

FINAL DRAFT

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

**FOUNDERS HALL AT
THE NATIONAL MUSEUM OF THE
UNITED STATES ARMY
FORT BELVOIR, VIRGINIA**

On behalf of:



**Department of the Army
U.S. Army Garrison Fort Belvoir, Virginia**

**Contract No. W912DR-14-D-0017 TO 0012
Aerostar SES Project Number M1103.0012**

December 2015

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DRAFT FINDING OF NO SIGNIFICANT IMPACT
FOR THE PROPOSED FOUNDERS HALL AT THE NATIONAL MUSEUM OF
THE UNITED STATES ARMY
FORT BELVOIR, VIRGINIA

BACKGROUND: The United States (U.S.) Army has prepared a Supplemental Environmental Assessment (SEA) that analyzed the potential environmental impacts that may occur as a result of the proposed changes to the development assessed in the *Environmental Assessment for the National Museum of the United States Army* dated September 2010. The proposed changes consist of the construction and operation of a new visitor center and multi-purpose facility, “Founders Hall”, at the National Museum of the United States Army (NMUSA) complex and a construction access road, utilizing the existing historic Fort Belvoir Military Railroad (FBMRR) corridor along the southern portion of the site. The proposed changes are in a location outside of the original Limits of Disturbance (LOD) assessed in the original 2010 Environmental Assessment (EA).

The SEA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), its implementing regulations published by the Council on Environmental Quality (CEQ) 40 Code of Federal Regulations (CFR) Parts 1500-1508, Army Regulation (AR) 200-2, and “Environmental Effects of Army Actions,” (32 CFR Part 651). As the proponent of this project, the U.S. Army has the responsibility to comply with the full range of environmental laws regarding the implementation of the Proposed Action.

PURPOSE AND NEED: Founders Hall is proposed to be the first building constructed at the NMUSA complex. As an anchor building at the NMUSA complex, Founders Hall will provide an introduction to some of the features of the museum during the NMUSA’s 2.5-year construction period. In general, Founders Hall will be a multi-purpose facility supporting activities related to orientation, donor cultivation, marketing, education, training, revenue generation, and special events. Founders Hall will serve two main purposes:

Pre-Museum Opening Purpose and Activities (2016-2019)

- Real-time visibility of National Museum construction progress.
- Preview of design, purpose, and theme of the National Museum.
- Orientation and cultivation of prospective major donors and other key people.
- Educational displays of selected U.S. Army artifacts and artwork.
- Revenue generation opportunities (events, gift/book shop) as soon as practicable - event sizes ranging from 10 to 100 participants.
- Training site for docents.

Post-Museum Opening Purpose and Activities (2019 and after)

- Revenue generation via events (conferences, catered events, corporate displays, gift/book shop) - event sizes ranging from 10 to 100 participants.
- Continuing cultivation of prospects, donors, and other key people.

- Venue for special Army Historical Foundation (AHF) and U.S. Army activities.
- Extended office space for AHF and U.S. Army staff.
- Educational displays of selected U.S. Army artifacts and artwork.

DESCRIPTION OF THE PROPOSED ACTION: Founders Hall will be located at the Gunston site within the North Post section of Fort Belvoir and will be located on Liberty Drive at the entrance to the NMUSA complex off of Fairfax County Parkway. The Founders Hall site would be comprised of approximately 1.24 acres and the overall LOD of the Proposed Action, including utilities and temporary construction access to the site will be 14 acres. Founders Hall will be a two-story facility with an entry plaza to be provided at the northeast corner of the building, and sidewalks adjacent to the 29-space parking area will also provide access to a service entrance. A small courtyard and pedestrian sidewalks will also be provided on the lower level.

ALTERNATIVES CONSIDERED: Two alternatives were analyzed in the 2010 NMUSA EA and resulted in the selection of the Gunston site (see 2010 NMUSA EA). The location within the Gunston site for Founders Hall was chosen due to the limited upland space available and positioned to avoid impacts to natural resources to the maximum extent practicable. Therefore, only the No Action Alternative and the Founders Hall Proposed Action were carried forward for further analysis. Under the No Action Alternative, Founders Hall would not be constructed, and the NMUSA would continue on to be constructed as planned in the 2010 NMUSA EA; however, the Purpose and Need objective would not be met under the No Action Alternative.

AFFECTED ENVIRONMENT AND CONSEQUENCES: If minimization and mitigation measures are implemented, the Founders Hall Proposed Action would not significantly impact any of the resources analyzed. Minor and short-term impacts would occur from implementation of the Proposed Action on Soils, Vegetation and Wildlife, Waters of the U.S., Cultural Resources, Air Quality, Noise, and Traffic and Transportation. A listing of the resources analyzed and the consequences of the implementation of the Proposed Action is as follows:

Land Use, Plans and Coastal Zone Management - No significant impact expected. The Founders Hall Proposed Action is compliant with land use plans according to the June 2015 Real Property Master Plan (RPMP) Environmental Impact Statement (EIS) for Fort Belvoir and is consistent with the Coastal Zone Management Act (CZMA).

Soils - No significant impact expected. Minor impacts include the disturbance of 14 acres of soil in addition to the proposed soil disturbance of 74.9 acres for the NMUSA Proposed Action. The added disturbance to the NMUSA Proposed Action would not significantly impact soil resources in the area. The Chesapeake Bay Best Management Practices (BMPs), Virginia Department of Environmental Quality (VA DEQ) approved Erosion and Sediment Control (VESC) Plan, VA DEQ approved Stormwater Management Plan (SWMP), and a Stormwater Pollution Prevention Plan (SWPPP) would be implemented to reduce erosion, control pollution and stormwater runoff, and prevent sedimentation during construction until permanent stabilization is achieved.

Vegetation and Wildlife - No significant impact expected. Minor impact to vegetation and habitats would occur due to disturbance of 14 acres of mixed oak/pine forest in the proposed Founders Hall LOD in addition to the 74.9 acres of mixed habitat that comprises

the proposed NMUSA LOD. However, the U.S. Army would protect existing trees to the maximum extent feasible by removing only those trees that would interfere with Founders Hall and NMUSA features in accordance with Fort Belvoir Tree Removal Policy #27.

No critical endangered species habitats are located within the proposed Founders Hall and NMUSA LODs as designated by the U.S. Fish and Wildlife Service (USFWS). However, federally-protected species habitats for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) occur within both the Founders Hall and NMUSA LODs. The U.S. Army has completed ESA Section 7 consultation with the USFWS regarding project effects to the NLEB.

The proposed Utilities (IT, sewer, and electricity) will traverse the Forest and Wildlife Corridor (FWC); however, FWC would not be impacted because the utilities would be directionally drilled under the FWC. However, temporary minor impacts to the FWC would occur during the construction phase of the Proposed Action when the FBMRR is temporarily used as an access road.

Construction of Founders Hall would result in minor impacts to approximately 2 acres of Partners in Flight (PIF) buffer areas where the utilities would be installed south of the FBMRR and along the temporary construction road on the FBMRR.

Surface Water, Water Quality, and Floodplains - No significant impact expected. The U.S. Army would adhere to VESC, SWMP, and Fort Belvoir Master Spill Plan (FBMSP) to protect surface waters and water quality. A Frack-Out Plan will be prepared and maintained onsite by drill crews during horizontal directional drilling activities. The Founders Hall and NMUSA Proposed Action is not located within a floodplain.

Waters of the U.S., Resource Protection Areas (RPAs), and Non-Perennial Stream Buffers - No significant impact expected. As a result of Founders Hall Proposed Action, 0.101 acres of RPAs, 23 linear feet (LF) of perennial stream would be impacted, and 0.011 acres of Palustrine Forested (PFO) wetlands would be converted to Palustrine Emergent (PEM) wetlands. The combined impacts for Founders Hall and NMUSA would result in permanent impacts to jurisdictional resources to include 0.075 acres of PFO wetland, 0.074 acres of PEM wetland, 0.011 acres of permanent PFO conversion to PEM, and 110 linear feet (LF) of stream channel. Additionally, 0.695 acres of RPAs and 0.142 acres of non-perennial stream buffers would be impacted by the combined action of Founders Hall and NMUSA. The U.S. Army will obtain U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) Numbers 27 and 39 and a VA DEQ Water Protection General Permit (WP4) to authorize the proposed impacts to Waters of the U.S. and Waters of the State. The 401 water quality certification is being issued as part of the WP4. Any permanently impacted wetlands or streams would be mitigated according to the mitigation measures submitted to the USACE in accordance with the Section 404 permit process. RPAs and non-perennial stream buffers will be mitigated at a 1:1 ratio. Planting shall be in conformance with the Riparian Buffers Modification and Mitigation Guidance Manual (Virginia Department of Conservation and Recreation [DCR]/Chesapeake Bay Local Assistance [CBLA]-2006).

Cultural Resources - No significant impact expected. For the Proposed Action, Fort Belvoir completed Section 106 consultation for the construction access road and utility

crossing in 2013 and has initiated an amendment to the NMUSA Memorandum of Agreement (NMUSA MOA) with the Virginia Department of Historic Resources (VDHR) and consulting parties. On April 13, 2013, VDHR provided concurrence on Fort Belvoir's determination of No Adverse Effect under the condition that the rail bed be restored to its preconstruction condition (VDHR File No. 2003-1374). The proposed NMUSA MOA amendment will address the expanded area of potential effect (APE) and a five year extension of the NMUSA MOA. No additional mitigation will be required by the proposed NMUSA MOA amendment. It is expected that VDHR will execute the NMUSA MOA amendment, and Fort Belvoir will provide a copy to the Advisory Council on Historic Preservation.

Petroleum and Hazardous Substances - No significant impact expected. All hazardous and regulated wastes and substances will be managed in accordance with all applicable state and federal regulations, and no adverse effects on human health or the environment are anticipated.

Air Quality - No significant impact expected. Minor, short-term impacts will result from equipment and fugitive dust emissions during construction. Minor short-term impacts may result from backup generators during storm events. Emissions are not estimated to exceed Federal *de minimis* thresholds.

Noise - No significant impact expected. Minor, short-term impacts will result from construction activities. No long-term impacts are expected.

Infrastructure & Utilities - No significant impact expected. Sufficient capacity exists within local utility suppliers for electricity, water, sewer, gas, and communications to accommodate increases in demand. A Frac-Out Plan prior to directional drilling will be submitted to the Fort Belvoir wetlands and Municipal Separate Storm Sewer System (MS4) programs for review to ensure no impacts from the procedure will occur to sensitive resources during the installation of utilities.

Socioeconomics - No impact expected. Minor positive impacts may be realized through an increase in local employment.

Community Facilities and Services - No significant impact expected. Minor impacts would occur to the availability of hunting areas. As a result of Founders Hall, approximately 1.5 acres of hunting area would decrease in hunting area H13. As a result of the combined Founders Hall and NMUSA Proposed Actions, approximately 35 acres of hunting area would decrease in hunting area H13; however, 47 acres will still be available for hunting in the FWC, and approximately 3,565 acres will still be available for hunting throughout Fort Belvoir.

Traffic and Transportation Systems - No significant impact expected. An Engineering Study was performed for the 2010 Environmental Assessment for the NMUSA and concluded that no significant impacts to transportation or traffic would likely result from implementation of the NMUSA Proposed Action. The number of trips to and from the site are not expected to increase due to the construction of Founders Hall, and the Founders Hall Proposed Action would utilize the same traffic design.

CUMULATIVE IMPACTS: The impacts of the Proposed Action when combined with impacts from other present or planned development in the surrounding area are not expected to result in significant adverse cumulative impacts to the resources analyzed in the SEA if minimization and mitigation measures are implemented.

MINIMIZATION AND MITIGATION MEASURES: Minimization measures and BMPs will be implemented in accordance with all applicable state and federal regulations to protect Air Quality, Soils and Topography, Surface Waters, Water Quality and Floodplains, Waters of the U.S., RPAs and Non-Perennial Stream Buffers during the construction and operation of Founders Hall and NMUSA (see Section 5.0 of the SEA). Mitigation measures will be implemented for Vegetation and Wildlife, Wetlands, RPAs and Non-Perennial Stream Buffers, and Cultural Resources.

Minimization Measures:

- Construction activities would be conducted in full compliance with current and pending Virginia regulatory requirements, with compliant practices and/or products.
- Utilities will be directionally drilled under wetlands, waters of the U.S., RPAs, the FWC and the FBMRR to avoid impacts to these resources where practicable, and a Frac-Out Plan will be prepared and maintained onsite by drill crews during drilling activities.
- Wetlands and stream boundaries would be flagged with bright day-glow pink or orange flagging within 50 feet of any waters of the U.S. to ensure construction equipment and personnel can clearly see the boundary and avoid entering these natural resources.
- Orange protection fence for trees would be installed within 50 feet of any Waters of the U.S.

Mitigation Measures:

- Out-of-kind mitigation will be implemented to offset the loss of vegetation and natural habitats to include the restoration design of an 800-foot section of Mason Run creek (MR1), located off-site approximately 800 - 1,600 feet north of John Kingman Road. This work will comply with the conditions of NWP #27 - Aquatic Habitat Restoration, Establishment, and Enhancement Activities.
- To avoid and minimize impacts to migratory birds, bird nest surveys will be conducted ahead of construction and selective removal of trees. Habitat avoidance will be achieved through selective removal of trees and only disturbing areas necessary to accommodate the development of the Proposed Action.
- Identify additional areas for possible re-vegetation to support the habitats of PIF bird species on site or elsewhere on Fort Belvoir as identified by Environmental and Natural Resources Division (ENRD).
- Plant native wetland or water-tolerant plants in storm drainage areas which would also promote water quality through filtration.
- Landscape with a mixture of deciduous shade and flowering trees, such as American elm cultivars (Valley Forge, New Harmony, Jefferson, or Princeton), swamp white oak (*Quercus bicolor*) and eastern redbud (*Cercis canadensis*), and plant seedlings, such as dogwood (*Cornus florida*), possumhaw (*Viburnum nudum*), and red chokeberry (*Aronia*

arbutifolia) throughout the landscaping.

- The U.S. Army will implement time-of-year restrictions for tree clearing and mitigation measures presented in Appendix A as a result of Section 7 consultation with U.S. Fish and Wildlife Service (USFWS).
- Impacts to wetlands are relatively small; therefore, credits will be purchased at a wetland bank which is the agencies' preferred method for mitigation. Once payment is made to a bank, the liability of the permittee ends. Responsibility for design, construction, ten years of monitoring, and guaranteeing successful wetland creation will be held by the wetland bank. The Founders Hall Proposed Action will require the purchase of 0.011 credits to mitigate for 0.011 acres of wetland conversion (PFO to PEM). The NMUSA Proposed Action will require the purchase of 0.15 wetland credits to mitigate for 0.075 acres of PFO impacts and of 0.074 wetland credits for impacts to 0.074 acres of PEM wetlands.
- Stream impacts will be mitigated through off-site stream restoration southeast of the project site in the FWC (see **Figure 3-5**). The stream mitigation involves restoring a 145 LF portion of perennial stream by removing a section of the abandoned railroad embankment and an aging 36-inch reinforced concrete pipe. The proposed regrading will create a funneling effect to lead wildlife directly to the existing wildlife crossing under Fairfax County Parkway. The Founders Hall Proposed Action would utilize approximately 21% (60 LF), and the NMUSA Proposed Action would utilize 79% (225 LF) of the stream credits produced from the restoration effort.
- The 35-foot non-perennial stream buffer impacts from implementation of the NMUSA Proposed Action will include reforestation of approximately 0.204 acres of the existing golf course along the existing fairways (within the 35-foot non-perennial stream buffer) associated with golf holes #3 and #8 to the east of the project site. This area will be abandoned by the golf course when the holes are rerouted to make room for the museum site. Although reforestation will also take place just outside of the 35-foot non-perennial stream buffer, mitigation credit will only be achieved for the area within the buffer. The NMUSA Proposed Action requires this mitigation at a 1:1 ratio or greater.
- The RPA impacts will be mitigated by reforestation along the abandoned Old Accotink Road corridor within the RPA. The ratio of reforested RPA area to impacted RPA will be 1:1 or greater. Planting shall be in conformance with the Riparian Buffers Modification and Mitigation Guidance Manual (Virginia Department of Conservation and Recreation [DCR]/Chesapeake Bay Local Assistance [CBLA]-2006).

NOTICE OF AVAILABILITY: The Supplemental Environmental Assessment is available for public review and comment at the following libraries: Fort Belvoir Van Noy Library, Lorton Branch, Sherwood Regional Branch, and Kingstowne Branch. The documents are also available at: <http://www.belvoir.army.mil/envirodocssection2.asp>. Comments on the SEA and draft FNSI should be submitted to Mr. Felix M. Mariani, Fort Belvoir DPW Environmental and Natural Resources Division, Building 1442, 9430 Jackson Loop, Fort Belvoir, VA 22060, or usarmy.belvoir.imcom-atlantic.mbx.enrd@mail.mil. Comments must be received no later than 30 days after publication of this Notice of Availability.

FINDINGS AND CONCLUSIONS: Pursuant to the Council on Environmental Quality (CEQ) regulations; Title 40, Code of Federal Regulations (CFR) Section 1500-1508 regarding procedural

implementation of the National Environmental Policy Act (NEPA) of 1969; and implemented for the Army by Title 32 CFR 651, Environmental Analysis of Army Actions, it has been determined that implementation of the Founders Hall Proposed Action would not result in significant or major adverse impacts on any of the resources analyzed within the SEA document. No further analysis or documentation, such as the preparation of an Environmental Impact Statement (EIS), is required. All practical and reasonable means will be employed by the U.S. Army to minimize the potential adverse impacts on the human and natural environment. Therefore, a Finding of No Significant Impact (FNSI) is warranted.

MICHELLE D. MITCHELL
Colonel, AG
Commanding

Date

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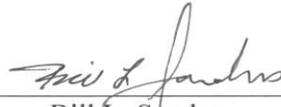
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THE NATIONAL MUSEUM OF THE
UNITED STATES ARMY
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FINAL DRAFT

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MICHELLE D. MITCHELL
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Commanding

EXECUTIVE SUMMARY

Background: The United States (U.S.) Army is preparing a Supplemental Environmental Assessment (SEA) that will analyze the potential environmental impacts that may occur as a result of the proposed changes to the development assessed in the *Environmental Assessment for the National Museum of the United States Army* dated September 2010. The proposed changes consist of the construction and operation of a new visitor center and multi-purpose facility, “Founders Hall”, at the National Museum of the United States Army (NMUSA) site and a construction access road, utilizing the existing historic Fort Belvoir Military Railroad (FBMRR) corridor along the southern portion of the site. The proposed changes are in a location outside of the original Limits of Disturbance (LOD) assessed in the original 2010 Environmental Assessment (EA).

This SEA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), its implementing regulations published by the Council on Environmental Quality (CEQ) 40 Code of Federal Regulations (CFR) Parts 1500-1508, Army Regulation (AR) 200-2, and “Environmental Effects of Army Actions,” (32 CFR Part 651). As the proponent of this project, U.S. Army has the responsibility to comply with the full range of environmental laws regarding implementation of this project.

Purpose and Need: Founders Hall is proposed to be the first building constructed at the NMUSA complex. As an anchor building at the NMUSA Center, Founders Hall will provide an introduction to some of the features of the museum during the NMUSA’s 2.5-year construction period. Founders Hall is designed, both in appearance and purpose, to be complementary to the NMUSA. It is anticipated this facility will be open for several years while the NMUSA building is under construction. In general, Founders Hall is a multi-purpose facility supporting activities related to orientation, donor cultivation, marketing, education, training, revenue generation, and special events. Founders Hall will serve two main purposes:

Pre-Museum Opening Purpose and Activities (2016-2019)

- Real-time visibility of National Museum construction progress.
- Preview of design, purpose, and theme of the National Museum.
- Orientation and cultivation of prospective major donors and other key people.
- Educational displays of selected U.S. Army artifacts and artwork.
- Revenue generation opportunities (events, gift/book shop) as soon as practicable - event sizes ranging from 10 to 100 participants.
- Training site for docents.

