Site Evaluation Study | Phase II: Analysis and Modeling

EXECUTIVE SUMMARY

November 15, 2005
INTRODUCTION

This report presents the results of an extensive evaluation of the four potential sites for the new National Museum of African American History and Culture (NMAAHC). As listed in the order of the National Museum of African American History and Culture Act, the sites under consideration are:

- The Smithsonian Institution’s Arts and Industries Building;
- The Monument site at 14th Street, N.W. and Constitution Avenue;
- The Liberty Loan Building site on 14th Street near the Jefferson Memorial; and
- The Banneker Overlook site at the south end of L’Enfant Plaza on 10th Street, S.W.

The National Museum of African American History and Culture (NMAAHC) Plan for Action Presidential Commission was established on December 28, 2001 by Public Law 107-106 to create an implementation plan for the NMAAHC. Following the work of the Plan for Action Presidential Commission which investigated eleven potential sites in Washington D.C., these four sites were chosen by Congress for further investigation. After the completion of the Commission’s work, Congress considered legislation to establish the Museum, and on December 16, 2003, President Bush signed the National Museum of African American History and Culture Act (PL 108-184) into law.

The NMAAHC legislation specifically directs the Smithsonian Board of Regents to select one of the four potential sites. The Smithsonian Institution began work on this study upon receipt of Congressional funding in December 2004.

The Smithsonian contracted with Plexus Scientific Corporation (Plexus), a minority-owned business management consulting and engineering firm, to accomplish this site evaluation study for the NMAAHC. Plexus teamed with the architectural/engineering firm, PageSoutherlandPage, to complete this study.

PHASES I AND II STUDY APPROACHES

The site evaluation study for the NMAAHC has been organized into two overlapping phases. Phase I occurred between January 2005 and August 2005 and consisted of two major activities: 1) developing the study methodology and approach, and 2) gathering data on each of the four potential sites. Data gathering was accomplished through site visits, research of past studies and construction documents, website searches, interviews, and meetings.

Phase II began in April 2005 and continued through October 2005. The team analyzed the collected data and the relative importance of the site attributes and characteristics obtained during Phase I. At least two scenarios for each site have been developed, along with a cost analysis for each scenario. The Arts and Industries Building site – which has the only existing building being considered for the museum – has an additional scenario. This Phase II report also includes a matrix of site evaluation criteria, according to which sites have been rated in terms of advantages and disadvantages.

The final Phase II study does not include a recommendation for a preferred site. Rather, it is intended to provide the Smithsonian Institution Board of Regents with a comprehensive, objective source of information on the potential museum sites. The final site selection decision will be made by the Board in January 2006.

SITE EVALUATION CRITERIA

Seven major criteria have been identified as site evaluation subjects:

1) Location: Some stakeholders find great symbolism to being located on the central Mall among the row of other national museums. Others simply desire proximity to other cultural institutions and monuments, especially those related to African American history and culture. Other location criteria included the visitation potential and the views to and from each site.
Aerial View of the Four Potential Sites
2) **Compatibility with Planning Efforts:** Each of the sites has been evaluated as to how it would impact or be affected by these previous plans for Washington, D.C.: L’Enfant Plan (1791); McMillan Plan (1901); The National Park Service National Mall Master Plan (1972); Extending the Legacy: Planning for America’s Capital for the 21st Century (1997); Memorials and Museums Master Plan (2001); and the Federal Elements of the Comprehensive Plan for the National Capital (2004).

3) **Existing Site Conditions:** The site development possibilities and limitations were evaluated, including sufficient acreage for a viable program and building footprint, program events outside the building envelope, security standoff distances, sightlines established by adjacent buildings, opportunities for architectural expression and sustainable design, compatibility with area zoning, existing landscape features and availability of utilities.

4) **Transportation:** Transportation issues were evaluated at each site, including vehicular, pedestrian and bicyclist access to the sites, vehicular traffic volumes on surrounding roadways, and availability of parking and public transit.

5) **Environmental Factors:** Existing environmental factors for each site were identified and evaluated, including subsurface conditions, hazardous materials, landforms (including elevations and flood risk), climate, air quality and odors, and noise levels generated by traffic.

6) **Order of Magnitude of Costs:** Basic budget estimates that include costs for site acquisition (if applicable), demolition (if applicable), construction and site development, equipment, furnishings, design contingency, construction contingency, escalation, design fees, construction management fees, relocation costs (both Smithsonian and non-Smithsonian, if applicable), and start-up and opening costs were developed and evaluated.

7) **Review Agency and Public Support:** The law creating NMAAHC required the Smithsonian to consult with specified individuals during the site selection process. The Secretary of the Smithsonian requested their written comments on the NMAAHC site selection criteria via letters mailed on February 15, 2005. The Smithsonian also voluntarily sought feedback from other groups and received some unsolicited comments.

**COMMON SITE ISSUES**

The four sites are located in downtown Washington, D.C., and all are within less than one mile of each other. The Monument site and A&I Building site are on the Mall, and Liberty Loan and Banneker Overlook are just south of the Mall. Other common site issues include:

**Vicinity and Regional Plans**

Planning for the downtown area has evolved considerably from the original 1791 L’Enfant Plan. Major planning efforts were studied, including and following that initial plan:

- L’Enfant (1791) Plan
- McMillan (1901) Plan
- National Park Service National Mall Master Plan (1972)
- Memorials and Museums Master Plan (2001)
- Anacostia Waterfront Initiative (ongoing)

**History of Study Area**

The report recaps the history of the National Mall area and briefly outlines its growth from its conception in L’Enfant’s plan to its status today as the heart of Washington, D.C.’s cultural, historical and recreational resources.
The historical and cultural connections of African Americans to the study area are also noted, from the slave markets in the Mall area to the African Americans who helped build many of the historic structures on the Mall. Among the other ties to the study area are:

- Benjamin Banneker, an African American for whom one of the potential sites is named, had a prominent role in L’Enfant’s original plan.
- The Overlook and Southwest Waterfront areas are rich with references to African American history.
- The first civil rights rally was held on the Mall on August 6, 1926.
- Marian Anderson gave a recital at the Lincoln Memorial in 1939.
- Dr. Martin Luther King, Jr. gave his famous “I Have a Dream” speech at the Lincoln Memorial on August 28, 1963.

