# STAFF RECOMMENDATION

C. Kelly

**NCPC File No. 7094**

**FORT BELVOIR – NORTH POST**
NATIONAL MUSEUM OF THE UNITED STATES ARMY

Fairfax County Parkway and John J. Kingman Highway
Fairfax County, Virginia

Submitted by the Department of the Army

June 24, 2010

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## Abstract

The Department of the Army has submitted the concept design for the National Museum of the United States Army on the North Post of Fort Belvoir in Fairfax County, Virginia. The museum building and campus will be constructed in phases and will initially consist of an approximately 187,500 gross square foot facility, landscaping, and parking. Later phases will include additional exhibit space, a theater, and other exterior features. The museum is expected to attract 735,000 visitors in its opening year and stabilize to 615,000 per year.


## Commission Action Requested by Applicant

Approval of comments on concept design pursuant to 40 U.S.C. § 8722(b)(1).

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## Executive Director's Recommendation

The Commission:

**Provides the following comments** on the concept design for the National Museum of the United States Army on the North Post of Fort Belvoir, in Fairfax County, Virginia, as shown on NCPC Map File Number 2204.10(38.00)43040.

- **Recommends** that the Army evaluate alternative access points to the site in an effort to lessen transportation impacts on Fairfax County Parkway;

- **Recommends** that the Army evaluate the configuration and location of the internal access road leading to the Museum in an effort to minimize the access road's impact on

wetlands, the Resource Protection Area, and steep slopes; a more direct route to the Museum building should be analyzed;

- **Recommends** that the Army evaluate the supply, configuration, location, and building materials of the proposed parking in an effort to minimize the amount of impervious surface at the site and to improve the aesthetics of the vehicular approach to the building. This evaluation should include: the need for the number of parking spaces proposed, off-site parking locations for large events, the use of structured parking, and the use of pervious paving materials; and

- **Recommends** that the Army evaluate alternative visitor and employee transportation opportunities to and from the Museum site in an effort to reduce vehicle trips to the site. These opportunities should include shuttle buses and bicycle and pedestrian amenities.

**Requires** that the Army submit the following in the next submission to the Commission:

- A letter from the Virginia Department of Transportation concurring with the Army's decision to use an at grade intersection at Fairfax County Parkway to access the site;

- Information regarding the relocation of the golf course lost due to the museum construction;

- A detailed landscape plan; including the bioswales proposed for the parking lot;

- Renderings of the site from two vantage points along Fairfax County Parkway and from the top of the parking lot looking south at the Museum building, as well as a north-south and an east-west site section showing the parking lot, the museum building, the access road, and Fairfax County Parkway; and

- Information on how the project conforms to the Department of the Army's procedures to implement Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," and the Energy Independence and Security Act of 2007.

**Notes** that Fairfax County submitted comments on the proposed project and **recommends** that the Army meet with Fairfax County regarding these comments. In addition, the Army should evaluate these comments within its National Environmental Policy Act review of the project prior to the next submission of the project for Commission review.

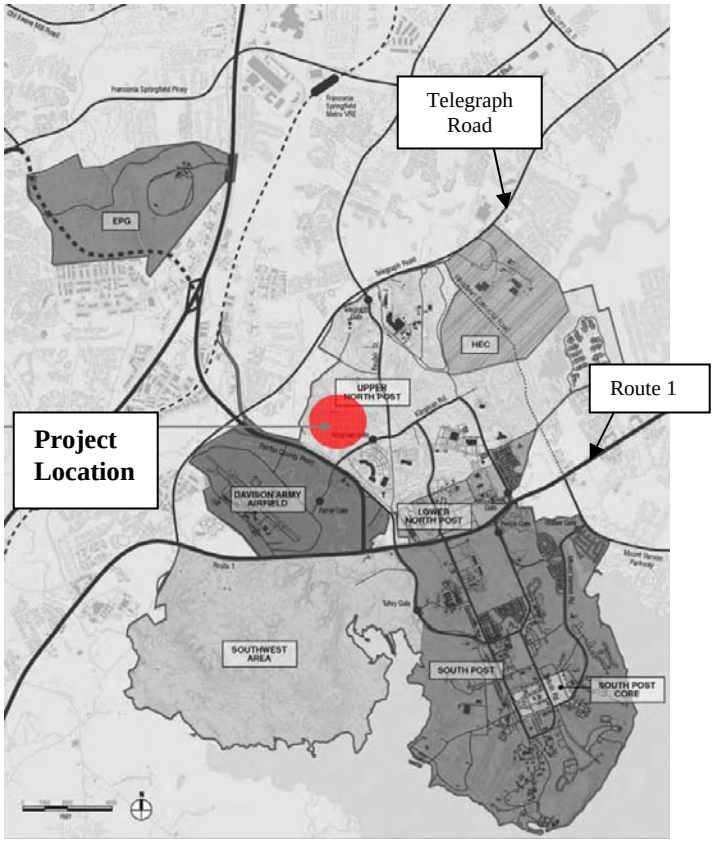
* * *

PROJECT DESCRIPTION

Site

The proposed site for the National Museum of the United States Army is located on the Upper North Post at Fort Belvoir. The Fort is divided into two geographically separate areas; The "North Area" (formerly known as the Engineering Proving Ground) is located on the west-side of I-95, to the northwest of the larger "Main Post" section. The Main Post is located on the east-side of I-95, directly south of Telegraph Road (Route 613). Route 1 divides the Main Post area into "North Post" and "South Post" sections, with North Post bordered by Route 1 on the south and Telegraph Road on the north-west.

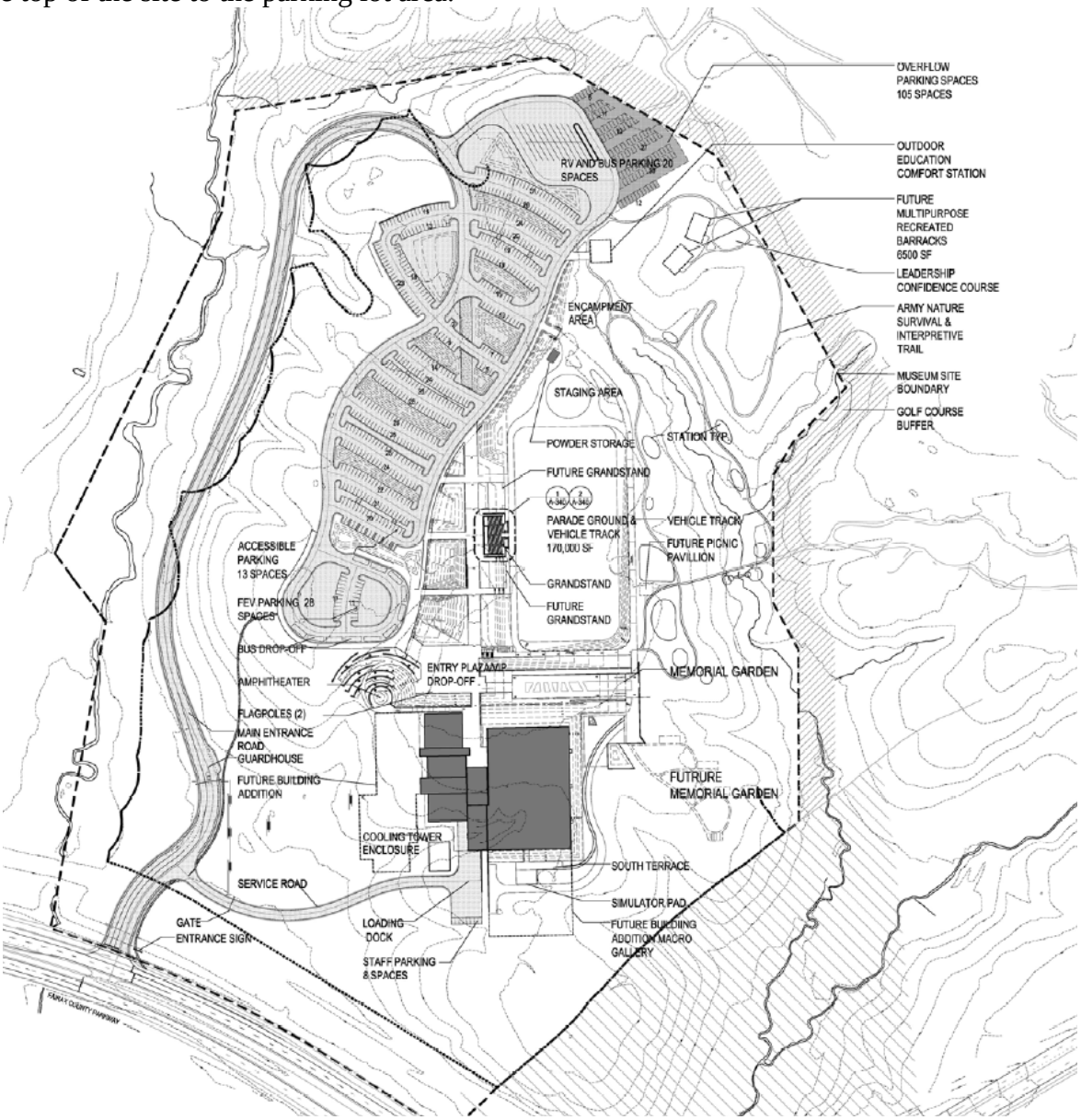
The site is bounded by Fairfax County Parkway to the south, John J. Kingman Road to the east, the Fort Belvoir North Post golf course to the north, and Swank Road to the west. The current site condition includes golf links, forested areas, an abandoned access road and wetlands.




