continue to service the site via Metrobus, DC Circulator and Metrorail.

The sidewalk adjacent to the site along 15<sup>th</sup> Street would match the finish, material and overall character along 15th Street within the Washington Monument Grounds. Other sidewalks around the site's perimeter would remain largely unchanged after construction is complete. On the southern side of the museum, the sidewalk, water element, and plaza would be composed to reinforce pedestrian movement from the Mall to the Washington Monument and accommodate visitors. Walkways at the southeast and southwest corners of the site would improve circulation around the plaza and the water feature. The visitor amenities such as benches, shade, food, and restrooms would be accessible to Mall and Washington Monument visitors as well.

Overall, while the Preferred Alternative would provide visitor amenities such as a new cultural destination, an enhanced pedestrian environment, passive gathering space, vegetative screening, and outdoor program and performance space, there would be a net loss of open space due to the placement of a building on the site.

### **Historic Resources**

A new above-grade structure on the project site would impact multiple historic resources on and within proximity to the Washington Monument Grounds. The height and massing would obstruct or impede key views to and from the Washington Monument. It would also restrict key views of surrounding urban features, such as the Federal Triangle. The Preferred Alternative would bring the existing row of museums on the north side of the Mall closer to the Washington Monument, thereby diminishing the open spaces that emphasize the Monument's visual prominence as a central organizing feature within its setting. It would have a major, significant, adverse effect on views from within the Washington

Monument Grounds; on important non-cardinal views from principal corner street crossings adjacent to historic resources; and on the panoramic view that opens and widens on the approach to the Washington Monument Grounds from the Mall. It would have a moderate, significant, adverse effect on the panoramic view that opens and widens on the approach to the Washington Monument Grounds from the Ellipse and on the important non-cardinal views from historic Mall pathways.

The Preferred Alternative would be a prominent new feature on the landscape and would have a major, significant, adverse effect on distant views of the Washington Monument Grounds from locations such as the top of Washington Monument and the air. The height of the roofline would conceal a greater portion of the shaft of the Washington Monument and would have a moderate, significant, adverse effect on distant views from the Old Post Office Tower. The location within the site and the massing of the Corona would not substantially alter the key vistas looking east to west along the Mall from the center panels. Thus, this alternative would have a minor adverse effect on long and mid-range vistas down the Mall looking west.

Although the exterior night lighting would be designed to complement and not compete with nearby landmarks, the lighting – including exterior lighting of outdoor gathering and circulation spaces, and special features – would illuminate a portion of the Washington Monument Grounds previously unlit at night (except for perimeter street lights). This would alter multiple nighttime views of the Washington Monument Grounds. It would have a major, significant, adverse effect on views of the Washington Monument Grounds at night.

Due to the location, height, and massing of the structure, the Preferred Alternative would have a major, significant, adverse effect on the spatial organization of the Washington Monument Grounds (Reservation No. 2); and a moderate, significant, adverse effect on the larger spatial organization of the Mall (Reservation Nos. 3, 3B, 4, 5, 6, and 6A).

Due to the location, height, and massing of the structure, the Preferred Alternative would have a major, significant, adverse effect on the cross-axial spatial organization of the monumental core, which is marked by the Washington Monument and its Grounds at the crossing; and a moderate, significant, adverse effect on the spatial organization of the Ellipse.

The Preferred Alternative would introduce a new element into the open space of the Washington Monument Grounds (Reservation No. 2). As a result, it would have a minor adverse effect on the spatial organization of features that contribute to the historic significance of the city plan. The footprint would occupy a significant portion of the site, reducing the amount of public gathering and recreational space within the Washington Monument Grounds. As part of the Smithsonian Institution, NPS-permitted activities would not be allowed on the NMAAHC grounds, constituting a change in the historic use of the land as a public forum for speech protected by the First Amendment. This alternative would have a major, significant, adverse effect on the established land uses of the Washington Monument Grounds. The Preferred Alternative would have no effect on the land use of the Mall or the surrounding urban context of the Federal Triangle.

The Preferred Alternative would remove open circulation on a portion of the Washington Monument Grounds and would introduce a new type of circulation feature with the vehicular service entrance. However, the primary circulation routes of the landscape plan would consist of broadly sweeping curvilinear paths that would acknowledge and be compatible with the existing pedestrian paths of the Washington Monument Grounds and the Ellipse. As a result, it would have a minor adverse effect on the distinctive circulation features of the Washington Monument Grounds. It would have no effect on the circulation features of the Mall.

The location of the Preferred Alternative would eliminate a portion of the peripheral flats of the Washington Monument Grounds. However, it would feature a rolling topography, broadly sweeping paths, and informal groupings of trees that would be compatible with the picturesque character of the Washington Monument Grounds. As a result, the Preferred Alternative would have a minor adverse effect on the naturalistic topography of the Washington Monument Grounds and the distinct characteristics of this historic environment, including the "flats" and central mound. It would have no effect on the topography of the Mall or the surrounding urban context.

The footprint would eliminate a large portion of the open lawn that defines the ground plane of the Washington Monument Grounds. The landscape design would feature water elements and hardscape areas that would occupy additional areas of open lawn. The Preferred Alternative would preserve an open rolling landscape on the northern portion of the site and provide a double row of street trees along Constitution Avenue. As a result, this alternative would have a moderate, significant, adverse effect on the significant vegetative features of the Washington Monument Grounds. Because the reduction of open space on the site would result in an incremental increase in the intensity of use on the Mall, particularly during the turf reconstruction project, the Preferred Alternative would have a minor, adverse effect on the grass panels and tree panels of the Mall.