### Points of interest within a one-mile radius of sites

Each of the four final sites is located within one mile of a number of popular tourist attractions, including the U.S. Capitol Building, the White House, major museums and monuments on the National Mall, art galleries and libraries.

### Zoning and Land Use

Each of the potential sites is zoned for government use.

### Flood Zones

Two sites, Liberty Loan and Banneker Overlook, are located adjacent to the 100-year floodplain. A major portion of the Monument site is within the floodplain.

### Public Transportation Systems

Each site has adequate access to public transportation, including Metro bus and rail systems and the Downtown Circulator. The Tourmobile operates on and around the National Mall. Taxi service is also available to and from each site.

### OUTSIDE GROUP POSITIONS

The law creating NMAAHC required the Smithsonian to consult with the following individuals during the site selection process. Brief summaries of the opinions expressed by those who responded are noted below. The report presents a more thorough documentation of the responses.

#### The National Capital Planning Commission

John V. Cogbill, Chair, III, recommended developing a schematic building program. NCPC staff noted the historic connections of African Americans to the Banneker and A&I sites. The NCPC Chair has since stated his support for those two sites following a briefing on the initial findings. NCPC is “committed to ensure that the location and design of the museum are of the highest quality and appropriately celebrate the important contributions of African Americans to our nation’s history.”

#### The Commission of Fine Arts

After an initial briefing the Commission Secretary, Thomas Luebke, speaking for the CFA Chair, noted that the commission found the process and criteria for the site selection sound and stressed the need for a well-defined building program. Following a later briefing, CFA “noted that two of the sites, the Liberty Loan Building and the Banneker Overlook, offer the potential for the museum to be a highly visible gateway element to the city. They also “emphasized that the Arts and Industries Building, adjacent to the Smithsonian Castle and the National Museum of African Art, was clearly an excellent location directly on the National Mall.”

#### The Chair and Vice Chair of the NMAAHC Plan for Action Presidential Commission

Dr. Robert L. Wright, Chairman Emeritus, reiterated the Commission’s recommendation that the museum be on the Mall and expressed his preference for the Monument site.
Claudine Brown, Vice Chairman Emeritus, favored the Monument site because of its visible and accessible location.

The Chair of the Building and Site Subcommittee of the NMAAHC Plan for Action Presidential Commission
Robert Wilkins strongly recommended the Monument site as the best location “to give voice to the African American experience.” He deemed the other sites inappropriate for reasons particular to each site.

The Chair and ranking minority members of the Smithsonian’s authorizing and appropriations committees in the U.S. Congress:

*U.S. Senate Committee on Rules and Administration*
Senator Trent Lott, Chairman, gave his approval for the site selection criteria and the evaluation process.

*U.S. House of Representatives Committee on House Administration*
Representative Juanita Millender-McDonald, Ranking Member, was most concerned with location and access, and felt that the A&I Building and the Monument sites best meet these goals.

*U.S. Senate Committee on Appropriations*
Senator Thad Cochran, Chairman, (also a member of the Smithsonian Board of Regents) approved the site selection criteria and asked to be informed of the plan’s progress.

The Secretary of the Smithsonian also voluntarily requested written comments on the NMAAHC site selection criteria from a variety of interested parties. Brief summaries of the opinions expressed by those who responded are presented below. Again, the report presents a more thorough documentation of the responses.

Senator Sam Brownback, Sponsor of NMAAHC Legislation
Senator Brownback emphasized that the site should be on or adjacent to the National Mall “to showcase the perseverance of African Americans in their struggle for equality.”

District of Columbia Mayor Anthony Williams
Deputy Mayor Stanley Jackson said the District was unable to fully evaluate the sites at that time, but offered input on each of the sites. The District prefers the Banneker site, as it is tied to the effort to redevelop the Southwest Waterfront; it is also the site of the proposed Intermodal Transportation Center and the new National Children’s Museum.

Donald Williams, Regional Administrator, National Capital Region, General Services Administration
The GSA would prefer that the Liberty Loan site not be selected, since the demolition of the building on the site would involve moving 500 Treasury employees to another location.

Judy Scott Feldman, President, National Coalition to Save Our Mall
Ms. Feldman wrote in support of selecting the Banneker Overlook site for NMAAHC; as her organization is opposed to new construction on the Mall.

The following individuals submitted unsolicited written comments to the Smithsonian on the NMAAHC site selection process:

Members of the U.S. Commission on Civil Rights
The U.S. Commission on Civil Rights urged the Smithsonian Institution’s Board of Regents to select a prominent site on the National Mall.

**MUSEUM REQUIREMENTS ASSUMPTIONS**

The Final Site Report prepared by the Plan for Action Presidential Commission included a preliminary “strawman” program of space requirements for the NMAAHC of 350,000 gross square feet (GSF). Assumptions from the earlier study were reviewed and re-evaluated in this study and were considered reasonable. In this study, the museum model has been sized at 350,000 GSF, which is used as the point of departure for scenario development.
Floor to floor height was considered while developing the scenarios for each site, both in the context of surrounding structures and for interior space. A minimum of 15 feet is required for office, administration and exhibition support areas, 30 feet for exhibition, and 45 feet to accommodate a theater.