**National Museum of the United States Army Site Location**

Proposal

The Department of the Army has submitted the concept design for the National Museum of the United States Army on the North Post of Fort Belvoir in Fairfax County, Virginia. The museum building and campus will be constructed in phases and will initially consist of an approximately 187,500 gross square foot facility, landscaping, and parking on an 83 acre site. Later phases will include additional exhibit space, a theater, and other exterior features. The museum is expected to attract an average of 615,000 visitors a year. The museum site design elements include: a parade ground, a grandstand, a memorial garden, an amphitheater, parking for 524 visitors, RV and bus parking. The Museum building is located in the southern section of the site and will be visible from Fairfax County Parkway. Access to the site is from an at-grade intersection with Fairfax County Parkway. One would then traverse the site on an access road that drives north to the top of the site to the parking lot area.




**Museum Site Elements and Layout**

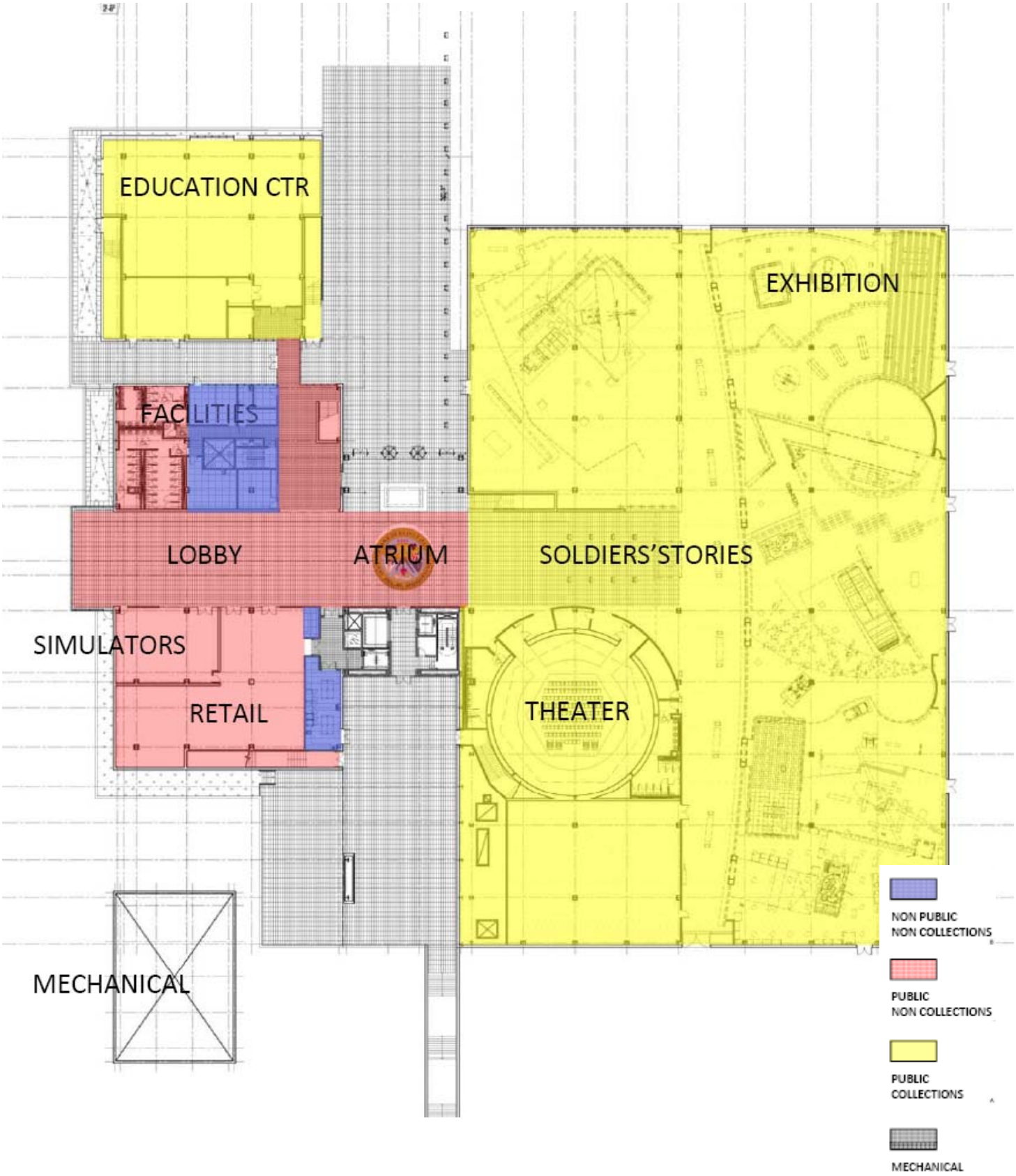
The Museum building itself will be approximately 187,500 gross square foot with multiple stories. There are two "zones" within the building which translate into the two structural elements of the project – the pavilion containing the exhibition and the composition of smaller pavilions housing all public programs. The two zones are connected by an atrium. The museum program area will be distributed through 6 floors and four pavilions of different heights. Below is a chart showing the different floors in the proposed Museum, what the function, height, and gross square feet of each of the floors. The building exterior materials include: insulated metal panel, perforated metal screen, and low-e glass.

**Museum Building Floor Description**

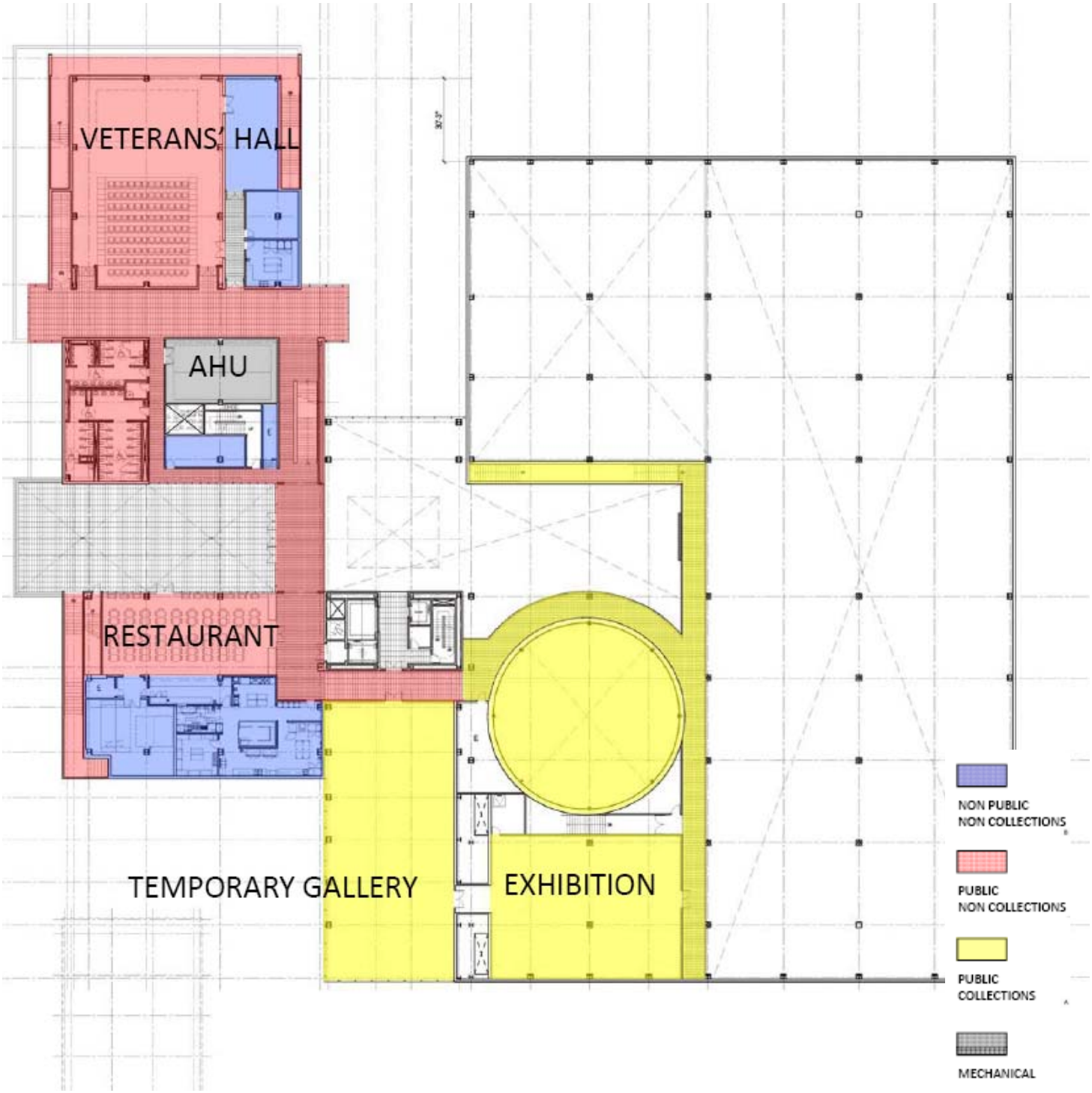
| Floor | Primary Use | Floor to Floor Height | Approx. Gross Square Footage |
|---|---|---|---|
| Basement | Mechanical | 17 feet | 29,500gsf |
| Level 1 | Lobby and Assembly, Retail, Education Center, Exhibition Space | 19 feet 6 inches | 88,000gsf |
| Level 2 | Exhibition Space, Food Services, Veterans' Hall | 14 feet 6 inches | 36,000gsf |
| Level 3 | Administration | 14 feet 6 inches | 19,500gsf |
| Level 4 | Administration | 14 feet 6 inches | 7,500gsf |
| Level 5 | Mechanical | 12 feet | 4,000gsf |
| Level 6 | Event Space | 16 feet | 3,000gsf |
| **Total** | | **180.4 feet** | **187,500gsf** |