The Preferred Alternative would have the following effects on the buildings and structures within the Washington Monument Grounds: The height, massing, and location of this alternative would diminish the visual impact of the Washington Monument by adding a new element within the Washington Monument Grounds. It would have a major, significant, adverse effect on the Washington Monument. The location of this alternative would alter the setting of the Bulfinch Gatepost located on the southeast corner of 15th Street NW and Constitution Avenue. However, it would provide a substantial setback from the gatepost. As a result, it would have a moderate, significant, adverse effect on the Bulfinch Gateposts. The height and massing of this alternative would diminish the visual impact of the Monument Lodge within the setting of the Washington Monument Grounds. This alternative would have a major, significant, adverse effect on the Monument Lodge.

The Preferred Alternative would have the following effects on the buildings and structures in proximity to the NMAAHC site: The metal skin of the Corona would have an atypical visual character that would contrast with the existing character of the buildings and structures in the vicinity of the NMAAHC site. Because there would be no physical alteration, this alternative would have a minor adverse effect on the buildings and structures within the Washington Monument Grounds, Federal Triangle, and the Mall. This alternative would intrude upon the setting of the Federal Triangle buildings by altering their relationship

with the open space of the Washington Monument Grounds and obstructing clear views of the buildings that comprise the Federal Triangle. Because the visual obstruction would be partial, the alternative would have a minor adverse effect on the Federal Triangle buildings from the Washington Monument Grounds. It would alter the setting of NMAH as the end piece of the row of museums along the Mall and the relationship of NMAH with the open space of the Washington Monument Grounds. Because this alteration would be slight, it would have a minor adverse effect on the buildings along the Mall.

### **Visual Resources**

The Refined Pavilion 2 Alternative would be somewhat consistent with surrounding buildings in its form and alignment. The Corona would rest on a simple base, consistent with its surrounding building context. The color and finish proposed for the exterior skin would make the building stand out from those that immediately surround it. The setback from 14th Street would be 76 feet and the museum would lie within the setback lines established by the Herbert C. Commerce Hoover Building to the north.

The outer edge of the Corona would be located approximately 19 feet north of the 445-foot McMillan setback line. While the structural supports for the porch on the south side of the building would be located north of the McMillan line, the cantilevered overhang of the porch on the south side of the building would extend beyond the McMillan line by approximately 32 feet, and possibly as little as 24'5". The Preferred Alternative would result in minor/not significant effects on the urban context due primarily to the extension of the porch overhang beyond the McMillan setback line for buildings, and the potential contrast in color and appearance of exterior materials of the Corona with surrounding structures.

The Washington Monument is the focal point of the axial view looking west from the lower terrace of the U.S. Capitol Building. The penthouse and skylights would be slightly visible above the treeline. Overall, long-term impacts to the view west from the U.S. Capitol would be minor/not significant. There could also be minor/not significant short-term effects to this view during construction if equipment is visible above the treeline. There would be no long-term effects to the Lincoln Memorial – east/west cross axis viewshed along the National Mall. There is also the potential for minor/not significant short-term effects during construction if equipment is visible above the treeline.

Due to the lack of visibility of the majority of the NMAAHC within the view looking along the Jefferson Memorial – north/south cross axis, long-term effects to this viewshed would be minor/not significant. There is also the potential for minor/not significant short-term effects during construction if equipment is visible above the treeline.

There would be no long-term effect to the Constitution Avenue viewshed during the spring and summer months due to tree cover, and minor/not significant long-term effects during the fall and winter months when the leaves are off the trees. There would also be minor/not significant effects during construction due to the visibility of construction equipment.

The Preferred Alternative would extend the building line one block to the south on the west side of 14th Street, thereby altering the perception of the intersection of the Washington Monument Grounds and the National Mall from points south. Overall, short-term effects to the 14th Street view corridor would be

moderate/significant during construction as a result of the potential visibility of construction equipment, and long-term effects to this viewshed would be major/significant.

While this alternative would not obstruct the direct view looking south on 15th Street, it would substantially alter the perception of the Washington Monument Grounds as viewed from 15th Street. Long-term effects to the 15th Street view corridor would thus be major/significant. There is also the potential for moderate/significant short-term effects as a result of the potential visibility of construction equipment.

The lighting of outdoor gathering and circulation spaces would be shielded to minimize glare; however, the placement of a museum on the parcel would transform a largely dark site (particularly the interior of the site) to one with visible light at night. The extent of this effect will be more precisely clarified in future lighting studies that will depict lighting levels. These lighting studies will be reviewed by CFA and approved by NCPC. The overhang of the porch and southern water feature would project south beyond the historic 445-foot setback line, thereby narrowing night views looking west along the axis of the National Mall and altering the dark setting of the northern side of the Washington Monument. While the intent of the design is to select materials and finishes that minimize night glare and minimize the reflective qualities of the exterior building materials, there would be moderate/significant effects to night lighting.

