

4.0 Environmental Consequences

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter includes an assessment of potential direct and indirect impacts of the Museum plans (See Fig. 4.0.1; 4.0.2; 4.0.3; 4.0.4; and 4.0.5) on the Judiciary Square Master Plan area and study area, as well as cumulative impacts from other projects in the study area. The assessment is based on available information, site reconnaissance, and resource analysis.

4.1 Socio-Economic Resources

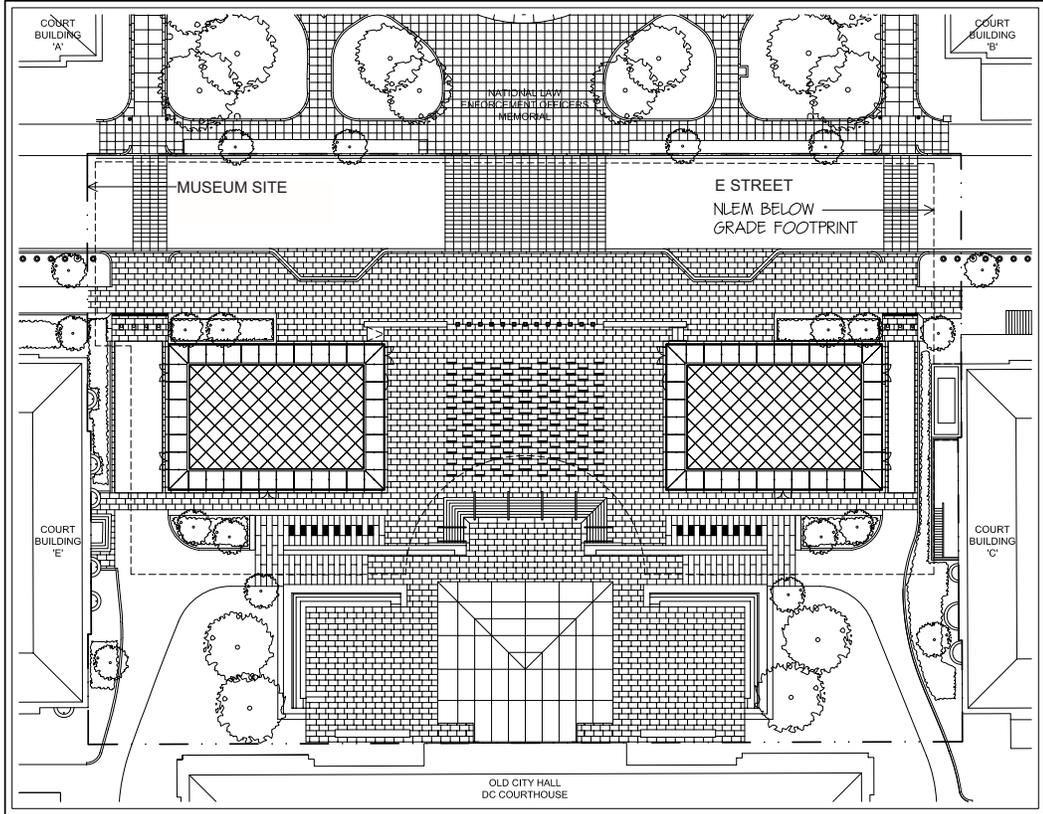
4.1.1 Land Use

Museum Alternative

With the implementation of the Museum Alternative, the below-grade museum facility with its above-grade Museum Entry Pavilions, Museum/Courthouse Entry Plaza and pedestrian walkways would replace the surface parking lot that currently occupies that area of the Museum site.

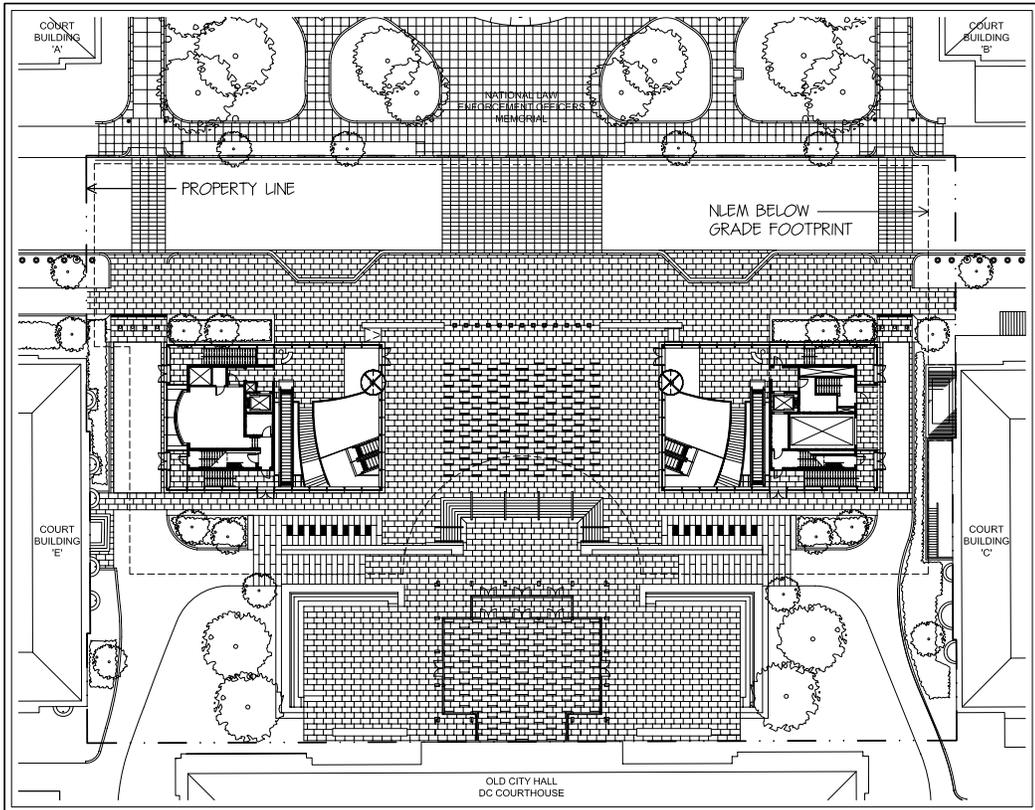
The land uses associated with the completed Museum would be consistent with established land uses adjacent to the site and with those found in the immediate area.

- The Museum's presence would be a positive impact on the area and Washington, D.C., as a whole since the city would have a new cultural and educational resource that does not now exist.
- The Museum would be housed in an exciting new below-grade space, while entry to its public spaces would be through carefully designed entry pavilions set within a carefully designed and pedestrian-friendly plaza and landscaped setting.
- The removal of the use of the space for automobile parking would be a positive effect, as automobile parking is inconsistent with the original and present intentions for the use of Judiciary Square, a federal reservation.
- The Museum could have indirect positive impacts on land use in the study area since the presence of a new cultural/educational facility in the area could enhance revitalization in surrounding neighborhoods, particularly north and west of the site.
- Short-term minor adverse impacts are also likely due to increases in local traffic, noise, and air pollutant emissions (dust) during construction of the project.