**North Perspective: Entry to the Building**

**1st Floor Plan**

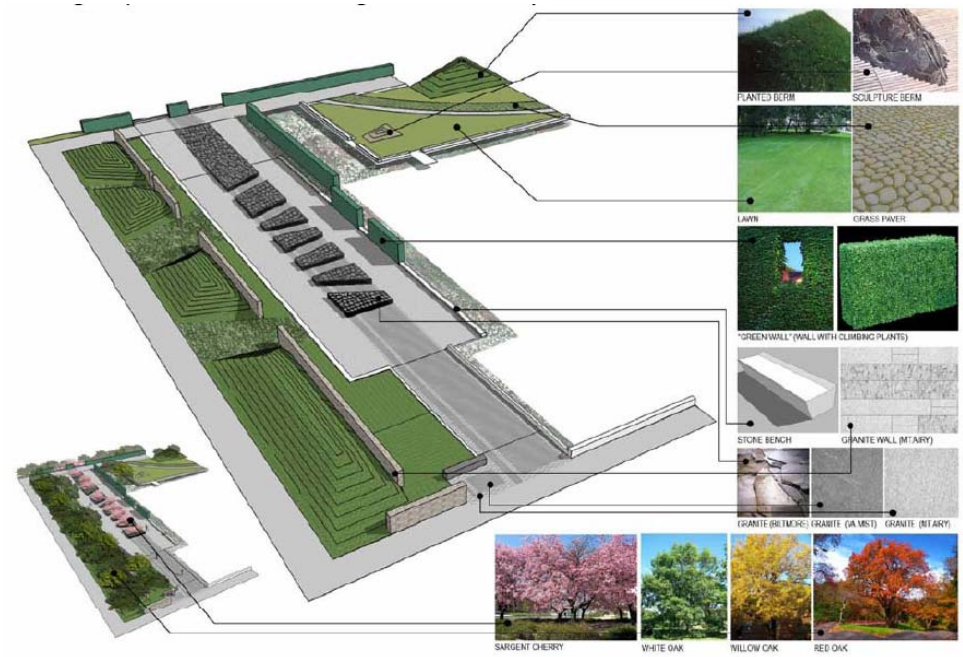


**2nd Floor Plan**



The design is proposing multiple sculptural elements for the Museum. The narrative for the project states that the "intent is to present soldiers, representing different epochs of the Army's history, distributed amongst the site and advancing up the hill toward the museum building." These elements will be incorporated with a signage wall and a water feature near the access road and service drive. The picture below illustrates the sculptural elements; these elements are still conceptual and will be further developed as the design moves forward.

Another site element is the Memorial Garden, located between the Museum and the parade ground.




**<u>Memorial Garden Design</u>**

Development Program

Applicant: The Department of the Army

Architect: The architecture firm designing the proposed museum is Skidmore Owings & Merrill (SOM) out of New York City, New York.

Timeline: The site infrastructure work for the project is anticipated to start in the spring of 2012 with the Museum opening in summer 2015.

Estimated Cost: The project, with exhibits, is estimated to cost $185 million to $225 million.

## PROJECT ANALYSIS

Executive Summary

Staff is supportive the location of a National Museum of the United States Army at Fort Belvoir and overall commends the Army and its design team for the use of sustainable elements and an innovative building design. However as the design progresses, staff encourages the Army to evaluate parking, access to and around the site, and transportation opportunities to and from the site.

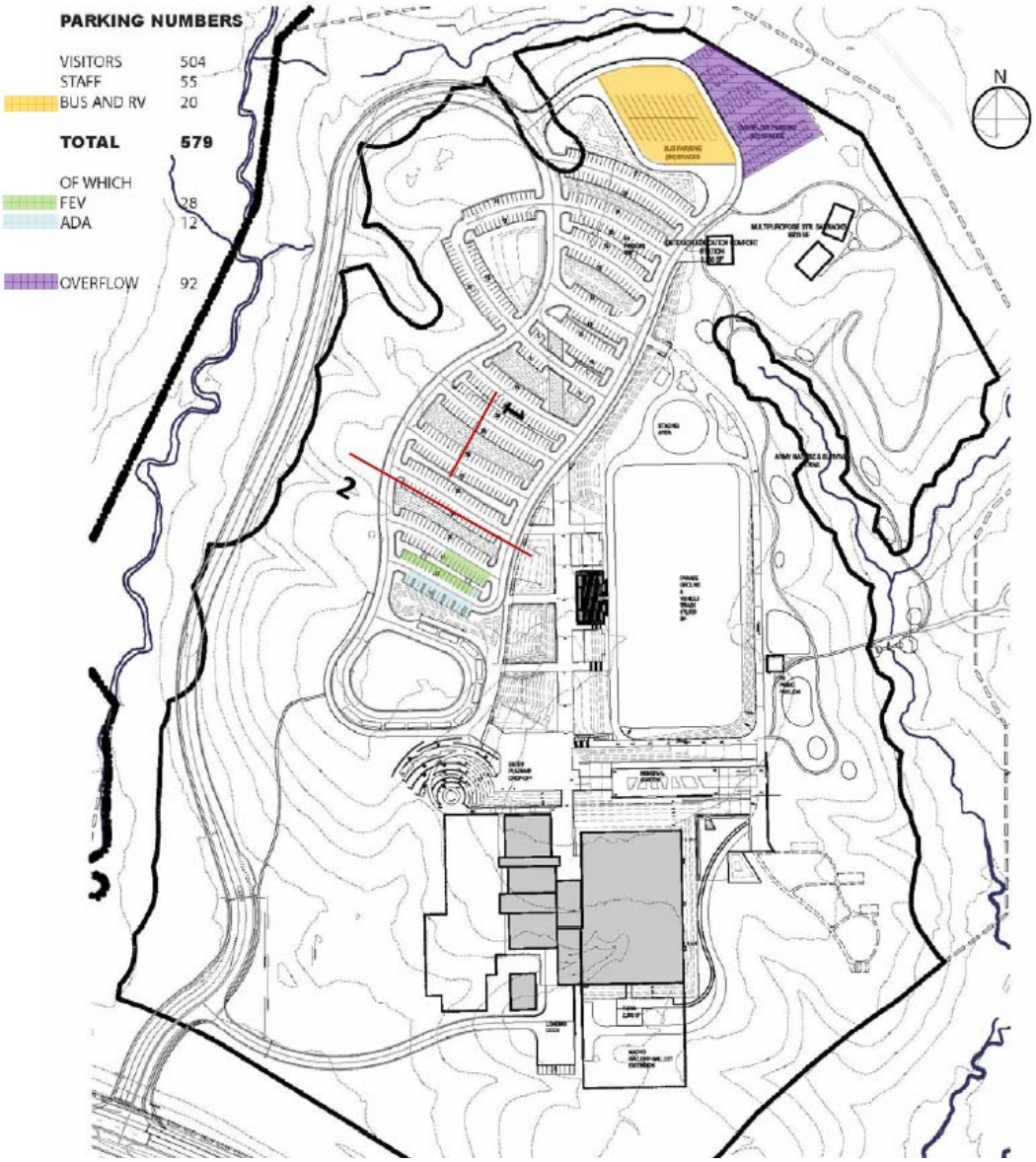
*Parking*

Staff has reviewed the parking information provided by the applicant. In August 2009, the Army hired Lord Cultural Resource to conduct a "Market Analysis and Attendance Projects" Report to analyze the expected number of visitors to the Museum and the needed parking for the site. The report projects an annual attendance at 735,000 people for the opening year, with a stabilized year at 615,000 people. To calculate the number of parking spaces needed, it was estimated that 45% of the annual museum attendance would occur on the weekends, roughly 276,750 visitors per year. Divided by the number of weekend days per year, the anticipated weekend day attendance is 2,660. This number was then multiplied by 30 percent to account for the higher attendance month, equaling 3,460 visitors per weekend day. It was then estimated that the maximum number of people on site at one time would be 40 percent of total visitors per peek weekend day or 1,384 visitors. The study also estimated that there would be an average of 2.5 persons per car. Per these findings, the Army is proposing to construct 504 visitor parking spaces and 20 Bus and RV parking spaces as well as 92 overflow parking spaces. The Army is also proposing to construct 50 employee parking spaces, which will meet NCPC parking ratio of 1 parking space for every 1.5 employees.