#### **Geology, Soils, and Groundwater**

In order to bear the loads from the major supporting elements of the building, and so that disturbance of soils on the NMAAHC would not potentially cause settlement of any adjacent structures, all building loads for the Refined Pavilion 2 Alternative would be founded on a combination system consisting of mat and deep foundations that would not cause load changes in the soils founding the Washington Monument or other nearby structures. The use of a rigid Support of Excavation (SOE) system that reaches to bedrock would also help maintain soil stability at adjacent sites. As such, there would be no adverse impact on on-site soil stability or soils adjacent to the Washington Monument during construction. Impacts on geology would be less than significant because no significant geologic features were found on-site.

The use of a rigid SOE system that reaches to bedrock would also help prevent changes to the groundwater (i.e. avoid dewatering). There would be no long-term impact on the museum or adjacent building structures from groundwater. There would also be no significant impact on groundwater or groundwater quality.

#### **Natural Resources**

The Refined Pavilion 2 Alternative would involve construction of a building with approximately 372,000 gross square feet of space on the project site. The building would cover approximately 59,100 square feet (approximately 25 percent) of the five-acre parcel site. The alternative would remove existing trees from the site including 14 mature trees that would constitute a significant impact. Replacement of existing trees (on-site or on adjacent parcels) with one or more trees whose aggregate diameter (dbh) equals the aggregate diameter of the trees to be removed would reduce the long-term adverse effect.

Development of this alternative would reduce the total amount of open space located within the site from approximately 96 percent currently to approximately 75 percent. Although converting the site from landscaped open space to development would result in a significant impact, this alternative would provide substantially more on-site open space than the other museums on the National Mall.

The Preferred Alternative would comply with federal mandates and incorporate a number of sustainable features to minimize the adverse effects on water infiltration from additional impervious surfaces at the project site. It would be constructed to meet LEED Gold certification criteria. Additional sustainable design strategies would be implemented in order to improve the environmental impact of the construction and operation of the facility. At a minimum, compliance with federal mandates and LEED requirements would ensure that this alternative would not increase stormwater runoff from the project site.

The operation of the Preferred Alternative would increase green house gas emissions compared to emissions from the temporary concession trailer that is currently operating on-site. The incremental contribution to climate change during its operation would be reduced to no significant impact through project sustainability strategies.

### **Transportation**

The Refined Pavilion 2 Alternative would have minimal or negligible effects on future roadway and traffic conditions. However, as determined in Section 3.7.4 of the FEIS, background traffic growth is forecast to reduce overall LOS at 3 of the 4 intersections within the study area. Overall, no intersection is forecast to fail, but several approaches would experience lengthy delays. The increase in delay experienced at several approaches is primarily associated with background traffic growth forecasted for the study area and is not caused by trips generated by the Preferred Alternative. As such, no significant impact would occur on vehicular traffic during peak hour periods as a result of the Preferred Alternative. The service access would also have no significant impact on the surrounding transportation system based on the planned service access, circulation and staging provisions.

This alternative would increase the number of tour bus and school bus trips to the project area. However, given that the museum will open after the morning peak hour, and because most buses depart before the evening peak hour, these additional vehicle trips to and from the site would not have significant effect on area traffic volumes. As a result, the Preferred Alternative would not have a significant impact on vehicular traffic during peak hour periods. It would not have a significant impact on external access routes or crossing volumes or patterns at adjacent intersections for pedestrians or bicyclists.

### **Construction Impacts**

While the NMAAHC site would not accommodate public or recreational use during construction, significant impacts to land use and visitor experience are not anticipated during construction due to the abundance of adjacent recreational and concessions space available on the National Mall. In addition, visitorship levels to the National Mall would not be expected to change during the construction period.

Construction activities would adversely affect a visitor's overall experience due to the aesthetic impacts of the construction area and the temporary closing of sidewalks adjacent to the site along 14th and 15th Streets, and north sidewalk only on Madison Drive. The construction activities will adhere to District



(DDOT) traffic and safety regulations. Further coordination will occur to ensure that traffic and pedestrian impacts will be fully addressed, including detailed coordination of Traffic Management Plans with the District Department of Transportation (DDOT) and NPS as part of the permitting process and in ongoing coordination during construction to avoid conflicts with the timing and location of specific construction activities of other projects in the area,

Construction impacts on cultural resources and aesthetic and visual resources would include moderate and major significant, adverse short-term impacts on the NMAAHC site and on the Washington Monument Grounds, including the loss of the existing visual character of the site (turf and existing trees). Additionally, short-term effects to cultural resources and aesthetics and visual resources would result from excavation activities and the stockpiling of construction materials as well as the loss of physical and visual access to the Mall and Washington Monument Grounds through the NMAAHC site.

Construction of the NMAAHC would cause short-term noise impacts due to intermittent noise-producing activities such as trenching, pavement removal and replacement, building foundation preparation (driven and drilled piles), and land excavation. Noise produced during construction would vary daily depending on the type of construction activity. While noise produced by construction activities would occur and would be audible from adjacent properties, it would be temporary and would not exceed applicable noise standards because construction activities will adhere to D.C. noise regulations.

The first package for the start of construction includes the rerouting and installation of new utility lines which may cause minor temporary disruptions to operations. There could also be temporary (but not significant) disruptions to utility services in surrounding buildings during final connection stages which would generally occur at night. Modifications to the utility network would be avoided through best management practices and effective coordination with providers.