Fifty-foot setbacks for security were considered for all scenarios except for the A&I Building site, due to the constraints of the site. Instead, consideration was given to hardening the existing structure.

**CLARIFICATION OF SCENARIO OPTIONS AND COST ESTIMATES**

**Minimum build-out:** This scenario is based on the gross square footage of structure that can be comfortably accommodated above and below ground on a particular site. In the case of the A&I Building, the minimum build-out area retained the existing building envelope boundaries, even though they exceeded the security setback requirements.

**Maximum build-out:** This scenario allows the greatest amount of gross square footage of structure that can be accommodated above and below ground on a particular site.

**Floors or levels:** Floors or levels of potential build-outs are equivalent to “office” floors, which are 15 feet floor-to-floor. Integrated within each office floor are spaces which require larger clear spans, such as 30 feet for exhibit spaces and 30 to 45 feet for theater or performance spaces.

**Cost estimates** have been provided for each of the Minimum and Maximum scenarios, as well as for a model 350,000 GSF museum at each site. Please note: for cost estimating purposes, all build-out square footages are rounded off. A chart on page 20 of this summary presents comparative and escalated costs for each of the sites.

**ARTS AND INDUSTRIES BUILDING SITE SCENARIOS**

**Introduction**

The Arts and Industries (A&I) Building was constructed between 1879 and 1881 as the “National Museum” and was the Smithsonian’s first building designed specifically for exhibitions. The Victorian-style building was designated a Historic Landmark in 1971 and is listed on the National Register of Historic Places. Located just east of the Smithsonian Castle Building, it is considered to be a vital component of the National Mall Historic District.

The A&I Building site encompasses approximately 143,000 SF, or 3.25 acres, and is occupied by the 185,000 GSF, two-story structure which has approximately 102,200 NSF on the first floor and 67,800 NSF on the second floor (which was added at a later date).

The large, open building, which had abundant windows and natural light, was designed by the prominent Washington architectural firm, Cluss and Schulze. The past several decades have brought many physical changes to the once open and airy exposition hall, and previous renovations have altered the building to such an extent that it can no longer function as originally intended.

The A&I Building is in need of significant renovations and repairs, and building systems have deteriorated. The original 1881 center roof section has weakened and will need to be replaced. Renovations to the building may not bring the building up to current museum standards. Significant portions of the building rest on “rubble” foundations. Also, certain areas of the building contain hazardous materials which will need to be contained and abated. The building has been closed to the public since 2004, and Smithsonian staff in this building have begun phased relocations.

The A&I Building is in a prime location, directly on the National Mall and surrounded by major museums and national monuments, making it easily accessible to pedestrians who are visiting other attractions along
the Mall. The Smithsonian Castle, National Museum of African Art and the Hirshhorn Museum and Sculpture Garden are on either side, and the Haupt Garden is immediately adjacent to its west entrance.

The A&I Building is in close proximity to several modes of public transportation, including Metrorail, Metrobus, Downtown Circulator, and Tourmobile. It is less than a half-mile from the Smithsonian Metrorail station.

The A&I Building's location places it in an area that is at high risk for a terrorist attack. Security at the A&I Building cannot be improved without impacting the structure. Recommended standoff distances of 50 feet from roads are not attainable, and underground utilities cannot easily be relocated away from the building. Hardening the exterior of the building to meet seismic, wind and anti-terrorism standards will be difficult due to the building’s construction methods and historic landmark status.

Program Scenarios

The Arts and Industries Building is the only existing structure that is being considered for retention and reuse. For comparative purposes, the model program includes a scenario for a cleared A&I site, since clear scenarios are considered for the other three sites.

There are several issues to consider regarding the use of the A&I Building for the new museum, using either the Minimum or the Maximum Scenario:

- Of utmost importance is that the building is a National Historic Landmark and, therefore, it would require considerable effort to make significant changes to the structure to accommodate the museum.
- As a National Historic Landmark, modifications and structural reinforcements required to withstand attacks would be limited or not possible.
- Providing appropriate humidity control within the building will be difficult.
- The existing A&I Building is approximately 185,000 GSF, far less than the model program of 350,000 GSF.
- The existing structural system may limit spaces – such as a theater or auditorium – that require larger clear spans (column free).

Selection Criteria Common to all A&I Scenarios:

Location

- Adjacent to several well-attended attractions, including Smithsonian Castle, Hirshhorn Museum and Sculpture Garden, and National Museum of African Art
- Views clear to the north of Mall and Mall museums
- Views south are largely toward the Department of Energy building
- Central axis of existing building aligns with central axis of Hirshhorn Museum east of site
- Existing building has two main entries which will be maintained: on the Mall side where pedestrian traffic is moderate, and on the west from the Haupt Garden
- An additional secondary entrance could be re-established on the south side of the building, off Independence Avenue
- Service entrance from eastern lot between existing building and Hirshhorn to be maintained

Compatibility with Planning Efforts

- L’Enfant and McMillan plans both showed buildings on this site

Existing Site Conditions

- Existing building is highly visible from Independence Ave
- Existing building currently sits outside of 50-ft security setback from adjacent roadways, posing a possible security threat
- Vehicles exiting the 9th Street tunnel to the south allow a high-
speed approach to the building and pose a risk
- Surrounded on three sides by gardens
- Adjacent to landscaped areas of Haupt Garden, Folger Rose Garden and Hirshhorn Sculpture Garden, which contribute to the overall site environment but limit potential for proposed museum-related outdoor gathering and programming spaces
- Possibility for underground connection to Quadrangle Building and National Museum of African Art
- The cleared site offers more opportunity for both architectural expression and sustainable design than the existing building
- All utilities available