Staff encourages the Army to reevaluate the need for 504 visitor parking spaces, 20 Bus and RV parking spaces, and 92 overflow spaces. Staff urges the Army to build parking spaces for the average daily visitor numbers rather than multiplying the number by 30 percent to account for the higher attendance events. The Army should evaluate the use of shuttles from off site locations for large events.

Staff also encourages the Army to evaluate the use of structure parking and pervious pavement to reduce the amount of impervious surfaces on site. Structure parking would also increase the amount of open space at this location. If structure parking is not used, any overflow parking and parking areas not frequently used should use pervious materials such as grass pavers. Staff does commend the Army for the use of bioswales and landscaping in the parking lot design; however, staff urges the Army to use additional initiatives on a site that is currently a golf course and is entirely pervious surface.

Staff is also encouraging the Army to evaluate the location and configuration of the parking. While staff understands the constraints of the site; the current parking configuration requires the visitor to traverse the parking lot prior to seeing the building and degrades the experience of visiting the Museum. Visitors to the Museum should have the opportunity to experience the Museum building and entrance before experiencing the parking lot.

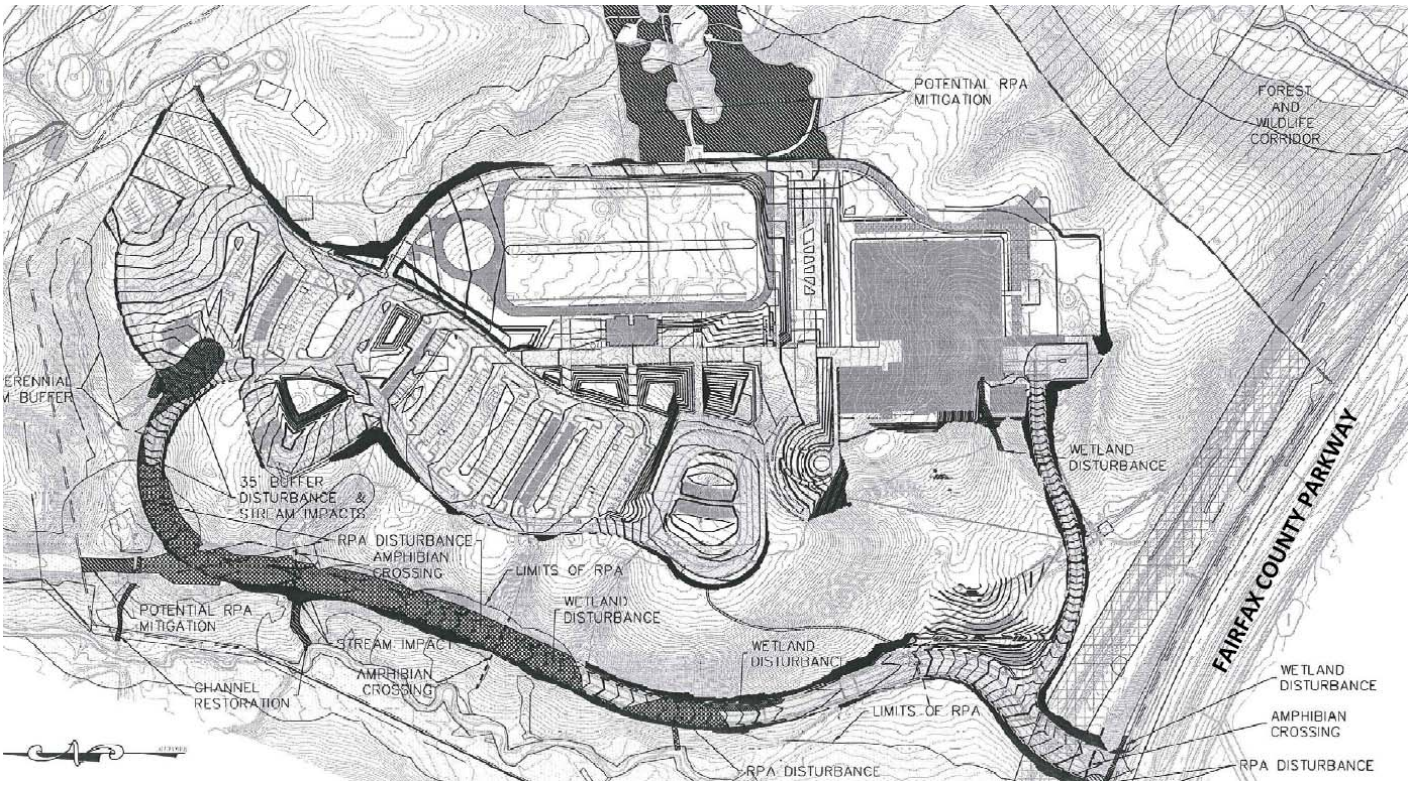



**Parking Plan**

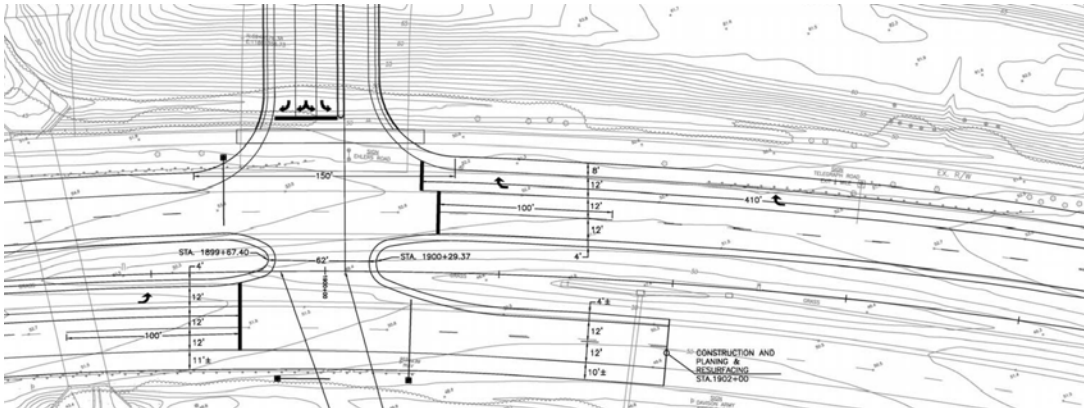
*Access Road*

The Army is proposing an at-grade intersection with the Fairfax County Parkway to access the site. The access road would follow and widen an existing abandoned road alignment that cuts through a steeply sloping area adjacent to Kernan Run, the perennial stream that flows along the western property boundary. The road would diverge away from the existing roadway alignment and traverse a steeply sloping area to the plateau area on which the Museum would be located. Due to the steep slopes and location of wetlands, staff encourages the Army to evaluate the access road location. Staff also encourages the Army to evaluate the at-grade intersection with Fairfax County as an at-grade intersection may negatively impact the traffic at this location.

**<u>Potential Impacts and Mitigation on Wetlands and Resource Protection Areas</u>**




**<u>Proposed At-Grade Intersection with the Fairfax County Parkway for Museum Access</u>**

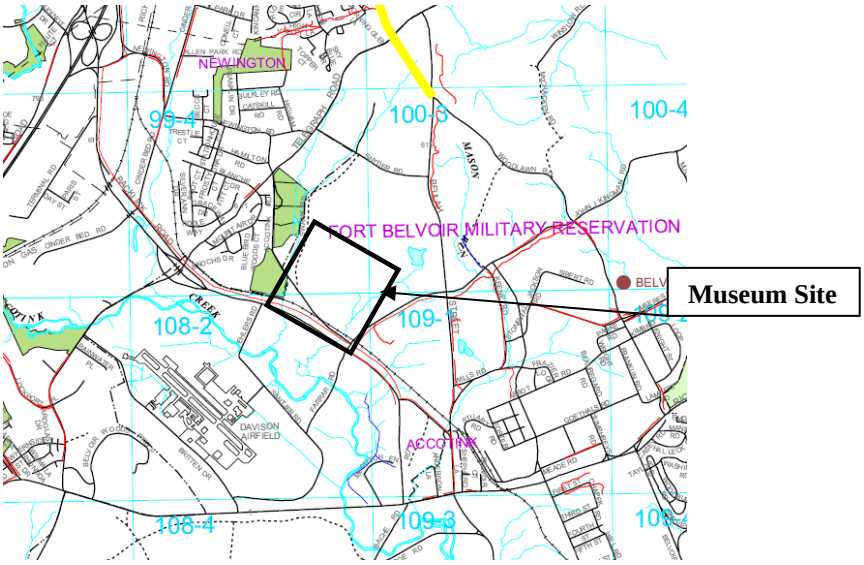


*Transportation*

The Army anticipates that 90 percent of the visitors to the Museum will come by automobile. While staff understands the limitation of site for transit options, staff encourages the Army to evaluate ways to reduce the number of vehicle trips to the site. Staff encourages the Army to evaluate multiple transportation options for visitors to get to and from the site.