Post-Museum Opening Purpose and Activities (2019 and after)

- Revenue generation via events (conferences, catered events, corporate displays, gift/book shop) - event sizes ranging from 10 to 100 participants.
- Continuing cultivation of prospects, donors, and other key people.
- Venue for special Army Historical Foundation (AHF) and U.S. Army activities.
- Extended office space for AHF and U.S. Army staff.
- Educational displays of selected U.S. Army artifacts and artwork.

Description of the Proposed Action: Founders Hall will be located at the Gunston site within the North Post section of Fort Belvoir. Founders Hall will be situated to the immediate west of the traffic circle on Liberty Drive at the entrance to the NMUSA complex off of Fairfax County Parkway. The site is forested and bounded by Liberty Drive on the east, the FBMRR to the south, and a perennial stream (Kernan Run) to the west. The northernmost tip of the site abuts Old Accotink Road. The Founders Hall site would be comprised of approximately 1.24 acres and the overall LOD of the Proposed Action, including utilities and temporary construction access to the site, will be 14 acres. Total occupied impervious area is estimated to be 25,266 square feet which includes 17,941 square feet of parking and 7,325 square feet of the building's footprint.

Founders Hall will be a two-story facility with the lower level built into the side of the existing terrain. An entry plaza will be provided at the northeast corner of the building and sidewalks adjacent to the accessible parking will also provide access to a service entrance. A small courtyard and pedestrian sidewalks will also be provided on the lower level. Except for two buried cables in the northern right-of-way of the FBMRR, there are no utilities on or within the vicinity of the site. However, information technology (IT), sewer and electricity will be provided from the east along the south side of the FBMRR corridor; water will be supplied from the east (Beulah Road) along a golf cart path to the NMUSA Complex; and natural gas will come from the east north of the FBMRR; however, the exact route has not yet been determined.

The building will be less than 25 feet above grade at the front entrance (facing east across Liberty Drive and up the hill toward the museum) and less than forty (40) feet above grade at the southwest side of Founders Hall as you approach the building on Liberty Drive from Fairfax County Parkway. Most of the lower level is below grade when compared to the parking lot and entrance, with the back section opening to the lower patio area. The two-story layout takes advantage of the terrain, and helps to minimize the footprint and visual impact of Founders Hall to the complex.

Founders Hall represents a minimal 6% (six percent) increase in building footprints to the entire NMUSA complex. The total occupied area of the building and hardscape represents only a 2% (two percent) increase in total area of the NMUSA Complex. On the north side of Founders Hall will be a single small parking lot with a total of twenty-nine (29) parking spaces, including those designated for the handicapped. This lot will be sufficient to provide parking for full time staff as well as for visitors and mid-sized events (up to 20 attendees). For large events (in excess of 100 attendees) at Founders Hall, shuttle service will be provided to transport individuals from either the Fort Belvoir Golf Club parking lot (prior to museum completion) or the NMUSA parking lot.

Until construction of Liberty Drive and connection to Fairfax County Parkway can be made available, access to Founders Hall will be via a gravel road following the alignment of the FBMRR from its intersection with Kingman Road to the east to a point where the Old Accotink Road crosses the rail bed. At this point, the access road will follow Old Accotink Road to the Founders Hall site.

A temporary parking area for the duration of construction, equipment staging area will be available to the immediate east of the Founders Hall site within the corridor of the proposed Liberty Drive.

Alternatives Considered: Two alternatives were analyzed in the 2010 NMUSA EA and resulted in the selection of the Gunston site (see 2010 NMUSA EA). The location within the Gunston site for Founders Hall was chosen due to the limited upland space available and positioned to avoid impacts to natural resources to the maximum extent practicable. Therefore, only the No Action

Alternative and the Founders Hall Proposed Action were carried forward for further analysis in this SEA. Under the No Action Alternative, Founders Hall would not be constructed and the NMUSA would continue on to be constructed as planned in the 2010 NMUSA EA; however, the Purpose and Need objective would not be met under the No Action Alternative. The Founders Hall Proposed Action would satisfy the stated purpose and need by providing necessary education and event support, thereby increasing operation and efficiency of the NMUSA complex.

Affected Environment and Consequences: The Founders Hall Proposed Action would not significantly impact any of the resources analyzed. Minor and short-term impacts would occur from implementation of the Proposed Action on Soils, Vegetation and Wildlife, Cultural Resources, Air Quality, Noise, and Traffic and Transportation Systems. A listing of the resources analyzed and the consequences of the implementation of the Proposed Action is as follows:

Land Use, Plans and Coastal Zone Management - **No significant impact.** The Founders Hall Proposed Action is compliant with land use plans according to the Draft June 2015 Real Property Master Plan (RPMP) and RPMP EIS for Fort Belvoir and is consistent with the Coastal Zone Management Act (CZMA).

Soils - **No significant impact.** Minor impacts include the disturbance of 14 acres of soil in addition to the proposed soil disturbance of 74.9 acres for the proposed NMUSA. The added disturbance to the proposed NMUSA would not significantly impact soil resources in the area. Implementation of Chesapeake Bay Best Management Practices (BMPs), Virginia Department of Environmental Quality (VA DEQ) approved Erosion and Sediment Control (VESC) Plan, and VA DEQ approved Stormwater Management Plan (SWMP) would be implemented to reduce erosion until permanent stabilization is achieved.

Vegetation and Wildlife - **No significant impact.** Minor impact to vegetation and habitats would occur due to disturbance of 14 acres of mixed oak/pine forest in the proposed Founders Hall LOD in addition to the 74.9 acres of mixed habitat that comprises the proposed NMUSA LOD. However, the U.S. Army would protect existing trees to the maximum extent feasible by removing only those trees that would interfere with Founders Hall and NMUSA features. Selective removal of trees in accordance with Fort Belvoir Tree Removal Policy #27 would be conducted to preserve the high-value trees that do not adversely impact the visitor's view of Founders Hall as they enter the site from the Fairfax County Parkway. See Mitigation Section 5.3 for more details.

No critical endangered species habitats are located within the proposed Founders Hall and NMUSA LODs as designated by the U.S. Fish and Wildlife Service (USFWS). However, federally-protected species habitats for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) occur within both the Founders Hall and NMUSA LODs. The U.S. Army has completed ESA Section 7 consultation with the USFWS regarding project effects to the NLEB. Through the Section 7 consultation process, mitigation measures have been identified and agreed upon by the U.S. Army and USFWS for impacts related to the NMUSA and Founders Hall Action (see Appendix A).

The proposed utilities (IT, sewer, and electricity) would traverse the Forest and Wildlife Corridor (FWC) but not impact would occur because the utilities would be directionally drilled under the FWC. However, minor impacts to the FWC would occur during the construction phase of the proposed action when the FBMRR is temporarily used as an access road.

Construction of Founders Hall would result in minor impacts to approximately 2 acres of Partners in Flight (PIF) buffer areas where the utilities would be installed south of the FBMRR. Additionally, the FBMRR which is also within this 2 acre disturbance area, would be used for a temporary access road during construction of the NMUSA complex. The NMUSA construction footprint will also result in minor impacts to approximately 14 acres of PIF buffer areas due to the construction of the facility and trails. The disturbed areas within the LODs for both actions will be re-landscaped with a mixture of native tree, shrub and herbaceous species. Once the site is revegetated, habitats will be provided for a variety of birds though they may not be for the same species as those designated in the PIF buffers. Therefore minor impacts to PIF buffer areas are expected.

Surface Water, Water Quality, and Floodplains - **No significant impact.** The U.S. Army would adhere to VESC, SWMP and Fort Belvoir Master Spill Plan (FBMSP) to protect surface waters and water quality. A frack-out plan will be prepared and maintained onsite by drill crews during horizontal directional drilling activities. The Founders Hall and NMUSA Proposed Action is not located within a floodplain. Therefore, no significant impact to surface waters, water quality and floodplains is expected as a result of the construction of Founders Hall and NMUSA.

Waters of the U.S., RPAs, and Non-Perennial Stream Buffers - **No Significant impact.** As a result of Founders Hall Proposed Action, 0.101 acres of RPAs, 23 linear feet (LF) of perennial stream would be permanently impacted, and 0.011 acres of Palustrine Forested (PFO) wetlands would be converted to Palustrine Emergent (PEM) wetlands. The combined impacts for Founders Hall and NMUSA would result in permanent impacts to jurisdictional resources will include 0.075 acre of PFO wetland, 0.074 acre of PEM wetland, 0.011 acres of permanent PFO conversion to PEM, and 110 linear feet of stream channel. Additionally, 0.695 acres of RPAs and 0.142 acres of non-perennial stream buffers would be impacted by the combined action of Founders Hall and NMUSA. Wetland and stream impacts will be permitted for impacts in accordance with U.S. Army Corps of Engineers (USACE) and VA DEQ as required to include mitigation as deemed necessary under Section 404 and 401 of the Clean Water Act (CWA). RPAs and non-perennial stream buffers will be mitigated at a 1:1 ratio.

Cultural Resources - **No significant impact.** For the Proposed Action, Fort Belvoir completed Section 106 consultation for the construction access road and utility crossing in 2013 and has initiated an amendment to the NMUSA Memorandum of Agreement (NMUSA MOA) with the Virginia Department of Historic Resources (VDHR) and consulting parties. On April 13, 2013, VDHR provided concurrence on Fort Belvoir's determination of No Adverse Effect under the condition that the rail bed be restored to its preconstruction condition (VDHR File No. 2003-1374). The proposed NMUSA MOA amendment will address the expanded area of potential effect (APE) and a five year extension of the NMUSA MOA. No additional mitigation will be required by the proposed NMUSA MOA amendment. It is expected that VDHR will execute the NMUSA MOA amendment, and Fort Belvoir will provide a copy to the Advisory Council on Historic Preservation.

Petroleum and Hazardous Substances - **No significant impact.** All hazardous and regulated wastes and substances will be managed in accordance with all applicable regulations and no adverse effects on human health or the environment are anticipated.

Air Quality - **No significant impact.** Minor, short-term impacts will result from equipment and fugitive dust emissions during construction. Minor short-term impacts may result from back-up

generators during storm events. Emissions are not estimated to exceed Federal *de minimis* thresholds.

Noise - No significant impact. Minor, short-term impacts will result from construction activities. No long-term impacts are expected.

Infrastructure & Utilities – No significant impact. Sufficient capacity exists within local utility suppliers to accommodate increases in demand.

Socioeconomics - No impact. Minor positive impacts may be realized through an increase in local employment.

Community Facilities and Services - No significant impact. As a result of Founders Hall, approximately 1.5 acres of hunting area would decrease in hunting area H13. As a result of the combined Founders Hall and NMUSA Proposed Actions, approximately 35 acres of hunting area would decrease in hunting area H13; however, 47 acres will still be available for hunting in the FWC, and 3,565 acres will still be available for hunting throughout Fort Belvoir.

Traffic and Transportation Systems - No significant impact. An Engineering Study was performed for the 2010 Environmental Assessment for the NMUSA and concluded that no significant impacts to transportation or traffic would likely result from implementation of the NMUSA Proposed Action. The number of trips to and from the site are not expected to increase due to the construction of Founders Hall, and the Founders Hall Proposed Action would utilize the same traffic design. Therefore, no significant impacts to Traffic and Transportation Systems are expected.

Cumulative Impacts: The impacts of the Proposed Action when combined with impacts from other present or planned development in the surrounding area are not anticipated to result in significant adverse cumulative impacts. The U.S. Army will implement all appropriate minimization and mitigation measures to the maximum extent practicable. See Section 4.0 of the SEA for further discussion of Cumulative Impacts.

Minimization and Mitigation Measures: Minimization measures and Best Management Practices (BMPs) will be implemented in accordance with all applicable state and federal regulations to protect Vegetation and Wildlife, Soils and Topography, Surface Waters, Water Quality and Floodplains, Waters of the U.S., RPAs and Non-Perennial Stream Buffers and Air Quality during the construction and operation of Founders Hall and NMUSA (see Section 5.0 of the SEA). Mitigation measure will be implemented for Vegetation and Wildlife, Wetlands, RPAs, Non-Perennial Stream Buffers and Cultural Resources.

Minimization Measures:

- Construction activities would be conducted in full compliance with applicable Virginia regulatory requirements, with compliant practices and/or products.
- Preparation and implementation of a Virginia-approved Erosion and Sediment Control (VESC) Plan, Stormwater Management Plan (SWMP), and a Stormwater Pollution Prevention Plan (SWPPP) to reduce erosion, control pollution and stormwater runoff, and prevent sedimentation during construction.
- Implementation of the FBMSP to prevent and manage accidental spills that may occur

during construction of the facility.

- A Frack-Out Plan will be prepared and maintained on site by drill crews during horizontal drilling activities.
- Utilities will be directionally drilled under wetlands, waters of the U.S., RPAs, FWCs and the FBMRR to avoid impacts to these resources where practicable.
- Wetlands and stream boundaries would be flagged with bright day-glow pink or orange flagging within 50 feet of any waters of the U.S. to ensure construction equipment and personnel can clearly see the boundary and avoid entering these natural resources.
- Orange protection fence for trees would be installed within 50 feet of any Waters of the U.S.

Mitigation Measures:

- To protect the watershed and reduce the number of trees removed, during the design phase, the U.S. Army would identify specimen trees to be preserved and locate dead and diseased trees to be removed. The final selection of trees would be done by a certified arborist after the building is framed. Selective tree removal will be conducted in accordance with Fort Belvoir Tree Removal Policy #27.
- Out of kind mitigation will be implemented to off-set the loss of vegetation and natural habitats to include the restoration design of an 800-foot section of Mason Run creek (MR1), located off-site approximately 800-1600 feet north of John Kingman Road (See Section 5.3).
- To avoid and minimize impacts to migratory birds, bird nest surveys will be conducted ahead of construction and selective removal of trees. Habitat avoidance will be achieved through selective removal of trees and only disturbing areas necessary to accommodate the development of the Proposed Action.
- Identify additional areas for possible re-vegetation to support the habitats of Partners in Flight (PIF) bird species on-site or elsewhere on Fort Belvoir as identified by ENRD.
- Plant native wetland or water-tolerant plants in storm drainage areas which would also promote water quality through filtration.
- Landscape with a mixture of deciduous shade and flowering trees, such as American elm cultivars (Valley Forge, New Harmony, Jefferson, or Princeton), swamp white oak (*Quercus bicolor*) and eastern redbud (*Cercis canadensis*), and plant seedlings, such as dogwood (*Cornus florida*), possumhaw (*Viburnum nudum*), and red chokeberry (*Aronia arbutifolia*) throughout the landscaping.
- The U.S. Army will implement time-of-year restrictions for tree clearing, and the mitigation measures identified and agreed upon by the U.S. Army and USFWS presented in Appendix A).
- Impacts to wetlands are relatively small; therefore, credits will be purchased at a wetland bank which is the agencies' preferred method for mitigation. Once payment is made to a bank, the liability of the permittee ends. The wetland bank will be responsible for design, construction, ten years of monitoring, and guaranteeing successful wetland creation.
- Stream impacts will be mitigated through off-site stream restoration southeast of the project site in the FWC (see Figure 3-5). The stream mitigation involves restoring a portion of perennial stream by removing a section of the abandoned railroad embankment and an aging 36-inch reinforced concrete pipe. The proposed regrading will create a funneling effect to lead wildlife directly to the existing wildlife crossing under Fairfax County Parkway. The grading will also create several drainage pathways for runoff to enter the proposed wetland

areas and fill the vernal pools before draining into the unnamed tributary to Accotink Creek. To ensure channel stability, a few structures (cross-vanes, j-hooks) will be placed, and adequate floodplain benching will be provided. Restoration of this portion of the stream will include a planting plan that meets regulatory mitigation requirements and replaces the number of trees removed to construct the project. In order to qualify as mitigation, this off-site restoration effort will be designed to meet the calculated stream mitigation requirement determined by the Unified Stream Methodology (USM). Final drawings will be submitted for review and approval.

- To mitigate impacts to the 35-foot non-perennial stream buffer, the proposed design includes reforestation of approximately 0.20 acre of the existing golf course along the existing fairways (within the 35-foot non-perennial stream buffer) associated with golf holes #3 and #8 to the east of the project site. This area will be abandoned by the golf course when the holes are rerouted to make room for the museum site. Although reforestation will also take place just outside of the 35-foot non-perennial stream buffer, mitigation credit will only be achieved for the area within the buffer.
- The RPA impacts will be mitigated by reforestation along the abandoned Old Accotink Road corridor within the RPA. The ratio of reforested RPA area to impacted RPA will be 1:1 or greater. Planting shall be in conformance with the Riparian Buffers Modification and Mitigation Guidance Manual (Virginia Department of Conservation and Recreation [DCR]/Chesapeake Bay Local Assistance [CBLA]-2006).