Debris generated during construction would increase the amount of solid waste generated and collected at the existing site. However, consistent with LEED construction sustainability requirements, solid waste would be sorted and recycled if practicable. Subsequent solid waste disposal would be done by external contracting agencies at a collective landfill consistent with disposal regulations. Additional loads would not be significant in comparison to the larger disposal operations and the generation of construction debris and disposal would take place over a three-year period.

Hazardous waste generated during construction would be stored, transported, and disposed of consistent with a hazardous waste disposal program conforming to applicable EPA and District regulations and thus there would be no significant construction impacts relative to waste collection and disposal. Overall, the construction of NMAAHC is not expected to generate significant short-term environmental challenges.

Construction at the NMAAHC site would cause short-term impacts to vehicular traffic, pedestrian and bicycle traffic, and transit operations due to additional truck traffic associated with construction, as well as lane and sidewalk closures for the streets adjacent to the site. The proposed closing of most of the length of the north traffic lane of Madison Drive as well as the existing drop off area beginning with the installation of the site fence which will provide protection for the site and create a single primary access point for construction vehicles to enter and exit the site from Madison. Site Utility construction,

including the installation of a new water line in the parking lane of 14<sup>th</sup> Street, would occur at night so that trenches can be covered with steel plates during the day to avoid daytime lane closure on 14<sup>th</sup> Street and at connection points to lines in Constitution and Madison. During the majority of the construction period, pedestrian and bicycle traffic would be routed away from on-site construction hazards. The approximately 150 to 400 (or even 500) daily construction vehicles, depending on the stage of construction and the number of work hours per day, would be comparable to the total additional vehicles of all types that would be added during operation and would not alter the levels of service on adjacent roadways. Thus, there would not be a significant impact on the surrounding transportation network. Construction activities would be conducted in coordination with other agencies, including NPS and DDOT. Construction will also comply with applicable regulations and guidance to avoid safety hazards and minimize conflicts between pedestrian and vehicles, including the provision of temporary sidewalks and trained personnel to guide construction vehicles for access to the site. The greatest disruption during construction would be to visitors travelling east and west between the Washington Monument and the National Museum of American History who would be required to cross three streets rather than two, though without any greater length of travel. This major disruption will be mitigated with signage and barriers that will reduce confusion and discourage walking in the street. In contrast, north-south pedestrians utilizing 14<sup>th</sup> and 15<sup>th</sup> Street sidewalks, who are largely headed to and from destinations that are either on the west side of 15<sup>th</sup> Street or the east side of 14<sup>th</sup> Street, would be rerouted to alternative routes on the other sides of those streets without resulting in an unreasonable inconvenience. As a result, no significant short-term effects to external security, public health, or safety are anticipated due to construction of the NMAAHC. Specific operational issues will be addressed in the Traffic Control Plan as part of the Construction Management Plan for each of the major phases of the project's construction including Site Utilities, Excavation and Building Construction.

### **Environmental Justice**

According to the Tier I analysis and updated Tier II analysis, the construction and the operation of the NMAAHC facility would not significantly impact local economic development, demographics, or housing, would not further burden community services such as schools, fire and rescue services or hospitals and it would not significantly impact environmental justice populations or children.

## **8.0 CUMULATIVE IMPACTS AS A RESULT OF THE PREFERRED ALTERNATIVE**

There are a variety of recent, ongoing, and future projects that could contribute to cumulative impacts for the NMAAHC. These other projects include new attractions and destinations, facility and physical improvement projects, and roadway projects.

Overall, the cumulative impacts of the Refined Pavilion 2 would include:

- land use – cumulative impacts due to the loss of flexible open space;
- visitor use and experience – cumulative impacts for those visitors seeking a contemplative experience or space for First Amendment demonstrations;
- historic resources – cumulative impacts due to changes in historic views and vistas, visual character, spatial organization, and historic land use, circulation patterns, topography and vegetation, and effects on the Plan of the City of Washington;
- visual resources – cumulative impacts due to night lighting;
- conservation of natural resources – cumulative impacts due to permanent loss of open space;
- transportation resources – cumulative impacts due to pedestrian safety; and
- construction – short-term cumulative impacts due to construction activities, noise, and a temporary loss of visual quality.

**9.0 MITIGATION MEASURES**

The Smithsonian Institution will apply the following mitigation measures to avoid, minimize, or address impacts. The measures are organized by resource topic of the impacts to be mitigated. The timeline for implementation includes three general phases: design (which includes preconstruction activities), construction (which is expected to last 3 years), and operation (which occurs after the museum opening).

**Land Use and Planning Policy**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>The Smithsonian Institution shall reduce the facility’s footprint to no more than 216 feet x 216 feet to maintain as much open space on the site as possible, particularly on the western and southern sides of the building.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>The alternative shall continue to respect the urban context and established setbacks of the site by locating the mass of the building (Corona) behind the 445-foot McMillan setback line; studies are underway to refine the Corona and the porch to modestly increase the setback of the building mass from the McMillan line and reduce the extension of the porch across the McMillan line by at least 20 percent (i.e. from 32 feet to no more than 25 feet across the McMillan line).</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>The loss of public space for large-scale gatherings and demonstrations will be offset by providing outdoor space on the NMAAHC site for a range of programmed activities (related to the museum’s mission) that will be open to the public (Tier I).</li> </ul>	SI	NCPC	Operation