A shuttle bus to and from the Virginia Railway Express (VRE) Lorton Station and the Franconia-Springfield metro station, as well as tourist destinations such as the Pentagon and the National Mall should be evaluated. Staff also encourages the Army to reach out to the Veterans Affairs Administration and the Armed Forces Retirement Home to offer shuttle service or visitations from their facilities.

Staff encourages the Army to evaluate pedestrian and bicycle amenities on site. Given that the Fairfax County Parkway shared path is adjacent to the site; the Army should include a new path connecting the Museum with the Fairfax County Parkway trail. The Museum design should also take into account bicycle facilities on site. Staff encourages the Army to work with Fairfax County to identify possible trail connections.




**Existing Inventory of Trails in Fairfax County**
Trails are in red

*Next Submission*

Staff has identified the following elements that the applicant and design team should submit for the next submission to the Commission:

- A letter from the Virginia Department of Transportation (VDOT) concurring with the Army's decision to use an at grade intersection at Fairfax County Parkway to access the site. Given that at-grade intersections are not common on Fairfax County Parkway and

may negatively impact traffic in this location, and would need permitting from the VDOT, staff requests that a letter from VDOT accompany the submission materials before the project can achieve final approval.

- Information regarding the relocation of the golf course lost due to the museum construction. As a result of this project, golf links will be reconstructed at a different location. That location and project should be evaluated with the proposed museum project.
- A detailed landscape plan; the bioswales for the parking lot
- Renderings of the site from two vantage points along Fairfax County Parkway and of the building from the top of the parking access lane to the facility, as well as a north-south and an east-west site section showing the parking lot, the museum building, the access road, and Fairfax County Parkway.
- Information on how the project conforms to the Department of the Army's procedures to implement Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," and the Energy Independence and Security Act of 2007.

## CONFORMANCE

### Comprehensive Plan for the National Capital

The proposed project is not inconsistent with Comprehensive Plan for the National Capital in particular the Visitors Element.

### Federal Capital Improvements Plan

The National Museum of the U.S. Army is located within the Federal Capital Improvements Plan for the fiscal years 2010-2015. The project was categorized as a project requiring additional planning coordination. The estimated cost in the FCIP is $388,175,000. The FCIP describes the museum as: "This project will construct a 155,977 gross square foot facility to house the National Museum of the US Army at Fort Belvoir. This complex will consist of indoor and outdoor exhibit space, HVAC, lighting and information systems. Supporting facilities include electrical service, water distribution and wastewater collections lines, site improvements, relocation of golf course facilities, and realignment of the golf course. AT/FP measures will be included and access for the handicapped will be provided. A total of 550 vehicles and 40 recreational vehicle parking spaces will be provided through surface parking. The project is proposed to meet LEED Silver standards. Access gate improvements will be included.

### Fort Belvoir Master Plan update

The project is consistent with the land use of the area as designated by the current Master Plan update being completed for Fort Belvoir. The draft Long Range Component of the Fort Belvoir Master Plan proposes land use in this area as community. Fort Belvoir defines community uses as "land use that encourages a mix of uses. Facilities allowed include religious, family support, personnel services, professional services, medical, community, housing, commercial and recreational services. Users live both on- and off-post and may include soldiers, dependents, retirees, and other civilian personnel." Staff has reviewed the draft Long Range Component of the Fort Belvoir Master Plan and provided comments to the Army on the master plan. The Army

anticipates starting National Environmental Policy Act review of the master plan in July 2010, with formal submission of the master plan to the Commission in the fall of 2010.

National Environmental Policy Act (NEPA)

Completion of National Environmental Policy Act review is not required for Commission review at the concept level. The Army is currently undergoing an Environmental Assessment for the project. The Museum project is outside the District of Columbia; therefore, NCPC does not have independent NEPA responsibility.

National Historic Preservation Act (NHPA)

Completion of Section 106 of the National Historic Preservation Act review is not required for Commission review at the concept level. The Army has initiated consultation with the Virginia State Historic Preservation Office on the project. As a project outside the District of Columbia, NCPC does not have independent Section 106 responsibility.

Sustainability

Staff commends the Army and its design team for the sustainability elements of the project. The Museum is designed to achieve a Leadership in Energy (LEED) and Environmental Design silver rating. Some of the elements that the project includes to reach the LEED silver rating are:

- Refrigerants will be selected to minimize their emissions and potential negative impact on the ozone layer;
- High efficiency LED lighting will be utilized to minimize electrical demand;
- Materials will be utilized based on their composition of recycled content and their geographical region of origin, to reduce demand for virgin resources, and to reduce environmental impacts from long distance shipment;
- Rapidly renewable materials, with a harvest life of less than 10 years, will be utilized to reduce demand for resources that take longer to regenerate;
- Paints, sealants, and composite woods will be selected based on their Volatile Organic Compound (VOC) content to minimize future "off-gassing" during the life of the structure.

**Proposed Building Materials**

CONSULTATION

Referral to relevant local planning agencies

In accordance with the Commission's Procedures for Intergovernmental Cooperation in Federal Planning in the National Capital Region, NCPC staff referred the proposed project to: Fairfax County; the Virginia Department of Transportation; the Virginia Department of Environmental Quality; the Washington Metropolitan Council of Governments; the Northern Virginia Regional Commission; and the Northern Virginia Transportation Commission. The comments received from Fairfax County are attached.

Staff encourages the Commission to **note** that Fairfax County submitted comments on the proposed project and **recommends** that the Army meet with Fairfax County regarding these comments. In addition, the Army should evaluate these comments within its National Environmental Policy Act review of the project prior to the next submission of the project for Commission review.

**Attachment: Fairfax County Letter and Comments**

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

June 2, 2010

David W. Levy
Director, Urban Design and Plan Review
National Capital Planning Commission
401 9th Street, NW
North Lobby, Suite 500
Washington, DC 20004

Dear Mr. Levy:

In collaboration with the Department of Public Works and Environmental Services (DPWES), Fairfax County Department of Transportation and the Fairfax County Park Authority staff, the Department of Planning and Zoning has reviewed project plans that have been submitted for the following four projects at Fort Belvoir: The National Museum of the United States Army (NCPC File Number 7094), the Arts and Crafts Center (NCPC File Number 7095), the Post Exchange Shopping Center (NCPC File Number 7096) and the Flight Control Tower (NCPC File Number 7097). Our comments on each of these projects are attached. Our comments do not address the set of documents that has been submitted as part of Fort Belvoir's Real Property Master Plan; comments on that set of documents are being submitted under separate cover.

Please note that these comments reflect the views of county staff and have not been reviewed by the Fairfax County Board of Supervisors. Please also note that these comments focus primarily on building and site design issues, as opposed to analyses of alternatives.

The review packages have been presented as preliminary and/or final submission packages. While we do not have major concerns about either the Flight Control Tower or Arts and Crafts Center, we do have more substantial concerns about both the Army Museum project and the Post Exchange Shopping Center project and feel that NEPA documentation is necessary for the consideration of both of these projects before they proceed to either the preliminary or final review stage. This essential NEPA documentation was not available for review along with the project plans. NCPC's "Environmental and Historic Preservation Policies and Procedures" states:

> "In requesting preliminary plan approval, the submitting agency shall submit an environmental document as specified at Sections 8, 9, or 10 of these procedures [an Environmental Assessment, Environmental Impact Statement or a Categorical Exclusion determination]. In a submission requiring either an Environmental Assessment or an Environmental Impact statement, the final determination resulting from the document *must* be completed and signed by the responsible federal lead agency *prior* to the submission of the proposal to the Commission for review."

**Department of Planning and Zoning**
Director's Office
12055 Government Center Parkway, Suite 755
Fairfax, Virginia 22035-5509
Phone 703-324-1380
Fax 703-324-3056
www.fairfaxcounty.gov/dpz/

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DEPARTMENT OF PLANNING & ZONING

Therefore, we are providing these comments with the understanding that, on July 1, preliminary and final plan approvals by NCPC will only be considered for the Flight Control Tower and Arts and Crafts Center projects and that any NCPC reviews of the Army Museum and Post Exchange Shopping Center projects will be concept-level reviews, resulting in NCPC comments to Fort Belvoir without any consideration of approval. We feel that such concept reviews would be helpful to all parties and we therefore encourage NCPC to move forward in this manner, recognizing that there will be a need for a future NCPC approval process that will incorporate a consideration of appropriate NEPA documentation and that will include another opportunity for county review. We also wish to stress that our review of these two projects cannot be considered to be complete until we are able to review NEPA documentation in concert with the development plans.

Please note that we do not have major concerns in regard to either the Arts and Crafts Center or the proposed flight tower; we therefore do not object to NCPC's consideration of preliminary and final plan reviews of these projects at this time.

NCPC should also be made aware that information presented in two of the project-specific submissions conflicts with information that has been presented in broader master planning documents, as follows:

- The Area Development Plan for the Community Support Area identifies structured parking adjacent to a proposed shopping center building. The project plans for the Post Exchange shopping center identify surface parking instead.

- The Area Development Plan for the Airfield Area identifies two possible locations for a new air traffic control tower—one would be near the southwestern property boundary (and a tower in this location would have adverse impacts on the adjacent residential area) while the other would be more centrally located on the parcel. The project submission, however, indicates that neither of these sites has been selected for this facility.