Findings and Conclusions: Based on the analysis presented in this SEA, implementation of the Proposed Action would not result in significant or major adverse impacts on any of the resources analyzed within this document and no further analysis or documentation, such as the preparation of an Environmental Impact Statement (EIS), is required. Minor and short-term impacts would occur from implementation of the Proposed Action on Soils, Vegetation and Wildlife, Cultural Resources, Air Quality, Noise, Traffic and Transportation Systems. The impacts of the Proposed Action when combined with impacts from other present or planned development in the surrounding area are not anticipated to result in significant adverse cumulative impacts. All practical and reasonable means will be employed by the U.S. Army to minimize the potential adverse impacts on the human and natural environment. Therefore, a Finding of No Significant Impact (FNSI) is warranted.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES-1
LIST OF FIGURES	v
LIST OF TABLES	v
LIST OF APPENDICES	vi
LIST OF ACRONYMS, ABBREVIATIONS AND SYMBOLS	vii
1.0 PURPOSE AND NEED FOR ACTION.....	9
1.1 Introduction.....	9
1.2 Background.....	9
1.3 Location of the Proposed Action	10
1.4 Purpose of and Need for the Proposed Action.....	10
1.5 Project Scoping and Development.....	11
1.6 Organization of the Environmental Assessment.....	11
1.7 Environmental Permits and Agency Coordination Required.....	11
1.7.1 Coastal Zone Management Consistency.....	11
1.7.2 Section 7 of the Endangered Species Act Consultation	12
1.7.3 Construction General Permit.....	12
1.7.4 Section 404 Wetlands Permit.....	12
1.7.5 Virginia Department of Environmental Quality Water Protection General Permit.....	12
1.7.6 Section 106 of the National Historic Preservation Act Consultation	13
1.7.7 Clean Air Act and General Conformity	13
1.8 Laws and Regulations.....	13
1.8.1 Environmental Policy.....	13
1.8.2 Relevant Environmental Issues	13
1.8.3 Relevant Environmental Documents.....	14
1.9 Public and Agency Notification.....	14
2.0 DESCRIPTION OF PROPOSED ACTION AND NO ACTION ALTERNATIVES	15
2.1 Introduction.....	15
2.1.1 Proposed Action.....	15
2.1.2 No Action Alternative.....	16
3.0 AFFECTED ENVIRONMENTS AND CONSEQUENCES.....	18
3.1 Land Use, Plans, and Coastal Zone Management.....	19
3.1.1 Land Uses in the Vicinity of Fort Belvoir	19
3.1.2 Current Land Use at Fort Belvoir.....	19
3.1.3 Comprehensive Plan for the Installation	19
3.1.4 Other Planning Requirements.....	19
3.1.5 Coastal Zone Management Program.....	20
3.1.6 Consequences of the Proposed Action: Land Use, Plans and CZM.....	21
3.1.6.1 Land Use	21
3.1.6.2 Planning	21
3.1.6.3 Coastal Zone Management	22
3.1.7 Consequences of the No Action Alternative: Land Use, Plans and CZM.....	22
3.2 Soils and Topography	22

3.2.1	<i>Soils</i>	22
3.2.2	<i>Topography</i>	23
3.2.3	<i>Consequences of the Proposed Action: Soils and Topography</i>	24
3.2.4	<i>Consequences of the No Action Alternative: Soils and Topography</i>	24
3.3	<i>Vegetation and Wildlife</i>	24
3.3.1	<i>Vegetation and Habitats</i>	24
3.3.2	<i>Wildlife</i>	25
3.3.3	<i>Federal and State Protected Species</i>	25
3.3.3.1	<i>Special Status Plant Species</i>	25
3.3.3.2	<i>Special Status Animal Species</i>	26
3.3.4	<i>Migratory Birds and Partners in Flight (PIF) Program</i>	28
3.3.5	<i>Special Natural Areas</i>	29
3.3.6	<i>Consequences of the Proposed Action: Vegetation and Wildlife</i>	29
3.3.6.1	<i>Vegetation and Habitats</i>	29
3.3.6.2	<i>Wildlife</i>	29
3.3.6.3	<i>Federal and State Protected Species</i>	30
3.3.6.4	<i>Migratory Birds and PIF Program</i>	30
3.3.6.5	<i>Special Natural Areas</i>	31
3.3.7	<i>Consequences of the No Action Alternative: Vegetation and Wildlife</i>	31
3.4	<i>Surface Water, Water Quality, and Floodplains</i>	31
3.4.1	<i>Surface Water</i>	31
3.4.2	<i>Water Quality</i>	32
3.4.2.1	<i>Federal and State Mandates</i>	32
3.4.2.2	<i>Stormwater</i>	33
3.4.3	<i>Consequences of the Proposed Action: Surface Water, Water Quality and Floodplains</i>	35
3.4.4	<i>Consequences of the No Action Alternative: Surface Water, Water Quality and Floodplains</i>	35
3.5	<i>Waters of the U.S., RPAs and Non-Perennial Stream Buffers</i>	35
3.5.1	<i>Waters of the U.S.</i>	35
3.5.2	<i>RPAs and Non-Perennial Stream Buffers</i>	36
3.5.3	<i>Consequences of the Proposed Action: Waters of the U.S., RPAs and Non-Perennial Stream Buffers</i>	37
3.5.3.1	<i>Waters of the U.S.</i>	37
3.5.3.2	<i>RPAs and Non-Perennial Stream Buffers</i>	38
3.5.4	<i>Consequences of the No Action Alternative: Waters of the U.S., RPAs and Non-Perennial Stream Buffers</i>	38
3.6	<i>Cultural Resources</i>	38
3.6.1	<i>Historic Property</i>	39
3.6.2	<i>Archeological Sites</i>	39
3.6.3	<i>Consequences of the Proposed Action: Cultural Resources</i>	40
3.6.4	<i>Consequences of the No Action Alternative: Cultural Resources</i>	40
3.7	<i>Petroleum and Hazardous Substances</i>	40
3.7.1	<i>Construction Activities</i>	41
3.7.2	<i>Operation Activities</i>	41
3.7.3	<i>Consequences of the Proposed Action: Petroleum and Hazardous Substances</i>	42
3.7.4	<i>Consequences of the No Action Alternative: Petroleum and Hazardous Substances</i>	42
3.8	<i>Air Quality</i>	42

3.8.1	<i>Federal Conformity Rule</i>	44
3.8.2	<i>Consequences of the Proposed Action: Air Quality</i>	44
3.8.3	<i>Consequences of the No Action Alternative: Air Quality</i>	46
3.9	Noise	46
3.9.1	<i>Consequences of the Proposed Action: Noise</i>	46
3.9.2	<i>Consequences of the No Action Alternative: Noise</i>	47
3.10	Infrastructure and Utilities	47
3.10.1	<i>Potable Water</i>	48
3.10.2	<i>Sanitary Sewer</i>	48
3.10.3	<i>Natural Gas</i>	49
3.10.4	<i>Electricity</i>	49
3.10.5	<i>Communications</i>	50
3.10.6	<i>Solid Waste</i>	50
3.10.7	<i>Consequences of the Proposed Action: Infrastructure and Utilities</i>	51
3.10.8	<i>Consequences of the No Action Alternative: Infrastructure and Utilities</i>	52
3.11	Socioeconomics	52
3.11.1	<i>Population</i>	52
3.11.2	<i>Income and Poverty</i>	53
3.11.3	<i>Housing</i>	54
3.11.4	<i>Labor Force and Employment</i>	54
3.11.5	<i>Consequences of the Proposed Action: Socioeconomics</i>	55
3.11.6	<i>Consequences of the No Action Alternative: Socioeconomics</i>	55
3.12	Community Facilities and Services	55
3.12.1	<i>Safety and Security Services</i>	55
3.12.2	<i>Recreational Facilities</i>	56
3.12.3	<i>Consequences of the Proposed Action: Community Facilities and Services</i>	56
3.12.4	<i>Consequences of the No Action Alternative: Community Facilities and Services</i>	57
3.13	Traffic and Transportation Systems	57
3.13.1	<i>Traffic Patterns in the Vicinity of the Proposed Action</i>	57
3.13.2	<i>Transportation Systems in the Vicinity of the Proposed Action</i>	58
3.13.3	<i>Consequences of the Proposed Action: Traffic and Transportation Systems</i>	58
3.13.4	<i>Consequences of the No Action Alternative: Traffic and Transportation Systems</i>	59
3.14	Impact Summary	59
4.0	CUMULATIVE IMPACTS	64
4.1	Past, Present, and Future Actions Relevant to the Proposed Action	64
4.2	Cumulative Impacts (Temporary)	65
4.3	Cumulative Impacts (Permanent)	65
4.3.1	<i>Land Use, Plans, and Coastal Zone Management</i>	65
4.3.2	<i>Soils and Topography</i>	65
4.3.3	<i>Vegetation and Wildlife</i>	66
4.3.4	<i>Surface Water, Water Quality, and Floodplains</i>	66
4.3.5	<i>Waters of the U.S., RPAs and Non-Perennial Stream Buffers</i>	66
4.3.6	<i>Cultural Resources</i>	66
4.3.7	<i>Petroleum and Hazardous Substances</i>	67
4.3.8	<i>Air Quality</i>	67
4.3.9	<i>Noise</i>	67
4.3.10	<i>Infrastructure and Utilities</i>	67

4.3.11	<i>Socioeconomics</i>	68
4.3.12	<i>Community Facilities and Services</i>	68
4.3.13	<i>Traffic and Transportation Systems</i>	68
5.0	MITIGATION MEASURES	70
5.1	Land Use, Plans, and Coastal Zone Management.....	70
5.2	Soils and Topography	70
5.3	Vegetation and Wildlife	70
5.4	Waters of the U.S., RPAs and Non-Perennial Stream Buffers	71
5.5	Cultural Resources	72
6.0	CONCLUSION.....	74
7.0	LIST OF PREPARERS AND AGENCIES AND PERSONS CONSULTED	75
8.0	REFERENCES	77

LIST OF FIGURES

Figure 1-1	Proposed Action Vicinity Map
Figure 1-2	Proposed Action LOD for Founders Hall and NMUSA
Figure 1-3	Proposed Founders Hall Plan View
Figure 3-1	Land Use in the Vicinity of the Proposed Action
Figure 3-2	Soils in the Vicinity of the Proposed Action
Figure 3-3	Vegetation and Wildlife in the Vicinity of the Proposed Action
Figure 3-4	Surface Water, Water Quality, and Floodplains in the Vicinity of the Proposed Action
Figure 3-5	Wetlands and RPAs in the Vicinity of the Proposed Action
Figure 3-6	Cultural Resources in the Vicinity of the Proposed Action

LIST OF TABLES

Table 2-1	Alternatives Matrix
Table 3-1	Soils Summary
Table 3-2	Special Status Species Documented near, or Potentially Occurring in, the Proposed Action Area
Table 3-3	Accotink Creek Impairment Summary
Table 3-4	Summary List of TMDLS issued and their applicability to Fort Belvoir MS4 Permit
Table 3-5	National Ambient Air Quality Standards (NAAQS)
Table 3-6	Construction Air Emission Estimates
Table 3-7	Operations Air Emission Estimates
Table 3-8	Noise Levels (dBA) of Construction Equipment and Attenuation
Table 3-9	Population
Table 3-10	Race and Ethnicity
Table 3-11	Educational Attainment
Table 3-12	Income and Poverty
Table 3-13	Housing Units
Table 3-14	Impact Summary

LIST OF APPENDICES

- Appendix A Agency Coordination
- Appendix B Agency Distribution List
- Appendix C Air Quality Analysis and Record of Non-Applicability
- Appendix D RPMP EIS Table 4-1

LIST OF ACRONYMS, ABBREVIATIONS AND SYMBOLS

µg/m ³	micrograms per cubic meter	EISA	Energy Independence and Security Act
ABWR	Accotink Bay Wildlife Refuge	EMS	Emergency Medical Service
ACBM	Asbestos-Containing Building Material	ENRD	Environmental & Natural Resources Division
AHF	Army Historical Foundation	EO	Executive Order
AM	12 Midnight to 12 Noon	EPACT	Energy Policy Act
APE	Area of Potential Effect	ESA	Endangered Species Act
AQCR	Air Quality Control Region	°F	degrees Fahrenheit
AR	Army Regulation	FBMRR	Fort Belvoir Military Railroad
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers	FBMSP	Fort Belvoir Master Spill Plan
AST	Aboveground Storage Tank	FBNA	Fort Belvoir North Area
BMPs	Best Management Practices	FEMP	Federal Energy Management Program
BRAC	Base Closure and Realignment Commission	FHWA	Federal Highway Administration
CAA	Clean Air Act	FMWR	Family and Morale, Welfare and Recreation
CBLA	Chesapeake Bay Local Assistance	FNSI	Finding of No Significant Impact
CDP	Census Designated Place	FR	Federal Register
CEQ	Council on Environmental Quality	FWC	Forest and Wildlife Corridor
CFR	Code of Federal Regulations	GCR	General Conformity Regulations
CGP	Construction General Permit	GIS	Geographic Information System
CO	Carbon Monoxide	gpd	Gallons per Day
CRMP	Comprehensive Roadside Management Projects	HOV	High Occupancy Vehicle
CWA	Clean Water Act	HVAC	Heating, ventilating, and air conditioning
CZ	Coastal Zone	I-95	Interstate-95
CZM	Coastal Zone Management	lb	Pound
CZMA	Coastal Zone Management Act	ICRMP	Integrated Cultural Resources Management Plan
DAAF	Davidson Army Airfield	INRMP	Integrated Natural Resources Management Plan
dB	Decibel	IT	Information Technology
dBA	A-weighted sound pressure level in decibels	JMAWR	Jackson Miles Abbott Wetland Refuge
dbh	Diameter at breast height	kWh	Kilowatt Hour
DC	District of Columbia	LBP	Lead-Based Paint
DCR	Department of Conservation and Recreation	LEED	Leadership in Energy and Environmental Design
DES	Directorate of Emergency Services	LOD	Limits of Disturbance
DLA	Defense Logistics Agency	mgd	Million gallons per day
DNL	Day-Night Average Sound Level	Mitchell	Mitchell Ecological Research Service, LLC
DoD	Department of Defense	MOA	Memorandum of Agreement
DPW	Directorate of Public Works	MP	Military Police
DRMO	Defense Reutilization and Marketing Office	MS4	Municipal Separate Stormwater System
DVP	Dominion Virginia Power		
EA	Environmental Assessment		
EIS	Environmental Impact Statement		

MSDS	Material Safety and Data Sheet	SIP	State Implementation Plan
msl	Mean Sea Level	SO ₂	Sulfur Dioxide
NAAQS	National Ambient Air Quality Standards	SPOC	Single Point of Contact
NCPC	National Capital Planning Commission	SWMP	Stormwater Management Plan
NCR	National Capital Region	SWMU	Solid Waste Management Unit
NEPA	National Environmental Policy Act	SWP	Small Whorled Pogonia
NHPA	National Historic Preservation Act	SWPPP	Stormwater Pollution Prevention Plan
NLEB	Northern Long-eared Bat	T&E	Threatened and Endangered
NMUSA	National Museum of the U.S. Army	TMDL	Total Maximum Daily Load
NNSR	Nonattainment New Source Review	TN	Total Nitrogen
NO ₂	Nitrogen Dioxide	TP	Total Phosphorus
NO _x	Nitrogen Oxide	TSS	Total Suspended Solids
NOA	Notice of Availability	U.S.	United States
NPDES	National Pollutant Discharge Elimination System	USACE	U.S. Army Corps of Engineers
NRCS	Natural Resources Conservation Service	USC	United States Code
NRHP	National Register of Historic Places	USEPA	U.S. Environmental Protection Agency
NSPS	New Source Performance Standards	USFWS	U.S. Fish and Wildlife Service
NSR	New Source Review	USGS	U.S. Geological Survey
O ₃	Ozone	UST	Underground Storage Tank
PCB	Polychlorinated Biphenyl	VAC	Virginia Administrative Code
PEM	Palustrine Emergent	VDCR	Virginia Department of Conservation and Recreation
PFO	Palustrine Forested	VA DEQ	Virginia Department of Environmental Quality
PIF	Partners in Flight	VDGIF	Virginia Department of Game and Inland Fisheries
PM	12 Noon to 12 Midnight	VDH	Virginia Department of Health
PM 10	Particulate Matter - 10 Microns or Less	VDHR	Virginia Department of Historic Resources
POL	Petroleum, Oil, and Lubricants	VESC	VA DEQ-approved Erosion and Sediment Control
ppb	Parts Per Billion	VESCH	Virginia Erosion and Sediment Control Handbook
ppm	Parts Per Million	VMRC	Virginia Marine Resource Commission
PSA	Paciulli, Simmons and Associates	VOC	Volatile Organic Compound
PSD	Prevention of Significant Deterioration	VPDES	Virginia Pollutant Discharge Elimination System
psi	Pounds Per Square Inch	VRE	Virginia Railway Express
QRP	Qualified Recycling Program	VRRM	Virginia Runoff Reduction Method
RCRA	Resource Conservation and Recovery Act	WLA	Waste Load Allocation
REX	Richmond Highway Express	WMATA	Washington Metropolitan Area Transit Authority
RMA	Resource Management Area	WSS	W.S Sipple Wetland and Environmental Training Consulting
ROI	Region of Influence	WTU	Warriors in Transition Unit
RONA	Record of Non-Applicability		
RPA	Resource Protection Area		
RPMP	Real Property Master Plan		
SEA	Supplemental Environmental Assessment		
SF	Square Feet		
SHPO	State Historic Preservation Office		

1.0 PURPOSE AND NEED FOR ACTION

1.1 Introduction

The United States (U.S.) Army is preparing a Supplemental Environmental Assessment (SEA) that will analyze the potential environmental impacts that may occur as a result of the proposed changes to the development assessed in the *Environmental Assessment for the National Museum of the United States Army* dated September 2010. The proposed changes consist of the construction and operation of a new visitor center and multi-purpose facility, “Founders Hall”, at the National Museum of the United States Army (NMUSA) complex and a construction access road, utilizing the existing historic railroad corridor along the southern portion of the site. The proposed changes are in a location outside of the original Limits of Disturbance (LOD) assessed in the 2010 NMUSA Environmental Assessment (EA). **Figure 1-1** presents a Proposed Action vicinity map and **Figure 1-2** presents the LOD for Founders Hall in relation to the NMUSA LOD.

This SEA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, its implementing regulations published by the Council on Environmental Quality (CEQ) 40 Code of Federal Regulations (CFR) Parts 1500-1508, Army Regulation (AR) 200-2, and “Environmental Effects of Army Actions,” (32 CFR Part 651). As the proponent of this project, the U.S. Army has the responsibility to comply with the full range of environmental laws regarding implementation of this project.

This SEA defines the Purpose and Need for the construction of Founders Hall; describes the Proposed Action; and evaluates the potential environmental impacts that may result from the construction and operation of Founders Hall. Additionally, only the No Action Alternative will be evaluated within this SEA. Alternatives for the NMUSA were previously discussed in the 2010 NMUSA EA.

The environmental analysis contained within this SEA will determine if a Finding of No Significant Impact (FNSI) can be issued or if there would be significant impacts that would require the preparation of an Environmental Impact Statement (EIS).

1.2 Background

In 1979, the U.S. Army began consideration of a national museum to collect and preserve U.S. Army memorabilia and to honor the service and sacrifice of the soldiers who have given to our country. Since 1979, over 64 sites in the Washington Metropolitan area and around the country have been evaluated as potential locations for the NMUSA. U.S. Army Garrison Fort Belvoir in Virginia was selected as the best and most reasonable location. In October 2001, the Secretary of the Army officially designated Fort Belvoir as the site, and Congress made this decision into law in September 2003 (10 United States Code [USC] 4772).

The U.S. Army assessed various potential areas at Fort Belvoir for the NMUSA and decided on two potential locations, Pence Gate and Gunston. These locations were presented for analysis in the October 2008 Draft EA. Site-specific designs for the NMUSA were also evaluated in the 2008 Draft EA for both sites. In January 2010, Pence Gate became unavailable by the decision to construct a new Child Development Center, as addressed in the *Finding of No Significant Impact*

and Final Environmental Assessment for the South Post Child Development Center, Fort Belvoir (January 2010).

In October 2008, Fort Belvoir published a Draft EA on its website evaluating the potential environmental impacts of the NMUSA project at the Gunston location, and hosted a public information meeting on 30 October 2008 to encourage review by interested members of the public. Copies of the Draft EA were distributed to federal, state, and local agencies, citizen groups, and other stakeholders. Fort Belvoir published an Environmental Assessment for the chosen NMUSA site in September 2010 and a FNSI was signed on April 11, 2011. Comments received from the public and the various government agencies were incorporated into the plans and alternatives addressed in the 2010 NMUSA EA.

Changes to the original design discussed in the 2010 NMUSA EA were proposed by the U.S. Army and include a new visitor center and multi-purpose facility, Founders Hall. The proposed changes are in a location outside of the original LOD assessed in the 2010 NMUSA EA and will, therefore, be addressed in this SEA.

The following presents the Purpose and Need for the additional building, Founders Hall, to be included in the NMUSA complex.

1.3 Location of the Proposed Action

Founders Hall will be located within the North Post section of Fort Belvoir, immediately west of the traffic circle on Liberty Drive at the NMUSA entrance at Fort Belvoir, Virginia. The site is bounded by Liberty Drive to the east, the Fort Belvoir Military Railroad (FBMRR) corridor to the south, and a Resource Protection Area (RPA) associated with a perennial stream (Kernan Run) to the west. The northernmost tip of the site borders Old Accotink Road. The overall LOD associated with this Proposed Action, including access to the site, will be approximately 10 acres. Fort Belvoir is located in eastern Fairfax County approximately 9 miles southwest of Alexandria and 13 miles south-southwest of Washington, District of Columbia (DC). **Figure 1-2** presents the location map of the Proposed Action LOD. **Figure 1-3** presents the detailed plan view of the Founders Hall Proposed Action.