Transportation
- Pedestrian traffic to site flows from adjacent Mall museums as well as to/from public transportation
- One-way vehicular traffic (north of site) on Jefferson Drive moving east
- Moderate vehicular traffic (south of site) on Independence Avenue
- Existing parking lot east of site is tight, limiting loading and receiving potential, but offering more than the five recommended spaces
- Site is in close proximity to Metro bus stops and rail stations and served by Circulator and Tourmobile

Environmental
- Site is essentially flat with existing adjacent landscaped garden areas immediately west, north and east
- Existing building contains hazardous materials which would require special handling

Project Costs
- Underpinning of the exterior structure, restoration of architecturally significant exterior features and reengineering and replacing the roof are included in the cost for the minimum and maximum scenarios

Review Agency and Public Support
- Site is one of two recommended by Rep. Millender-McDonald
- CFA and NCPC support the reuse of the A&I Building
- Reuse of A&I Building is not supported by the Presidential Commission or the D.C. Mayor’s office, and the site is opposed by the National Coalition to Save Our Mall

A&I Existing Building – Minimum Build-out
Total existing acreage: 3.25 acres (143,000 SF)
Two levels above grade
Two basement levels
Total potential build-out: 375,000 GSF

The Minimum Build-out would restore the existing building to its original intention – a large, open building with many windows to allow for natural light throughout. It would maintain the two above-grade levels of the existing A&I Building and require two levels of underpinning. The two basement levels are adjacent to the Quadrangle Building, which sits three levels below grade.

Proposed Build-out
- First level of existing building would hold all major visitor service functions
- Second level would hold limited space for administrative and curatorial office functions
- All built program areas, including expansion, would sit within existing envelope or below grade
- Placing majority of exhibit spaces below-grade would severely limit – or require creative solutions for – providing natural lighting
- Theater and performance spaces would be limited and
placed in one area, as they would require a clear span of approximately 45 feet

- Underpinning below-grade considered for additional useable program area, and to provide spaces with museum-quality temperature and humidity control features, a requirement for maintaining artifacts
- Proposed underpinning would pose several possible risks, including proximity to the water table and adjacent Quadrangle Building, and additional cost
- Significant upgrades to existing mechanical and electrical systems required to provide museum-quality environment

**A&I Existing Building – Maximum Build-out**

Total existing acreage: 3.25 acres (143,000 SF)
Two levels above grade
Two basement levels
Total potential build-out: 509,000 GSF

The Maximum Build-out would restore the existing building to its original intention – a large, open building with many windows to allow for natural light throughout. It would maintain the two above-grade levels of the existing A&I Building, requiring two levels of underpinning, in addition to a north-west expansion. The two basement levels are adjacent to the Quadrangle Building, which sits three levels below grade.

**Proposed Build-out**

- Maximizing the use of this site will require substantial below-grade expansion
- First level would hold all major visitor service functions
- Second level would have limited space for administrative and curatorial offices
- Majority of exhibit spaces will be housed below grade due to limitations in air quality control and available space
- Additional area for public programming and office functions held below-grade
- Underpinning below grade considered for additional program area and to provide spaces with museum-quality temperature and humidity control
- Proposed underpinning would pose several possible risks, including proximity to the water table and adjacent Quadrangle Building, and additional cost

**A&I Cleared Site – Maximum/Minimum Build-out**

Total existing acreage: 3.25 acres (143,000 SF)
Seven levels above grade
Two basement levels
Total potential build-out: 736,000 GSF

A new building on this site would occupy less above-ground area in order to comply with security set-back requirements. Below-grade expansion to the north and west allow for large, basement-level footprints. The building would be aligned with the Hirshhorn Museum and Sculpture Garden and the National Air and Space Museum, and would be approximately the same height (75 feet) as the Hirshhorn.

Should the decision be made to clear the A&I site and construct a new building for the museum, the following should be considered:

- Existing structure would require historic evaluation and documentation in accordance with the National Historic Preservation Act.
- Existing building contains extensive hazardous materials which would require special handling and disposal during demolition.
- Additional outdoor gathering and program space available north and south of site, if present-day site lines and setbacks of adjacent buildings are considered.
Proposed Build-out

- Proposed above-grade footprint at Level One leaves approximately 66,800 GSF for outdoor programming
- First level would hold all major visitor service functions and access to theater and performance spaces
- Upper levels would hold administrative and curatorial office functions as well as public program and exhibit spaces, allowing natural light in the spaces
- Additional performance space and exhibit support functions held below grade
- Major axis of existing building maintained for new scenario
- Additional performance space and exhibit support functions held below grade
- Ample space for theater and performance spaces

MONUMENT SITE SCENARIOS

Introduction

The Monument site, which is on the National Mall, is part of the original public reservation that came under the control of the United States in 1791. The site has not been used for a permanent structure since its acquisition by the United States. Although never built on, this site near the Washington Monument was identified on both the L’Enfant and the McMillan plans as a potential building site.

The Monument site has a relatively generous area in which to place a building, and it provides excellent vistas of the Washington Monument. This site also provides an opportunity for an underground connection between the NMAAHC and the National Museum of American History. Some utilities would need to be rerouted, but this should not be a major issue.

The Monument site is highly visible and accessible from the Mall and several major streets. Pedestrians visiting the Washington Monument, the Holocaust Museum, the American History Museum and the National Museum of Natural History, among other attractions, would find it convenient to also visit the NMAAHC.

Approximately two blocks each from the site are Metrorail’s Smithsonian and Federal Triangle Stations. Tourmobile stops are located on the south end of the site, along with bus pull-over areas. Public parking around the Monument site is minimal.

The Monument site slopes upward from two meters (6.6 feet) above sea level on the north end to six meters (19.7 feet) above sea level on the south edge. The site is within the 100-year floodplain.

The entire site is an open public space. It is often used as a staging area for marches, rallies and other large gatherings, and the site is a favorite location for recreation activities.