The planning documents should be consistent with one another.

Our primary concern with the Army Museum project relates to the proposal to provide access to the site from an at-grade intersection with the Fairfax County Parkway and through an Environmental Quality Corridor within the western portion of the site. This proposal generates concerns about impacts to traffic flow along the Parkway, adverse impacts to the natural environment within the EQC, the potential for conflicts with a possible future rail transit alignment as a result of a proposed at-grade crossing, and potential adverse impacts to the Mount Air historic site. The NEPA documentation for this project should evaluate alternative approaches to the provision of access to this site.

Our primary concern with the Post Exchange shopping center project relates to the intensity of the proposed development from a land consumption standpoint. There would be extensive clearing of trees and a considerable addition of impervious cover resulting from the proposed action. Alternative site design approaches that would not necessitate this extent of clearing and impervious cover (e.g., multi-story commercial buildings; structured parking) should be considered. We also feel that additional analysis is needed in regard to transportation concerns.

There are other issues associated with each of these projects; details are provided within the attached sets of comments.

If you have questions about comments on any of the four projects, please feel free to coordinate with the contact person identified at the top of the respective set of comments. If you have questions about the broader set of concerns noted above, please contact Noel Kaplan at Noel.Kaplan@fairfaxcounty.gov or at 703-324-1369.

Sincerely,

James P. Zook, Director
Department of Planning and Zoning

JPZ: NHK

Attachments: As Stated

cc: Board of Supervisors
Anthony H. Griffin, County Executive
Robert A. Stalzer, Deputy County Executive
Katharine D. Ichter, Director, Fairfax County Department of Transportation
Fred R. Selden, Planning Division Director, DPZ
Mark G. Canale, Fairfax County BRAC Coordinator, FCDOT
Fred Rose, Chief, Watershed Planning & Assessment Branch, Stormwater Planning Division
Sandra Stallman, Manager, Park Planning Branch, Fairfax County Park Authority
Pamela G. Nee, Chief, Environment and Development Review Branch, DPZ
Noel H. Kaplan, Senior Environmental Planner, EDRB, DPZ
John Bell, Senior Environmental Planner, EDRB, DPZ
Maya Dhavale, Environmental Planner, EDRB, DPZ
Mary Ann Welton, Environmental Planner, EDRB, DPZ
Cheryl L. Kelly, Urban Planner, National Capital Planning Commission

**National Museum of the United States Army (NMUSA)**
**NCPC Project Plans—Preliminary Submission**
**NCPC File Number 7094—April 2, 2010**
**Comments from Fairfax County Staff, May 2010**
**Staff Contact: Noel Kaplan, Noel.Kaplan@fairfaxcounty.gov; 703-324-1369**

These comments have been prepared by the Fairfax County Department of Planning and Zoning in collaboration with the Fairfax County Department of Public Works and Environmental Services (DPWES), the Fairfax County Department of Transportation and the Fairfax County Park Authority staff. This project proposes the construction of the National Museum of the United States Army on a site that is largely vacant; the site does, however, include golf course holes on the North Post golf course.

## Documentation

The review package has been presented as an "NCPC Project Plans Preliminary Submission." However, essential documentation required under the National Environmental Policy Act (NEPA) was not available for review along with the project plans. NCPC's "Environmental and Historic Preservation Policies and Procedures" states: "In requesting preliminary plan approval, the submitting agency shall submit an environmental document as specified at Sections 8, 9, or 10 of these procedures [an Environmental Assessment, Environmental Impact Statement or a Categorical Exclusion determination]. In a submission requiring either an Environmental Assessment or an Environmental Impact statement, the final determination resulting from the document *must* be completed and signed by the responsible federal lead agency *prior* to the submission of the proposal to the Commission for review." Therefore, it would be inappropriate to proceed with NCPC approval at this time. However, we do feel that a concept proposal review (resulting in NCPC comments to Fort Belvoir without any consideration of approval) would be helpful to all parties and we therefore encourage NCPC to move forward with such a review, recognizing that there will be a need for a future NCPC approval process that will incorporate a consideration of appropriate NEPA documentation and that will include another opportunity for county review.

A draft Environmental Assessment on the Army Museum project was provided in November 2008. In a November 17, 2008 letter to Fort Belvoir's Commander, the Chairman of the Board of Supervisors stated that the "Board of Supervisors strongly supports the decision to have the home of the National Museum of the United States Army located at Fort Belvoir." The letter noted, however, that the county did not support a proposed Finding of No Significant Impact; the preparation of an Environmental Impact Statement was recommended.

The NEPA documentation that is prepared for this project should evaluate environmental impacts associated with various project alternatives, both in terms of siting and internal design (i.e., access options). Absent such documentation, the comments provided herein should be considered to be preliminary and incomplete.

## Siting

The draft EA evaluated two possible locations for the museum: The location that is now being proposed (referred to as the "Gunston site" in the draft EA) and a site near Pence Gate. Unless it is demonstrated in the NEPA documentation that the Pence Gate site is no longer viable as a result of other projects that are being pursued in that general area, we continue to feel that the Pence Gate site would be preferable to the Gunston site. The primary reasons, which are similar to the reasons we identified in 2008, are:

- As proposed, development of the Gunston site would require a break in the limited access control line of the Fairfax County Parkway; a new at-grade intersection is proposed along a highway segment that is already characterized by failing levels of service. The Pence Gate site would not have this impact.
- The Pence Gate site provides better access to transit through the existing Fairfax Connector and REX service. Public transportation could easily be provided directly to the site.
- The Pence Gate site provides a better connection with historic attractions in the area, including Mount Vernon and Woodlawn Plantation.
- As detailed below, the proposed access to the Gunston Site would have a considerable adverse impact to an Environmental Quality Corridor associated with Kernan Run (the stream that flows along the western boundary of the site). An alternate access approach, as identified in the draft EA, would not impact this EQC but would have at least some impact to Fort Belvoir's Forest and Wildlife Corridor. Access to the Pence Gate site could be provided without disturbing environmentally sensitive areas.
- The proposed access road and tower could potentially have adverse visual impacts to Mount Air, which is located adjacent to and west of the site and which is eligible for listing on the National Register of Historic Places.
- The Gunston site would require the taking of recreational facilities on the installation (golf course holes).
- The Gunston site would result in an at-grade crossing of an abandoned railroad corridor that runs parallel to the Fairfax County Parkway. This corridor could be used for future pedestrian, bicycle or transit use. Potential conflicts with a possible future transit alignment are of concern.

We recognize that the purpose of the NCPC plan submission is not to evaluate alternatives but is instead to consider a specific development concept. However, we recommend that the NEPA documentation address siting alternatives.

**Access to the museum**

The Army is proposing to provide access to the site through an at-grade intersection with the Fairfax County Parkway. The access road would cross the abandoned railroad alignment and follow an abandoned road alignment (Swank Road) that cuts through a steeply sloping area adjacent to Kernan Run, the perennial stream that flows along the western property boundary. The road would diverge away from the Swank Road alignment and climb a relatively steeply sloping area to the plateau area on which the museum and associated facilities would be located. There are several concerns generated by this proposed access:

- Adverse environmental impacts

- The provision of an at-grade intersection along a stretch of highway planned to be a limited access facility
- The at-grade crossing of the rail alignment, eliciting concerns about possible conflicts with a potential future transit corridor
- Potential adverse impacts to the Mount Air historic site

Alternative access strategies should be considered in the project documentation and NEPA analysis.

Environmental impacts

- Page 7 of the submission states that "the National Museum of the US Army will also be an example of sustainability strengthening natural habitats, enhancing creeks and contributing to the education of the community in the realm of contemporary environmental consciousness and practices." We commend the Army for including this statement. However, the proposed access road would have significant adverse impacts to an Environmental Quality Corridor (boundaries defined by the extent of 15% + slopes) and would also encroach into a Resource Protection Area, and alternatives may be available that would better support this statement. The impacts would not be confined to a small portion of this EQC; rather, the road would be oriented near and parallel to the stream for a distance of several hundred feet. The old road bed is narrow and has closed forest canopy over it. Redeveloping this road for an entrance road would have direct impacts on the stream and adjacent wetlands, would cause significant deforestation on steep slopes and in the RPA over a considerable length, would significantly compromise the ecological functions of this EQC, and would place significant impervious surfaces adjacent to Kernan Branch with little or no opportunity of capturing, treating and detaining that run-off before it would enter the stream. Such runoff would likely also cause significant impacts to the wetlands adjacent to the old road bed.

- While it is recognized that the area in question has already been disturbed by the abandoned road alignment, the use of this alignment for the entrance road would perpetuate and exacerbate the conflict with the EQC policy and add impervious cover within the RPA. Further, it is not clear the extent to which additional clearing and grading would be needed for construction of this road—in particular, we question whether the Erosion and Sediment Control Plan presented in Figure A-011 accurately reflects the extent of clearing and grading that would be needed for the segment of the access road that would connect the existing Swank Road alignment with the upland area.