1.4 Purpose of and Need for the Proposed Action

Founders Hall is proposed to be the first building constructed at the NMUSA complex. As an anchor building at the NMUSA complex, Founders Hall will provide an introduction to some of the features of the museum during the NMUSA's 2.5-year construction period. Founders Hall construction will be a much shorter construction schedule than the larger NMUSA building(s). It is anticipated this facility will be open for several years while the NMUSA building is under construction. In general, Founders Hall is a multi-purpose facility supporting activities related to orientation, donor cultivation, marketing, education, training, revenue generation, and special events. The purpose of the Founders Hall is summarized below in two phases: those prior to the opening of the museum; and those post-museum opening:

Pre-Museum Opening Purpose and Activities (2016-2019)

- Real-time visibility of the National Museum construction progress.
- Preview of design, purpose, and theme of the National Museum.

- Orientation and cultivation of prospective major donors and other key people.
- Educational displays of selected U.S. Army artifacts and artwork.
- Revenue generation opportunities (events, gift/book shop) as soon as practicable - event sizes ranging from 10 to 100 participants.
- Training site for docents.

Post-Museum Opening Purpose and Activities (2019 and after)

- Revenue generation via events (conferences, catered events, corporate displays, gift/book shop) - event sizes ranging from 10 to 100 participants.
- Continuing cultivation of prospects, donors, and other key people.
- Venue for special Army Historical Foundation (AHF) and U.S. Army activities.
- Extended office space for AHF and U.S. Army staff.
- Educational displays of selected U.S. Army artifacts and artwork.

1.5 Project Scoping and Development

The scope of the SEA includes the analysis of environmental impacts resulting from the construction and operation of Founders Hall. The SEA will be prepared in accordance with the NEPA of 1969 (42 USC 4321-4347), the CEQ regulations for implementing NEPA (40 CFR 1500-1508), Army Regulation (AR) 200-2, “Environmental Effects of Army Actions,” (32 CFR Part 651), and other pertinent environmental statutes, regulations, and compliance requirements.

1.6 Organization of the Environmental Assessment

The SEA follows the organization established by CEQ, NEPA and AR, and consists of the following chapters.

1. Background, Purpose and Proposed Action
2. Description of Proposed Action and Alternatives
3. Affected Environment (Baseline Conditions) and Consequences (Anticipated Effects)
4. Cumulative Impacts and Reasonably Anticipated Future Actions
5. Mitigation Measures
6. Conclusion
7. List of Preparers and Agencies and Persons Consulted
8. References
 - Figures
 - Appendices

1.7 Environmental Permits and Agency Coordination Required

This section describes the environmental permitting and agency coordination that would be necessary for the implementation of the Proposed Action that should be achieved prior to construction. As the proponent, the U.S. Army would be responsible for obtaining or overseeing the acquisition of all required permits and ensuring compliance with all conditions contained within the permits. This section may be expanded throughout the analysis process.

1.7.1 Coastal Zone Management Consistency

Coastal Zone Management (CZM) is a state and local cooperative program administered by the Virginia Department of Environmental Quality (VA DEQ) Water Division and 84 localities in

Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act (Virginia Code §§ 62.1-44.15:67 through 62.1-44.15:79) and Chesapeake Bay Preservation Area Designation and Management Regulations (9 Virginia Administrative Code [VAC] 25-830-10 et seq.). Any development within the Coastal Zone (CZ) (Fairfax County) must obtain CZ Consistency from VA DEQ. A Coastal Zone Consistency Determination has been completed and submitted to VA DEQ for review and concurrence.

1.7.2 Section 7 of the Endangered Species Act Consultation

Section 7 of the Endangered Species Act (ESA) (16 USC § 1531 et seq.) of 1973, requires federal agencies to consult with the U.S Fish and Wildlife Service (USFWS) on actions with the potential to affect a listed species. Fort Belvoir has completed Section 7 Consultation with the USFWS and will implement mitigation measures to avoid impacts to protected species.

1.7.3 Construction General Permit

As authorized by the Clean Water Act (CWA) of 1972, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point and non-point sources that discharge pollutants into waters of the U.S. The U.S. Environmental Protection Agency (USEPA) administers NPDES regulations that govern construction related ground disturbances greater than one acre. In Virginia, the Virginia Pollution Discharge Elimination System (VPDES) program is administered through the VA DEQ. The Proposed Action would require registration through and compliance with Section 402 of the CWA, the Virginia Stormwater Management Law (Title 10.1, Chapter 6, Article 1.1 of the Code of Virginia), and the VAC (9 VAC 25-870-62 through 9 VAC 25-870-92). The VPDES program requires the U.S. Army's construction contractor to prepare a Stormwater Pollution Prevention Plan (SWPPP), a VA DEQ-approved Erosion and Sediment Control (VESC) Plan, and an approved Stormwater Management Plan (SWMP) before obtaining a Construction General Permit (CGP). The VESC Plan would include measures consistent with the Virginia Erosion and Sediment Control Handbook (VESCH) and the Fairfax County Public Facilities Manual. These permits will be obtained once all design drawings have been finalized and approved.

1.7.4 Section 404 Wetlands Permit

Wetland impacts are expected for the Proposed Action. The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into wetlands and waterways under Section 404 of the CWA (33 CFR §§ 320 -330). Fort Belvoir will obtain all necessary wetland permits prior to construction of the proposed action.

1.7.5 Virginia Department of Environmental Quality Water Protection General Permit

The Commonwealth of Virginia also regulates any alteration of wetlands or inland waterways under the Virginia Wetland Permit Program (9 VAC 25-210), and tidal wetlands, subaqueous or bottomlands, and coastal primary sand dunes under the Tidal Wetlands Act (4 VAC 20). "Subaqueous or bottomlands" do not generally include wetlands, but are described as stream and river bottoms where the average annual flow is five cubic feet per second or the contributing drainage area is five square miles. In Virginia, the regulating agencies have cooperated to provide one application process (the Joint Permit Application), although separate permits are required from each agency with jurisdiction.

1.7.6 Section 106 of the National Historic Preservation Act Consultation

Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires federal agencies to take into account the effects of their undertakings on historic properties. The Virginia Department of Historic Resources (VDHR) is the designated State Historic Preservation Office (SHPO) in charge of administering Section 106 in the Commonwealth of Virginia.

1.7.7 Clean Air Act and General Conformity

In accordance to the requirements of the Clean Air Act (CAA), as amended in 1990 (42 USC 7401-7671q), the VA DEQ Air Division is responsible for implementing the federal and state laws and regulations governing all aspects of permitting for air emissions.

Stationary sources of air emissions associated with the Proposed Action would be subject to federal and state air permitting regulations. These requirements include, but are not limited to, minor new source review (NSR), nonattainment new source review (NNSR), prevention of significant deterioration (PSD), and new source performance standards (NSPS) for selected categories of industrial sources.

Air impacts have been assessed in this SEA and a Record of Non Applicability (RONA) has been prepared for this project (Appendix C).

1.8 Laws and Regulations

This section describes laws, regulations and processes that govern the development and approval of this SEA and subsequent FNSI.

1.8.1 Environmental Policy

NEPA establishes a national environmental policy with goals for the protection, maintenance and enhancement of the environment and provides a process for accomplishing these goals within federal agencies. NEPA requires federal agencies to consider, as part of planning and decision-making processes, the impact(s) of their actions on the natural and physical environment. The level of analysis required to meet NEPA requirements depends on the scope and severity of the environmental impacts resulting from the Proposed Action.

To comply with NEPA, the planning and decision-making process for a Proposed Action by federal agencies involves a study of relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. NEPA addresses them collectively in the form of an EA or EIS, which provides the decision-maker with a comprehensive view of major environmental issues and requirements associated with the Proposed Action.

This SEA was prepared by U.S. Army in accordance with the NEPA of 1969 (42 USC 4321-4347) and the CEQ regulations for implementing NEPA (40 CFR 1500-1508), as well as AR 200-2 and “Environmental Effects of Army Actions,” (32 CFR Part 651).

1.8.2 Relevant Environmental Issues

This SEA identifies, describes and evaluates the potential impacts to the following:

- Land Use, Plans, and Coastal Zone Management
- Soils and Topography
- Vegetation and Wildlife
- Surface Water, Water Quality, and Floodplains
- Waters of the U.S., RPAs and Non-Perennial Stream Buffers
- Cultural Resources
- Petroleum and Hazardous Substances
- Air Quality
- Noise
- Infrastructure and Utilities
- Socioeconomics
- Community Facilities and Services
- Traffic and Transportation Systems

Impacts that occur as a result of the Proposed Action and Alternatives will be studied in the depth necessary to adequately identify, describe and evaluate the impacts. Potential cumulative impacts of the Proposed Action and Alternatives with other actions will also be evaluated.

The level of detail for issues studied is relevant to their anticipated impact related to the Proposed Action. Issues that may have significant impacts have been studied in greater detail while actions that are not anticipated to have significant impacts have been studied in lesser detail.

1.8.3 Relevant Environmental Documents

The following related environmental documents were reviewed.

- Environmental Assessment, The National Museum of the United States Army, Fort Belvoir, Virginia (U.S. Army Garrison, Fort Belvoir, September 2010).
- Draft Environmental Impact Statement, Short-Term Projects & Real Property Master Plan Update, Fort Belvoir, Virginia (June 2015) Volume 1.

1.9 Public and Agency Notification

In accordance with NEPA regulations, a Notice of Availability (NOA) for the draft version of this SEA will be provided directly to relevant agencies for review since the Commonwealth of Virginia does not participate in the state Single Point of Contact (SPOC) program. Additionally, the NOA will be published in local and regional newspapers to inform the public that the draft version of this SEA and FNSI will be made available for public review for a period of 30 days. This Draft SEA and FNSI will also be made available electronically at <http://www.belvoir.army.mil/environdocssection2.asp> and will be distributed to local libraries and any agencies, organizations, or individuals who express interest in the project. All correspondence sent or received during the preparation of this Draft SEA will be included in **Appendix A** of the Final SEA. Agencies receiving a copy of the Draft SEA is listed in **Appendix B**, Agency Distribution List.

2.0 DESCRIPTION OF PROPOSED ACTION AND NO ACTION ALTERNATIVES

2.1 Introduction

This chapter presents a description of the Proposed Action and the No Action Alternative in terms of their consistency with the stated Purpose and Need, as discussed in Section 1.4. **Table 2-1** presents an alternatives matrix for the Proposed Action and the No Action Alternative with regard to satisfying the stated Purpose and Need.

NEPA requires the identification and evaluation of practical alternatives in order to demonstrate the proponent is well informed prior to committing to a final decision. Alternatives that were identified during the scoping process of the proposed NMUSA action along with the reasons for excluding them from further analysis can be reviewed in the 2010 NMUSA EA.

2.1.1 Proposed Action

Founders Hall will be located at the Gunston location within the North Post section of Fort Belvoir. Founders Hall will be situated to the immediate west of the traffic circle on Liberty Drive at the entrance to the NMUSA complex north of Fairfax County Parkway. The site slopes to the west with a change in elevation of approximately ten feet. The site is wooded with a mix of mature oaks and pine. The site is bounded by Liberty Drive to the east, the FBMRR to the south, and a RPA associated with a perennial stream (Kernan Run) to the west. The northernmost tip of the site abuts Old Accotink Road.

Construction of Founders Hall is expected to commence in January 2016 with an estimated completion date toward the end of 2016. Founders Hall will be a two-story facility with the lower level built into the side of the existing terrain. An entry plaza will be provided at the northeast corner of the building and sidewalks adjacent to the accessible parking will also provide access to a service entrance. A small courtyard and pedestrian sidewalks will also be provided on the lower level. Except for two buried cables in the northern right-of-way of the FBMRR, there are no utilities on or within the vicinity of the site. However, information technology (IT), sewer and electricity will be provided from the east along the south side of the FBMRR corridor; water will be supplied from the east from Beulah Road along a golf cart path to the NMUSA Complex; and natural gas will come from the east, north of the FBMRR corridor; however, the exact route of the natural gas line has not yet been determined.

The building will be less than 25 feet above grade at the front entrance (facing east across Liberty Drive and up the hill toward the museum) and less than forty (40) feet above grade at the southwest side of Founders Hall as you approach the building on Liberty Drive from Fairfax County Parkway. Most of the lower level is below grade when compared to the parking lot and entrance, with the back section opening to the lower patio area. The two-story layout takes advantage of the terrain, and helps to minimize the footprint and visual impact of Founders Hall to the complex.

The Founders Hall site would be comprised of approximately 1.24 acres and the overall LOD of the Proposed Action, including utilities and temporary construction access to the site, will be 14 acres. Total occupied impervious area is 25,266 square feet (SF) which includes 17,941 square feet of parking and 7,325 SF of the building's footprint. Founders Hall represents a minimal 6%

(six percent) increase in building footprints to the entire NMUSA complex. The total occupied area of the building and hardscape represents only a 2% (two percent) increase in total area of the NMUSA Complex. On the north side of Founders Hall will be a single small parking lot with a total of twenty-nine (29) parking spaces, including those designated for the handicapped. This lot will be sufficient to provide parking for full time staff as well as for visitors and mid-sized events (up to 20 attendees). For large events (in excess of 100 attendees) at Founders Hall, shuttle service will be provided to transport individuals from either the Fort Belvoir Golf Club parking lot (prior to museum completion) or the NMUSA parking lot.

Founders Hall complements the sustainable principles of the NMUSA, preserving and enhancing the natural characteristics of the overall museum site. Site disturbances have been minimized. Landscaping enhances the Founders Hall site, extending west of Liberty Drive and complementing the NMUSA experience. Selective tree removal will be conducted to minimize impacts to vegetation to the maximum extent practicable. This will be the same strategy set forth for the NMUSA Proposed Action (i.e, a 2:1 replacement ratio) in accordance with the Fort Belvoir Tree Replacement Policy #27.

Until construction of Liberty Drive and connection to Fairfax County Parkway can be made available, access to Founders Hall will be via a gravel road following the alignment of the FBMRR from its intersection with Kingman Road to the east to a point where the Old Accotink Road crosses the rail bed. At this point, the access road will follow Old Accotink Road to the Founders Hall site. The FBMRR and Old Accotink Road will be graded to correct surface irregularities and any drainage problems would be corrected by providing an aggregate base suitable for heavy construction traffic and contractor privately owned vehicles. The LOD for these activities will be no greater than 40 feet centered on the existing alignments with no construction extending downslope of the railroad in fill areas or wetlands.

A temporary parking area for construction and equipment staging area will be available to the immediate east of the Founders Hall site within the corridor of the proposed Liberty Drive.

2.1.2 No Action Alternative

Only the No Action Alternative will be carried forward for analyses in this SEA because the U.S. Army previously assessed two alternative locations, the Pence Gate and Gunston sites. As determined in the 2010 NMUSA EA, the Gunston site was chosen for the proposed action. The location within the Gunston site for Founders Hall was chosen due to the limited upland space available and positioned to avoid impacts to natural resources to the maximum extent practicable.

The No Action Alternative is required by NEPA to serve as the benchmark for other alternatives in order to show change or effect on environmental components associated with those alternatives. Under the No Action Alternative, Founders Hall would not be constructed and the current design of the NMUSA would continue to be built as proposed in the 2010 NMUSA EA. Under this No Action Alternative, the purpose and need objective for the SEA would not be met, resulting in continued lack of educational and special events support for the NMUSA complex. **Table 2-1** presents an alternatives matrix summarizing the purpose and need for each alternative. As required by NEPA, the No Action Alternative has been carried forward for further analysis to provide a detailed comparison to the Proposed Action.

Table 2-1 Alternatives Matrix

Purpose and Need	Proposed Action	No Action Alternative
Pre-Museum Opening Purpose and Activities (2016-2019)		
Will provide real-time visibility of the National Museum construction progress.	Yes	No
Will provide preview of design, purpose, and theme of the National Museum.	Yes	No
Will provide orientation and cultivation of prospective major donors and other key people.	Yes	No
Will provide educational displays of selected U.S. Army artifacts and artwork.	Yes	No
Will provide revenue generation opportunities (events, gift/book shop) as soon as practicable	Yes	No
Will provide training site for docents.	Yes	No
Pre-Museum Opening Purpose and Activities (2016-2019)		
Will provide revenue generation via events (conferences, catered events, corporate displays, gift/book shop) - event sizes ranging from 10 to 100 participants.	Yes	No
Will provide Continuing cultivation of prospects, donors, and other key people.	Yes	No
Will provide venue for special AHF and U.S. Army activities.	Yes	No
Will provide extended office space for AHF and U.S. Army staff.	Yes	No
Will provide educational displays of selected U.S. Army artifacts and artwork.	Yes	No

3.0 AFFECTED ENVIRONMENTS AND CONSEQUENCES

In this chapter, the current conditions are presented for comparison against the potential impacts of the Founders Hall Proposed Action by itself and the Founders Hall and NMUSA Proposed Actions combined. A description of the existing conditions for affected environments will be presented in each resource heading. The potential consequences to the affected environments will be presented under the heading of *Consequences of the Proposed Action* and *Consequences of the No Action Alternative*. Cumulative Impacts will be evaluated in Section 4.

Within the scope of NEPA review, project-related impacts are classified based on changes to the existing environment. The assessment of potential impacts and the determination of their significance are based on the requirements in 40 CFR 1508.27. NEPA identifies three levels of impact:

- **No Impact** - No impact is predicted.
- **No Significant Impact** - An impact is predicted, but the impact does not meet the intensity or context significance criteria for the specified resource.
- **Significant Impact** - An impact is predicted that meets the intensity/context significance criteria for the specified resource. *A significant impact may exist even if the federal agency believes that the effect will be beneficial.*

Under NEPA (42 USC 4321 et seq.), significant impacts are those that have potential to significantly affect the quality of the natural or physical environment and the relationship of people to those environments (40 CFR Section 1508.14). Whether an alternative significantly affects the quality of the environment is determined by considering the context in which it will occur along with the intensity of the action (40 CFR Section 1508.27). The context of an action is determined by studying the potential region of influence (ROI) and affected interests within each. Significance varies depending on the physical setting of an alternative (40 CFR Section 1508.27). The level at which an impact is considered significant varies for each environmental resource and is referred to as the significance threshold. Significance thresholds are often established by federal, state, tribal or local regulations. In other cases, significance thresholds are determined by the experiences of the specific resource specialists. The intensity of an action refers to the severity of the impacts, both regionally and locally, and may be determined by:

- Overall beneficial project effect versus individual adverse effect(s);
- public health and safety;
- unique characteristics in the area (i.e., wetlands, parklands, ecologically critical areas, cultural resources and other similar factors);
- degree of controversy;
- degree of unique or unknown risks;
- precedent-setting effects for future actions;
- cumulatively significant effects;
- cultural or historic resources;
- special-status species or habitats; and, or
- compliance with federal, state, or local environmental laws.

Resources that may be impacted by the Proposed Action and the No Action Alternative will be addressed based on the level of importance of the environment and significance of the expected impact to that environment. The following presents the analyses for each resource with the exception of geological resources. Geological resources include physical surface and subsurface features of the earth, such as geological formations and the seismic activity of the area. Construction of Founders Hall is not anticipated to impact the geologic resources in the area; therefore, geological resources will not be impacted by the Proposed Action or the No Action Alternative, and, therefore, will not be analyzed in further detail.

3.1 Land Use, Plans, and Coastal Zone Management

The assessment area for this project includes the land use and plans for Fort Belvoir, the adjacent Fairfax County neighborhoods, and the Virginia CZ that may be affected by the Proposed Action. The Proposed Action is not likely to impact land uses beyond the confines of the proposed project site, as discussed below.