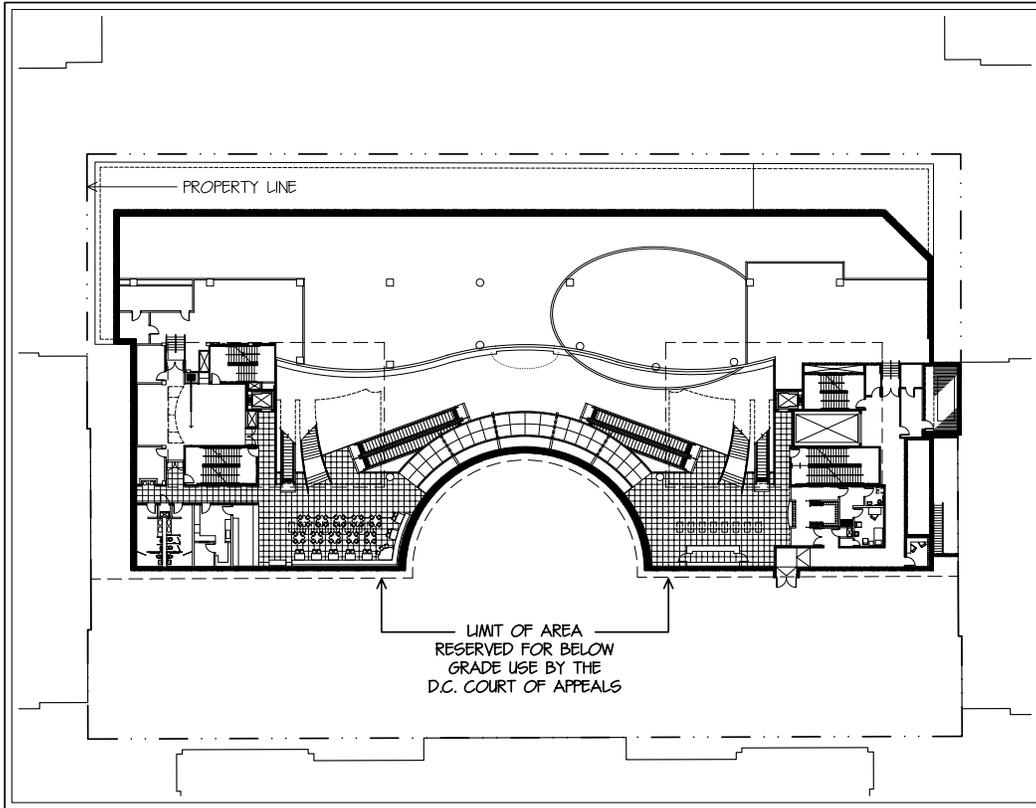
SITE/ROOF PLAN

FIGURE 4-0-1



PLAZA LEVEL PLAN

FIGURE 4-0-2



TICKETING/VISITOR SERVICE LEVEL PLAN

FIGURE 4-0-3

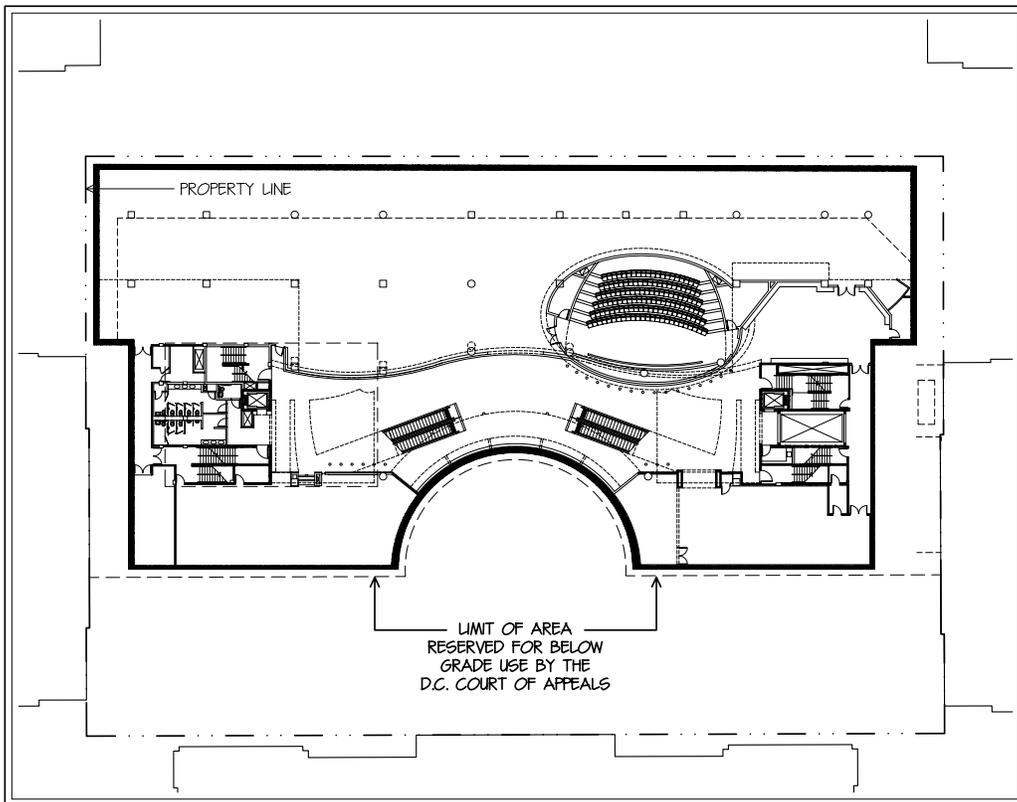
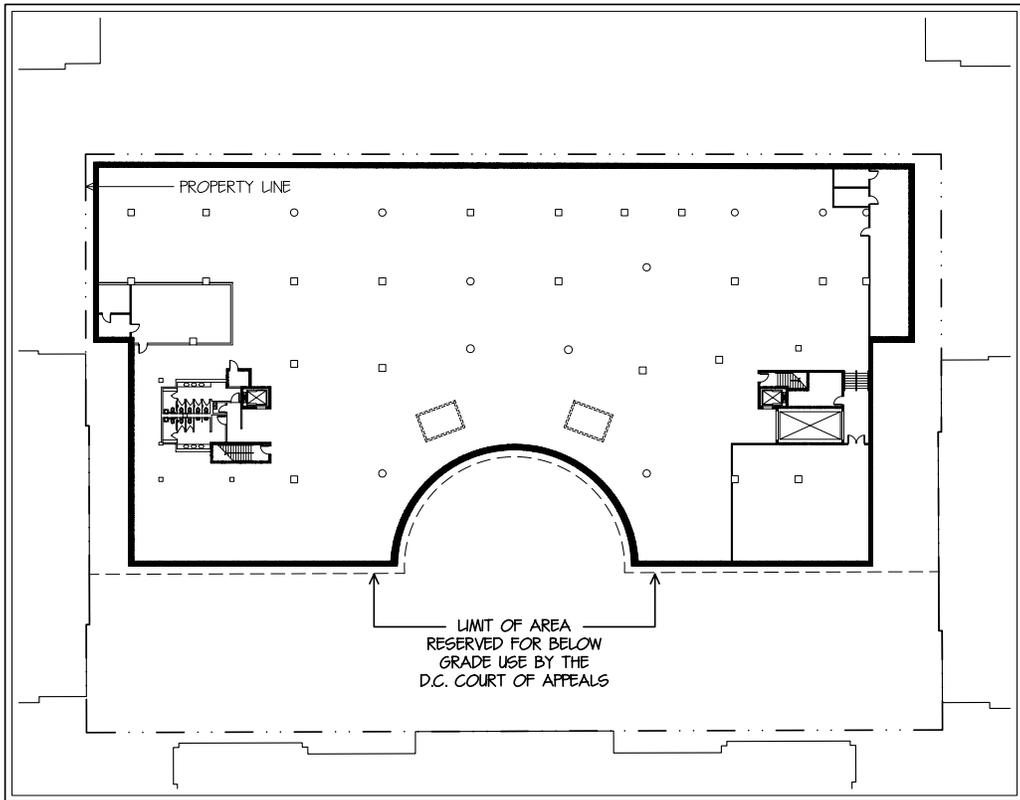


EXHIBIT LEVEL PLAN

FIGURE 4-0-4



ADMINISTRATION LEVEL PLAN

FIGURE 4-0-5

Cumulative Impacts

There could be minor adverse cumulative impacts to land use. Judiciary Square currently consists of civic buildings separated by landscaped/hardscaped buffers. However, the construction of the Museum, when coupled with the addition to the north elevation of the Old City Hall, would add new built features to the open area that adjoins the Old City Hall (Courthouse) building, Courts Building C, Building E (the U.S. Court of Appeals for the Armed Forces), and E Street.

Mitigation

To minimize the potential short-term minor adverse impacts that are likely to occur owing to increases in local traffic, noise, and air pollutant emissions (dust) during construction of the project, the Museum's Contractor will be required to contain these adverse impacts through a program of mitigation that will include:

Compliance with all applicable federal and District of Columbia laws, regulations, ordinances, codes and standards with respect to environment control. Particular attention will be given, without limitations to:

1. Minimization of dust, containment of chemical vapors, control of engine exhaust gases, and control of smoke from temporary heaters.
2. Reduction of water pollution by control of sanitary facilities, proper storage of fuels and other potential contaminants, and prevention of siltation from land erosion.
3. Minimization of noise levels. Compliance will be required with all jurisdictional requirements for permitted work hours and noise levels.
4. Proper and legal disposal, off site, of waste and spoil resulting from construction activities.

To minimize the adverse impact of constructing building additions onto historically open space, the plan presents a unified site development that integrates the Museum and Courts facilities with each other and the NLEOMF Memorial across E Street. Further, the size and mass of the Museum Pavilions has been minimized to the maximum extent functionally and legally (i.e. building code) practicable.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on the site. The inner ring of Judiciary Square would be limited to a uses associated with the D.C. and federal judicial system. The diversity of cultural/educational opportunities at Judiciary Square

would remain unchanged. The National Law Enforcement Officers Memorial would be surrounded on three sides by monumental/institutional edifices with minimal pedestrian traffic and no public access. Further, the National Law Enforcement Officers Memorial Fund (NLEMF) would be deprived of a nearby facility that is critical to the full realization of their memorial/educational program, which focuses on the Memorial and the activities that occur there.

4.1.2 Planning Policies

Museum Alternative

Realization of the Museum would not be inconsistent with some of the policies of the *Federal Elements of the Comprehensive Plan*.

The Transportation Element recommends the following policies that are applicable to the proposed action:

- *“Place parking in structures, preferable below ground, in the interest of efficient land use and good urban design.”*
- *“Position parking facilities so as not to obstruct pedestrian and bicycle access to buildings.”*
- *“Support projects that provide improved transit and roadway access in existing, highly developed areas.”*

As part of the effort to obtain the NLEM Museum site from Congress, the NLEOMF led a successful corollary effort to have Congress authorize the construction of a subterranean parking structure that is to be built in the southwest quadrant of the block that the NLEM and Court Buildings C, D and E are located on. This enabled the previously existing surface parking for the D.C. Courts to be relocated to this new underground parking structure.

The Parks and Open Space Element recommends the following policies that are relevant to the Museum:

- *“Use easements, donations, purchases, exchanges, or other means to acquire land or to enhance parks and open space.”*
- *“Enhance parks and preserve open green space for future generations.”*
- *“Maintain small urban parks primarily as historic parks and designed landscapes with fountains, monuments, memorials, tree cover, and other features of civic art.*
- *“Use monumental parks and landscapes to provide settings for public buildings, monuments and memorials, and to create special environments for limited activities.”*

The proposed plan will provide a landscaped open space where there is currently a surface parking lot; and will complement the existing National Law Enforcement Officers Memorial across E Street from the site. Once completed, the Museum and surrounding landscape plan will provide an improved and cohesive, park-like setting for the many public buildings that surround the central open space of Judiciary Square, including the several D.C. Court buildings and the National Building Museum.

The Federal Environment Element promotes the following policies relevant to the Museum:

- *“Incorporate new trees and vegetation to moderate temperatures, minimize energy consumption, and mitigate stormwater runoff.”*
- *“Encourage the use of native plant species, where appropriate.”*
- *“Ensure that construction activities comply with local noise ordinances, and coordinate with local government and the community to establish limits on the intensity and hours of noise generation.”*

The proposed plan for the Museum includes a landscape plan showing the incorporation of new trees as well as the elimination of some of the impervious surface currently on the site, thus meeting the objectives of moderating temperature and mitigating stormwater runoff. In addition, the NLEOF will abide by all local ordinances regarding noise generation and intensity during the construction process.

The Preservation and Historic Features Element recommends the following policies that are relevant to the Museum:

- *“Encourage the practice of good design principles throughout the region to continually strengthen the image of the nation’s capital.”*
- *“Support campus master planning and other planning initiatives as an opportunity to evaluate potential historic resources and to develop management plans for their protection and use.”*
- *“Work cooperatively with local agencies to ensure that development adjacent to historic properties not detract from their historic character.”*

The proposed plan for the Museum meets several of the policy objectives for the Preservation and Historic Features Element. The Museum will be located almost entirely underground, with the exception of two symmetrical entry pavilions. The Judiciary Square Master Plan has been consulted to ensure the Museum will meet the long-term planning and design objectives of the area.

The Visitors Element recommends relevant policies such as:

- *“Locate and design new memorials and museums in accordance with the Commission’s Memorials and Museums Master Plan.”*
- *“Balance the needs of security with visitor accessibility by ensuring that federal visitor attractions in the National Capital Region provide for the safety of visitors while remaining accessible and aesthetically pleasing, following the recommendations in The National Capital Urban Design and Security Plan.”*

Both the *Memorials and Museums Master Plan* and the *National Capital Urban Design and Security Plan* were consulted in the design of the Museum. The Museum will meet the objectives of both plans.

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Mitigation

No mitigation required.

No Action Alternative

Under the No Action Alternative, the Museum would not be built. The following negative impacts would occur as a result of the No Action Alternative:

- Judiciary Square, the District of Columbia, the nation, and the Law Enforcement Community would be deprived of a new educational and cultural facility that is meaningfully connected to the Memorial. If the Museum were to be located elsewhere, it would lack the emotional and intellectual synergy with the National Law Enforcement Officers Memorial that is possible through the proposed plan. The relationship of the Memorial to the Museum and its collection would be minimized, while the proposed plan would provide the opportunity for maximum interdependence. A different location would not afford visitors the opportunity for interpretation and contact as a single occurrence. Further, the potential synergy with the National Building Museum as a “critical mass” of visitor attractions in the area would not happen.
- New development, compatible with the Historic Features of the District, would not happen at this location.
- Awareness of and access to facilities, places and activities of the Museum, activities essential to residents and visitors, would not occur.
- Construction of a facility, essential for public service delivery (educating the public about law enforcement), would not occur on this site.
- Policies and objectives in both the *Federal Elements* and *District Elements* of the *Comprehensive Plan for the National Capital* would not be met regarding long-range planning and development.