The Monument site is at high risk for an attack due the surrounding federal facilities and highly visible memorials. A 50-foot setback on all sides of a new facility from the adjacent streets is achievable.

Program Scenarios

In an urban planning and architectural sense, a museum at this site would help complete both the L’Enfant and McMillan plans. It would, however, conflict with recent plans by federal planning groups, who envision the site as open.

Selection Criteria Common to all Monument Scenarios:

Location

- Adjacent to Washington Monument and National Museum of American History (NMAH), two recognizable landmarks
- Most notable views to/from site are Washington Monument and the White House
• Other views (to south and east of site) toward adjacent Mall museums
• Potential build-out could obstruct views along Constitution Avenue looking toward the Washington Monument
• Site begins row of museums on the west end of the mall
• Major façade would face south, attracting pedestrian traffic from adjacent National Mall museums to the east and southeast of site, as well as traffic from existing bus lay-by on Jefferson Drive
• Primary entry proposed from south near Washington Monument
• Secondary entrance proposed from north of site along Constitution Avenue to pick up pedestrian traffic from NMAH and NMNH
• Similar service entry as exists for NMAH along 14th Street
• Possibility for underground connection to NMAH
• Building on this site would displace group assembly area and emergency functions

Compatibility with Planning Efforts
• The L’Enfant and the McMillan plans show this to be a potential building site
• The site is within “The Reserve” area in the 2001 Memorials and Museums Plan

Existing Site Conditions
• Site is in an area of high risk for attack
• 50-feet security setback does not preclude significant, useable building acreage for a museum
• Site could easily accommodate model 350,000 GSF
• Adjacent buildings of various architecture styles and periods allow opportunities for architectural expression that would be specific to the proposed museum’s function
• Sustainable design concepts would be easily incorporated into the design of the museum
• Open site provides opportunity for additional landscape features
• All utilities available; GSA water and gas lines may need to be relocated
• Stormwater drainage will need to be increased to minimize local flooding
• With either build-out scenario, high water tables in this area and the nearby Washington Monument will require special construction techniques

Transportation
• Pedestrian traffic flows to site en route to memorials and museums on the greater National Mall
• Site provides good access to/from public transportation at the Smithsonian and Federal Triangle Metrorail stations, two blocks away
• Heavy vehicular traffic northeast of site on 14th Street and Constitution Ave.
• Heavy tour bus traffic south of the site, loading and unloading Washington Monument visitors, from an existing bus lay-by on Jefferson Drive

Environmental
• A major portion of the site is within the 100-year floodplain
• Site slopes up about six and one-half feet from north to south

Project Costs
• Higher water table may require special construction, which may affect overall costs.
Review Agency and Public Support
- Site has been recommended by the Presidential Commission and is one of two recommended by Rep. Millender-McDonald
- Site is supported by the DC Mayor’s office, with reservations
- Any site on or near the Mall is supported by Sen. Brownback and the U.S. Commission on Civil Rights
- Site opposed by National Coalition to Save Our Mall

Monument – Minimum Build-out

Total existing acreage: 5 acres (217,800 SF)
Five levels above grade
One basement level
Total potential build-out: 415,000 GSF

The approximate height of the building – 75 feet – would not exceed the height of the National Museum of American History building. The building’s north-south axis would align with the NMAH, and its east-west axis with the Department of Commerce.

Proposed Build-out
- Proposed above-grade footprint at Level One leaves approximately 148,700 GSF for outdoor programming
- Proposed above-grade footprint preserves the majority of existing trees and provides some area for surface parking for buses, VIPs, etc.
- First level would hold all major visitor service functions and access to some performance space
- Upper levels would hold administrative and curatorial office functions, as well as public program and exhibit spaces, allowing for more natural lighting
- Additional theater, performance space and exhibit support functions held below-grade

Monument – Maximum Build-out

Total existing acreage: 5 acres (217,800 SF)
Seven levels above grade
One basement level
Total potential build-out: 804,000 GSF

The height of the building, at approximately 105 feet, would not exceed the height of the Department of Commerce building. The building’s north-south axis would align with the NMAH, and its east-west axis with the Department of Commerce.

Proposed Build-out
- Proposed above-grade footprint at Level One leaves approximately 113,300 GSF for outdoor programming
- First level would hold all major visitor service functions
- Upper levels would hold administrative and curatorial office functions, as well as public program and exhibit spaces, allowing for natural lighting
- Theater, performance space and exhibit support functions held below-grade

LIBERTY LOAN SITE SCENARIOS

Introduction

The Liberty Loan site is located on 2.5 acres at the north terminus of the 14th Street Bridge, just south of the U.S. Bureau of Engraving and Printing Building. The southern end of this site was originally part of the Potomac River tidal flats and marshland that were filled in to expand the National Mall near the end of the 19th century.

The site is occupied by the Liberty Loan Building, which has been in continuous use by the U.S. Department of the Treasury since it was built in the early 1920s. The L-shaped, 155,000 SF structure is one of the few surviving examples of what were known as “World War I temporary
buildings.” The building is used by the Treasury Department’s Financial Management Services as office space for approximately 500 workers. These workers would be relocated to another location if the site is selected for the NMAAHC museum.

The District of Columbia’s Department of Transportation owns and maintains the paved access ramp from Maine Avenue to 14th Street that cuts through the property and the building. This ramp will need to be either removed or re-routed to make the best use of this proposed site.

The site is heavily congested with on-site parking, security barriers, constantly moving traffic beneath the building and heavy traffic along the southern and eastern borders. The site provides limited opportunities for an entry plaza or landscaping, and outdoor spaces would be possible only via terrace or roof garden.