**Visitor Experience**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Concealment screens will be implemented around the site during construction to minimize impacts to visitor experience from noise and dust. The screens should convey information relating to the NMAAHC, including its background and mission and elements of African American history and culture (Tier I) [and will be coordinated with DDOT to meet or exceed their standards].</li> </ul>	SI	NCPC	Construct.
<ul style="list-style-type: none"> <li>The loss of public space for large-scale gatherings and demonstrations will be offset by providing outdoor space on the NMAAHC site for a range of programmed activities that will be open to the public (Tier I).</li> </ul>	SI	NCPC	Operation

**Historic Resources <sup>1</sup>**

***Views and Vistas***

<b>Mitigation Measures</b>	<b>Implementing Responsibility</b>	<b>Monitoring Responsibility</b>	<b>Timeline</b>
<ul style="list-style-type: none"> <li>Minimize loss of views across the site by using low reflectivity glass along the perimeter wall of the Corona base to enhance transparency and allow for partial views through the building at the ground level.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Minimize potential adverse effects on distant views of the Washington Monument Grounds, the Mall, and Federal Triangle from locations such as the top of the Washington Monument by avoiding the use of highly reflective materials on the exterior of the Corona and the roof, by minimizing the overall height of the building to no more than 126 feet above sea level, and by refining the sawtooth-shaped roof, comprised of north-facing skylights and south-facing photovoltaic panels, so that the roof is an attractive feature compatible with the adjacent architectural and urban context.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Minimize adverse effects on views of the Washington Monument Grounds, the Mall, and Federal Triangle at night by reducing exterior night lighting levels to that required for pedestrian and visitor safety without competing with the light levels at the Washington Monument and the Capitol Building, based on light level readings from certain vantage points.</li> </ul>	SI	NCPC	Design

***Spatial Organization***

<b>Mitigation Measures</b>	<b>Implementing Responsibility</b>	<b>Monitoring Responsibility</b>	<b>Timeline</b>
<ul style="list-style-type: none"> <li>Minimize adverse effects on the spatial organization of the Washington Monument Grounds by eliminating the west skylight in the proposed landscape design.</li> </ul>	SI	NCPC	Design

***Buildings and Structures***

<b>Mitigation Measures</b>	<b>Implementing Responsibility</b>	<b>Monitoring Responsibility</b>	<b>Timeline</b>
<ul style="list-style-type: none"> <li>Reduce the overall height of the building to a level that does not exceed the 126-foot height above sea level of the Herbert C. Hoover Commerce Building.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Reduce the size of the Corona to no larger than 216 feet x 216 feet.</li> </ul>	SI	NCPC	Design

<sup>1</sup> The Programmatic Agreement (PA) referenced in Section 4.0 specifies certain minimization and mitigation commitments related to historic resources that the Smithsonian Institution will implement. Under the provisions of the PA, Section 106 consultation will be on-going until such time that final plans are completed and approved and all mitigation measures are fulfilled, which may potentially result in further minimization and mitigation measures.

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<ul style="list-style-type: none"> <li>Minimize intrusions of the porch into the 445-foot setback by at least 20 percent (i.e. from 32 feet to no more than 25 feet across the McMillan line).</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Continue to minimize adverse effects on the Washington Monument by relating the west façade to the Washington Monument and providing windows to view the Monument and Grounds.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Minimize adverse effects on the buildings and structures within the Washington Monument Grounds, Federal Triangle, and the Mall by refining the skin treatment of the Corona to ensure it is not highly reflective.</li> </ul>	SI	NCPC	Design

**Programmatic Agreement**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Monitoring of adjacent historic properties.</li> </ul>	SI	NCPC	Design, Construct.
<ul style="list-style-type: none"> <li>Tree planting on the Washington Monument Grounds.</li> </ul>	SI, NPS	NCPC, NPS	Construct.
<ul style="list-style-type: none"> <li>National Register amendment for the Washington Monument Grounds.</li> </ul>	SI	NPS, NCPC, SHPO	Construct.
<ul style="list-style-type: none"> <li>Bulfinch Gate Post protection plan.</li> </ul>	SI	NPS, NCPC, SHPO	Design
<ul style="list-style-type: none"> <li>National Register amendment for the Bulfinch Gate Posts and Gate Houses history.</li> </ul>	SI	NPS, NCPC, SHPO	Construct.
<ul style="list-style-type: none"> <li>Bulfinch Gate Post treatment plan.</li> </ul>	SI	NPS, NCPC, SHPO	Construct.
<ul style="list-style-type: none"> <li>Coordination with the National Mall Plan PA.</li> </ul>	SI	NPS, NCPC, SHPO	Construct.
<ul style="list-style-type: none"> <li>HABS/HALS recordation of the Monument Site.</li> </ul>	SI	NPS, NCPC, SHPO	Design
<ul style="list-style-type: none"> <li>Documentation of water intake tunnel.</li> </ul>	SI	SHPO	Construct.
<ul style="list-style-type: none"> <li>Exhibits regarding the NMAAHC, the Section 106 process and related information.</li> </ul>	SI	SHPO	Design
<ul style="list-style-type: none"> <li>National Register Nomination for the Greenough Statue of George Washington.</li> </ul>	SI	SHPO	Construct.
<ul style="list-style-type: none"> <li>Research regarding Monument Site-related African American history and related topics.</li> </ul>	SI	SHPO	Design

**Visual Resource**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>The exterior building materials shall not be highly reflective to minimize glare.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>The Smithsonian Institution shall complete an illumination study as part of the final design to ensure that lighting levels of the NMAAHC would be</li> </ul>	SI	NCPC	Design

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consistent with the other museums on the north side of the National Mall and deferential to the Washington Monument and Capitol Building.			
<ul style="list-style-type: none"> <li>The Smithsonian Institution shall eliminate the skylight located on the western side of the site along the 15th Street sidewalk.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Concealment screens will be implemented around the site during construction to minimize impacts to visitor experience from noise and dust. The screens should convey information relating to the NMAAHC, including its background and mission, and elements of African American history and culture (Tier I).</li> </ul>	SI	NCPC	Construct.