4.1.3 Community Facilities

Museum Alternative

The fruition of the Museum would result in positive impacts to cultural and educational facilities, recreational resources, and public safety facilities. The Museum’s presence would improve the landscapes and provide walkways surrounding the various statues and memorials in the area and perhaps provide areas for more. In addition, building the Museum would help to enhance and define existing open spaces and improve pedestrian

connections to and from the Museum site. There would be an increase (positive impact) on public safety and educational facilities as a result of the Museum Alternative. It would bring additional visitation to the area, increasing awareness of the Memorial and the National Building Museum.

Mitigation

No mitigation would be necessary.

No Action Alternative

Under the No Action Alternative, the Museum would not be built at Judiciary Square and, thus, there would be no positive impact on community facilities as a result of the No Action Alternative. In this sense, the No Action Alternative would represent a “lost opportunity” for Washington, D.C. and the nation.

4.1.4 Demographics / Environmental Justice

Museum Alternative

The realization of the Museum would not increase the residential population or directly affect demographics in the Judiciary Square area. There would be indirect positive impacts to surrounding neighborhoods due to open space and pedestrian circulation improvements within the Museum site. There will be minor, short-term, construction-related negative impacts due to construction activities connected with the construction of the Museum.

There would be no disproportionately high and adverse human health or environmental effects on minority or low-income populations as a result of the Museum.

Mitigation

No mitigation would be necessary.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. Thus, there would be no impacts to demographics/environmental justice as a result of the No Action Alternative.

4.1.5 Economic / Fiscal Resources

Museum Alternative

The realization of the Museum would result in an estimated increase in employment at Judiciary Square of 60 people above the current employment level. This minor increase would have a negligible positive impact on local retail spending. The Museum plans a Café and Gift Shop that will contribute modestly to the sales tax revenues to the District of Columbia.

No property tax would be generated from the proposed Museum as the Museum and its parent, the NLEOMF, Inc. will be and are, respectively, tax-exempt entities under the 501c3 provisions of the tax code. There would be no change to the current tax status of the property.

Mitigation

No mitigation would be necessary.

No Action Alternative

Under the No Action Alternative, the Museum would not be built at this site. Thus, there would be no increase in tax revenues to the District of Columbia related to the proposed Museum, nor would there be other impacts to economic/fiscal resources as a result of the No Action Alternative.

4.2 Cultural Resources

Standards for evaluating potential effects on historic resources are obtained from the National Historic Preservation Act of 1966 (NHPA), as amended, and its regulations. These regulations define “effect” as “alteration to the characteristics of a historic property (and its associated resources) qualifying it for inclusion in or eligibility for the National Register” (36 CFR 800.16). Further, an “adverse effect” occurs “when an undertaking may alter, directly or indirectly, any of the characteristics of the historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association” (36 CFR 800.5). Federal regulations also require that special attention be given to the effects of an undertaking on a National Historic Landmark (NHL). (36 CFR 800.10) and Federal agencies undertake planning in order to avoid, to the extent possible, adverse effects to National Historic Landmarks.

Potential effects to archaeological and historic resources include direct and indirect effects. The physical displacement, demolition, or alteration of a resource is a direct effect; changes in the use, operation or character of a resource may be either direct or indirect effects; and changes to the visual context are considered indirect effects.

4.2.1 Archaeological Resources

Museum Alternative

Based on an extensive review of available archival information from multiple sources including the Architect of the Capitol's Archives, the Library of Congress and others, as well as consideration of historical and landscape development processes known to have occurred in the area, there is little chance that significant archaeological resources are present within the Museum site area. Information used to assess the potential for archaeological remains was reviewed by the DC SHPO, and that agency agreed that there was insufficient evidence to support the preparation of a formal Archaeological Plan to identify and document archaeological resources prior to construction.

Avoidance, Minimization, and Mitigation

Completion of Section 106 requirements with regard to archaeological resources at the NLEM site will be completed according to stipulations in a Memorandum of Agreement (MOA) between the NLEMF, the NCPC, and the DCSHPO. As is often the case in highly developed urban areas, the process of archaeological resource identification and treatment (mitigation) will be deferred until the onset of construction, when the site will be available for archaeological investigation. The MOA contains stipulations that will allow archaeological monitoring of construction to occur at the earliest practical phase of construction as well as archaeological data recovery in the event that significant archaeological resources are identified during monitoring.

Other stipulations in the MOA establish procedures for the treatment of unanticipated discoveries, including the unexpected exposure of human remains.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. There would be no effects to archaeological resources as a result of the No Action Alternative.

4.2.2 Historic Resources Museum Alternative

The Museum will serve the National Law Enforcement Fund as the educational companion to the National Law Enforcement Memorial. The Museum will consist of a below-grade facility for exhibition, curatorial, educational, and administrative activities related to the history and purpose of the National Law Enforcement Memorial Fund. The Museum is to be located directly to the south of the Memorial.

The adjacency of the new Museum to the Memorial will allow for a full experience for visitors. The Entry Pavilions, to be located on the plaza just south of E Street, will provide access to the below-grade space. The twin pavilions will be constructed of glass and metal to appear as light, garden pavilions that will complement the neoclassical masonry Court Buildings. The two pavilions allows for one to be reserved for use by groups, while the other serves the public. When necessary, such as during high visitation, each pavilion can be converted to accept traffic in one direction only (i.e., one for access and the other for egress) to expedite entry and exit. The west pavilion includes a special elevator designed to allow for large artifacts, such as museum-quality police vehicles, to be brought into and out of the museum.

The implementation of the Museum Alternative, the below-grade museum facility with its above-grade Museum Entry Pavilions, Museum/Courthouse Entry Plaza and pedestrian walkways would replace the surface parking lot that currently occupies that area of the Museum site. The Entry Pavilions would provide a visual connection to the Memorial directly to the north.

The relocation of the surface parking to underground facilities elsewhere will have a positive effect on the setting of these existing historic buildings; however, the construction of the Museum Entry Pavilions in the spatial and formal center of Judiciary Square will have an adverse effect on the open space that is framed by the historic buildings, on the relationship of the buildings to the Square, and to the setting. The Museum Pavilions will also block some of the views of the Old City Hall (Building D) and Courts Buildings C and E (The U.S. Court of Appeals for the Armed Forces).

NCPC, in consultation with the D.C. SHPO and other parties, has determined that the construction of the pavilions (of any structures in Judiciary Square) will have an adverse effect on the Pennsylvania Avenue National Historic Site, Judiciary Square and its contributing buildings, including Buildings C, D (Old City Hall), a National Historic Landmark, and building E.

NCPC has initiated section 106 review with the District of Columbia Historic Preservation Office in accordance with the procedures prescribed in the Section 106 legislation (see appended record of meetings with the Deputy State Historic Preservation Officer for the District of Columbia (D.C. SHPO) in Appendix 5.5.5).

Effects

The following list enumerates the potential adverse effects determined by NCPC and concurred in by DC SHPO:

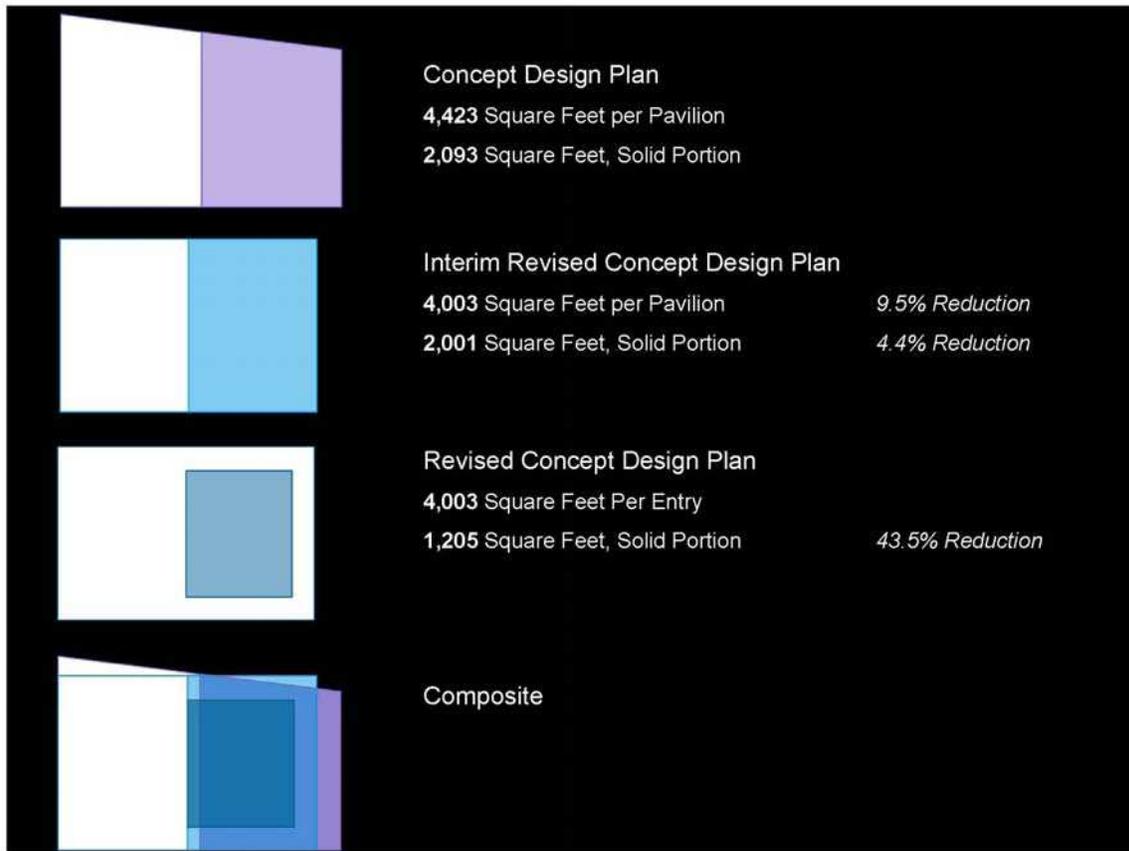
- The extent of excavation and underground construction required to complete the below-grade portion of the Museum may cause structural or other damage to the adjacent historic buildings.
- The footprint, height, and massing of the Museum's above-grade Entry Pavilions, as allowed by the National Law Enforcement Museum Act (P.L. 106-492), will alter the setting of the historic buildings and the spatial character of Judiciary Square.
- The contemporary architectural expression of the Museum's Entry Pavilions to be executed in glass and metal may not be compatible with the historic buildings and their context.
- The construction of the above-grade Entry Pavilions will occur concurrently with the addition of the new North Entrance Pavilion to the north elevation of the Old City Hall. The combined introduction of these new construction projects and any related appurtenances will have a cumulative effect infringing on the open space and historic setting.
- The siting of the Museum's Entry Pavilions could compromise the visual axis of E Street, an east-west street that is recognized as part of the L'Enfant Plan.
- The curblin configuration and width of the extension of E Street between 4th and 5th Streets will be altered with lay-bys to provide two areas for passenger drop-offs to serve the Courts and the Museum.