3.1.1 Land Uses in the Vicinity of Fort Belvoir

Land uses in the vicinity of Fort Belvoir are predominantly residential, although some commercial and industrial areas, such as the Lorton Valley Industrial Park and a number of retail malls, are located along U.S. Route 1 and near Interstate 95 (I-95). Several public lands are located nearby, including Huntley Meadows Park, Pohick Bay Regional Park, Mason Neck State Park, the Washington Grist Mill Park, Mount Vernon Estate and Parkway, Gunston Hall Plantation, Woodlawn Plantation, Potomac River National Wildlife Refuge, and Mason Neck National Wildlife Refuge. Many of these tracts are located along the Potomac River, resulting in a continuous band of natural habitat along the river.

3.1.2 Current Land Use at Fort Belvoir

Current land use designations used at Fort Belvoir are based on a system adopted by the U.S. Army in 2007 that classifies land uses into seven categories throughout Fort Belvoir: community, airfields, training, industrial, professional institutional, troop and residential use. The Founders Hall and the NMUSA Proposed Actions would be located within an area designated for community land use within the North Post area as seen in **Figure 3-1**.

3.1.3 Comprehensive Plan for the Installation

Currently, the *Draft June 2015 Real Property Master Plan (RPMP)* and RPMP EIS guides the land use decisions on post, providing a blueprint for future real property planning through 2030 now that the 2005 Base Closure and Realignment Commission (BRAC) recommendations for Fort Belvoir have been fully implemented. The BRAC realignment increased the installation's building space by 47 percent and its workforce by 63 percent in a 6-year period. The master plan now shifts the planning focus to encompass non-BRAC-related and BRAC-related facilities, tenants, and missions through 2030.

3.1.4 Other Planning Requirements

Federal actions in the National Capital Region must be reviewed by the National Capital Planning Commission (NCPC) and must also be consistent to the maximum extent practicable with the enforceable policies of the applicable state's CZM. The NCPC is the central planning agency for

the federal government in the National Capital Region (NCR), which includes DC, several Maryland counties, and the counties of Northern Virginia. The NCPC prepares the Federal Elements of the Comprehensive Plan for the National Capital. These elements include the following.

- “Federal Workplace: Location, Impact, and the Community” lists policies for building and development codes, energy efficiency, working environment, and physical policies applicable to the Proposed Action. This element includes the use of innovative energy conserving techniques such as High Performance and Sustainable Building, Low Impact Building, Leadership in Energy and Environmental Design (LEED) strategies, and requirements of the Energy Policy Act (EPACT) of 2005. This element also includes designing security barriers and checkpoints at vehicular entry points on federal installations to accommodate vehicular queuing onsite and to avoid adverse effects on adjacent public roadways operations and safety.
- “Transportation” lists federal parking policies and associated parking ratios in response to the area’s congestion and poor air quality. For suburban federal facilities more than 2,000 feet from a Metrorail Station, the parking ratio should reflect a phased approach linked to planned improvements over time. Federal facilities not served by High Occupancy Vehicle (HOV) lanes, today or in the future, are expected to achieve a parking ratio of one space per 1.5 employees (NCPC, August 2004). From I-95, Fort Belvoir is accessed by the Fairfax County Parkway; there is no entrance to or exit from the HOV lanes at that intersection.
- “Visitors” lists policies regarding the placement and operation of new memorials and museums.

These policies largely relate to the Monumental Core and other areas of DC, and encourages dispersing new attractions and activities away from the National Mall so that economic activity is spread into other areas while protecting and enhancing unique historic resources of the Monument Core.

3.1.5 Coastal Zone Management Program

The Coastal Zone Management Act (CZMA) of 1972 (16 USC § 1451, et seq., as amended) provides assistance to the states, in cooperation with federal and local agencies, for developing land and water use programs in coastal zones. Section 307(c)(1) of the CZMA Reauthorization Amendment stipulates that federal projects that affect land uses, water uses, or coastal resources of a state’s coastal zone must be consistent to the maximum extent practicable with the enforceable policies of that state’s federally-approved coastal management plan. The Commonwealth of Virginia has developed and implemented a federally-approved Coastal Resources Management Program that brings together a series of laws and policies pertaining to the protection of the state’s coastal zone. These laws and policies regulate:

- tidal and non-tidal wetlands,
- fisheries,
- subaqueous lands,
- dunes,
- point source air pollution,

- point source water pollution,
- non-point source water pollution,
- shoreline sanitation,
- and coastal lands.

Virginia's CZ includes all of Fairfax County, including Fort Belvoir. Therefore, federal actions at Fort Belvoir are subject to federal consistency requirements. The VA DEQ serves as the lead agency for consistency reviews.

3.1.6 Consequences of the Proposed Action: Land Use, Plans and CZM

3.1.6.1 Land Use

The Proposed Action is located within the community land use category and is consistent with land uses designated for Fort Belvoir in the June 2015 RPMP. Specifically, the Founders Hall Proposed Action is located southwest of the golf course and Old Accotink Road (see **Figure 3-1**). The Proposed Action is also located northeast of the Davison Army Airfield (DAAF), within an area where buildings are subject to height restrictions for the safety of aircraft. The distance from the airfield and the site topography restricts the maximum height of a building to 94 feet. This height can accommodate the construction of a building with a ceiling height of up to 8 stories (at 12 feet per story). The Founders Hall Proposed Action would involve the construction of a two-story building and would be within the required height restriction. The proposed NMUSA complex also falls within the height requirement within this community land use area (see 2010 NMUSA EA).

3.1.6.2 Planning

The U.S. Army intends for the proposed Founders Hall and its associated facilities to qualify for a LEED® Silver designation, and would incorporate other energy-saving measures, including High Performance and Sustainable Building, Low Impact Building, and requirements of the EPACT of 2005. The U.S. Army is coordinating with Virginia Department of Transportation to evaluate the vehicular access points and roadway changes (signalization, turn-lanes, etc.). The Proposed Action intends to meet the requirements of the Energy Independence and Security Act (EISA) of 2007, and Executive Orders (EOs) 13423 and 13514. The project team would design the building systems to achieve a 30 percent energy use reduction compared to the baseline building per the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) 90.1 (2004) in compliance with EPACT 2005 and help to achieve the energy reduction goals of EO 13423. Requirements for Federal Energy Management Program (FEMP)/Energy Star rated products and green products, in accordance with EO 13423, would be incorporated into the specifications of the Proposed Action.

The Founders Hall Proposed Action would install solar water heating systems for 30 percent of the hot water demand in accordance with EISA 2007. In addition to using the LEED rating system and mandating a silver rating, the project would incorporate the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings in accordance with EO 13514. The project would evaluate technologies and features such as green or reflective roofs, rainwater harvesting, alternative heating, ventilating, and air conditioning (HVAC) systems, and alternative lighting technologies to help achieve the LEED silver rating and meet the requirements of EO 13514. The current plans provide a total of 29 employee, visitors, and volunteer parking spaces

for Founders Hall. NCPC recommends a parking ratio of one space per 1.5 employees; however, visitor parking is not restricted by the NCPC policy. The NCPC encourages the use of the upper limit so as to encourage carpooling and use of public transit by limiting available parking.

Long-term operation would contribute minimally to peak traffic over area roadways as employees commute to work, but the majority of new traffic would be from visitors and would likely be during off-peak hours. The traffic study conducted for the NMUSA Proposed Action revealed that no significant impacts would occur to traffic and transportation systems from the NMUSA Proposed Action. (2010 NMUSA EA) This study would also apply to Founders Hall.

3.1.6.3 Coastal Zone Management

Fort Belvoir's CZ Consistency Determination for the Founders Hall Proposed Action has been prepared and sent to VA DEQ for concurrence and any resulting correspondence received will be included in Appendix A, Agency Coordination. This determination includes all elements of the plans for the construction of Founders Hall. Fort Belvoir has already received CZ Consistency for the NMUSA Proposed Action; therefore, CZ consistency for the Founders Hall Proposed Action is also expected. In addition, Fort Belvoir has determined that the NMUSA and Founders Hall Proposed Actions would be consistent with the Commonwealth of Virginia's Comprehensive Roadside Management Projects (CRMP's) enforceable policies to the maximum extent practicable. The Founders Hall Proposed Action would not affect fisheries, subaqueous lands, coastal dunes, or shoreline sanitation.

The U.S. Army would adhere to designated land use plans for Fort Belvoir and all state and federal regulations while implementing both Founders Hall and NMUSA Proposed Actions. Therefore, no significant impacts to land use, plans and CZM are expected.

3.1.7 Consequences of the No Action Alternative: Land Use, Plans and CZM

No impacts would occur to Land Use, Planning, and CZM.

3.2 Soils and Topography

The assessment area for topography and soils includes all areas within the Proposed Action LOD, where grading, construction and landscaping could change the current conditions. This includes the entire project site encompassing 10 acres.

3.2.1 Soils

All of Fort Belvoir, including the Proposed Action, is located in the Coastal Plain Physiographic Province, an area comprised primarily of unconsolidated, alternating layers of sand, gravel, shell rock, silt, and clay (U.S. Geological Survey [USGS], 2006). The Coastal Plain is underlain by a thick wedge of sediments that increases in thickness from the Fall Zone in the west to the Atlantic Coast in the east. These sediments rest on an eroded surface of Precambrian to early Mesozoic rock. The soils at the NMUSA Proposed Action site were identified as Beltsville silt loam, Sassafras sandy loam and Sassafras-Marumsc Complex (2010 NMUSA EA). However, the Natural Resources Conservation Service (NRCS) Geographic Information Systems (GIS) data identifies the soils at the Founders Hall Proposed Action site as Corodus and Hatsboro, Downer loamy sand, Gunston silt loam, Sassafrass sandy loam, Sassafrass – Marumsc Complex, and Woodstown sandy loam. **Figure 3-2** presents the soil information obtained from NRCS web mapper (July 2015).

Table 3-1 summarizes the relevant information concerning soils for the Proposed Action. “Problem Class A” refers to soils with a potential for unstable slopes, land slippage, high shrink-swell clays, poor foundation support, and high water tables. “Problem Class B” refers to soils with issues related to wetness and drainage that can be addressed in construction. “Problem Class C” soils are not considered problem soils for building foundations. The assessment area for topography and soils includes all areas within the LOD of the Founders Hall Proposed Action, where grading and construction could change the current conditions.

Understanding the soils and topography of the assessment area is important as it relates to the following:

- The potential for wetlands and wildlife habitats.
- How surface water and groundwater migrates across the site.
- How construction on areas of steep topography or weak soil can affect soil erosion and drainage.

Table 3-1 Soils Summary

Name	Drainage Class	Problem Class	Flooding	Foundation Support	Hydric
Beltsville Silt Loam	MWD	B	No	Good with proper drainage; foundation drains and waterproofing necessary.	No
Corodus and Hatsboro	MWD	A	Yes	Very Limited, Flooding Area	Yes
Downer Loamy Sand	WD	C	No	Not Limited	No
Gunston Silt Loam	WD	A	No	Very Limited at Depth of Saturation Zone	No
Sassafras Sandy Loam	WD	A	No	Somewhat Limited by Slope	No
Sassafras – Marumscoc Complex	WD	A	No	Very Limited at Depth of Saturation and by Slope	No
Woodstown Sandy Loam	MWD	A	No	Somewhat limited by Slope	No

Drainage Class Abbreviations:

WD: well drained

MWD: moderately well drained

SPD: somewhat poorly drained

PD: poorly drained

Source: NRCS, Soil Survey Report, Fort Belvoir, 1982 and NRCS GIS Soil Layers 2015

3.2.2 Topography

The topography of the Founders Hall Proposed Action generally slopes from east to west with a change in elevation of approximately 10 feet. The elevation changes from approximately 70 feet

above mean sea level (msl) west of Old Accotink Road, and slopes to the west to an elevation of approximately 60 feet msl. The site is wooded with a mixture of mature hardwoods and pine (Fort Belvoir GIS data, 2015).

3.2.3 Consequences of the Proposed Action: Soils and Topography

Impacts to soil resources would occur if the erosion rate was accelerated beyond its normal rate or if soil properties were damaged. Insignificant impacts would occur where the resource is slightly impacted or if the resource is not important to that region. Impacts would be considered beneficial if potential hazards were diminished or if the productivity of soils was enhanced.

Site preparation would require cut-and-fill work to prepare for Founders Hall building, grounds, parking, service road, utilities and the temporary access road. The amounts of grading, cutting, and filling would occur on approximately 1.24 acres out of the 14 acre LOD. Construction techniques such as directional drilling and a retaining wall will be used to avoid soil erosion impacts. To avoid encroachment into the RPA, a retaining wall will be required to adjust grades on the north end of the site to accommodate the north parking lot and the driveway to the lower level.

Grading, paving, and other development could result in localized changes in slopes, soil infiltration rates, and surface runoff patterns. The Proposed Action would affect more than 2,500 SF; therefore, both a VESC plan employing soil best management practices (BMPs), and a CGP would be required for clearing and grading activities. The VESC plan would include measures consistent with the VESCH and the Fairfax County Public Facilities Manual, such as silt fences around the limits of clearing and grading to reduce construction impacts. Because the Proposed Action affects more than one acre, a VA DEQ approved SWMP is also required. Also, the SWMP would include measures consistent with the Virginia Stormwater regulations (9VAC25-870), such as to address stormwater quality and quantity.

Fort Belvoir would comply with the VESC and SWMP Plans, as required by VA DEQ; therefore, no significant impacts to Soils and Topography resources would occur due to the combined Founders Hall and NMUSA Proposed Actions.

3.2.4 Consequences of the No Action Alternative: Soils and Topography

Under the No Action Alternative, there would be no construction activities; therefore, no direct impacts on soils would occur. The proposed Founders Hall site would continue to consist of undeveloped, forested land.

3.3 Vegetation and Wildlife

The assessment area for vegetation and wildlife includes all areas within the boundaries of the proposed site where the effects from construction would occur.

3.3.1 Vegetation and Habitats

Fort Belvoir has designated 742 acres as the Fort Belvoir Forest and Wildlife Corridor (FWC). The FWC traverses the installation, connecting Huntley Meadows Park and the Jackson Miles Abbott Wetland Refuge (JMAWR), located northeast of Fort Belvoir, to the Accotink Bay Wildlife Refuge (ABWR) on South Post, and to the Mason Neck State Park and the Potomac River National

Wildlife Refuge Complex, located south of the installation (Integrated Natural Resources Management Plan [INRMP], U.S. Army Garrison Fort Belvoir, 2001). The Founders Hall Proposed Action would involve the temporary utilization of the FBMRR as an access road to cross over the FWC during construction. Additionally, utilities would be directionally drilled under the FWC to avoid permanent impacts. **Figure 3-3** presents the location of the Proposed Action in relation to the FWC.

The vegetation and habitat types identified within the Proposed Action LOD include a mixed oak and pine forest. Founders Hall construction activity will occur within a 14-acre LOD after selective tree removal is conducted to minimize impacts to vegetation to the maximum extent practicable. This will be the same strategy set forth for the NMUSA Proposed Action (i.e., a 2:1 replacement ratio) in accordance with the Fort Belvoir Tree Replacement Policy #27.

3.3.2 *Wildlife*

Based on the descriptions of habitats available, wildlife expected to be located in the Founders Hall Proposed Action area includes white tailed deer (*Odocoileus virginianus*), wild turkeys (*Meleagris gallopavo*), shrews (*Soricidae*), Great Horned Owls (*Bubo virginianus*), Barred Owls (*Strix varia*), raccoons (*Procyon lotor*), coyotes (*Canis latrans*), opossum (*Didelphis virginiana*), American crows (*Corvus brachyrhynchos*), American robins (*Turdus migratorius*), wood thrushes (*Hylocichla mustelina*), eastern wood pewees (*Contopus virens*), scarlet tanagers (*Piranga olivacea*), and other common mammal, reptile, amphibian and migratory bird species.

3.3.3 *Federal and State Protected Species*

The ESA of 1973 provides for the conservation of federally-listed threatened and endangered (T&E) plant and animal species and the designated critical habitats of such species. Under Section 7 of the ESA, federal agencies are prohibited from authorizing, carrying out, or funding actions that are likely to jeopardize the continued existence of any T&E species or to result in the destruction or adverse modification of critical habitat of such species.

3.3.3.1 Special Status Plant Species

Historically, there are no documented occurrences of special status plant species located within the Founders Hall and NMUSA LODs (correspondence from the Virginia Department of Conservation and Recreation [VDCR], 2009). However, the USFWS indicated that the federally-listed threatened Small Whorled Pogonia (*Isotria medeoloides*) may be present in the assessment area (USFWS, 2008). Consequently, a Small Whorled Pogonia (SWP) survey was conducted by W.S Sipple Wetland and Environmental Training Consulting (WSS). Approximately 90 acres comprised of the Founders Hall and NMUSA LODs and adjacent areas were surveyed. No SWP were located although the consultant verified the existence of approximately 40 acres that was either highly favorable habitat or somewhat favorable habitat. This habitat generally comprised wooded areas located adjacent to streams. Approximately 50 acres of the survey area was not favorable habitat for SWP. According to the USFWS, the survey is only applicable for two years. Therefore, another SWP survey was conducted by the same consultant June 8 through 10, 2015 within the Founders Hall and NMUSA LODs (Sipple, 2015). The results again revealed that no SWP were observed in the Proposed Action areas. However, because the site presents areas that are suitable habitat, a SWP survey should be conducted every two years if the NMUSA and Founders Hall construction is not complete. A brief description of the plant is provided below.

Small Whorled Pogonia (Isotria medeoloides)

The SWP is a member of the orchid family and usually has a single grayish-green stem that grows approximately 10 inches tall when in flower and about 14 inches when bearing fruit. The plant is named for the whorl of five or six leaves near the top of the stem and beneath the flower. The leaves are grayish-green, somewhat oblong and 1 to 3.5 inches long. The single or paired greenish-yellow flowers are about 0.5 to 1 inch long and appear in May or June. The fruit, an upright ellipsoid capsule, appears later in the year. The SWP, rare but widely distributed, is found in 17 eastern states and Ontario, Canada. Populations are typically small with less than 20 plants. It has been extirpated from Missouri, New York, Vermont, and Maryland.

This orchid grows in older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory. Sometimes it grows in stands of softwoods such as hemlock. It prefers acidic soils with a thick layer of dead leaves, often on slopes near small streams. The SWP flowers from mid-May to mid-June, with the flowers lasting only a few days to a week. It may not flower every year but when it does flower, one or two flowers are produced per plant. If pollinated, a capsule forms that contains several thousand minute seeds. The SWP appears to self-pollinate by mechanical processes. The flower lacks both nectar guides and fragrance and insect pollination has not been observed.

3.3.3.2 Special Status Animal Species

Although no specific occurrences have been documented, the potential exists for three special status species to be located near the Proposed Action site (VDCR, 2008). In addition, Accotink Creek, located approximately 1,400 feet south of the Proposed Action at its closest point, is an anadromous fish use area. Copies of the U.S. Army’s correspondence with the agencies are presented in **Appendix A**. Special status species documented near or potentially occurring in the Proposed Action area are presented in **Table 3-2**.