Impacts to the Fairfax County Parkway

- While it appears that adequate intersection spacing and ramp spacing (incorporating acceleration lanes and transitions) are provided between the existing Telegraph Road interchange and proposed John Kingman Highway interchange, the addition of the proposed direct access from the Parkway may create weave/merge conflicts and result in a degradation of level of service on the Parkway.

Impacts to a potential future transit alignment

- The Long Range Component of Fort Belvoir's draft Real Property Master Plan states: "Develop the abandoned Fort Belvoir railway into a transit corridor, in conjunction with the TMP to support bus-rapid transit or light rail service to connect to Franconia-Springfield Metrorail Station and VRE stations." We view the abandoned rail alignment as a critical link between the Franconia-Springfield Metrorail Station and Fort Belvoir. Any proposed access into the NMUSA should ensure that this rail corridor will remain viable for future transit use. The proposed entrance would result in a new at-grade crossing of this alignment, creating the potential for conflicts with its future transit use.

Potential impacts to Mount Air

- In March 2010, the Virginia Department of Historic Resources (VDHR) determined that Mount Air is eligible for listing on the National Register of Historic Places. While the Army suggests that historic views do not contribute to the significance of Mount Air, no information has been provided in the project review materials that indicates that VDHR concurs with the Army's finding. The determination is not final without concurrence from the VDHR. The entrance road to the Army Museum is proposed to be located along the western property boundary adjacent to Mount Air. This raises a concern about potential negative visual and audible impacts to Mount Air.

Evaluation of alternative access approaches

- Ideally, if the site is to be accessed directly from the Fairfax County Parkway, a more direct access from the Parkway to the proposed parking lot should be pursued in a manner that would minimize disturbance to the EQC and avoid encroachment into the RPA. Section B5 on page 9 stresses "a prioritized strategy of addressing environmental impacts through avoidance, minimization and mitigation." A more direct access road route would either avoid or reduce much of the EQC and RPA impacts. A more direct access road would also reduce the fragmentation of the EQC that would result from the use of the old road alignment. Two amphibian crossings are proposed for the proposed road alignment; there would not be the fragmentation requiring these crossings if a more direct route to the plateau area was to be pursued. A more direct access road would also reduce the concern about conflicts between the access road and Mount Air, as the access road would be considerably farther away from the historic site.

  Page 17 of the submission suggests that this alternative access concept may not be feasible due to steepness of slopes in the area. Is this the reason a more direct access is not being pursued? If so, why does the schematic site plan (Figure A-008) identify a more direct service drive access route to the museum area? The Army should better justify why the proposed access road, and its impacts to the EQC and RPA, are necessary and should either evaluate a more direct alternative or provide documentation demonstrating that such an alternative would not be possible.

- We recognize that there has been considerable discussion in the past regarding the idea of accessing the museum from Kingman Road and that Fort Belvoir has chosen not to pursue

such a concept. Such an access concept would be preferred from a transportation standpoint in that it would avoid the adverse impacts relating to a new at-grade intersection along the Fairfax County Parkway and an at-grade crossing of the abandoned rail alignment. Any access from Kingman Road would, however, require a new crossing of the Forest and Wildlife Corridor, along with either a second EQC crossing or the loss of additional holes from the golf course. The Kingman Road access idea was recognized in the 2008 draft Environmental Assessment, where it was suggested that a study would need to be performed to evaluate the impacts of this access concept to the Forest and Wildlife Corridor. In light of the considerable concerns that would be generated by direct access from the Fairfax County Parkway, we feel that the Kingman Road access concept should not be eliminated from consideration and that it should be evaluated as an alternative within the NEPA documentation; the study suggested in the 2008 Environmental Assessment should be incorporated within the NEPA analysis. While any new disturbance to the Forest and Wildlife Corridor would, at least to some extent, add to the adverse impacts that have already occurred in this area (e.g., crossings by the Fairfax County Parkway and by Beulah Street), a portion of the corridor has already been cleared in the area where a new access road would probably originate (across from the Defense Logistics Agency entrance at Kingman Road), and the topography in the area is such that a bridge crossing of the stream in this area could be designed such that it would create only a narrow disturbance footprint with a wide, tall opening that would readily accommodate faunal movement, hydrologic functions and genetic exchange. While the impacts associated with a Kingman Road access may ultimately be determined to eliminate this option from consideration, we feel that the option should, at this point, be retained for analysis as a possible alternative.

- Finally, consideration should be given to the potential for the provision of a grade-separated access. While such an approach would be considerably more expensive than an at-grade Parkway intersection, it would be beneficial from both an environmental perspective and a Parkway operations perspective, and it could avoid an at-grade crossing of the abandoned rail alignment.

- If an alternative access strategy is pursued, the old Swank Road alignment could be restored, through planting of native species and/or natural succession, based on the recommendation of a professional arborist. Another option would be to retain the use of this alignment as a pedestrian and bicycling route.

**<u>Stream and Resource Protection Area impacts</u>**

- Page 17 of the submission document indicates that, if access is provided as proposed, there will be impacts to 0.14 acres of isolated wetlands, 430 linear feet of streams, and 2.1 acres of buffer areas within Resource Protection Areas. Mitigation of the stream and RPA impacts is proposed through stream restoration and reforestation efforts on-site or nearby; we support the pursuit of mitigation efforts close to the areas of impact and commend the Army for this approach.

- The document notes that there are two streams on the site that are characterized by erosive conditions/vertical banks and that these channels will be re-graded, using natural stream

design. Are we correct in assuming that these streams are different from the stream restoration project area that would be pursued to mitigate impacts to streams (in that an off-site project to the southeast of the project site is referenced)? If so, the off-site mitigation efforts should be identified either on Figure A-010 (the mitigation plan) or a smaller scale companion map.

- With respect to the re-grading of the two streams, who will oversee the design and construction of this project to ensure that the newly constructed channels will be designed and constructed to accommodate anticipated stormwater runoff flow volumes and peak flows and that any disturbed areas will be revegetated appropriately? How will the restored streams be monitored over time?

- We encourage the Army to develop strong mitigation plans that include multiple years of monitoring and maintenance to ensure planting success, control non-native invasive plant species, and control white-tailed deer since over-browsing by this species will have devastating effects on native vegetation and defeat restoration attempts.

- The submission materials reference mitigation of impacts to a small, isolated wetland through the purchase of credits at a wetlands bank. While we recognize that these impacts will be minor (only 0.14 acres of isolated wetlands), we question why the purchase of credits in a wetlands bank (which would probably not even be located in Fairfax County) would be the preferred mitigation approach. Consideration should be given to pursuing restoration efforts nearby. The Stormwater Planning Division of the Department of Public Works and Environmental Services (703-324-5500) may have suggestions for nearby restoration projects.

**<u>Transportation—Site access and intersection operation</u>**

- As part of the design process, Fairfax County and the Virginia Department of Transportation (VDOT) worked cooperatively to establish limited access controls on both the Fairfax County Parkway and Franconia-Springfield Parkway as a means of controlling points of access. Historically, the county and VDOT have denied all but one request for a modification in the limited access control line, the one exception being Walker Lane, originally intended as "emergency access only." The county's Comprehensive Plan calls for a future grade separated interchange at John Kingman Road and the Fairfax County Parkway. Assuming that the access concept that is ultimately pursued is one requiring direct access from the Parkway, the requested break in the limited access should only be granted for the use of the NMUSA and should not convey for any other land use that may be proposed for this site. In order to provide for full access to the Fairfax County Parkway and limited access break while also providing for the future interchange at John Kingman Road, the county strongly encourages that, during the NMUSA design process, an evaluation be performed of all traffic and geometric design elements for the future interchange. County staff would support the proposed full access to the Fairfax County Parkway (and break in limited access)

on the condition that the Army reserve the right of way for the future interchange at John Kingman Road at no cost to the county or VDOT.

- With the future Kingman Road interchange and the existing interchange at Telegraph Road, adding NMUSA access could negatively impact traffic operations. A "right in/right out" access to NMUSA is hence strongly preferred to mitigate this traffic impact. If a full access is provided, the Army will need to fund and construct a traffic signal at the location upon completion of a Signal Warrant Study.

- Additional analyses should be performed to identify mitigation measures to improve the operations of the existing intersection of Fairfax County Parkway and John Kingman Road that would also provide a benefit to the proposed NMUSA entrance onto Fairfax County Parkway, such as:
  - Reconfiguring the lane usage for the westbound right turn volume from Kingman Road onto northbound Fairfax County Parkway to provide additional capacity;
  - Possibly adding capacity along the Fairfax County Parkway northbound approach, perhaps by widening; and
  - Lengthening the left turn storage bay for the left turn volume onto John Kingman Road from Fairfax County Parkway southbound approach or similar improvements to provide increased capacity for the turn lanes or the mainline.

- It is stated in the Page 26 of the NMUSA Corridor Study (July 1, 2008) that the signal timings at the intersection of Fairfax County Parkway and John Kingman Road were optimized. However, it is not specified if similar optimization efforts were being pursued for the future no-build scenario. Since it is stated in the finding that some of the performance along the corridor would improve with the future NMUSA development, optimization for the future no-build scenario needs to be performed to provide fair assessment of the impact associated with the NMUSA development.