Avoidance, Minimization and Mitigation

Implementation of the Museum will adhere to the conditions of a Memorandum of Agreement (MOA) that is being prepared as part of the Section 106 process, among NCPC, DC SHPO, NPS, and the NLEMF. The MOA will set forth stipulations that will avoid, minimize, and/or mitigate the above-listed adverse effects on the historic resources that might otherwise result from the construction of the Museum.

The following mitigation measures have been, or will be, employed:

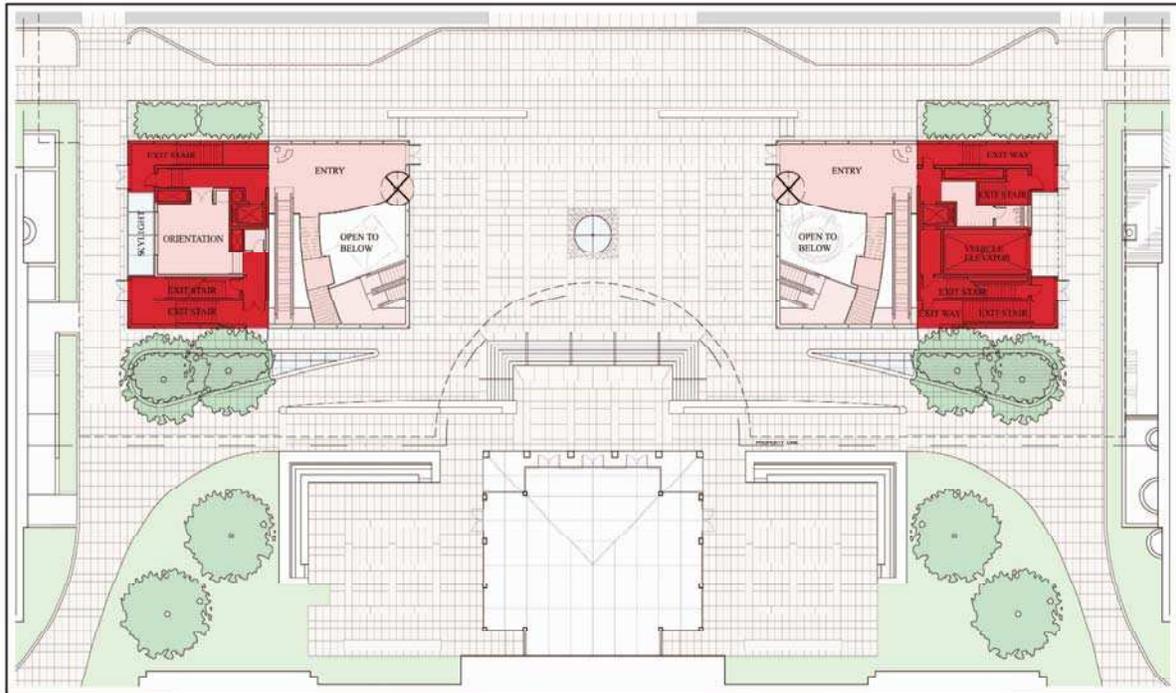
- A structural analysis will be performed to ensure that the excavation and construction of the below-grade facilities of the Museum will not compromise the structural integrity of the adjacent historic buildings. The NLEMF, as the owner of the Museum, will require the building contractors to identify, define, and implement procedures that will demonstrate the requisite level of care to be taken during construction to protect the adjacent buildings from damage caused by any building activity.
- The footprint, height, and massing of the Entry Pavilions have been reduced to the minimum amount possible to accommodate the functional requires necessary to support and operate the Museum's building and activity program. (See Figure 4-2-2-1Footprint Reduction Diagram)
- E Street above the Museum will be reconstructed to meet DDOT/FHV/A specifications so that it will function as a full component of the street system of the District of Columbia.



FOOTPRINT REDUCTION DIAGRAM

Figure 4.2.2.1

Footprint: Figure 4.2.2.1 illustrates the successive reductions that have been made in the pavilion footprints in response to comments made through the formal design reviews required by the Commission of Fine Art, the NCPC, and the Section 106 process. Figures 4.2.2.2; 4.2.2.3; 4.2.2.4 (Plaza Critical Elements Plans) on the following pages illustrate the components of the pavilions that are at minimum size as set by the required building code. The elements shown in pink on these diagrams indicate the minimum size required for functionality for those program elements that are required to be at the plaza level.



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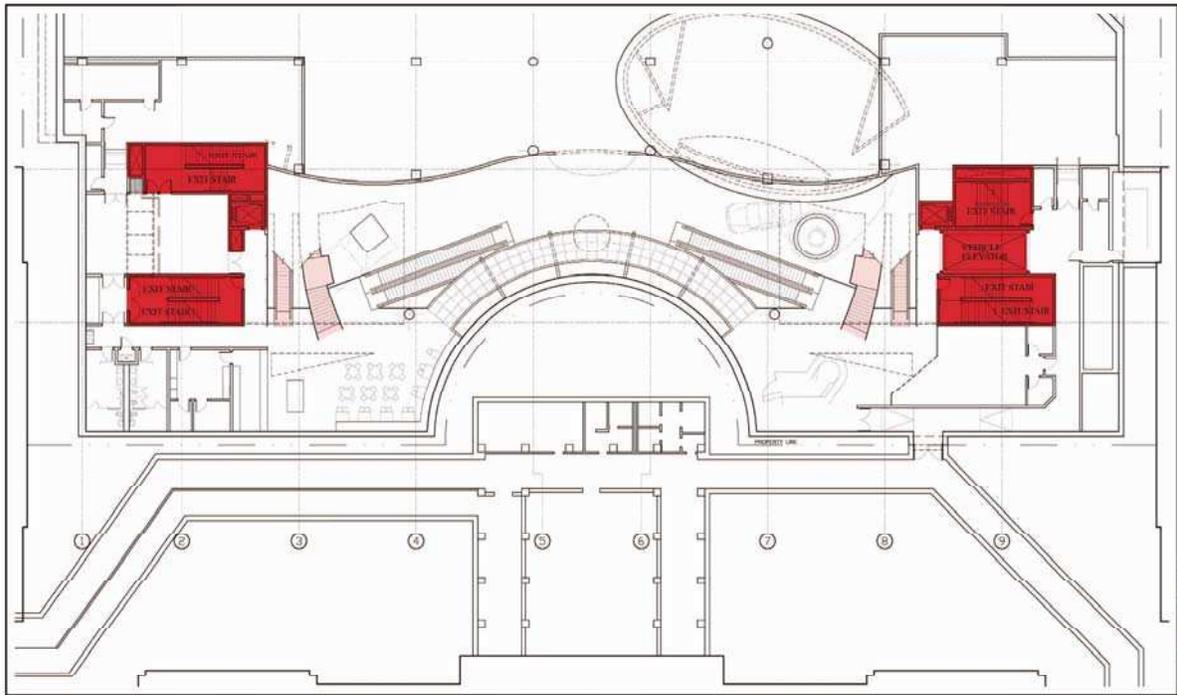
PLAZA LEVEL CRITICAL ELEMENTS PLAN
GROUND LEVEL PLAN

JUNE 23, 2005

1

NATIONAL LAW
ENFORCEMENT MUSEUM

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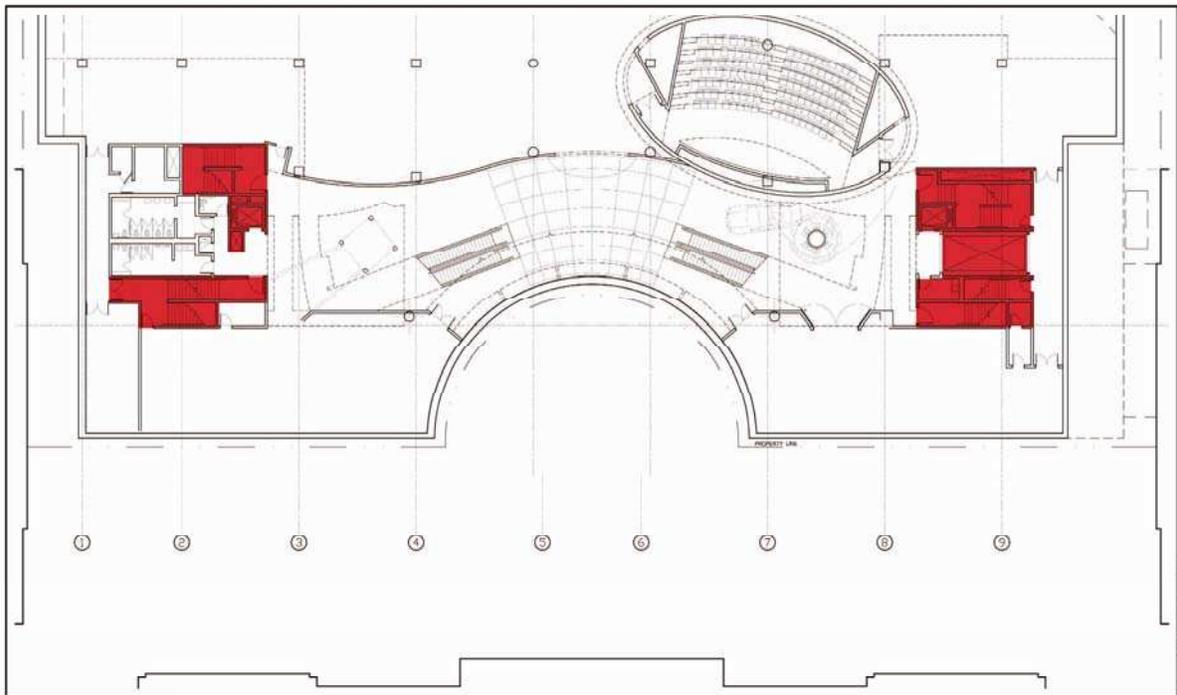


PLAZA LEVEL CRITICAL ELEMENTS PLAN
FOOD/GIFT LEVEL PLAN

JUNE 23, 2005

2

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PLAZA LEVEL CRITICAL ELEMENTS PLAN
EXHIBIT LEVEL PLAN

JUNE 23, 2005

3

NATIONAL LAW
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Height: The vault of each Entry Pavilion springs from a base set at 20 feet 3-3/8 inches above the measuring point defined in the legislation then rises to the highest point of 25 feet above-grade (68.80 feet above sea level) measured from the top of the south curbline of E Street adjacent to the West Pavilion in conformance with the NLEM Act. This height is the lowest possible measurement that will allow the pavilions to serve their intended purpose and be mechanically functional. The vault serves not only as a roof over the pavilion, but also provides the covering for the mechanical penthouse, thereby providing an aesthetic form visually unimpaired by the equipment necessary to serve the below-grade facility. The highest point of the vault provides the minimum volume needed for the equipment that is housed in the mechanical penthouse areas above the “inner box” at the plaza level. Significantly, the design has been changed to accommodate the grade change along E Street.