Table 3-2 Special Status Species Documented near, or Potentially Occurring in, the Proposed Action Area

Species	Status	Occurrence in Study Area
Bald Eagle <i>Haliaeetus leucocephalus</i>	Federal Protected	Documented within 2 miles of the proposed site (The Center for Conservation Biology [CCB] 2015)
Wood Turtle <i>Glyptemys insculpta</i>	State Threatened	Documented within 0.75 mile of the site. Coordination recommended (VDGIF 2008)
Northern Virginia Well Amphipod <i>Stygobromus phreaticus</i>	Federal Species of Concern	Documented at Fort Belvoir – Surveys recommended (VDCR 2008)
Northern Long-eared Bat (NLEB) <i>Myotis septentrionalis</i>	Federal Threatened	Surveys are currently being conducted on site. Preliminary results of on-going acoustic surveys indicate NLEB may be present. Section 7 Consultation is required.
Anadromous fish	N/A	Documented at Accotink Creek (VDGIF 2008)

Bald Eagles (Haliaeetus leucocephalus)

Bald eagles are protected under the Bald and Golden Eagle Protection Act of 1940 and the Migratory Bird Treaty Act of 1918. The Act prohibited taking or possession of bald eagles or any bald eagle parts including feathers, eggs, and nests. Bald eagles were further protected as Endangered Species under the 1973 ESA, however, expanding populations led to down-listing as a Threatened Species in 1995. In 2007, bald eagles were formally "de-listed" or removed from the federal ESA. Bald eagles have been known to forage within Fort Belvoir; however, they tend to nest in areas away from human contact. Shorelines along creeks, rivers and lacustrine areas on Fort Belvoir provide valuable nesting, foraging, and loafing habitat for resident and migratory bald eagles. Potential threats to bald eagle nesting, foraging and loafing habitat include disturbances caused by near shore activities. The USFWS and VDGIF have published Bald Eagle Protection Guidelines for Virginia (2012). Based on recent surveys, Bald Eagle nests and habitats occur near and along the Potomac River (Watts and Byrd, 2012). According to the guidelines, the Proposed Action would be far enough away from current bald eagle nests to preclude an adverse effect. However, should nesting eagles appear within the Proposed Action area, nest protection zones would be established in accordance with the Fort Belvoir Bald Eagle Management Plan. The plan is modeled after the Virginia Bald Eagle Protection Guidelines which provides guidelines to protect bald eagle habitat and nests from activities conducted on Fort Belvoir.

Wood Turtle (Glyptemys insculpta)

Potential wood turtle habitat occurs within the stream valleys at or near the Proposed Action; therefore, a wood turtle survey was conducted in 2009 for both the proposed Founders Hall and NMUSA LODs. The survey report, provided by Mitchell Ecological Research Service, LLC (Mitchell, 2009), indicated that "the first-order streams in each of the study areas do not provide sufficient shelter that would allow successful hibernation." Mitchell found no wood turtles within the proposed LODs. The report concluded that "wood turtles are not going to be impacted by construction above these creeks."

Northern Virginia Well Amphipod (Stygobromus phreaticus)

The Northern Virginia well amphipod (*Stygobromus phreaticus*), a subterranean crustacean with a very limited range, occupies habitat that is limited to groundwater seeps. The species has been collected only three times since 1921, including once at Fort Belvoir's T-17 training area in 1996 (VDCR Division of Natural Heritage, June 2003). This amphipod is listed as G1/S1, indicating that it is critically imperiled because of its extreme rarity, or because factors in its biology make it especially vulnerable to extinction (MACTEC June 2003). The Northern Virginia well amphipod may occur in the seeps on, or adjacent to, the Founders Hall Proposed Action as well as the NMUSA Proposed Action. The Proposed Actions (Founders Hall and NMUSA) could possibly also affect seeps offsite by increasing impervious surfaces and soil compaction, which reduces the rate at which rainfall infiltrates into the site soils and recharges local groundwater. This could potentially reduce the flow of groundwater to nearby seeps, including potential habitat for the Northern Virginia well amphipod. The U.S. Army's construction contractor shall fully comply with the VESC Plan, the Chesapeake Bay BMPs and the SWPPP (Sections 3.2 and 3.4) to avoid soil erosion impacts to these sensitive species. The U.S. Army will also avoid impacts to springs and seeps, and maintain forested buffers along slopes to protect groundwater recharge areas to the maximum extent practicable.

Northern Long-eared Bat (NLEB) (Myotis septentrionalis)

The NLEB (*Myotis septentrionalis*) was recently listed as "threatened" under the ESA (effective

May 2015) and may occur on forested areas at Fort Belvoir. Fort Belvoir is currently conducting a survey to determine if the bat is present on post. The NLEB is medium-sized with a body length of 3 to 3.7 inches and a wingspan of 9 to 10 inches. Their fur color can be medium to dark brown on the back and tawny to pale-brown on the underside. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, *Myotis*.

Winter Habitat: NLEBs spend winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. Within hibernacula, surveyors find them hibernating most often in small crevices or cracks, often with only the nose and ears visible.

Summer Habitat: During the summer, NLEBs roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. NLEBs seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds.

Anadromous Fish

Anadromous fish are those fish species which live in salt water but migrate to fresh water areas to spawn. Example fish species include alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), and striped bass (*Morone saxatilis*). The VDGIF commented in a letter dated November 10, 2008, for the 2010 NMUSA EA, that Accotink Creek is a confirmed Anadromous Fish Use Area, but VDGIF “does not anticipate that this project will result in impacts to anadromous fish.”

3.3.4 Migratory Birds and Partners in Flight (PIF) Program

The Migratory Bird Treaty Act of 1918 was established to protect migratory birds and prohibits the taking of any migratory bird, nest, egg, or part, except as permitted by the USFWS. The prohibitions under this law and its regulations generally include activities or attempted activities that pursue, hunt, shoot, wound, kill, trap, capture, possess, or collect any migratory bird species and their nests and eggs. Migratory birds potentially forage and nest in both Founders Hall and NMUSA action areas.

The potential forest impact areas for the Proposed Action are within buffer zones designated by the Partners in Flight (PIF) Program. The PIF Program was launched in 1990 in response to growing concerns about declines in the populations of many land bird species. PIF is a partnership among federal, state, and local government agencies, philanthropic foundations, professional organizations, conservation groups, industry, the academic community, and private citizens (Partnersinflight.org, accessed 2015).

The PIF buffer areas at the Proposed Action site are associated with the wood thrush, (*Hylocichla mustelina*) scarlet tanager (*Piranga olivacea*) and eastern wood pewee (*Contopus virens*). Both the wood thrush and scarlet tanager species are ranked as Entry Level IA in the PIF Priority Species Pool Order of Concern. The eastern wood pewee is ranked as Entry Level IIA (Partnersinflight.org, accessed 2015). The Proposed Action would temporarily disturb PIF buffer areas located along the temporary access road during construction; and permanently disturb small PIF buffers areas along the utility corridor south of the FBMRR, along a golf cart route and within

the southeastern portion of the NMUSA proposed construction footprint.

3.3.5 Special Natural Areas

Fort Belvoir includes four designated Special Natural Areas: the ABWR, the JMAWR, the T-17 Ravine Conservation Site, and the FWC. The ABWR is 1,480 acres in size and located along Accotink Bay and Accotink Creek in the central portion of the South Post. The JMAWR is 234 acres in size and located in the northeastern corner of the North Post. The T-17 Ravine Conservation Site is 69 acres in size and located at Tompkins Basin, along the north bank of Gunston Cove. The Fort Belvoir FWC consists of a 742-acre area that traverses the installation and connects the ABWR to the JMAWR.

3.3.6 Consequences of the Proposed Action: Vegetation and Wildlife

3.3.6.1 Vegetation and Habitats

The disturbance of 10 acres of mixed oak forest habitat would likely cause a reduction in the number of animals supported by the forested area and the overall landscape. Construction noise would be noticeable but temporary to wildlife in the vicinity of the Proposed Action. Minimization and mitigation measures implemented by the U.S. Army to offset impacts to vegetation and wildlife habitats would include the VESC Plan; Chesapeake Bay BMPs; Fort Belvoir Master Spill Plan (FBMSP); replanting trees at a ratio 2 planted for every one tree taken in accordance with the Fort Belvoir Tree Removal Policy #27, and clearly marking boundaries of RPAs and wetlands prior to construction. These minimization and mitigation measures would also be applied to the NMUSA Proposed Action where clearing 35.75 acres of forested land, 39.14 acres of maintained lawn and 0.01 acres of wetland seeps would add to the loss of habitat in the area (see 2010 NMUSA EA). Minor impacts to vegetation and habitats is expected.

Out-of-kind mitigation will be implemented to off-set the loss of vegetation and natural habitats due to the Founders Hall addition. This mitigation includes the design of an 800 foot section of Mason Run Creek (MR1), which is to be restored as mitigation for the original NMUSA project (see Section 5.3). This work will comply with the conditions of Nationwide Permit (NWP) #27-Aquatic Habitat Restoration, Establishment, and Enhancement Activities.

No significant impacts to Vegetation and Habitats are expected if mitigation measures are implemented.

3.3.6.2 Wildlife

No significant impacts to wildlife described in Section 3.3.2, would occur as a result of the Founders Hall and NMUSA Proposed Actions. Minor temporary impacts would occur during the re-vegetation stage, as there would be a lack of suitable habitat for nesting and foraging. However, it is expected that once the areas are stabilized and landscaped, the site would begin to provide habitats for wildlife. The areas surrounding the Proposed Actions will be landscaped and each 4-inch in dbh tree that will be selectively removed will be replaced with two trees in accordance with the Fort Belvoir Tree Removal Policy #27.

In addition to the mitigation proposed in in 3.3.6.1, a portion of the wildlife corridor would be restored and enhanced near the intersection of Fairfax County Parkway and John Kingman Road (see **Figure 3-5**) as described for Non-Perennial Stream mitigation in Section 5.4. This project

would enhance the ability of wildlife to cross under Fairfax County Parkway with less exposure to traffic.

Fort Belvoir manages a deer hunting program on the installation to control the local population of white-tailed deer. Founders Hall would result in the loss of 2.5 acres of hunting acreage and NMUSA would result in the loss of 33.5 acres of hunting acreage in Hunting Area H13. Closing of the hunting areas within the construction site is not expected to significantly affect deer population as there are approximately 3,565 acres of hunting area throughout Fort Belvoir. Additionally, the FWC would remain available for hunting, and comprises approximately 47 acres within Hunting Area H13. Therefore, no significant impacts to the deer hunting program is expected.

3.3.6.3 Federal and State Protected Species

No federal or state protected species or other species of special concern will be affected by the project except for the NLEB. Section 7 Consultation “Species Conclusion Tables” are presented in Appendix A. The golf course reconfiguration and construction resultant from the combined NMUSA and Founders Hall Proposed Action would initially result in the loss of 36 acres of forested habitat suitable for NLEB. Because NLEB has general habitat requirements, this represents less than 1% of potential habitat on Fort Belvoir. The results of acoustic monitoring indicate the presence of NLEB on site. Therefore the U.S. Army completed Section 7 Consultation with the USFWS.

In May 2015, the U.S. Army completed Programmatic Informal Consultation on the NLEB with the USFWS under Section 7 of the ESA. The Programmatic Informal Consultation identified criteria under which construction projects would be considered “Not Likely to Adversely Affect” NLEB (“Informal Conference & Management Guidelines on the NLEB (*Myotis septentrionalis*) for Ongoing Operations on Installation Management Command Installations”, (U.S. Army Environmental Command, May 2015). However, this project is not covered by this Programmatic Consultation because the total amount of trees to be cleared exceeds the limit of 10 acres specified in the consultation. Therefore, the U.S. Army completed project specific consultation with the USFWS. The USFWS has concurred with Fort Belvoir's determination of "may affect, but is not likely to adversely affect" NLEB. This determination was made based on a set of project-specific mitigation measures, including a time of year restriction (from 15 April through 15 September) on tree removals at the project site. The mitigation measures that were developed to protect and restore NLEB habitat during and after construction are presented in Appendix A (“Appendix C, *NLEB Mitigation Plan for the National Museum of the U.S. Army, Fort Belvoir*” along with concurrence from the USFWS). Therefore, no significant impacts to protected species will occur if mitigation is implemented.

No critical habitats for any listed species are located within the Proposed Action area.

3.3.6.4 Migratory Birds and PIF Program

To avoid and minimize impacts to migratory birds, bird nest surveys will be conducted ahead of construction and selective removal of trees. Habitat avoidance will be achieved through selective removal of trees and only disturbing areas necessary to accommodate the development of the Proposed Action.

Construction of Founders Hall would result in minor impacts to approximately 2 acres of PIF buffer areas where the utilities would be installed south of the FBMRR. Additionally, the FBMRR, also located within this 2-acre disturbance area, would be used for a temporary access road during construction of the NMUSA complex. NMUSA construction footprint will also result in minor impacts to approximately 16 acres of PIF buffer areas due to the construction of the facility and temporary disturbance due to the installation of a waterline to the east.

Disturbed areas within the LODs for both actions will be re-landscaped with a mixture of deciduous shade and flowering trees, such as American elm cultivars (Valley Forge, New Harmony, Jefferson, or Princeton) and swamp white oak (*Quercus bicolor*), eastern redbud (*Cercis canadensis*), and plant seedlings, such as dogwood (*Cornus florida*), possumhaw (*Viburnum nudum*), and red chokeberry (*Aronia arbutifolia*). Once the site is revegetated, habitats will be provided for a variety of birds though they may not be for the same species as those designated in the PIF buffers. Therefore, minor impacts to PIF Buffer areas are expected.

3.3.6.5 Special Natural Areas

The proposed utilities (IT, sewer, and electricity) would not impact the FWC located off-site near the intersection of Fairfax County Road and John Kingman Road (**Figure 3-3**) because the utilities would be directionally drilled under the FWC. However, minor impacts to the FWC would occur during the construction phase of the proposed action when the FBMRR is temporarily used as an access road, and during sewer tie in with the FWC at an existing manhole located just west of the Un-Named stream (east of John Kingman Road, see Figure 3-3). The disturbance would occur while preparing the access road and when restoring the FBMRR. The disturbance in the FWC would also be temporary and impact 0.01 acres of FWC, an area already disturbed from the existing manhole. The rail bed and the old road bed will be bladed to correct surface irregularities and drainage problems, and then will be provided with an aggregate base course suitable for heavy construction traffic and privately owned vehicles. The LOD for this work will be no greater than 40 feet centered on the existing alignments with no work extending downslope of the rail bed in wetlands or streams. Therefore minor and temporary impacts to FWC is expected.

3.3.7 Consequences of the No Action Alternative: Vegetation and Wildlife

No impacts to vegetation and wildlife would occur as a result of the No Action Alternative.

3.4 Surface Water, Water Quality, and Floodplains

The assessment area is defined as the area in which surface water and floodplains could be directly or indirectly impacted by construction or operation of Founders Hall. This includes on-site streams and down-stream water bodies. **Figure 3-4** presents surface water and floodplain areas near the Proposed Action. No floodplains occur within the construction footprint of both NMUSA and Founders Hall.

3.4.1 Surface Water

The Proposed Action would be located within the Accotink Creek watershed located adjacent to Kernan Run, a perennial stream positioned to the west of the Proposed Action. Surface water from Founders Hall would potentially drain into Kernan Run and eventually flow into Accotink Creek located approximately 1,400 feet to the southwest. In turn, these waters would discharge to the Potomac River at a point approximately 2.25 miles to the south of Founders Hall.

3.4.2 Water Quality

3.4.2.1 Federal and State Mandates

The Federal Water Pollution Control Amendments of 1972, commonly referred to as the CWA, established the basic structure for regulating discharges of pollutants into waters of the U.S. The CWA contains the requirements to set water quality standards for all contaminants in surface waters. The USEPA is the designated regulatory authority to implement pollution control programs and other requirements of the CWA. However, USEPA has delegated regulatory authority for the CWA to applicable state agencies for the implementation of pollution control programs as well as other requirements of the act. The CWA and EO 12088, Federal Compliance with Pollution Control Standards, require federal facilities to comply with all substantive and procedural requirements applicable to point and nonpoint sources of pollution.

Section 303(d) of the CWA

Section 303(d) of the CWA requires states to identify and develop a list of waterbodies that are impaired and for which technology-based and other required controls have not resulted in attainment of water quality standards. Section 303(d) requires the development of Total Maximum Daily Loads (TMDLs) for waterbodies included on the 303(d) list. TMDLs target the load reductions needed to reduce the pollutants of concern (that is, the pollutants causing the impairment to the particular waterbody) for each listed waterbody.

The TMDL for benthic impairments in the Accotink Watershed (Fairfax County, City of Fairfax, and Town of Vienna, Virginia) was issued by USEPA on April 18, 2011, and was overturned in the U.S. District Court on January 3, 2013 and is no longer applicable to this project. While Accotink Creek is considered to be impaired for benthic-macroinvertebrates, a TMDL for this impairment is currently under development by VA DEQ and is not scheduled to be completed until February 2016.

VA DEQ has developed TMDL criteria for surface waters as part of the Phase II Chesapeake Bay Watershed Implementation Plan. Virginia, Department of Defense (DoD), and other federal agencies will work together in the joint development of a Memorandum of Understanding to meet Chesapeake Bay water quality goals and achieve the necessary reductions called for by the Chesapeake Bay TMDL (VA DEQ, 2013a).

The VA DEQ defines surface water quality standards that protect designated uses of surface waters in Virginia. These standards have three components: general criteria, use designations, and numeric water quality criteria necessary to protect those uses. All streams in Virginia, including those flowing through Fort Belvoir, are minimally assigned the uses of:

- Recreation (e.g., swimming, boating);
- Propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them;
- Wildlife habitats; and
- The production of edible and marketable natural resources (e.g., fish and shellfish).

VA DEQ uses ambient water quality, sediment, fish tissue, and other available data to assess water quality conditions, threats to human health, and the impairment status for each waterbody

to support the development of the 303(d) list and to monitor progress as TMDLs are developed and implemented. Accotink Creek is on the 303(d) list of impaired waterbodies. VA DEQ monitors stations near Fort Belvoir including Accotink Creek. **Table 3-3** presents a summary of impairment issues related to uses for the Accotink Creek waterbody.

Table 3-3 Accotink Creek Impairment Summary

Cause Group Code <i>Impaired Use</i>	Cause	Cause Category	Initial List Date	TMDL Development Date
A15R-01-PCB Fish Consumption	PCB	5A	2010	2022
A15R-01-BEN Aquatic Life	Benthic Macroinvertebrate Assessment	5A	1996	2016
A15R-01-BAC Recreation	Escherichia coli	5A	2004	2016

Current and historical water quality data for the watersheds in the vicinity of Fort Belvoir are available from VA DEQ, the Fairfax County Health Department, and USEPA’s Storage and Retrieval database. In addition to the data presented in the above **Table 3-3**, data have shown reduced dissolved oxygen levels in Accotink Creek (upstream of the post). The Fort Belvoir baseline aquatic inventory sampling showed concentrations of aluminum, manganese, and iron with total metal concentrations higher than the USEPA chronic aquatic life or human health criteria.

3.4.2.2 Stormwater

VA DEQ regulates construction activities affecting greater than 2,500 SF located within the Chesapeake Bay Watershed. The construction contractor is required to obtain a CGP, develop and comply with the SWPPP, and demonstrate how these will be maintained for the duration of the construction period, as well as who will be responsible for their maintenance (9 VAC 25-870-62 through 9 VAC 25-870-92). Fort Belvoir has a Small Municipal Separate Storm Sewer System (MS4) with stormwater discharge permitted by VPDES MS4 Permit Number VAR040093. Under this permit, Minimum Control Measure #4 (Construction Site Stormwater Runoff Control) addresses all development on the Main Post and Fort Belvoir North Area. Fort Belvoir also has a current VPDES Industrial Stormwater General Permit (No. VAR051080 – expires in June 2019) that specifically covers stormwater runoff from DAAF, located approximately 2,000 feet southwest of the Proposed Action. Fort Belvoir has applied for a new industrial stormwater permit (No. VA0092771) that will cover the entire installation (Harback, pers. comm., June 20, 2012). This permit will require Fort Belvoir to monitor TMDL for total suspended solids (TSS), total nitrogen (TN), total phosphorous (TP), and other parameters (i.e metals and hardness) at each of the 33 outfall locations. Fort Belvoir also has polychlorinated biphenyls (PCBs) TMDL sampling and reporting requirements for the Chesapeake Bay TMDL. **Table 3-4** presents a summary of TMDLs that have been issued relating to discharging stormwater into Accotink Creek and ultimately Chesapeake Bay.