**Geology, Soils, and Groundwater**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>The potential impacts on geology, soils, and groundwater resources will be minimized to no impact or a less than significant impact with implementation of appropriate Best Management Practices (BMPs) during clearing, excavation, and construction.</li> </ul>	SI	NCPC	Construct.

**Soil Erosion**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Appropriate stormwater management and soil erosion measures shall be implemented in accordance with District of Columbia regulations and applicable federal storm water management guidelines and regulations.</li> </ul>	SI	NCPC	Design, Construct., Operation
<ul style="list-style-type: none"> <li>Positive surface drainage shall be maintained in a manner to prevent the accumulation of water and minimize erosion.</li> </ul>	SI	NCPC	Design, Construct.

**Geology/Soils**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>To maintain soil stability on the project site, either on-site soils or compatible off-site soils shall be used as fill. Fill soils shall have a maximum liquid limit of 45 and plasticity of less than 20. The moisture content of fill soils shall be within two percentage points of the optimum moisture content as determined from the standard Proctor density test, ASTM D 698.</li> </ul>	SI	NCPC	Construct.
<ul style="list-style-type: none"> <li>The Smithsonian Institution is committed to protecting the nearby resources on the National Mall and within the Federal Triangle and will implement a monitoring and contingency plan that will be developed to monitor vibrations, soil stability and</li> </ul>	SI	NCPC	Construct.

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<p>groundwater movement on site and within surrounding areas during construction. The monitoring and contingency plan, once developed, will outline the required monitoring periods for each type of monitoring instrument. Typically, monitoring well and excavation support monitoring instruments (inclinometers, tiltmeters, and survey points) are installed prior to beginning excavation on site. This advance installation provides a preliminary period to develop a preconstruction baseline reading for the instrument showing natural deviations in readings. Once a baseline has been established readings may be taken weekly or daily depending on what is outlined in the plan. These plans would also include a preconstruction survey identifying the current conditions of adjacent structures prior to NMAAHC construction activities, as well as a post-construction survey. The monitoring plan will be coordinated with monitoring well access points already in place at the Washington Monument.</p>			
<ul style="list-style-type: none"> <li>Optical survey points and geotechnical instrumentation will be used during construction, to detect any movement in the area and take immediate corrective action. As specific monitoring plans are developed during the detailed design phase of the project, additional measures may be identified and coordinated with NPS.</li> </ul>	SI	NCPC	Construct.
<ul style="list-style-type: none"> <li>Test piles shall be conducted by the project's construction manager on the site prior to construction to determine the feasibility of utilizing a driven pile foundation system and provide input on the performance of the soils. Prior to any test of pile driving operations, a monitoring program utilizing seismographs and sound level meters to collect noise and vibration readings shall be installed at various radii from the test area and at critical buildings around the NMAAHC site, including the Washington Monument, the National Museum of American History, the Herbert C. Hoover Commerce Building, and the EPA Headquarters and Mellon Auditorium so that any vibrations during the test can be measured. Continuous baseline readings will be established before any pile driving.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Pile installation monitoring shall be coordinated with adjacent property owners and occupants, and should be conducted by utilizing seismographs and a Pile Driving Analyzer (PDA) under the full time supervision of a qualified geologist/geotechnical engineer.</li> </ul>	SI	NCPC	Construct.



**Groundwater**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>To limit the effects of soil stress changes caused by excavation and construction on adjacent structures, the use of a rigid Support of Excavation (SOE) system shall be employed. The SOE system would function two ways: (1) it would allow for excavation and construction of the building by creating a rigid wall between the exterior of the site and the building area allowing for vertical soil excavation without causing soil instability in the surrounding area and (2) it would provide a permanent groundwater cutoff between the building and the surrounding area to maintain current groundwater pressures. The intent of the cutoff wall would be to greatly reduce the amount of groundwater intrusion into the site, allowing for dewatering of the zone within the SOE by utilizing a conventional subdrainage pumping system (Froehling &amp; Robertson, 2010).</li> </ul>	SI	NCPC	Design, Construct.
<ul style="list-style-type: none"> <li>Prior to construction, a licensed structural engineer shall review all SOE design plans and specifications to verify the stability of the system. Prior to construction, a licensed geotechnical engineer shall review all pile design plans and specifications for piles, or caissons, or augured piles, or drilled shafts for conformance to the design intent.</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Periodic groundwater monitoring shall occur before, during, and after dewatering activities to further verify data and establish a trend analysis of the groundwater data. A system of monitoring wells shall be installed and recorded during construction. These wells shall be used to demonstrate that the dewatering activities would be constrained to the site area and would not induce stress changes below adjacent structures. Monitoring is continued until the activity requiring monitoring is completed. For dewatering, water wells would be read until construction dewatering is completed and the permanent dewatering system is in operation. The SOE monitoring would continue until the building has reached ground level and the annular space between the SOE and the building wall has been filled in. With the use of vibration and/or air noise monitors, monitoring may continue past completion of construction. The NMAAHC vibration and groundwater monitoring efforts will be coordinated with the monitoring well access points already in place at the Washington Monument. Additionally, the SOE contractor will be required to install a</li> </ul>	SI	NCPC	Construct, Operation