Massing: To reduce the apparent size of the pavilions, the original design concept for the pavilions of a single volume that is half transparent and half opaque was modified to create the appearance of a smaller translucent/opaque “inner box” within a larger, totally transparent “box.” The mass was further reduced by lowering the perimeter “peristyle” zone by approximately three and a half feet to a height of 16 feet 8-1/2 inches, creating an intermediate step or “shoulder.” The height of the shoulder is set at the median of the differing heights of the portico bases of Court Buildings C and E and serves to resolve the height differential, while lowering the point of visual connection between each structure. Lowering the height of the peristyle elements also creates the massing effect of an attic story for the upper roof areas directly under the vault form, consistent and appropriate within the classical aesthetic. The massing is further reduced by the integration of a base that incorporates the grade change along E Street, reconciling the pavilion bases with the plaza, and in so doing, resolving the height difference between the porticoes on the two adjoining Court Buildings.

- The architectural treatment of the Museum Entry Pavilions takes its model, using metal and glass in contrast to the solid neoclassical masonry architecture of the Old City Hall and Courts Buildings. While the massing resembles a classical “temple” form with a surrounding peristyle beneath, the “Lamella” diagonal pattern of the framing of the vaults relate the pavilions to the Memorial directly to

the north. The execution of the structure and cladding with a lightweight and contemporary framing and glass cladding system defines the architecture as “of its own time.” The pavilion design has been refined from its original conception through the simplification and attenuation of its elements. These revisions clearly support the hierarchal relationship between old and new. Further, the fenestration is consistent the proportions of the Old City Hall. The result is a design that is respects and is consistent with, and not mimicking , of the neoclassical treatment of the historic buildings.

- The cumulative effect of the new construction within the open space of Judiciary Square is minimized by efforts to ensure that the design of Museum Entry Pavilions and Museum Plaza are compatible with the work intended by the Courts. The size, form, and materials are sympathetic to the new construction and compatible with the historic buildings. The plaza design is incorporated seamlessly into the Courts design. Although the space will not be completely open, it will be defined in a way that will allow for pedestrian use and enhance some views through artistic definition. Since the “peristyle” zone does not project as far toward the E Street right-of-way, the Court Buildings’ porticos are still dominant. The lowering of the “peristyle” elements coupled with their high transparency has reduced the intrusion of the pavilions into the view of the Court Buildings’ porticos. The reduced height of the peristyles has also heightened the visual importance of the new entrance for Court Building D and reduced the impact of the Museum Pavilions on the view of the north wall of that building. The amount of open space will be reduced but sufficient space will remain for pedestrian enjoyment, rather than the whole serving as a fenced parking lot.

- To minimize any potential infringement on the east-west visual axis of E Street, the Museum’s Entry Pavilions have been sited as far back as possible from E Street without violating the “no-build zone” open area between the exterior walls of the Museum Entry Pavilions and Old City Hall as required by P.L.106-492. Further, the introduction of a shoulder element in the pavilion massing serves to associate visually the pavilions with the porticoes of the Building C and E, rather than with their main building block.

The impact of the Museum's service needs in the Square will be minimized as the NLEOMF has agreed to work with the DC Courts to share a loading facility that will be designed and constructed by the Courts. The Museum will be connected to this facility via a below grade connection at the boundary between the Court property and the NLEM. The design and placement of this combined service facility is not a part of this project.

- Walkways, site stairs, planters and other appurtenances, and security elements required for the protection of the DC Court of Appeals will be designed to be compatible with the historic designs and materials of the surrounding buildings and the security elements will be shielded from view as much as possible.

- All alterations to E Street and the adjacent sidewalk will be made in a manner that is consistent with the NCPC-approved Master Plan for Judiciary Square. This will ensure that changes to the sidewalk widths, curbs, extra lanes, and all other aspects of the re-design will maintain the formal symmetry, materials, placement, and aesthetic presented in the Master Plan.

The two lay-bys have been reduced in length to limit their use to automobile-sized vehicles and are to be placed to either side of the 100-foot wide view corridor established in the Master Plan. This will keep short-term vehicular drop-off out of the central view of the Old City Hall building from the Pension Building and vice versa; and from the Law Enforcement Memorial and other vantage points to the north of the Museum. The revised size and location of the lay-bys can accommodate the disabled and light deliveries.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. There would be no effects to historic resources as a result of the No Action Alternative. The existing at-grade parking will be removed with the implementation of the planned renovations and additions to the Old City Hall building.

4.2.3 Visual Resources

Museum Alternative

The impact of the Museum on visual conditions and resources in the project area are analyzed and/or discussed below:

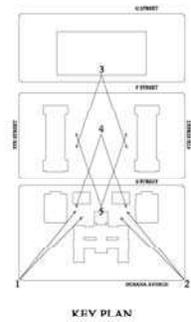
Impact on “Critical Views” of Visual Resources:

The following analysis was based on composite images created by the superimposition of computer generated models of the Museum project into photographs of the existing views taken at the locations defined below. This visual impact assessment addresses potential changes to significant views that can be attributed to the proposed construction of the Museum. For this analysis, five “Critical Views”, as determined by NCPC, were analyzed. Those views were as follows:

View #1:

Existing View: (Fig. 4.2.3.1)

Description/Location: View from the Northeast corner of 5th Street and Indiana Avenue, looking to the northeast through the gap between Court Buildings D (Old City Hall) and E (U.S. Court of Appeals for the Armed Forces.)



1. VIEW FROM 5TH & INDIANA AVENUE, NW

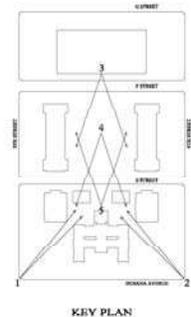
EXISTING CONDITIONS
Figure 4.2.3.1

Photomontage View: (Fig. 4.2.3.1A)

Discussion: The significance of this view is that it represents one of two urban “windows” into the center area of Judiciary Square from the south. This image illustrates that the Museum’s West Pavilion is barely visible in the photo-montage. The Pavilion’s Lamella patterned roof is marginally visible to the right of the gold statue. The montage shows that the scale of the Museum’s pavilions is deferential to the historic structures and appropriate to the Museum’s role as a “jewel” in the overall setting. The view between the buildings to the core area of the square is barely impacted.



1. VIEW FROM 5TH & INDIANA AVENUE, NW



COMPOSITE VIEW
Figure 4.2.3.1A

Assessment: minor visual impact.

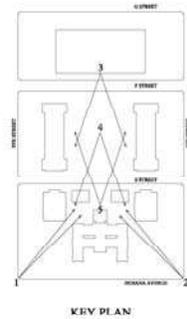
View #2:

Existing View: (Fig. 4.2.3.2)

Description/Location: View from the Northwest corner of 4th Street and Indiana Avenue, looking to the northwest through the gap between Court Buildings C and D (Old City Hall.)



2. VIEW FROM 4TH & INDIANA AVENUE, NW



EXISTING CONDITIONS
Figure 4.2.3.2

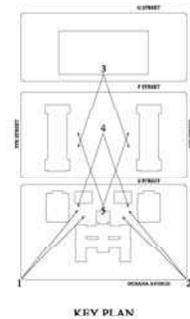
Photomontage View: (Fig. 4.2.3.2A)

Discussion: Like View#1, this view is of the other “window” into the central urban space of Judiciary Square. This image illustrates, as with View #1, that the Museum’s East Pavilion is barely visible in this view due to its low height and the intervening landscape elements. The view between the buildings is barely impacted. (note: the pavilion glass color has been made more intense than it would actually be to aid the reader’s ability to locate the pavilion in this view)



2. VIEW FROM 4TH & INDIANA AVENUE, NW

COMPOSITE VIEW
Figure 4.2.3.2A



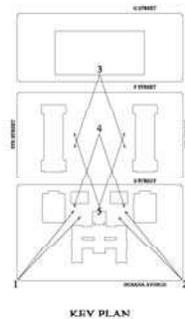
Assessment: minor visual impact.

Photomontage View: (Fig. 4.2.3.3A)

Discussion: The importance of this view is that it is along the formal, central, longitudinal axis of Judiciary Square and represents the view from one of the two principal buildings, on axis, to the other. This image illustrates that from the entrance to the Pension Building the Museum is practically invisible. Also, the view of the new north entrance addition to Court Building D (Old City Hall), shown here as a simplified computer rendering, is unimpeded by the Museum.



3. VIEW FROM BUILDING MUSEUM



COMPOSITE VIEW
Figure 4.2.3.3A

Assessment: no or minor visual impact.

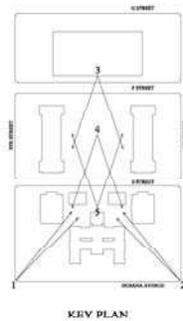
View #4:

Existing View: (Fig.4.2.3.4)

Description/Location: View from the center of the National Law Enforcement Officers Memorial looking south along the centerline (4th Street extended) axis of the Square toward Court Building D (Old City Hall.)



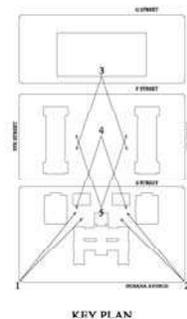
4. VIEW FROM CENTER OF MEMORIAL



EXISTING CONDITIONS
Figure 4.2.3.4

Photomontage View: (Fig.4.2.3.4A)

Discussion: The importance of this view is that, it is from the conceptual center of Judiciary Square and, like View #3 it is along the central, longitudinal (4th Street Extended) axis of the Square, looking at the Old City Hall's new north entrance. This image illustrates that the Museum's pavilions and site elements, while visible from this center axial line in the Memorial, do not impede the view of the Old City Hall building or its proposed new addition. There is some obscuring of the rear elevations of Court Buildings C and E and the Old City Hall Building will no longer be seen in its entirety due to the blockage of the views of these areas by east and west lower elevation areas of the visually opaque portions of the Pavilions. However, the existing and new landscape elements (trees) of the Courts' approved plans would also partially block views of these areas. The deferential scale of the Pavilions coupled with their transparent, garden-pavilion-like character minimizes their visual impact and provides a clear differentiation from the neoclassical masonry character of the Court Buildings.