Table 3-4 Summary List of TMDLS issued and their applicability to Fort Belvoir MS4 Permit

Document Name	Date Issued	Waste Load Allocation Regulated Stormwater (MS4)	Percent Reduction
TMDLs of PCBs for Tidal Portions of the Potomac and Anacostia Rivers in the DC, Maryland and Virginia	September 28, 2007; revised October 31, 2007	Accotink Creek 0.0992g PCBs/year Dogue Creek 20.2 g PCBs/year Gunston Cove 0.517 g PCBs/year Pohick Creek 7.58 PCBs/year	92.0 65.7 87.1 61.2
Bacteria TMDL for the lower Accotink Creek Watershed	September 2008	1.73E+12 cfu/year	97.0
TMDL for Benthic Impairments in the Accotink watershed (Fairfax County, City of Fairfax and Town of Vienna, Virginia)	April 18, 2011	This TMDL established by the USEPA Region III was overturned in the U.S. District Court on January 3, 2013 and is not applicable.	N/A
Chesapeake Bay TMDL for Nitrogen, Phosphorous and Sediment	December 19, 2010	N/A	See VA DEQ Phase II Watershed Implementation Plan for phased implementation

* Fort Belvoir was not assigned an individual waste load allocation (WLA) for Chesapeake Bay TMDL

Energy Independence and Security Act (EISA)

Projects involving the construction of federal buildings which disturb more than 5,000 square feet are required to meet stormwater design standards under Section 438 of the EISA. The USEPA Technical Guidance for Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of EISA (USEPA, 2009) sets a goal that is more rigorous than the Fairfax County and Commonwealth of Virginia stormwater management regulations in that it requires every technically feasible measure to maintain pre-development site hydrology by retaining rainfall onsite through evaporation/transpiration, infiltration, and re-use. USEPA guidance suggests two options to meet Section 438 requirements:

- 1) Retain the 95th percentile rain event, using practices that manage rainfall onsite and prevent off-site discharge from all rainfall less than or equal to the 95th percentile rain event, to the maximum extent technically feasible; and
- 2) Develop a site specific hydrologic analysis which would determine pre-developed hydrologic conditions (runoff rate, volume, duration and temperature) and match them by replicating predevelopment hydrology. This would use similar methods as described above for infiltration, evapotranspiration and rainwater harvesting (U.S. Army, 2014a).

A subsurface investigation of the Founders Hall site was conducted by Draper Aden Associates and is summarized in its report “Subsurface Exploration and Geotechnical Evaluation, The National Museum of the U.S. Army, Founders Hall, Fort Belvoir, Virginia – May 29, 2015”. Soil permeability testing indicated that rates are less than the minimum rates required by the BMP

Clearinghouse for infiltration BMPs.

3.4.3 Consequences of the Proposed Action: Surface Water, Water Quality and Floodplains

As a result of the subsurface investigation and VA DEQ requirements, the proposed design will route as much of the impervious area as possible to BMPs to provide water quality treatment, runoff volume reduction, and peak flow reduction. Total impervious area resulting from the construction of Founders Hall is anticipated to be approximately 25,000 SF. Storm water will be discharged in accordance with 9VAC25-870-66, and water quality compliance will be achieved onsite through the use of the Virginia Runoff Reduction Method (VRRM) Spreadsheet and implementation of stormwater BMPs from the Virginia BMP Clearinghouse in accordance with 9VAC25-870-62 through 65. A proposed storm water outfall site for Founders Hall is located extending west from Founders Hall to Kernan Run (see **Figure 3-4**). Additionally, to avoid encroachment into the RPA, a retaining wall will be required to adjust grades on the northern portion of the Proposed Action to accommodate the north parking lot and the driveway to the lower level.

EISA and water quality compliance for Founders Hall will be provided with a stormwater management plan including a proposed bioretention BMP (**Figure 3-4**). In addition to phosphorus removal as required by Virginia regulations, this stormwater management plan will also provide nitrogen removal as calculated by the VRRM Spreadsheet. Channel protection compliance in accordance with 9VAC25-870-66 will be provided by BMP(s) through a combination of volume reduction and peak reduction. Flood protection compliance will be achieved by analysis of Kernan Run from the proposed discharge point to a point where the total drainage area is 100 times the project drainage area.

Landscaping of the Founders Hall site will complement the NMUSA site and stabilize soils. The south side of the site abutting the FBMRR corridor will be suitably landscaped to comply with Section 106 mitigation requirements (see Section 3.6).

Compliance with Section 438 of EISA, Fairfax County and Commonwealth of Virginia stormwater management regulations will result in no impacts to water quality as a result of the Proposed Founders Hall and NMUSA actions. Compliance with VESC and VPDES requirements for construction sites (incorporated in the CGP Permit) and the Fairfax County Chesapeake Bay Ordinance would minimize transport of sediments and other contaminants into Accotink Creek and its tributaries during construction at the Founders Hall and NMUSA LODs. Therefore, no significant impacts to surface water, water quality and floodplains would occur as a result of the combined effects from the Founders Hall and NMUSA Proposed Actions.

3.4.4 Consequences of the No Action Alternative: Surface Water, Water Quality and Floodplains

The No Action Alternative would result in no impacts to surface waters, water quality and floodplains near the Proposed Action.

3.5 Waters of the U.S., RPAs and Non-Perennial Stream Buffers

3.5.1 Waters of the U.S.

The definition of Waters of the U.S. has been finalized as of August 28, 2015. Waters of the U.S.

are protected by the CWA and include wetlands and streams that meet certain criteria designated for Waters of the U.S. (see <http://www2.epa.gov/cleanwaterrule/definition-waters-united-states-under-clean-water-act>). Wetlands are part of the foundation of our nation's water resources and are vital to the health of waterways and communities that are downstream. Wetlands feed downstream waters, trap floodwaters, recharge groundwater supplies, remove pollution, and provide fish and wildlife habitat. Wetlands are also economic drivers because of their key role in fishing, hunting, agriculture and recreation. Wetlands include bottomlands, swamps, marshes and bogs. They vary widely because of differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors. Wetlands are often found alongside or adjacent to waterways (oceans, streams, rivers) and in flood plains. However, in some cases, wetlands have no apparent connection to a surface water like rivers, lakes or the ocean, but have critical groundwater connections.

Streams occur where water often first surfaces from underground and begins its path to the sea. Streams can form a complex hydrologic network that absorbs and then gradually releases nutrients, organic matter, and stream flow downstream. These headwaters support a staggering diversity of fish and wildlife species. Like wetlands, they provide essential "services" for humans such as preserving water quality and lessening the impacts of flooding.

For these reasons, wetlands and streams are regulated by both the USACE under Section 404 and 401 of the CWA and by the VA DEQ under their Water Protection Permit Program.

Assessment of wetlands and streams (Waters of the U.S.) for this analysis includes all areas within or adjacent to the Proposed Action LOD, where the impacts from the Proposed Action (both construction and operation) are most likely to occur. **Figure 3-5** show the wetlands and streams within and near the Proposed Action and is based on wetland/stream delineations completed by Paciulli, Simmons and Associates (PSA) (PSA, 2009 and 2010). The Jurisdictional Determination for the wetland and stream boundaries was issued June 3, 2011.

As a result of the Founders Hall Proposed Action, Palustrine Forested (PFO) wetlands would be converted to Palustrine (PEM) wetlands (conversion impacts) during the installation of utility lines south of the FBMRR. Additionally, perennial stream impacts would occur extending west from Founders Hall during construction of a stormwater outfall to Kernan Run (see **Figure 3-5**). As a result of the NMUSA Proposed Action, two stream locations would be impacted by the construction of two stormwater outfalls, and PFO wetland impacts would occur during construction of Liberty Drive north of Founders Hall. Additionally, PEM wetlands would be impacted by the construction of Liberty Drive entrance from Fairfax County Parkway over a small wetland. A culvert will be placed in this location to convey water and an amphibian crossing will be constructed to provide safe passage through the drainageway.

3.5.2 RPA's and Non-Perennial Stream Buffers

Fort Belvoir also ensures its actions are consistent to the maximum extent practicable with the Fairfax County Chesapeake Bay Preservation Ordinance, and gives special consideration to the Fairfax County designated Chesapeake Bay RPAs on the installation. These areas include streams with perennial flow, contiguous wetlands, a 100-foot buffer off of these features, and the 100-year floodplain, where present. The Chesapeake Bay Preservation Ordinance exempts public utility and roadway crossings of the RPA if no better alternative can be found. However, these crossings

must, to the extent practicable, be aligned in a way (usually at right angles) that minimizes impacts to the RPA.

RPAs are sensitive areas where development is largely restricted (with certain exceptions) to water dependent activities, maintenance of public activities, passive recreation, water wells, and historic preservation. These areas are compatible only with very low-density or no development (U.S. Army Garrison Fort Belvoir, 2001b).

Any land in Fairfax County that is not an RPA is considered a Resource Management Area (RMA). Development within RMAs must use Chesapeake Bay BMPs to reduce nutrients in stormwater discharges. For Non-Perennial Streams without RPAs, Fort Belvoir also designates 35-ft buffer areas to protect riparian areas. Riparian areas are considered environmentally sensitive and generally surround intermittent and ephemeral streams.

Assessment of RPAs and non-perennial stream buffers for this analysis includes all areas within or adjacent to the Proposed Action LOD, where the impacts from the Proposed Action (both construction and operation) are most likely to occur. **Figure 3-5** shows the RPAs and non-perennial stream buffers within and near the Founders Hall Proposed Action. As a result of the proposed action, RPA impacts would occur during the construction of the stormwater outfall west from Founders Hall to Kernan Run (**Figure 3-5**). Additionally, a temporary construction access road would occur on the FBMRR through an RPA in the southeast corner near the intersection of Fairfax County Parkway and John Kingman Road. As a result of the NMUSA proposed action, impacts to non-perennial stream buffers would occur where the two stormwater outfall structures are located for the NMUSA site. Additionally, impacts would occur to an RPA near the entrance of Liberty Drive and to RPAs during the construction of Liberty Drive north of Founders Hall.

3.5.3 Consequences of the Proposed Action: Waters of the U.S., RPAs and Non-Perennial Stream Buffers

3.5.3.1 Waters of the U.S.

As a result of Founders Hall Proposed Action, 23 linear feet (LF) of perennial stream would be impacted, and 0.011 acres of Palustrine Forested (PFO) wetlands would be converted to Palustrine Emergent (PEM) wetlands. However, the combined impact of Founders Hall and NMUSA would result in permanent impacts to the following jurisdictional resources: 0.075 acres of PFO wetland, 0.074 acres of palustrine emergent (PEM) wetland, and 110 linear feet (0.011 acre) of stream channel, for a total of 0.16 acres of wetland and stream impacts; and 0.011 acres of PFO conversion to PEM.

As required under Sections 404 and 401 of the CWA, wetland and stream impacts will be permitted with the U.S. Army Corps of Engineers (USACE) and Virginia Department of Environmental Quality (VA DEQ) regulatory agencies. The U.S. Army will obtain USACE Nationwide Permit numbers 27 and 39 and a VA DEQ Water Protection General Permit (WP4) to authorize the proposed impacts to Waters of the U.S. and Waters of the State. The 401 water quality certification is being issued as part of the WP4. As part of the permit process, mitigation measures will be implemented to offset impacts to wetland and stream resources. Wetland mitigation will include the purchase of wetland credits from a wetland bank. Stream impacts will be mitigated through stream restoration of 145 LF that will occur southeast of the Founders Hall and NMUSA in the

Forest and Wildlife Corridor (see **Section 5.4** for mitigation details).

Wetlands and stream boundaries would be flagged with bright day-glow pink or orange flagging within 50 feet of any waters of the U.S. to ensure construction equipment and personnel can clearly see the boundary and avoid entering these natural resources. Additionally, orange protection fence for trees would be installed within 50 feet of any Waters of the U.S.

No significant impacts to wetlands and streams would occur as a result of the combined Founders Hall and NMUSA Proposed Actions if mitigation and minimization measures are implemented.

3.5.3.2 RPAs and Non-Perennial Stream Buffers

The Founders Hall Proposed Action would result in 0.101 acres of impacts to RPAs; however, non-perennial stream buffers would not be affected by Founders Hall. The combined impacts to RPAs from the Founders Hall and NMUSA Proposed Actions would total 0.695 acres of RPAs. NMUSA by itself would impact 0.142 acres of non-perennial stream buffers. Changes to the original design of access roads and services roads for the NMUSA Proposed Action has resulted in less impacts to RPAs (originally proposed 2.11 acres for NMUSA alone). Liberty Drive north of Founders Hall, as shown in **Figure 3-5**, runs parallel and along the edge of the RPA, which is inconsistent with the Fairfax County Chesapeake Bay Preservation Area Ordinance; however, this design has presented less impacts from the original design.

Fort Belvoir will mitigate the impacts to the RPAs by enhancing approximately 0.695 acres of RPA located north of Founders Hall adjacent to Kernan Run (see Figure 3-5). Due to the NMUSA Proposed Action, Fort Belvoir will also mitigate impacts to the 35-foot non-perennial stream buffer, by reforestation of approximately 0.204 acre of the existing golf course along the existing fairways (within the 35-foot non-perennial stream buffer) associated with golf holes #3 and #8 to the east of the project site. (See **Section 5.4** for mitigation details). Through the implementation of mitigation, no significant impacts to RPAs and Non-Perennial Stream Buffers are expected.

To the maximum extent practicable, construction and installation of utilities, water and sewer will not enter any boundaries deemed RPAs. All utility lines including IT, sewer, water, gas and electricity will be directionally drilled under wetlands, streams, non-perennial stream buffers and RPAs to avoid impacts to these resources; with the exception of open trenching in the emergent wetlands (see Figure 3-5 impact number 8). Prior to directional drilling, a Frack-Out Plan will be submitted to the Fort Belvoir wetlands and MS4 programs for review to ensure no impacts from the procedure will occur to sensitive resources.

No significant impacts to wetlands, streams, RPAs or Non-Perennial Stream Buffers are expected as a result of the installation of utility services for the Proposed Action.

3.5.4 Consequences of the No Action Alternative: Waters of the U.S., RPAs and Non-Perennial Stream Buffers

The No Action Alternative would result in no impacts to wetlands, streams, RPAs and non-perennial stream buffers.

3.6 Cultural Resources

For the purposes of this assessment, the Area of Potential Effect (APE) is defined as the cumulative

area of three sub-APEs; the land disturbance APE, the visual APE, and the auditory APE. The land disturbance APE is defined as the limits of land disturbance required for site clearing and construction activities. The visual APE is defined as the viewshed to and from the Proposed Action. The auditory APE is defined as area where noise generated by the Proposed Action would be audible. The visual and auditory APEs extend one-quarter mile from the LOD.

Fort Belvoir's Integrated Cultural Resources Management Plan (ICRMP) was updated in early 2014 in compliance with DoD Instruction 4715.16 and AR 200-1. The regulations require that installations prepare plans, to be updated every five years, to assist them in appropriately managing and maintaining archeological and historic architectural resources. The ICRMP establishes management strategies and standard operating procedures to assist Fort Belvoir in complying with federal laws and regulations concerning cultural resources management. The standards set forth procedures for dealing with archeological and historic architectural resources largely based on Section 106 of the NHPA and other federal laws and regulations that address cultural resources.

Cultural resources surveys have revealed the existence of one National Register of Historic Places (NRHP) historic property and several archeological sites within and near the proposed Founders Hall and NMUSA LODs.

3.6.1 Historic Property

FBMRR (VDHR File No.2003-1374), located to the south of the Proposed Action, is eligible for listing on the NRHP. The Proposed Action would temporarily impact a small section to construct an access road to Founders Hall. Section 106 consultation has been completed for the access road, and VDHR concurred with Fort Belvoir that there would be no additional adverse effects as long as the FBMRR is restored to its previous elevation and slope once construction is completed (VDHR File No. 2003-1374). Section 106 consultation has been initiated with VDHR and consulting parties for the expansion of the APE, to include Founders Hall, and an amendment to the NMUSA Memorandum of Agreement (NMUSA MOA) is anticipated to result from this consultation. The amended NMUSA MOA is also expected to extend the MOA duration for an additional five years.

3.6.2 Archeological Sites

Eleven archeological sites have been identified within the land disturbance APE. However, all of these sites have been determined to be ineligible for listing on the NRHP.

Seven archeological sites have been identified within the visual and auditory APEs of the Proposed Action. Two (Sites 44FX0663 and 44FX1939) of the seven sites were determined to be ineligible for listing in the NRHP. Archeological Site 44FX2277 is Fairfax County Historical Park, identified as Mount Air, and located approximately 800 feet west of the Proposed Action. This site was evaluated and determined eligible for listing in the NRHP in 2010. A viewshed study has been conducted by Fort Belvoir for NMUSA and Founders Hall, and it has been determined that there will be no effects to Mount Air's viewshed. Any noise affects to the site would be temporary, occurring only during the construction phase. Three of the sites (44FX0425, 44FX2096, and 44FX2097) are located in a contemporary housing development and appear to have been significantly impacted by construction. The housing development has also compromised the viewsheds of these sites. Therefore, Fort Belvoir has completed a viewshed analysis of Mount Air and updated them in 2015 to include Founders Hall. The viewshed analyses will be included as part of the MOA amendment consultation. The results are expected to reveal that any visual or

auditory impacts resulting from the Founders Hall Proposed Action would not adversely impact this site.

3.6.3 Consequences of the Proposed Action: Cultural Resources

Until construction of Liberty Drive and connection to Fairfax County Parkway is completed, access to Founders Hall will be via a gravel road following the alignment of the FBMRR from its intersection with Kingman Road to the east, to a point where the Old Accotink Road crosses the rail bed. At this point, the access road will follow Old Accotink Road to the Founders Hall site. The FBMRR and Old Accotink Road will be graded to correct surface irregularities and any drainage problems would be corrected by providing an aggregate base suitable for heavy construction traffic and contractor privately owned vehicles. The LOD for these activities will be no greater than 40 feet centered on the existing alignments with no construction extending downslope of the railroad in fill areas or wetlands.

Currently, there is a communications cable running alongside the FBMRR that will be relocated to the south side of the FBMRR corridor (**Figure 3-6**).

A temporary parking area for construction and equipment staging area will be available to the immediate east of the Founders Hall site within the corridor of the proposed Liberty Drive. The parking area will have an all-weather aggregate surface and will be used to supplement parking for Founders Hall.

Once the construction of Liberty Drive is complete, the FBMRR will be graded and formed back to its original shape. Landscaping of the site will complement the NMUSA complex. The southern portion of the Proposed Action abutting the FBMRR corridor will be suitably landscaped to comply with previous Section 106 requirements.

The Proposed Action would have a temporary minor impact on a historic property (FMBRR) eligible for listing on the NRHP. However, no long term impacts are expected. Other historic resources within the visual and auditory APEs are limited to archeological resources, but it has been determined there will be no permanent effects to the sites. The Proposed Action would Not Significantly Impact cultural resources if Fort Belvoir adheres to the mitigation measures agreed to within the NMUSA MOA and the 2013 Section 106 consultation.

3.6.4 Consequences of the No Action Alternative: Cultural Resources

Under the No Action Alternative, no impacts to cultural resources would occur.