**Transportation—Transit**

- The section of the submission document addressing the Transportation Management Program (Section 1.K.) does not address the potential for utilization of transit and/or shuttle service. The Army should indicate how transit and/or shuttles could be used to access NMUSA. The site design should address public transit access/passenger amenities as well as tour bus accommodations.

- Existing and proposed transit stop locations in the vicinity of the NMUSA should be identified.

- Consideration should be given to the provision of a shuttle service to the NMUSA from off-site locations such as the Franconia-Springfield Metrorail Station or the Lorton Virginia Railway Express Station.

**Transportation—Bicycle and pedestrian-related facilities**

- A comprehensive system of pedestrian and bicycle amenities, including bicycle parking, should be incorporated into the design of the site.

- The Fairfax County Parkway Trail (shared use path) runs parallel to the Parkway on the north side. This trail should be upgraded to current standards as part of the NMUSA development.

- Site design should include a new shared use path connecting the NMUSA with the Parkway trail and a new path connecting these facilities to Accotink Road. Accotink Road could be designated as a bike route providing alternative access to the NMUSA and Parkway trail from adjacent neighborhoods and Telegraph Road.

- Right of way should be reserved along Fort Belvoir's abandoned railroad right of way between Telegraph Road and Cinderbed Road for a future bikeway serving the Franconia-Springfield Metro Station. While this bikeway is not on the current trails plan, it is proposed for such inclusion in the plan update.

- The main visitor access appears to be on the opposite side of the building from the Parkway. The plan submission should identify the walking distance from the Parkway to the building entrance as well as facilities that will be provided to aid pedestrians.

**Stormwater management**

- Page 10 of the submission document describes "natural infiltration systems" that will "have been enhanced through the creation of 500,000 SF for 10 acres of distributed bioswales." It is not clear what this statement means; clarification is needed. Later on page 10, it is stated that "the Museum site stormwater management will be based on models that replicate the natural hydrologic cycle." This concept is commendable, but no details are provided regarding the proposed stormwater management system aside from a small scale graphical representation of infiltration facilities, gravel pavement, permeable/grass pavement and soil amendments (drawing A-012). We support the incorporation of low impact development techniques into the site design and encourage the Army to design stormwater management strategies to infiltrate, evapotranspire or reuse stormwater runoff to the extent practicable. In addition, we encourage the Army to establish stormwater management performance levels that will support policy, legislative and/or regulatory efforts that are under way (e.g., development of Total Maximum Daily Loads for local bodies of water as well as the Chesapeake Bay; state and federal regulatory and/or legislative initiatives). The LEED-NC checklist provided at the end of the submission document indicates that the project will be designed such that the LEED® Stormwater Design credits will be attained. We commend the Army for pursuing these design goals and encourage the Army to share details of implementation with the Stormwater Planning Division.

- The proposed intensity of development in the upland area of the site, along with the significant elevation differences on the site, evoke concerns about the potential for the discharge of relatively large volumes and flows of stormwater runoff and the potential for erosion at outfalls and within downstream areas. The LID approaches that will be pursued will certainly be of benefit in this regard, but there will also be a need to design stormwater

outfalls carefully--outfalls should be non-erosive and stream stabilization work in receiving streams should be performed as necessary to ensure a stable receiving stream condition.

- In our comments on the 2008 draft EA, we suggested exploration of the potential for re-use of water from the Noman M. Cole, Jr. Pollution Control Plant for irrigation, cooling systems, toilet flushing, etc. Consideration can also be given to reusing stormwater runoff for these purposes.

- In our earlier comments, we had also suggested the use of innovative stormwater management techniques such as vegetated roofs. This would also support the statement on page 7 that "the National Museum of the US Army will also be an example of sustainability strengthening natural habitats, enhancing creeks and contributing to the education of the community in the realm of contemporary environmental consciousness and practices." Figures A-036 and A-037 (the façade and tower axonimetric views) indicate that the mains structure will be capped with a vegetated roof. This should be confirmed. We commend the Army for this proposal and encourage the Army to take advantage of the environmental education opportunities that this roof will provide.

- The stormwater management plan provided as Figure A-012 also identifies the use of permeable pavers to the north of a portion of the museum building. Pervious pavers are also referenced in Figures A-036 and A-037 and appear to be illustrated in Figure A-033. We commend the Army for considering this design approach and encourage the Army to share details regarding pavement designs and locations with the Stormwater Planning Division.

**<u>Watershed management planning</u>**

- The proposed project is located within the Accotink Creek watershed (near Accotink Bay, which flows into Gunston Cove). The streams in this watershed are substantially degraded and exhibit poor habitat, poor biological conditions and a lack of fish diversity. Benthic macroinvertebrate community health is also poor throughout the watershed. The entire Accotink Creek watershed is categorized as Watershed Restoration Level II by Fairfax County. The primary goal for Restoration Level II watersheds is to prevent further degradation and to implement measures to improve water quality.

  Portions of Accotink Creek from the confluence with Calamo Branch to the tidal waters of Accotink Bay have been listed as Impaired (Category 5) Waters by the Virginia Department of Environmental Quality for benthic macroinvertebrate bioassessments (TMDL scheduled in 2010) and fecal coliform bacteria (TMDL scheduled in 2016). Accotink Bay has also been listed as impaired for aquatic plants (TMDL schedule of 2010); causes of the impairment include atmospheric deposition of nitrogen, industrial and municipal point source discharge, internal nutrient recycling, loss of riparian habitat, sediment resuspension and wet weather discharges. The tidal waters of Accotink Creek near the confluence with Pohick Bay/Gunston Cove have also been listed as impaired for PCB in fish tissue.

  A Watershed Management Plan is currently under development for Accotink Creek; the proposed project falls within Watershed Management Area 8. This area was modeled and

assessed as the current golf course and open space land use. The results show that this area is one of the remaining areas in the Accotink Creek watershed that falls below the "Very High" mark for Total Nitrogen, Total Phosphorous and Total Suspended Solids. It also scored very high for Subwatershed Ranking. Every effort should be taken to preserve the low level of nutrients and suspended solids in this subwatershed. For information on the Accotink Creek Watershed Management Plan, visit the Accotink Creek watershed website at http://www.fairfaxcounty.gov/dpwes/watersheds/accotinkcreek.htm. For additional information, contact Danielle Wynne at danielle.wynne@fairfaxcounty.gov or 703-324-5616.

**Recreational impacts**

- The proposed museum site and layout would result in the loss of several holes of the golf course. The submission materials indicate that "a revised draft EA that includes the golf course replacement holes will be issued for public comment in May 2010." As the replacement golf course holes would be necessitated by the construction of the museum, the impacts of the construction of new golf course holes should be considered as part of this project. The EA for the golf course replacement holes should be reviewed concurrently with the development plans for the museum and the associated NEPA documentation.

**Mount Air**

- Concerns regarding potential adverse impacts of the proposed entrance road to Mount Air were noted previously.

- The proposed museum design includes a 100-foot high tower. It is not clear as to what impact this may have on Mount Air and raises concern of potential negative visual impact on the property.

**Parking**

- The site plan should identify both the designated pick-up and drop-off areas.

- A robust Parking Management Plan should be developed to handle parking during special events. Overflow parking alternatives should be addressed.

- Opportunities to use existing parking on Fort Belvoir should also be considered as an alternative to adding additional surface parking given the amount of impervious surface on the NMUSA site.

- The 2008 draft EA presented both a structured parking alternative and a surface parking alternative for the Gunston site. The plan submission indicates that only surface parking will be provided. While the document indicates that bioswales will be integrated into the parking lot design, the provision of structured parking would reduce impervious area and could potentially allow for more tree preservation. Is structured parking no longer being considered? If so, why? We encourage the Army to consider a multi-level parking garage with a vegetated roof on top as an alternative to the proposed large area of surface parking.

**Additional comments**

- The submission materials reference a LEED silver target for the museum. We commend Fort Belvoir for its commitment to green building design and construction.

- A report regarding wood turtles that was prepared by Dr. Joseph Mitchell is well done, but there is one minor correction needed. The report has a statement that no wood turtles have been confirmed in the "Dogue Creek watershed in modern times." Staff at Huntley Meadows Park found and documented two wood turtles within the park in the Dogue Creek watershed in 2009.

- The reference to "drawing A-009" on page 9 should be "A-010."

- On page 17, the following statement is made: "The Erosion and Sedimentation Control (ESC) goals for the project are to achieve regulatory compliance and LEED Silver certification . . ." In light of how broad and comprehensive the LEED program is, it is not clear why this program is being linked to the ESC efforts. Clarification is needed.

- The Fairfax County Parkway should be accurately referenced on drawing A-002.

- Square footage assumptions differ. The NCPC Project Plans Preliminary Submission (April 2, 2010) assumes total surface area of 187,500 square feet in the initial phase of construction while the NMUSA Corridor Study (July 1, 2008) assumes 155,000 square feet in Phase 1. This variance in the square footage assumption for the NMUSA may change the findings from the corridor study.

- On page 35 (Figure A-016), a north arrow is missing.

- On pages 35, 36 and 37 (Figures A-016, A-017 and A-018), the unit for the scale is missing.

- On page 36 (Figure A-017), the lane widths of the side street onto Route 7100 are not labeled.