groundwater reinjection system should groundwater depressions be observed during construction.			
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**Natural Resource**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Continue to consider measures to avoid the loss of trees on the site.</li> </ul>	SI	NCPC	Design, Construct.
<ul style="list-style-type: none"> <li>To minimize adverse effects associated with the loss of trees, the Smithsonian shall try to retain existing site trees to the extent practicable. For those trees that are candidates for being retained in place, the drip lines of these trees shall be fenced by a certified arborist prior to the start of construction.</li> </ul>	SI	NCPC	Design, Construct.
<ul style="list-style-type: none"> <li>To mitigate the loss of trees during construction, new trees that total the aggregate diameter breast height (dbh) of the trees lost (493.5 inches) shall be planted on site (or adjacent parcels).</li> </ul>	SI	NCPC	Design, Construct.

**Transportation**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Work with DDOT to optimize signal timing and coordination at appropriate intersections and install enhanced pavement markings and other roadway changes to accommodate the projected museum vehicular and pedestrian traffic. These improvements have been identified for the Constitution Avenue and 14th Street intersection by DDOT.</li> </ul>	DDOT	SI, NCPC	Construct.
<ul style="list-style-type: none"> <li>Work with DDOT to restrict charter bus drop-off and pick-up activity to appropriate locations and times; and prohibit parking on 14th and 15th Streets along the site boundary.</li> </ul>	DDOT	SI, NCPC	Construct.
<ul style="list-style-type: none"> <li>Work with DDOT to “enhance signalization, signage and pavement marking improvements to address the increased potential amount of pedestrian-vehicular conflicts that would occur (Tier I)” and implement pedestrian mitigation measures at adjacent intersections, including optimized pedestrian count-down signals, 10-foot distance between stop bars and crosswalks to separate motorists from crossing pedestrians, ladder-patterned crosswalks for greater visibility, and new curb ramps facing crosswalks.</li> </ul>	DDOT	SI, NCPC	Construct.
<ul style="list-style-type: none"> <li>Work with WMATA and DDOT to relocate the Metrobus stop and commuter “slug” line to the north or south along 14th Street to minimize conflicts with the eventual location of the 14th Street curb cut for servicing and loading.</li> </ul>	DDOT	SI, NCPC	Construct.
<ul style="list-style-type: none"> <li>Work with DDOT to implement the agreed upon</li> </ul>	SI	DDOT, NCPC	Construct.,

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appropriate time periods for truck access; in particular trucks over 70 feet in length are restricted to the hours between 11:00 pm and 6:30 am. Other trucks will be encouraged to provide delivery service during non-peak hour time periods.			Operation
<ul style="list-style-type: none"> <li>Conduct construction activities and transporting materials during the weekday off-peak periods, and utilize the lower volume streets (15th Street and Madison Drive) whenever possible, in keeping with the District and Federal [NPS] regulations to minimize the effects from construction traffic, lane closures [and sidewalk closures] (Tier I); and continue to study the possibility of providing alternative pedestrian routes and earlier reopening of the sidewalks along 14th and 15th Streets and possibly Madison Drive.</li> </ul>	SI	DDOT, NCPC	Construct.

**Surface Water**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>The Tier I Final EIS (Smithsonian Institution, 2008a) required implementation of mitigation measures to minimize adverse effects on surface water resources. Erosion and sediment control plans will be implemented to minimize erosion of exposed soils, slow the rate at which water leaves the site, and capture eroded soils and concentrated nutrients before they enter the downstream water flow.</li> </ul>	SI	NCPC	Design, Construct.
<ul style="list-style-type: none"> <li>Effluent created by dewatering practices associated with construction will be managed in a way that minimizes the potential impacts to water quality within the Potomac River Watershed and will be in compliance with all local and federal permits.</li> </ul>	SI	NCPC	Construct.

**Air Quality**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Use ultra low sulfur diesel fuel in off-road construction equipment.</li> </ul>	SI	DCRA, NCPC	Construct.
<ul style="list-style-type: none"> <li>Limit unnecessary idling times on diesel powered engines.</li> </ul>	SI	DCRA, NCPC	Construct.
<ul style="list-style-type: none"> <li>Locate diesel powered exhausts away from fresh air intakes.</li> </ul>	SI	DCRA, NCPC	Construct.
<ul style="list-style-type: none"> <li>Utilize water or appropriate liquids for dust control during demolition, land clearing, grading, on materials stockpiled on the ground surfaces, and other activities.</li> </ul>	SI	DCRA, NCPC	Construct.
<ul style="list-style-type: none"> <li>Cover open-body trucks for transporting materials.</li> </ul>	SI	DCRA, NCPC	Construct.
<ul style="list-style-type: none"> <li>Control dust related to the construction site through a</li> </ul>	SI	DCRA, NCPC	Construct.

soil erosion sediment control procedures.			
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**Noise**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Construction activities and equipment will adhere to District of Columbia and EPA requirements and will be confined to normal working hours to the greatest extent possible.</li> </ul>	SI	DCRA, NCPC	Construct.
<ul style="list-style-type: none"> <li>Noise-controlled construction equipment will be utilized to the greatest extent feasible.</li> </ul>	SI	DCRA, NCPC	Construct.