Public transportation is available via the closest Metro bus stop one block north on 14th Street, N.W., and the Smithsonian Metrorail station on Independence Avenue, which is three blocks northeast of the site. The Tourmobile route passes the site along the eastern side and stops in front of the Bureau of Engraving and Printing Building. Public parking around the Liberty Loan Building is minimal.

The Liberty Loan site is four blocks south of the historic Mall in the central portion of the National Mall and is not in close proximity to other Smithsonian museums. It is, however, within walking distance of the Washington Monument and the Tidal Basin and is also on the same block as the Holocaust Museum, which averages 1.8 million visitors per year. The Bureau of Engraving and Printing, just north of the Liberty Loan Building, draws approximately 250,000 visitors annually.

Given the requirements for a 50-foot setback and the existing road configuration, designers would have a difficult time fitting a museum building for the projected program size on this site. The site is in a location with multiple avenues of approach. The access ramp forms a passage through the first level of the building to connect with 14th Street. If this ramp remains, then extra protective measures will be required to further harden a new facility. A railroad line that annually carries six million tons of hazardous chemicals, including chlorine, ammonia, and hydrochloric and sulfuric acid, is within 300 feet of the site. The Tidal Basin and Washington Channel are within 500 feet.

Program Scenarios

Selection Criteria Common to all Liberty Loan Scenarios:

Location
- Site is located at termination of 14th Street (before bridge), on the block with Holocaust Museum, four blocks south of the center of the Mall and just south of the U.S. Bureau of Engraving and Printing
- Site has clear views of Jefferson Memorial and Tidal Basin (southwest of site), and the Washington Monument (northwest of site)
- Site will be in clear view of future Martin Luther King, Jr. Memorial (to west of site)
- Primary entry proposed from west of site, picking up pedestrian traffic from Washington Monument with major façade and views toward Tidal Basin and Jefferson Memorial
- Secondary entry proposed from east, to link with main entry of Holocaust Museum on 14th Street and pull pedestrian traffic from National Mall and Smithsonian Castle
- Service entry proposed for existing alley north of site

Compatibility with Planning Efforts
- The site has been ranked 12th among the top 20 potential sites in the Memorials and Museums Master Plan.
- The site is shown as a building site on the L’Enfant Plan
- The site fits with the Legacy’s Plan to disperse museums throughout the city
Existing Site Conditions

- 155,000 SF building located on site
- 50-ft security setback limits useable acreage for building footprint
- I-395 access ramp runs through existing building, providing easy access for vehicles carrying explosives to areas directly under a new facility
- Maintaining I-395 ramp limits useable acreage
- All utilities are provided; major underground utilities near Maine Avenue will need to be addressed in order to use the full site
- The site does not allow for any exterior activity spaces, including an optional outdoor theater
- Although the organizational diagram fits on the site, the majority of the open areas are sacrificed
- Views of Tidal Basin, southwest of site, offer distinctive opportunities for architectural expression
- Site offers opportunity for incorporating sustainable design concepts
- Existing building contains hazardous materials which would require special handling

Project Costs

- The cost of demolition of existing building is included

Review Agency and Public Support

- The Presidential Commission and D.C. Mayor’s office feel the site is inappropriate
- The GSA would prefer not moving its 500 employees from the building

Liberty Loan – Minimum Build-out

Total existing acreage: 2.5 acres (110, 000 SF)
Six levels above grade
One basement level
Total potential build-out: 475,000 GSF

As this scenario keeps the 14th Street access ramp which passes through the Liberty Loan Building, the first floor would have less square footage. The building would align with the U.S. Bureau of Engraving and Printing with an additional standoff area to the north between the two buildings. The height of the potential build-out is approximately 75 feet.

Proposed Build-out

- Proposed above-grade footprint at Level 1: 53,840 GSF
  leaves minimal space for outdoor programming
- Building footprint offset 10 ft (rather than 50 ft) from ramp, allowing for ample turning radius for merging traffic, as well as room for sidewalks

Transportation

- Heavy vehicular traffic and associated noise from traffic on 14th Street and Maine Avenue moving through site, toward I-395 and downtown
- Existing bus lay-by sits northwest of site across from Bureau of Engraving and Printing and Holocaust Museum on 15th Street
- Pedestrian traffic from north (Washington Monument and Holocaust Museum)
- Three Metrobus stops and a Metrorail station are within one-half mile of site

Environmental

- The site slopes about 13 feet downward from the north end to the south edge
• First level bisected by the I-395 ramp
• Northern portion of first level would hold some visitor service functions and receiving with access off the service alley to the north
• Access to theater and performance spaces in the southern portion would be from the upper levels
• Upper levels would hold additional visitor services, administrative and curatorial office functions, as well as public program and exhibit spaces
• Exhibit and public program spaces placed on upper levels to allow natural lighting
• Limited space for theater and performance
• Preservation of I-395 ramp limits possibilities for outside gathering spaces or entry plaza
• I-395 ramp also compromises vertical security, therefore making 50-ft setback largely negligible
• Mechanical spaces distributed to every floor, with major mechanical space and exhibit support functions held below-grade

**Proposed Build-out**

• Proposed above-grade footprint at Level 1: 60,000 GSF leaves minimal space for outdoor programming
• I-395 ramp to be removed, allowing for 50-ft setback to be maintained to some degree along 14th Street and Maine Avenue
• First and second levels set back to allow for bus lay-by and/or entry plaza
• First level holds major visitor service functions, as well as access to theater and performance spaces
• Receiving with access off the service alley to the north
• Upper levels hold administrative and curatorial office functions, as well as public program and exhibit spaces
• Exhibit and public program spaces placed on upper levels, allowing for natural lighting
• Small site limits possibilities for outside gathering spaces or an entry plaza
• Mechanical spaces distributed to every floor, with major mechanical space and exhibit support functions held below-grade

**Liberty Loan – Maximum Build-out**

Total existing acreage: 2.5 acres (110,000 SF)
Eight levels above grade
One basement level
Total potential build-out: 560,000 GSF

This scenario removes the 14th Street access ramp which passes through the Liberty Loan Building, allowing more square footage for the first floor. The building would align with the U.S. Bureau of Engraving and Printing with an additional standoff area to the north between the two buildings. The height of the potential build-out will be approximately 120 feet.