4. VIEW FROM CENTER OF MEMORIAL

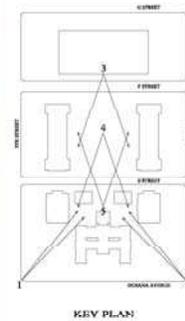
COMPOSITE VIEW
Figure 4.2.3.4A

Assessment: minor to moderate visual impact

View #5:

Existing View: (Fig. 4.2.3.5)

Description/Location: View from the location of the new monumental stair of the proposed addition of the E Street Entrance to Court Building D (Old City Hall) looking north toward the Pension Building (National Building Museum).

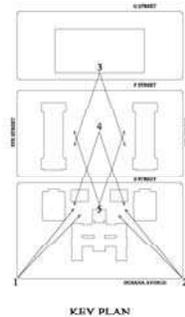
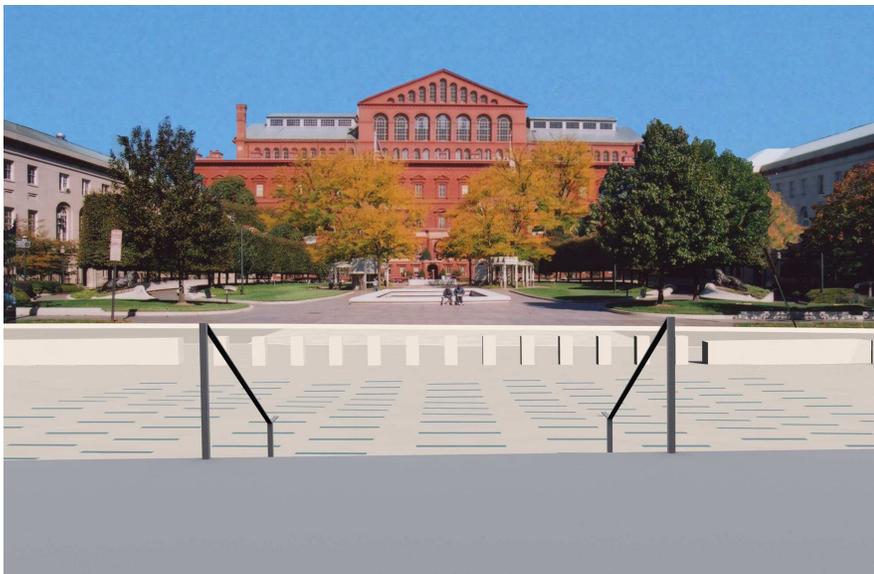


5. VIEW FROM COURT STEPS

EXISTING CONDITIONS
Figure 4.2.3.5

Photomontage View: (Fig. 4.2.3.5A)

Discussion: The importance of this view is that it represents the other end of the central longitudinal (4th Street Extended) axial view within Judiciary Square, looking at the Pension Building (National Building Museum), the other major “actor” in the dialogue of center stage in the square. This image illustrates that the view from the new Portico of the Old City Hall toward the National Law Enforcement Officers Memorial and the Pension Building beyond is unimpeded by the Museum. The Museum’s low walls at the sidewalk line do not impede the vista to the north.



5. VIEW FROM COURT STEPS

COMPOSITE VIEW
Figure 4.2.3.5A

Assessment: minor visual impact.

Evaluation Criteria:

Impacts on views are determined based on an analysis of the existing quality of the view, the sensitivity of the view (such as important views to and from historic and cultural sites), and the anticipated relationship of the proposed design elements to the existing visual environment. Visual impacts in the analysis presented below are described in the following categories:

- **Positive visual Impact-** The proposed alterations would improve a view of/or the visual appearance of an area.
- **No visual impact** - The proposed alterations would not be visible
- **Minor visual impact** - The proposed alterations would be marginally visible, but would not interfere with views and would not change the character of existing views.
- **Moderate visual impact** - The proposed alterations would be visible and would interfere with existing views, but would not negatively change the character of existing views.
- **Major visual impact-** The proposed alterations would be visible as a contrasting or dominant element that interferes with views and substantially changes the character of the existing views in a negative manner.

Analysis of Visual Impact on other Conditions and Visual Resources in the project area:

Over the short term, the construction of the Museum would likely result in moderate visual impacts to views due to construction activities. Upon completion of the Museum, the Plaza paving, bollards, handicapped access ramps and raised lawn panels of the Courts' Interim Plaza plan would be replaced by the Museum's modified version of the Plaza paving, modified handicapped access ramps and Museum Entry Pavilions and landscaping (see proposed site plan, Fig._4-01, site section, Fig. 4-02, elevations, Fig. 4-03 and Fig. 4-04 Renderings and a photograph of a model of the proposed plaza, site development and pavilions, Fig. 4-05). The E Street sidewalk would be widened in accord with the approved Master Plan for Judiciary Square. Stone paving would be installed on portions of the E Street sidewalks to maintain continuity with the Museum Plaza paving and Old City Hall/Courthouse Entrance.

The construction of a combined loading facility east of the Old City Hall, shared with the Courts complex, as approved by both the CFA and the NCPC, might impact views from 4th Street to the Old City Hall Building and from D Street to Court Building C. However,

these views currently include a surface parking lot, which would be removed with the construction of the new service facility. The impact of this element was analyzed in the Environmental Assessment for the work being proposed for the Old City Hall/Courthouse renovation and is beyond the scope of this assessment since the NLEOMF is not responsible for the design of this item.

Cumulative Impacts

The Master Plan for Judiciary Square articulates a concern for a cumulative crowding effect caused by multiple building elements including the Museum's Entry Pavilions and the proposed addition of the new north entrance to the Old City Hall building.

Mitigation

In establishing the design restrictions on the above-grade portions of the Museum, (the pavilions), Congress anticipated this concern by establishing a 100 foot wide view corridor between the two pavilions in anticipation of a largely below grade addition to the Old City Hall. The above-ground elements (pavilions) are further restricted by a "no-build zone" extending from Court Building C to Court Building E (the USCAAF) and from the Old City Hall Building northward 90 feet to south wall of the pavilions on each side of the 100 foot wide view corridor, to mitigate against the crowding concern.

To minimize the adverse visual effects resulting from the combination of the new North Entrance to the Old City Hall building and the new Entry Pavilions for the National Law Enforcement Museum, as well as the new, combined service area east of the Old City Hall building, the following minimization/mitigation measures have been employed in the design of the Museum:

1. The Pavilions have been minimized, within the limits of program, function and building code requirements, to reduce the potential for visual crowding, maximize the amount of open space, and preserve the view corridor between the Old City Hall Building and the Pension Building. See section 4.2.3 for a description of the additional measures taken to minimize the actual and apparent size of the Pavilions.
2. The concept for the Entry Pavilions maximizes transparency beyond the level called for in the design guidelines contained in the Urban Design Analysis submitted to NCPC on February 6, 2003 (see Appendix, and drawings and model photographs referenced above.) The necessary volume of the outer enclosure is rendered entirely in highly transparent low-iron content clear glass (walls and roof) to maximize visibility through the entry pavilions. An inner volume of core elements, that are the minimum components required for program and code, is rendered as an opaque/translucent element at the ground level, furthering the sense of minimization of the pavilions. Above

the ground level, a mechanical space is located above each of the two opaque/translucent volumes, under the vaulted roof form which houses the required smoke evacuation fans, cooling towers and emergency exit stair pressurization fans. Conceptually, the perimeter area around the internal volume is akin to the peristyle of Greek Revival Temple forms, rendered in a contemporary “modern” idiom.

3. Through the Section 106 consultation process, the actual and apparent size of the pavilions have been further reduced and configured in a manner that creates a more compatible composition of elements (the pavilions and the Court Buildings’ portico bases) whereby the pavilions create an intermediate step between the differing heights of the Court Buildings’ portico bases.
4. The architectural expression of the Entry Pavilions for the Museum is rendered in a modern idiom that is light, airy and purposefully in contrast to the neoclassical masonry architecture of the surrounding historic buildings. The execution of the Pavilions’ structural and cladding systems will be state of the art in contemporary architectural technology, assuring that the Pavilions are perceived as being “a design of their own time.”
5. Design of walkways, site stairs, plinth walls, and other security elements will be compatible with the historic designs and materials of the surrounding buildings and, in the case of the security elements, be shielded from view as much as possible.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. Thus, there would be no impacts to visual resources as a result of the No Action Alternative. The existing surface parking area would remain until replacement with the interim landscape plan of the Old City Hall renovation.

4.3 Transportation

4.3.1 Roadway Traffic

Museum Alternative

Traffic impacts could potentially occur on roadways in proximity to Judiciary Square in Northwest Washington, D.C. due to construction and operation of the Museum. Impacts to traffic during construction are short term in duration, while operational traffic impacts are long-term.

The proposed construction activities associated with the Museum would include the transport of workers, equipment, and materials to the site, transport of excavated soil from the site, and movement of equipment and vehicles on adjacent roadways. These activities would generate additional vehicle movement on roadways in proximity to the site and along haul routes, and therefore may constrain traffic movement somewhat. The potential roadway segments to be affected are all within the Judiciary Square Master Plan area and include segments of C, D, E, and F Streets and 4th, 5th, and 6th Streets.

Operation of the proposed facility would increase building space by \pm 85,000 square feet.

Since the museum is providing no parking for its employees, there may be a minor impact on the local public parking facilities and/or the Metrorail/Metrobus system due to and depending on the commuting patterns of the Museum's anticipated 60 \pm employees. However, it should be noted that 12 to 15 of these employees currently work within three blocks of the site at the NLEOMF offices at 7th and D Streets and the Visitor's Center on E Street between 5th and 6th Street and will relocate to this facility. The existing modal split conditions of 35-45 percent using alternative transportation is assumed to continue. Therefore, minimal changes in employee traffic volumes and patterns are anticipated, resulting in a minimal impact on design year 2015 roadway traffic.

Operation of the proposed Museum would represent new visitor facilities within Judiciary Square, creating a net increase of between 427,000 and 525,000 visitors per year within Judiciary Square. It is anticipated that museum visitors will either be largely local patrons who will come by private automobile or public transportation; or tourists who come by private passenger automobile or groups that come by chartered and/or school buses.

The sidewalk widening/roadway narrowing shown on the plan will facilitate unloading and loading of passengers in the two vehicular lay-by areas that will be created. Buses will be directed to a special bus lay-by, designated and reserved for use by the Museum, on 5th Street NW. Buses that have discharged their passengers will be driven to a location remote from the site for parking during the visitation of their passengers. Adjacent intersections on 4th and 5th Streets would continue to function within an acceptable LOS. In addition, the modified roadway would be designed to reduce pedestrian crossing times and vehicular-pedestrian conflicts.