**Utilities and Infrastructure**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Existing utility lines will be shielded from accidental damage or earth shifting and utilities in the construction area will be adequately rerouted. Consultation will occur with utility service providers.</li> </ul>	SI	DCRA, NCPC	Construct.
<ul style="list-style-type: none"> <li>Solid and hazardous wastes will be managed per the appropriate regulations and criteria.</li> </ul>	SI	DCRA, NCPC	Construct.

**Sanitary Sewer <sup>2</sup>**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Use best practices such as low-flow toilets (1.28 gal per flush), ultra low-flow urinals (0.125 gal per flush), low-flow sensor-operated lavatory faucets, and flow-restricting aerators at general use sinks (1.5 gpm flow rate)</li> </ul>	SI	NCPC	Design
<ul style="list-style-type: none"> <li>Direct all mechanical equipment that discharges clean water to the storm system</li> </ul>	SI	NCPC	Design

**Public Health and Safety**

Mitigation Measures	Implementing Responsibility	Monitoring Responsibility	Timeline
<ul style="list-style-type: none"> <li>Appropriate [and visible] signage will be posted near the site to redirect pedestrians and bicyclists away from the [fenced-off and patrolled] construction area during the construction period.</li> </ul>	SI	NCPC	Construct.
<ul style="list-style-type: none"> <li>Construction activities will be conducted in compliance with the applicable regulations and guidance and ensure the safety and health of the</li> </ul>	SI	NCPC	Construct.

<sup>2</sup> While the Tier I EIS addressed utilities and infrastructure, concerns were raised regarding the sufficiency of the analysis related to sanitary sewer service. As a result, to minimize potential impacts to the sanitary sewer system, the following measures shall be implemented to reduce the sanitary sewer load generated by the museum.

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workers during construction.			
<ul style="list-style-type: none"> <li>• Appropriate building security measures will be incorporated into the design.</li> </ul>	SI	NCPC	Construct.
<ul style="list-style-type: none"> <li>• Enhanced signalization, signage, and pavement marking improvements are required to increase pedestrian safety</li> </ul>	SI	NCPC	Construct.

**10.0 DETERMINATIONS AND FINDINGS**

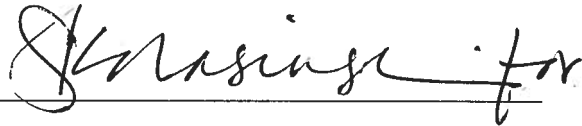
With completion of the Tier II FEIS, it can be determined that the Preferred Alternative will not have a significant effect on land use and planning policies, visitor use and experience, or geology, soils, and groundwater. It was also determined that there would be major/significant adverse effects on historic resources (due to changes to historic views and vistas, historic spatial organization, historic land use, and historic buildings and structures), visual resources (due to changes to key urban viewsheds), natural resources (due to the loss of open space and existing mature trees), and transportation (due to changes in pedestrian circulation). In addition, a number of resource topics were evaluated in the Tier I EIS and subsequently eliminated from further analysis because it was determined that there were no significant impacts. These eliminated resource areas include air quality, archaeological resources, communities and businesses, infrastructure and utilities, noise, public health and security, surface water resources, and threatened and endangered species.

The Preferred Alternative would have long term beneficial impacts by providing a national venue for the collection, study, preservation, and exhibition of artifacts, documents, and programs relating to African American life, art, history, and culture. The national venue will be a meeting place for all people to learn about the history and culture of African Americans and their contributions to and relationship with every aspect of the collective national life of America. In addition, the NMAAHC would provide a forum for collaboration with other museums, historically black colleges and universities, historical societies, educational institutions, and other organizations that promote the study or appreciation of African American issues.

**11.0 FUTURE ACTIONS TO REDUCE POTENTIAL FOR ENVIRONMENTAL IMPACTS**

This ROD completes the environmental review process undertaken pursuant to NEPA and NCPC's Environmental and Historic Preservation Policies and Procedures. As noted above, the conclusion of the NEPA process coincides with the completion of the schematic design phase of the museum. However, design review meetings with the consulting parties and review agency staff will continue as designs are finalized in accordance with the Programmatic Agreement. Submittals will be made to NCPC and CFA for preliminary design review and final NCPC approval of Site Utilities and SOE early construction packages (expected in Fall 2011), final NCPC approval for the early foundation package (expected Winter 2012), and final design review (expected in Summer 2012). As a result, there will be opportunities to address the details of the design through the Section 106 consultation process, and the NCPC and CFA review processes.

An annual mitigation progress report will be prepared and submitted to appropriate parties, including NCPC, NPS, and other agencies. The mitigation progress report will address monitoring and enforcement provisions. The mitigation progress report will be prepared in coordination with the PA annual report, with the first reports due approximately one year after the PA is signed and the ROD is approved by NCPC.



Bruce Kendall  
Director, Office of Facilities Engineering & Operations  
Smithsonian Institution

10.19.11

Date