**BANNEKER OVERLOOK SITE SCENARISOS**

**Introduction**

The eight-acre Banneker Overlook site is located at the southern terminus of L’Enfant Promenade at the south end of 10th Street. It is about four blocks from the Mall, and on axis with the Smithsonian Castle. The site overlooks the Southwest Waterfront.

The Banneker Overlook and the southwest areas of the District of Columbia were integral parts of the original L’Enfant Plan for the capital. During the early years of Washington, D.C., the Southwest Waterfront neighborhood was an active port area. During the late
nineteenth century, the U.S. Army Corps of Engineers reclaimed the land in this area by dredging what is now the Washington Channel and using the dredged spoils to fill and create new land, including creation of the mound that is now referred to as the “Banneker Overlook.”

In June 1970, the District of Columbia’s Redevelopment Land Agency transferred 4.68 acres of the Banneker Overlook site to the United States Government (for use by and control of the National Park Service). On November 19, 1971, a park was created on the site and designated as the Benjamin Banneker Overlook Park.

The Banneker Overlook site resides in an area that has figured prominently in the history of African Americans:
- During the late 1770s, the Overlook was originally part of the plantation belonging to Notely Young, whose house was on the site and who reportedly owned 265 slaves.
- The southern waterfront of the capital was the site of the near escape in 1848 of 77 slaves aboard the coastal schooner, Pearl.
- Anthony Bowen, an educator and former slave, made his waterfront area home a stop on the Underground Railroad.

The Banneker Overlook site is bisected by two access streets that connect 10th Street to 9th Street and I-395. Removal of these access streets is preferable if a museum is constructed on the site. Interstate 395, a major artery in the city, is located below and east and west of the site. Maine Avenue along the south side of the site is a six-lane, divided minor arterial. Current traffic patterns limit the site and pose some potential problems. L’Enfant Promenade would no longer be accessed by the I-395 off-ramp, and traffic would need to be re-routed in at least three ramp locations.

The District of Columbia Department of Transportation (DDOT) has expressed an interest in constructing an Intermodal Transportation Center (ITC) on the site which they envision sharing with a new building. A capacity of approximately 1,200 cars and buses has been projected for the ITC.

Overlook site elevations range from 15 meters (49.2 feet) above sea level at the Overlook structure to three meters (9.8 feet). This 40-foot elevation change forms a very steep grade just south of the Overlook structure continuing down to Maine Avenue. The east side of the site transitions more gradually from the Overlook and ends at an elevation of seven meters (23 feet)

The entire site is an open public space which is mostly covered in grass and various hard surfaces. There is no building on this site. A non-functioning reflecting pool/fountain sits on the highest elevation of the site in Banneker Park.

A new Children’s Museum is proposed to be constructed along L’Enfant Promenade in 2008, and that facility is expected to draw more than half a million annual visitors. The Anacostia Waterfront Initiative, a partnership between the District of Columbia, the federal government and the local community to revitalize the waterfront and Overlook and to provide a destination for tourists, is currently underway.

The Overlook site provides enough room to implement 50-foot standoff zones and hardening procedures for a new facility. The site could be vulnerable to attack from high-speed vehicles traveling from the north along the Promenade on 10th Street and from I-395. The Washington Channel, approximately 300 feet to the southwest, offers another avenue of approach. The sloping site allows for some protection from the south and east, but the lower areas are susceptible to chemical and biological attacks.

Program Scenarios

The Banneker Overlook could easily accommodate a significant museum program and provide generous outdoor spaces. A museum on this site would fit with the Anacostia Waterfront Initiative to redevelop the Southwest Waterfront, and it could become an anchor to the waterfront development.
Selection Criteria Common to all Banneker Overlook Scenarios:

Location

- Site is current location of Banneker Overlook Park and is located approximately one-half mile from Smithsonian Castle and National Mall along Southwest Waterfront.
- Site is historically rich with references to African-American History and Culture.
- Because of its size and proximity to L’Enfant Promenade and I-395, as well as the Southwest Waterfront, the site provides room for future expansion and could attract visitors via several traffic routes.
- Site offers great latitude in terms of architectural and landscape expression, of all the sites under consideration, given no specific architectural context in the area.
- At its highest point, the site provides views toward the Southwest Waterfront and the Potomac River and would place the museum in a visible location.
- Site holds clear views to the south of the Washington Channel and to the west of Jefferson Memorial.
- Prominent views of site from vehicles on I-395.
- The Forrestal Building along the L’Enfant Promenade prevents a direct visual connection to the Mall.
- Primary entry proposed from north of site at L’Enfant Promenade, maintaining major axis and picking up pedestrian traffic from National Mall.
- Secondary entry proposed from south which holds views toward Washington Channel along Maine Avenue, and would also maintain major axis.
- Service entry proposed on east side of site off 9th Street.
- Visitation to the site is low, but could increase with the new Children’s Museum, the proposed ITC and the Anacostia Waterfront Initiative.

- A significant grade change and views of Washington Channel, south of site, offer unique opportunities for architectural expression and outdoor programming.

Compatibility with Planning Efforts

- Site ties in directly with Anacostia Initiative and Third Century Mall plans to extend the Mall toward the Southwest Waterfront and to expand development along L’Enfant Promenade/Plaza.
- The site has been ranked ninth among the top 20 potential sites in the Memorials and Museums Master Plan.
- The site would fit with the Legacy Plan’s recommendation to disperse new museums to other parts of the city.