Service vehicles, i.e., delivery trucks and refuse collection trucks, will use the combined loading facility, east of the Old City Hall Building and accessed from 4th Street. The added truck traffic on 4th Street will have a slight negative impact on 4th Street traffic when service vehicles are backing into the loading berths off of 4th Street. Additionally, the Museum is

planning a secondary service/loading entrance off the east pedestrian walkway for the handling of exhibits, particularly those requiring special environmental controls and those that might be too large to fit through the service tunnel of the facilities that they would be sharing with the Courts .

Cumulative Impacts

Other construction and renovation projects proposed in the study area include the additions and renovations to the Old City Hall, the construction of the Newseum and the renovation and expansion of the E. Barrett Prettyman U.S. Federal Court Building. These facilities are scheduled to be constructed independently of the Museum and appear from their schedules that they will be largely complete by the time the Museum is under construction. If there is an unforeseen overlap in construction schedules, coordinated construction management would minimize construction-related traffic and roadway constraints during AM and PM traffic hours.

Operational traffic impacts would be generated by the additional employees and visitors to the NLEM, the Newseum and Prettyman Building. It is anticipated that the two museums would bring visitors during off-peak hours and a large number of visitors would access the area via public transit. Further, additional traffic generated from these facilities including the expansion of the Prettyman Building, has been taken into consideration in the projection of the baseline year traffic volumes. As discussed previously, the Museum Alternative would operationally add negligible traffic to the area and therefore, the cumulative impact due to the Museum Alternative on area transportation is anticipated to be minimal. Capacity deficiencies for three intersections either occur currently or will result from traffic growth not associated with the Museum.

Mitigation

To minimize the potential adverse traffic impacts resulting from the construction/operation of the Museum Plan, or due to the baseline year projections, the following mitigation measures should be employed:

- Prepare a plan in accordance with DDOT to manage the re-routing of traffic from E Street through the area during the time that excavation and build-back of the portions of the project that extend beneath E Street are in process.
- Prepare a plan in accordance with DDOT to manage construction worker traffic and parking, construction material delivery and waste hauling, and activities that constrain traffic movements. The plan

should be prepared by the general construction contractor for the project and should minimize equipment and vehicle movements on roadways during peak AM and PM weekday traffic periods.

No Action Alternative

Under the No Action Alternative, the proposed facilities of the Museum would not be built on this site. Therefore there would be no impacts to roadway traffic as a result of the No Action Alternative.

4.3.2 Parking Availability and Proximity

Museum Alternative

Construction of the Museum would include removal of 114 parking spaces from the surface parking lot that exists between the Old City Hall and E Street. Additionally, approximately 37 street parking spaces would be eliminated from E Street. However, plans by the D.C. Courts to construct three new below-grade parking facilities will contain approximately 550 restricted and public parking spaces. During the construction of the parking structures and when the D.C. Courts additions and renovations of the Old City Hall Building are in process, there may be a short term loss of existing parking. However, it is anticipated that the Museum construction start will occur approximately simultaneously with the completion of the work on the Old City Hall Building. The first of the new parking structures is currently nearing completion. Any short term loss of parking will actually be due to the Old City Hall construction rather than the Museum construction.

While the Courts are providing a net increase in parking spaces over what exist now, it is not anticipated that any of those spaces will be available to staff or visitors to the museum. The Museum is not planning to provide any parking for staff or visitors who will have to avail themselves of the various public parking facilities in the area.

Cumulative Impact

Construction of the Museum is likely to have cumulative parking impacts when combined with the additional proposed facilities in the area. The cumulative demand for parking in the area will be further increased with the construction of the Newseum and the Prettyman Courthouse.

Mitigation

To avoid the potential adverse parking impacts resulting from the construction of the Museum, the following mitigation measures should be employed:

- The HNTB Transportation and Security Study commissioned by DDOT deals with the impact of the Museum's and underground parking garages' construction on the parking supply in the Judiciary Square Study Area. See "Chapter 3: Recommendations" in that document for the proposed 3-phase "Action Plan" for measures to ameliorate the parking problems.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. Therefore, parking in the area would continue in its deficient state which would not be negatively affected by the construction of the Museum.

4.3.3 Public Transportation

Museum Alternative

Construction of the Museum would directly increase ridership on the Metrorail and Metrobus system components in Judiciary Square due to an increase in employees and visitors. However, the number of additional riders would be insignificant in relationship to the capacity of these components.

Cumulative Impacts

The Museum in combination with other projects in Judiciary Square are anticipated to bring additional visitors and staff to the area via public transit. However, the increase in riders would have a negligible impact on the Metrorail and Metrobus system.

Mitigation

No mitigation would be necessary.

No Action Alternative

Under the No Action Alternative, the proposed Museum would not be built on this site. Therefore there would be no impacts to public transportation as a result of the No Action Alternative.

4.3.4 Pedestrian / Bicycle Circulation

Museum Alternative

Construction of the Museum Alternative would positively impact both pedestrian and bicycle circulation on the site. Walkways and an urban plaza would be built as part of this project that would connect to walkways that will be rebuilt as part of the additions and renovations to the Old City Hall project. A new entry plaza, shared with the Old City Hall will provide pedestrian and universal handicapped access from the E Street sidewalk to both the Museum and to the stairs and ramps of the Old City Hall Building.

Bicycle circulation would be aesthetically improved through the square with the proposed narrowing of E Street and DDOT's proposed dedicated bicycle lanes on each side of E Street. Building the Museum would produce no change to the existing bicycle circulation

Cumulative Impacts

The cumulative effects of the various projects: the Newseum; the Prettyman Courthouse and the Museum will impact the existing pedestrian circulation moderately. It is anticipated that many visitors and staff to these facilities will utilize the existing and planned pedestrian circulation elements. However, the pedestrian traffic generated by the Museum and these other projects would occur primarily during non-peak hours and it is not likely to have a major impact on pedestrian traffic during peak periods.

Mitigation

No mitigation measures would be necessary.

No Action Alternative

Under the No Action alternative, the Museum Alternative would not be built on this site. Therefore, there would be no impacts to pedestrian/bicycle circulation as a result of the No Action Alternative.

4.4 Physical / Biological Resources

4.4.1 Air Quality

Museum Alternative

Construction activities would affect air quality as a result of: (1) construction vehicle and equipment emissions, including construction truck haul trips for building materials and removal of solid waste/cut soil, and construction worker commuting; and (2) momentary dust from excavation for below grade facilities, and earthmoving.

equipment emissions, including construction truck haul trips for building materials and removal of solid waste/cut soil, and construction worker commuting; and (2) momentary dust from excavation for below grade facilities, and earthmoving.

As stated in Section 3.4 of this EA, the Washington Metropolitan Area is a non-attainment area for ozone. The specific types of construction equipment that would be used for the excavation, utility, and facilities construction, and the precise construction schedules have yet to be defined. Once these are determined, the potential emissions can be estimated based on the type of land use, the gross floor area of facilities to be constructed, the volume of excavation, number and type of equipment to be used, construction duration, and emission factors used. However, given the scale of the museum project, it is unlikely that the estimated emissions would exceed the *de-minimis* threshold levels and the area's annual emission budget.

Once the Museum is built, additional pollutant emissions may be generated by the burning of natural gas for water and space heating. Emissions from the burning of natural gas are estimated based on the volume of space to be heated and the emission factors used. In addition, any increased vehicle trips would add additional mobile emissions. These emissions are predicted to be less than the *de minimis* thresholds and less than ten percent of the projected area emissions due to minor increases in building size and commuting employee vehicles.

In addition to the regional impact of vehicle emissions, it is necessary to consider the potential for local carbon monoxide (CO) "hot spots", which are high CO concentrations from vehicle emissions at congested intersections or roadway segments. The Metropolitan Washington area is in attainment for CO. Therefore, in accordance with the Transportation Project-level Carbon Monoxide Protocol (1997), only projects that worsen air quality such as increasing delays at intersections operating at LOS E or F should be further examined for CO impacts. The traffic analysis indicates that the intersections in the study area currently operate at LOS D or better, except for the 3rd and F Street, NW intersection (stop sign control) which operates at LOS E during the PM peak hour. However, the proposed action will only create a minor increase (3 percent) in employees and their vehicles in the area, which is not anticipated to increase delays at this intersection. In addition, proposed traffic mitigation for the study area includes provisions for converting the stop signs at this intersection to traffic signals to improve LOS. Therefore, there are no CO impacts anticipated as a result of this project.

In summary, the Museum Project is anticipated to result in only minor, temporary air quality impacts and would be in conformance with the area's air quality management plan. General mitigation is provided to further minimize construction emissions.

Cumulative Impacts

The other construction and renovation projects proposed in the study area will add to the construction and operation emissions of the Master Plan projects. However, the various renovation and construction projects would generate minor construction and operational emission impacts. Since conformity with the area's air quality plan is based on annual emissions, project construction scheduling will likely determine the basis for conformity. It is likely that the NLEM construction will follow the Old City Hall, Newseum and Prettyman Courthouse projects so there may be no cumulative effect of the NLEM construction, and other projects in the vicinity.

Mitigation

The general contractor and its subcontractors should implement best management practices during construction to reduce, minimize, or eliminate construction vehicle dust emissions. Two assumptions of construction emissions should be included in the specifications for the general contractor and subcontractors:

- Utilize commercial electric power for construction instead of portable generators wherever feasible.
- Apply water on active grading areas and material stockpiles to eliminate visible dust plumes during high wind conditions.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. Therefore, no construction, renovation, or operational emissions from the Museum would be generated. Thus, there would be no impact to air quality as a result of the No Action Alternative.

4.4.2 Noise Levels

Master Plan Alternative

Renovation and construction activities would result in intermittent, short-term elevated noise levels that would vary daily based on the construction activity. Construction equipment would not likely be a major noise source, except when piles are driven for shoring the excavation. Noise would be generated during excavations for the underground portions of the Museum, and by heavy trucks hauling construction waste, excavated soil not used for fill, and concrete and building materials to the site. The construction equipment anticipated for the project includes jack hammers during renovations;

garage and museum construction. Based on the geotechnical report for Garage #1 of the Old City Hall addition and renovation project, pile drivers are not anticipated to be used.

Nevertheless, there are no sensitive noise receptors on the construction sites. The District of Columbia limits weekday construction and demolition noise to 80 dBA Leq from 7 a.m. and 7 p.m., unless granted a variance. The construction equipment expected to be used on-site is capable of achieving this noise limit. Construction noise would occur during the daytime and, therefore, would not affect identified sensitive noise receptors adjacent to the site. As a result, no adverse noise impact is anticipated on-site. The movement of heavy trucks transporting materials could cause an adverse noise impact to residences if they are on or adjacent to the designated travel route during the evening or night hours. However, haul routes are anticipated to operate within the daytime construction hours specified above.