Existing Site Conditions

- Entire site is an open space, covered with grass and hard surfaces, with a non-functioning fountain at the top.
- Major axis runs across site from National Museum of Natural History to Smithsonian Castle, through L’Enfant Promenade.
- The site is vulnerable to attack from multiple points.
- Fifty-foot security setback easily achieves useable building acreage for a museum.
- Large, open site offers ample opportunities for both architectural expression and sustainable design.
- There are no GSA utilities (steam or chilled water) available at this site, so those utilities will need to be provided to the site.
- A very small section of the site is within the floodplain.

Transportation

- Heavy vehicular traffic runs on I-395 to north of site.
- I-395 ramp will remain.
- Additional vehicular traffic runs south of site along Maine Avenue.
- Pedestrian traffic from north along L’Enfant Promenade from...
National Mall and (south of site) along Waterfront
- Metrobus is adjacent to the site, and there is a Metrorail station at L’Enfant Plaza

Environmental
- The site slopes from approximately 49 feet to 10 and 23 feet at different ends of the site; the varied, sloping topography would support a variety of landscaping opportunities
- The topography of the site would allow part of the building to be exposed on one side, enabling natural light to reach below-grade levels
- The nearby fish market southwest of the site can have a negative impact on the air quality of the site, depending on wind direction and air temperature
- Heavy traffic carries noise and potential for air quality issues

Review Agency and Public Support
- The site is one of two recommended by the NCPC, and the site is also recommended by the D.C. Mayor’s office and the National Coalition to Save Our Mall
- The Presidential Commission believes that the site is inappropriate for a number of reasons as stated in its report

Banneker Overlook – Minimum Build-out
Total existing acreage: 7.8 acres (343,000 SF)
Three levels above grade (grade refers to Promenade level)
Total potential MUSEUM build-out: 490,000 GSF

This scenario accommodates the proposed District of Columbia four-level, Intermodal Transportation Center (ITC), which is planned to provide bus parking and parking for 1,138 cars. The museum building will sit approximately 45 feet high, atop the ITC structure. The ITC’s floor to floor heights range from 10 feet to 20 feet clear span, for bus parking.

Four levels Intermodal Transportation Center:
Four basement/parking levels
Total potential PARKING build-out: 540,850 GSF

Proposed Build-out
- Proposed above grade footprint at Level 1 leaves approximately 180,000 GSF for outdoor programming
- First level holds major visitor service functions and public programs, in addition to access to theater and performance spaces and potential outdoor landscaping on upper level of parking garage
- Upper levels hold administrative and curatorial office functions, additional public program and all exhibit spaces, allowing for natural lighting and potential views toward Washington and Washington Marina
- Visitor services, including dining area, located southeast to allow for potential views toward Washington Channel and Washington Marina
- Upper parking levels could serve as green roofs, providing landscaping and additional outdoor programming space
- Several office functions are integrated in the upper parking level
- Buses and vehicular traffic entering parking garage from entry east of the site
- Receiving from basement level off potential service road to be located east of site
- Mechanical spaces distributed on every floor
- Creative solutions for integrating parking structure with proposed museum above should be considered


Banneker Overlook – Maximum Build-out

Total existing acreage: 7.8 acres (343,000 SF)
Eight levels above grade
Five Levels below grade
Total potential build-out: 2,000,000 GSF

In this scenario, the museum would occupy the entire site. The potential build-out would be approximately 120 feet high, above the L'Enfant Promenade level, and aligned with the U.S. Post Office and adjacent buildings located across I-395.

Proposed Build-out

- Proposed above-grade footprint at Level 1 leaves approximately 180,000 GSF for outdoor programming
- Lower levels hold public program and administrative and curatorial office functions with views along Maine Avenue toward Washington Channel
- First level, at L’Enfant Promenade level, holds visitor service functions
- Upper levels hold administrative and curatorial office functions, as well as all exhibit spaces, allowing for natural lighting and potential views toward Washington Channel and Washington Marina
- Visitor services located south and southeast to allow for potential views towards Tidal Basin and Washington Marina
- Mechanical spaces distributed on every floor
## COMPARATIVE AND ESCALATED MUSEUM COSTS

<table>
<thead>
<tr>
<th>NMAAHC Scenario</th>
<th>GSF</th>
<th>$/SF Escalated to Jan. 2006</th>
<th>Costs Escalated to Jan. 2006</th>
<th>Midpoint of Construction</th>
<th>$/SF Escalated to Midpoint</th>
<th>Costs Escalated to Midpoint of Construction</th>
<th>Costs for 350,000 GSF Model (per site)</th>
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### Museums Table

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<th>$/SF</th>
<th>Costs Escalated to Jan. 2006</th>
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### SITE EVALUATION MATRIX

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<tr>
<th>Site Criteria</th>
<th>Scenario</th>
<th>A&amp;I (existing)</th>
<th>A&amp;I (clear)</th>
<th>Monument</th>
<th>Liberty Loan</th>
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<tr>
<td>e. Air Quality &amp; Odors</td>
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<tr>
<td>f. Noise Levels</td>
<td>All</td>
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<tr>
<td><strong>6. Magnitude of Costs</strong></td>
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<tr>
<td>a. Site Prep/Demolition</td>
<td>Minimum</td>
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<tr>
<td></td>
<td>Maximum</td>
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<tr>
<td>b. Facility</td>
<td>Minimum</td>
<td>-</td>
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<tr>
<td></td>
<td>Maximum</td>
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<tr>
<td>c. Cost-sharing</td>
<td>Minimum</td>
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<tr>
<td>d. Special Consideration</td>
<td>All</td>
<td>o</td>
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**Key to Ratings**

+ Positive

o Neutral

- Negative