Noise generated from ventilation equipment for the Museum building is anticipated to be minor when added to the existing area noise levels. Noise at the surface would be limited to the sound of air discharging out of the vent, which would be elevated above the ground surface and away from the street. This noise level is not likely to be perceptible at the ground surface. Thus, there would be no adverse noise impact with the project activities.

Cumulative Impacts

The other construction and renovation projects proposed in the study area would add to the construction and operation noise in the area. However, construction noise is short-term and is not anticipated to occur at the same time for all of the projects. In addition, the various renovation and construction projects would generate minor operational noise impacts due to the limited increase in employees and visitors.

Mitigation

To ensure that the general contractor and its subcontractors implement best management practices during construction, the following measures should be employed:

- Prepare and implement a construction management plan to comply with District noise regulations to ensure that short-term construction-related noise is mitigated and noise levels between 7:00 a.m. and 7:00 p.m. would not exceed 80 dBA at a distance of 25 feet outside the construction site boundary.
- Select truck routes that would minimize the potential for noise impacts from trucks to sensitive receptors, particularly during the hauling of excavated soil.

No Action Alternative

Under the No Action Alternative, the Museum would not be implemented. Therefore, no construction, renovation, or operational noise from the Museum Alternative would be generated. Thus, there would be no impacts to noise levels.

4.4.3 Natural Resources

Master Plan Alternative

Water Resources: During construction of the proposed Museum, the existing ground cover would be disturbed and exposed, thereby potentially transporting sediments eroded by stormwater runoff. Groundwater is expected to be encountered during excavation. Dewatering during construction and installation of a sub-drainage water system would be required to ensure groundwater stays below the elevation of the lowest slab floor elevation.

Soils and Topography: Building construction would not adversely impact geology, topography, or soils. The new underground Museum would require excavation of approximately 80,300 cubic yards of soil. Excavated soil may be suitable for structural and landscape fill, if not contaminated by pollutants.

Vegetation and Wildlife Habitat: The Master Plan would require the removal of the existing vegetation within the excavation sites. In addition to the excavated areas, vegetation along the streets is likely to be affected by construction of the new building entrances. Birds and rodents currently using the site would likely disperse at the onset of construction activities. However, once the site is replanted with a net increase in vegetation, similar wildlife that is adapted to the urban environment would likely return to the site.

Cumulative Impacts

The other construction and renovation projects proposed in the study area would add to the natural resource impacts of the area. However, construction impacts to natural resources are short-term and are not anticipated to occur at the same time.

Mitigation

To minimize the potential adverse natural resource impacts resulting from the implementation of the Judiciary Square Master Plan, the following mitigation measures should be employed:

- Require sheeting and shoring of soil surrounding excavated areas.
- Avoid driving piles since the vibrations from this may cause excess

- stress upon the existing historic buildings.
- Remove and dispose of excavated soil at an appropriate facility based on further laboratory testing.
- Submit an erosion and sedimentation control plan and a stormwater management plan to the District of Columbia Department of Health, Watershed Protection Division, prior to beginning construction activities. The erosion and sedimentation control plan should include measures to prevent erosion of cleared areas and the transport of soil and sediment. The stormwater management plan should address runoff and pollutant discharge. Dewatering measures should be implemented as appropriate. The installation of a sub-drainage water system would ensure that groundwater levels stay below the lowest floor slab elevation during operations.
- Prepare a detailed landscape plan for the excavated and disturbed areas. This plan would identify new trees shrubs, and grass for disturbed areas once construction of underground and hardscape structures is completed.

No Action Alternative

Under the No Action Alternative, the proposed Museum would not be constructed or renovated. Therefore, there would be no impacts to water resources, soil and topography, and vegetation and wildlife habitat as a result of the No Action Alternative.

4.4.4 Hazardous Materials

Museum Alternative

Implementation of Museum Alternative would involve grading and excavation of soil that may be contaminated. Since soil borings in the area detected fill material, there is the possibility that soils could be contaminated by natural or manmade compounds. Environmental soil sampling and testing of areas to be disturbed during construction would reveal contaminant levels, whether they exceed EPA health and safety thresholds, and whether the soils could be used on-site as backfill or required remediation prior to disposal at an appropriate landfill. Should contaminant be found, the excavation and disposal efforts would be monitored by appropriate DC government officials and authorized EPA officials.

Cumulative Impacts

The Haley and Aldrich study tested soil samples from the site and found traces of hazardous materials below EPA risk-based concentrations. The other construction and renovation projects proposed in the study area would add to the potential for hazardous

wastes generated from excavated soils or renovated building materials. However, construction is short-term and the projects are not anticipated to occur simultaneously.

Mitigation

To minimize the potential adverse impacts on hazardous materials that could result from the implementation of the Judiciary Square Master Plan, the following mitigation measures shall be employed:

- Environmental soil testing for contamination shall include analysis of soil samples by a certified lab, and removal and containment consistent with applicable handling regulations by licensed contractors and trained personnel.
- Collect, transport, and dispose of asbestos or lead-bearing waste by a specially licensed contractor in accordance with the requirements of Title 40 CFR Volume 23 Part 763. Hazardous materials to be removed should be shipped consistent with applicable transfer regulations and procedures to a hazardous waste disposal facility. There are a number of facilities in the surrounding states, particularly in Pennsylvania, that are licensed to handle such material.
- Segregate wastes to reduce quantities of hazardous waste.
- Comply with EPA, DOT and all other applicable federal, state, and local regulations for hazardous waste containers. All hazardous waste containers should be completely sealed and shall be checked for tightness prior to removal from the work area.
- Provide one copy of the completed Hazardous Waste Manifest no less than five days prior to the scheduled date of removal from the site.
- Haul hazardous wastes by a licensed hazardous waste hauler with permanent labeling.
- Dispose of hazardous and non-hazardous waste in accordance with all federal, state, and local regulations.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on the site. Therefore, there would be no excavation. However, any hazardous materials present in the soils would remain in the soil and present a potential source of contamination to ground water.

4.5 Utilities / Infrastructure

4.5.1 Storm-water Systems

Museum Alternative

During the construction of the Museum, soil would be exposed to wind and storm-water erosion, thereby creating a potential for sediment transport into the storm-water system. Upon completion, the Museum would not increase the amount of impervious surface area on the site. However, the post-development rate of storm-water discharge from the site does decrease as a result of the improved Best Management Practices (BMP's). A storm-water detention chamber will be used to restrict storm-water discharge to a flow rate equal to what it would be if the site was entirely pervious, ie. "meadow" condition. Portions of the roof of the below grade portions of the Museum would have "soft, urban friendly" bio-retention system landscape areas above the roof that would delay storm-water discharge during peak storm events. In addition, storm-water collected on the site would be routed through a sand filter that would further delay the storm-water and improve the water quality by filtering out contaminants prior to discharge into the storm-water system. The decrease in the volume of storm-water runoff that goes directly into the storm-water system during peak storm periods would increase the available capacity of the storm-water system and is anticipated to be a minor positive impact.

Cumulative Impacts

The other construction and renovation projects in the study area would, potentially, add to the storm-water runoff in the area. However, the Judiciary Square Master Plan projects would decrease the amount of impervious surfaces and help to offset the adverse storm-water impacts in the larger area. The Museum project would cause no increase of the impervious area of the Judiciary Square Master Plan area which is being reduced by approximately 11 percent by other (surface parking removal) projects proposed by the Judiciary Square Master Plan.

Mitigation

To minimize the potential adverse impacts on stormwater systems that could result from the implementation of the Museum Alternative, the following mitigation measures should be employed:

- Use the appropriate BMP's to prevent construction sedimentation in the storm-water runoff to minimize the impairment of the storm-water system.
- Ensure that the soil above the roof of the below grade areas of the Museum allows for some temporary retention of stormwater during major storm events to prevent water from discharging directly into

- the storm-water system.
- Consider the use of Low Impact Development Practices (LID) during detailed site design to manage storm-water run-off and include “bio-filtration “ measures to allow filtration and reduce velocity along the pedestrian pathways.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. Therefore, there would be no potential for sedimentation in the storm-water system. Thus, there would not be a slight increase in the impervious surface area, resulting in a slight negative storm-water runoff impact.

4.5.2 Wastewater Systems

Museum Alternative

The wastewater that would be generated on the Museum site is an increase of 8,200 gallons per day over the current level which is zero. This is because there is no development other than surface parking, roadways and walkways currently on the site.

Cumulative Impacts

The other construction and renovation projects in the area would also add to the cumulative wastewater generated in the area. However, all of the projects combined are expected to generate a limited amount of wastewater that is well within the capacity of the existing system.

Mitigation

No mitigation would be necessary.

No Action Alternative

Under the No Action Alternative, the Museum Alternative would not be built on this site. Therefore, wastewater generation would not increase.

4.5.3 Water Supply Systems

Museum Alternative

The Museum's demand for domestic water service is estimated to be 8,200 gallons per day for the Museum operations and landscape maintenance. This represents an increase on the site of 8,200 gallons per day. This increase in demand is a very small percentage of and well within the limits on the capacity of the water supply system available in the area.

Cumulative Impacts

The other construction and renovation projects proposed in the study area would also add to the consumption of water in the area. However, these other projects are expected to generate a limited demand for water that can be met by the existing supply.

Mitigation

No mitigation would be necessary

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. Therefore, water supply demand would not increase.

4.5.4 Energy Supply Systems

Museum Alternative

The proposed Museum project would increase the demand for energy. The building would require natural gas and electricity for heating, air conditioning, lighting and power. The existing utility lines in the area can accommodate the added demand.

Cumulative Impacts

In combination with the Museum, the other construction and renovation projects in the study area would add to the cumulative electrical supply consumed. However, the renovation projects are expected to produce some energy savings and taken together with more energy efficient new construction are not expected to exceed the capacity that can be met by the existing supply.

Mitigation

No mitigation would be necessary.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. Therefore energy demand would not increase.

4.5.5 Solid Waste Systems

Museum Alternative

Activities associated with the construction of the Museum would generate non-hazardous solid waste. The short term generation of solid waste would have a short-term impact on the existing method and frequency of collecting, hauling, and disposing of solid waste.

The Museum, when operational, would produce a solid waste volume of approximately 25cu. yards/month. Since there is no facility currently on the site, this represents a significant increase in the amount of solid waste being generated on the site. However, the volume of waste is relatively small when compared with that produced in other projects in the study area.

Cumulative Impacts

When combined with the Museum, the other construction and renovation projects proposed in the study area would add to the cumulative solid waste generated in the area. However, these projects are expected to generate a moderate amount of solid waste that can be met by the existing system.

Mitigation

To minimize potential adverse impacts to solid waste systems that could result from the Museum, the following mitigation measures should be employed:

- Recycle building materials to the fullest extent possible.
- Promote cost-effective waste reduction and recycling activities.

No Action Alternative

Under the No Action Alternative, the Museum would not be built on this site. Therefore, solid waste generation and disposal would not increase.