3.7 Petroleum and Hazardous Substances

Fort Belvoir uses, stores, generates, and transports a wide variety of petroleum products and certain materials defined as hazardous substances by the USEPA. Management of hazardous waste (a sub-category of “hazardous substances”) at Fort Belvoir is conducted in compliance with Resource Conservation and Recovery Act (RCRA). Fort Belvoir has a Hazardous Waste Management / Waste Minimization Plan and a Master Spill Plan. Fort Belvoir also has a RCRA Part B permit from VA DEQ for the storage of hazardous wastes.

For petroleum and hazardous substances, the assessment area is the area in which the use or storage

of petroleum products or hazardous substances would change as a result of the Proposed Action. This includes any contaminated soil and/or groundwater that could be encountered during construction activities. Since no offsite work or storage of petroleum or hazardous substances is planned, the LOD for the Proposed Action represent the extent of the assessment area. Three specific environmental concerns were identified.

- 1) Aboveground and underground storage tanks (ASTs and USTs) - past or present storage locations of petroleum or hazardous materials.
- 2) Spill response features - areas that may have been impacted by a historical release of petroleum or hazardous substances.
- 3) Solid Waste Management Units (SWMUs) - past or present locations of solid waste.

Two SWMUs (identified as site E-09 and site L-46) and six storage tanks are located near the golf course club house, on the central portion of the NMUSA Proposed Action. These two SWMUs are located over 2,000 feet northwest of the Founders Hall Proposed Action and were assessed in the 2010 NMUSA EA.

Based on this information, the potential for these SWMUs and storage tanks to have a negative impact on the Founders Hall Proposed Action is considered minimal.

If a release occurs during construction or if evidence of an existing release is discovered, the Founders Hall construction contractors would follow the FBMSP, which explains required petroleum and hazardous substances spill response procedures.

3.7.1 Construction Activities

All hazardous and regulated wastes and substances generated during construction would be collected, characterized, labeled, stored, transported, and disposed of in accordance with all federal, state, and local regulations, including proper waste manifesting procedures. All other hazardous and regulated materials or substances would be handled according to materials safety data sheet (MSDS) instructions. The potential impacts of the handling and disposal of hazardous and regulated materials and substances during project implementation would be minor when BMPs are implemented and would not pose a threat to human health or the environment or exceed the federal, state or local regulations regarding transport or disposal limitations.

There are no known PCB containing materials that would be affected by the Proposed Action. There are no known lead-based paint (LBP) or asbestos-containing building material (ACBM) sources such as those typically associated with building materials within the Proposed Action area. The Proposed Action is not located in an area with a high potential for radon (Virginia Department of Health [VDH] 2015).

3.7.2 Operation Activities

The NMUSA activities may require USTs or ASTs to fuel boilers and/or emergency power generators. All federal, state, and local requirements would be followed to ensure the safe storage and transfer of fuel to the storage tanks. The Environmental and Natural Resources Division (ENRD) of the Fort Belvoir Directorate of Public Works (DPW) is responsible for obtaining required environmental permits from the appropriate regulatory agencies for activities on Fort Belvoir. A tank activity permit is required to be submitted to the Fort Belvoir ENRD prior to

installation of USTs. Permits from the Fort Belvoir ENRD are also required for installation, upgrade, repair, or closure of USTs. If a fuel spill were to occur, Fort Belvoir personnel would follow the FBMSPP, and the Fort Belvoir ENRD would be notified. Any hazardous substances, petroleum products, or impacted soils removed, as a result of the release, would be disposed of in accordance with state and federal regulations.

Other than fuel for heating and cooling, operation of the NMUSA complex would not involve the use of more than minimal amounts of hazardous materials, e.g., household cleaners for cleaning and fertilizers and pesticides for grounds maintenance. Events at the parade grounds could involve the discharge of dummy ordnance from small firearms or the use of gunpowder for cannons. Storage/management of any ammunition or blanks should be conducted in accordance with Army regulations. Additionally, coordination with Directorate of Emergency Services (DES) should be conducted during the planning of applicable storage facilities. All materials and ordnance would be properly stored and used according to state and federal regulations.

3.7.3 Consequences of the Proposed Action: Petroleum and Hazardous Substances

The Proposed Action may result in a minimal increase in the amount of hazardous waste and, or materials produced, some of which would be related to typical construction waste as well as waste generated by the operation or maintenance of the Founders Hall Proposed Action. Most of the waste generated by the operation and maintenance of the Proposed Action is anticipated to be typical household waste materials. The use of building materials that are free of ACBMs and LBP would minimize potential negative impacts from these materials. Construction of Founders Hall would require heavy machinery and the use of petroleum, oil, and lubricants (POL). A limited amount of hazardous materials and waste, including POL, would be used or generated during routine maintenance and operation of the facility. It is not anticipated that the Proposed Action would generate significant quantities of petroleum and hazardous waste.

Fort Belvoir will adhere to their FBMSPP and all state and federal regulations. Therefore, no significant impact to petroleum and hazardous substances management would occur.

3.7.4 Consequences of the No Action Alternative: Petroleum and Hazardous Substances

Under this alternative, there would be no impacts because there would be no changes to the use of hazardous substances and/or generation of hazardous wastes.

3.8 Air Quality

Air quality is determined by the type and concentration of pollutants in the atmosphere, the size and topography of the air basin and local and regional meteorological influences. The severity or non-severity of a pollutant's concentration in a region or geographical area is determined by comparing it to federal and/or state ambient air quality standards including those established according to the requirements of the CAA, as amended in 1990 (42 USC 7401-7671q). While each state has the authority to adopt standards stricter than those established under the federal program, the Commonwealth of Virginia accepts the federal standards.

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and state air quality standards. Based on measured ambient air pollutant concentrations, the USEPA designates whether areas of the U.S. meet the NAAQS. Those areas

demonstrating compliance with the NAAQS are considered “attainment” areas, while those that are not are known as “non-attainment.” Those areas that cannot be classified on the basis of available information for a particular pollutant are “unclassifiable” and are treated as attainment areas until proven otherwise. The NAAQS are included in **Table 3-5**.

Table 3-5 National Ambient Air Quality Standards (NAAQS)

Pollutant [final rule cite]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide [76 Federal Register (FR) 54294]		Primary	8-hour	9 parts per million (ppm)	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead [73 FR 66964]		primary and secondary	Rolling 3 month average	0.15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Not to be exceeded
Nitrogen Dioxide [75 FR 6474] [61 FR 52852]		Primary	1-hour	100 parts per billion (ppb)	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb ⁽²⁾	Annual Mean
Ozone (O ₃) [73 FR 16436]		primary and secondary	8-hour	0.070 ppm ⁽³⁾	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
		Primary	Annual	12 $\mu\text{g}/\text{m}^3$	annual mean, averaged over 3 years
Particle Pollution	Particulate Matter (PM) _{2.5}	secondary	Annual	15 $\mu\text{g}/\text{m}^3$	annual mean, averaged over 3 years
		primary and secondary	24-hour	35 $\mu\text{g}/\text{m}^3$	98th percentile, averaged over 3 years
	PM ₁₀	primary and secondary	24-hour	150 $\mu\text{g}/\text{m}^3$	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520] [38 FR 25678]		Primary	1-hour	75 ppb ⁽⁴⁾	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

(1) Final rule signed October 15, 2008. The 1978 lead standard (1.5 $\mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

(2) The official level of the annual nitrogen dioxide (NO₂) standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

(3) Final rule signed October 1, 2015. The 1997 ozone standard (0.07 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations

under that standard (“anti-backsliding”). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

(4) Final rule signed June 2, 2010. The 1971 annual and 24-hour SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Air-quality Control Regions (AQCRs) in violation of the NAAQS are designated as nonattainment areas. AQCRs with levels below the NAAQS are designated as attainment areas. Maintenance AQCRs are areas that have previously been designated nonattainment and have been re-designated to attainment for a probationary period through the implementation of maintenance plans. According to the severity of the pollution problem, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. Fort Belvoir and Fairfax County are within the National Capital Interstate AQCR (AQCR 47) (40 CFR 81.12). The National Capital Interstate AQCR is in the O₃ transport region that includes 12 states and Washington, DC. The USEPA has designated Fort Belvoir and Fairfax County as the following:

- Moderate nonattainment for the 8-hour O₃ NAAQS.
- Nonattainment for the PM_{2.5} NAAQS.
- Attainment for all other criteria pollutants (40 CFR 81.347)

3.8.1 Federal Conformity Rule

The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria and requirements for conformity determinations for federal projects. The Federal Conformity Rule was first promulgated in 1993 by the USEPA, following the passage of amendments to the CAA in 1990. The rule mandates that a conformity analysis must be conducted by the lead federal agency if air emissions resulting from a federal action either exceed threshold levels of pollutants in a non-attainment or maintenance area or, if the emissions are deemed regionally significant.

If the emissions exceed established limits, known as *de minimis* thresholds, then the proponent is required to perform a conformity determination and implement appropriate mitigation measures to reduce air emissions. Therefore, the threshold of significance would be reached if air emissions resulting from the Proposed Action or No Action Alternative exceed the *de minimis* thresholds from the Federal Conformity Final Rule and a conformity determination and appropriate mitigation measures would be required.

3.8.2 Consequences of the Proposed Action: Air Quality

A temporary, negative impact on air quality may be anticipated during the construction phase of the Proposed Action. Impacts to air quality are anticipated primarily from fugitive dust and emissions resulting from construction-related equipment and processes. BMPs would be required and implemented for both construction emissions and stationary point source emissions associated with the Proposed Action.

To determine the applicability of the General Conformity Regulations (GCR), air emissions from construction and proposed stationary and mobile sources were compared to the applicability thresholds and regional emissions budgets (**Tables 3-6 and 3-7**). The requirements of this rule are not applicable because the highest estimated or calculated total annual direct and indirect emissions from these alternatives would not exceed the applicability threshold for any criteria pollutant

during any years, and would not be regionally significant. Detailed emission calculations and the Record of Non-Applicability (RONA) are provided in **Appendix C**.

Table 3-6 Construction Air Emission Estimates

Pollutant	Emission Totals (tons/year)	<i>de minimis</i> Thresholds (tons/year)¹
Carbon Monoxide (CO)	10.8	100
Volatile Organic Compounds (VOCs)	5.2	50
Nitrous Oxides (NO _x)	18.4	100
PM ₁₀	38.9	100
PM _{2.5}	5.4	100
Sulfur Dioxides (SO ₂)	2.1	100

(1) Federal Conformity Final Rule (40 CFR 93 § 153).

USEPA's preferred emission factor of 0.19 ton per acre per month (Midwest Research Institute 1996) was used to calculate fugitive dust emissions. Combustion emission calculations from typical construction equipment were calculated using USEPA's NONROAD2008a model (USEPA 2009). Details of the air emission calculations are provided in Appendix C.

Air emissions during operation of the Founders Hall Proposed Action would also occur from transportation of commuting employees and visitors. The calculations for air emissions from these operations sources are presented in **Appendix C** and are summarized in **Table 3-7**.

Table 3-7 Operations Air Emission Estimates

Pollutant	Emission Totals (tons/year)	<i>de minimis</i> Thresholds (tons/year)¹
Carbon Monoxide (CO)	1.64	100
Volatile Organic Compounds (VOC)	2.73	50
Nitrous Oxides (NO _x)	1.02	100
PM-10	0.107	100
PM-2.5	0.023	100
Sulfur Dioxides (SO ₂)	0.112	100

(1) Federal Conformity Final Rule (40 CFR 93 § 153).

Emissions from commuter automobiles were calculated using the USEPA's MOVES2010b on-road vehicle emission model (USEPA 2009b).

Total calculated air emissions from the Proposed Action do not exceed the Federal *de minimis* thresholds as indicated in **Table 3-6** and **Table 3-7**. As a result, impacts on air quality in the National Capital Interstate AQCR from the implementation of the Proposed Action would not meet the significance threshold and no violations of air quality standards or conflicts with the State

Implementation Plan (SIP) are anticipated. BMPs would be employed during construction and operational phases of the Proposed Action to minimize air emissions. These would include scheduled routine maintenance of all vehicles and construction related equipment, prevention of unnecessary idling, and dust suppression methods such as wetting exposed soils in construction areas. The construction would be accomplished in full compliance with applicable Virginia regulatory requirements, with compliant practices and/or products. These requirements include:

- Visible emissions and fugitive dust and emissions (9 VAC 5-40-60)
- Asphalt paving operations (9 VAC 5-40-5490)
- Open burning (9 VAC 5-40-5600)
- Portable fuel containers (9 VAC 5-40-5700)
- Architectural and industrial maintenance coatings (9 VAC 5-40-7120)
- Consumer products (9 VAC 5-40-7240 et seq.)

This listing is not all-inclusive; the U.S. Army and any contractors would be required to comply with all applicable air pollution control regulations. No significant impacts would occur to air quality from the combined effects of Founders Hall and NMUSA Proposed Actions.

3.8.3 Consequences of the No Action Alternative: Air Quality

The No Action Alternative would not cause any impacts to air quality because there would be no construction or operational activities.

3.9 Noise

The traditional definition of noise is “unwanted or disturbing sound.” Sound becomes unwanted when it either interferes with normal activities such as sleeping, conversation, or disrupts or diminishes one’s quality of life. Sound is typically measured on a logarithmic decibel (dB) scale. The threshold of human hearing is approximately 3 dB. Long-term exposures of over 85 dB may cause hearing loss and sounds of 120 dB or greater are generally considered painful to the human ear. A-weighted measurements or the A-weighted decibel (dBA) are commonly used to determine noise levels that can cause harm to the human ear. Environmental and industrial noise is most commonly expressed in dBA.

Noise levels occurring at night generally produce a greater annoyance than do the same levels occurring during the day. The day-night average sound level (DNL) is the community noise metric recommended by the USEPA and has been adopted by most federal agencies (USEPA 1974). The noise level most commonly used for noise planning purposes is a DNL of 65 dBA. The Fairfax County Code prohibits the creation of sound louder than 55 dB in a residential area, and 60 dB in a commercial area. In addition, they prohibit the creation of any excessive noise on any street adjacent to any school, institution of learning, court, or hospital that interferes with its function (Fairfax County Code Section 108-4-1). Sounds generated from construction and demolition activities are exempt from the Fairfax County Ordinance between 7:00 AM and 9:00 PM. Fort Belvoir has adopted Fairfax County’s Noise Ordinance and will conduct activities in accordance to the ordinance.

3.9.1 Consequences of the Proposed Action: Noise

Noise levels for various types of construction equipment along with attenuation of noise levels at

specified distances from the equipment are provided in **Table 3-8** (Federal Highway Administration [FHWA] 2007). Noise level attenuation rates are based on the inverse square law, which states that sound level attenuates or drops off at a rate of 6 dBA for each doubling of the distance (6 dBA/DD) from the point source as a result of the geometric spreading of the energy over an ever-increasing area (ICF Jones & Stokes 2009).

Table 3-8 Noise Levels (dBA) of Construction Equipment and Attenuation¹

Source	50 feet	100 feet	200 feet	400 feet	800 feet
Backhoe	78	72	66	60	54
Bulldozer	84	78	72	66	60
Concrete Truck	79	73	67	61	55
Crane	81	75	69	63	57
Dump Truck	76	70	64	58	52
Excavator	81	75	69	63	57
Front-end loader	82	76	70	63	57

Source: FHWA 2007
dBA- A-weighted decibel.

¹The dBA at 50 feet is from FHWA 2007. The 100- to 800-foot results are estimates using the inverse square law.

According to the inverse square law, three of the construction noise sources listed would generate a noise level above the 55 dBA threshold within 800 feet. However, there are no noise-sensitive receptors (residences, churches, hospitals, or schools) located within 1,000 feet of the Proposed Action. Because construction activities (the primary source of noise) would occur primarily during normal weekday business hours, no violation of Fort Belvoir’s noise ordinances, as adopted from Fairfax County, would be anticipated.

No significant long-term or permanent impacts from noise are anticipated from the combined effects of the Founders Hall and NMUSA Proposed Actions.

3.9.2 Consequences of the No Action Alternative: Noise

Under this alternative, there would be no direct impacts from noise because there would be no construction or operational activities.

3.10 Infrastructure and Utilities

According to EO 13423 - Strengthening Federal Environmental, Energy, and Transportation Management, Federal agencies are to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. Thus, energy demand and utility use are of particular interest for the SEA. The ROI for the Proposed Action is Fort Belvoir and Fairfax County, Virginia. Fairfax County is currently undergoing growth and subsequent increase in energy demand and utilities are anticipated.

The threshold of impact would be reached if the Proposed Action or No Action Alternative would cause an unsustainable or a significant increase in demand that exceeds the capacity of service providers for the region.

3.10.1 Potable Water

Under a wholesale customer agreement, Fairfax County Water Authority (Fairfax Water) delivers potable water to Fort Belvoir from its Frederick P. Griffith, Jr., Water Treatment Plant (Griffith Plant) in Lorton, Virginia. The treatment plant opened for operation in May 2006, with a production capacity of 120 million gallons per day (mgd) (Fairfax County Water Authority, 2006). The Griffith Plant is one of two supply points that feed the overall Fairfax Water system; the other is the Corbalis Water Treatment Plant in Herndon, Virginia, which provides water supply redundancy and reliability to Fort Belvoir. American Water Operations and Maintenance, Inc. (American Water) owns, operates, and maintains Fort Belvoir potable water distribution and wastewater collection systems under a 50-year utility privatization contract.

Founders Hall is expected to generate a peak need of approximately 52,000 gallons per day (gpd) of potable water, in addition to the approximate 408,000 gpd of peak potable water usage at the NMUSA. Water system upgrades to maintain a water pressure in the desired 40-60 pounds per square inch (psi) range have been planned (Fort Belvoir Hydraulic Evaluation of the Proposed National Museum of the U.S. Army, EA Science and Technology, Inc., 2008). These improvements, which are taking place separately from the Proposed Action to address the overall potable water needs of Fort Belvoir, include the installation of a 12-inch line along Beulah Street (replacing a 6-inch line) and connection of Fort Belvoir to existing water storage tanks. During the design stage of Founders Hall and subsequently, the NMUSA, all design will be coordinated with and approved by American Water.

Two water supply alternatives were proposed in the 2010 NMUSA EA for NMUSA. One alternative was to have potable water be provided to the NMUSA from the existing Fort Belvoir water main located along Beulah Street, approximately 4,100 feet northeast of the most likely connection point for the NMUSA. To connect to this main, Fort Belvoir would construct a new water line trending east from the NMUSA to the water main across the southern boundary of the golf course. The second alternative proposed was that the NMUSA could connect to this water main by installing a water line that trends north, through the North Post Golf Course.

According to Fort Belvoir ENRD, a new alternative has been proposed since the 2010 NMUSA EA and consists of installing 10-inch and 8-inch waterlines that connect on the east side of the Proposed Action area along an existing golf cart path. These waterlines will be directionally drilled under the intermittent stream on the eastern edge of the Proposed Action area.

3.10.2 Sanitary Sewer

Under a 50-year privatization contract, American Water owns, operates, and maintains the wastewater collection system. The sanitary sewer system includes 37 sewage pumping/lift stations and two main pumping stations. The installation discharges approximately 1.3 mgd (5 million liters) of wastewater from the installation to the Fairfax County sanitary sewer system (*U.S. Army Garrison Fort Belvoir*, 2001b). The closest connection point for the Founders Hall is an existing 15-inch sanitary sewer line located across John J. Kingman Road, approximately 3,100 feet east of the NMUSA Proposed Action.

Founders Hall is expected to generate approximately 42,000 gpd of sanitary sewage, in addition to the 255,000 gpd of sanitary sewage generated by the NMUSA. It is not currently known if the

15-inch line located across John J. Kingman Road has enough capacity to accept the estimated peak and average wastewater flows from Founders Hall and NMUSA. Additional studies are planned to determine the suitability of this line. If the U.S. Army determines that this line would not be sufficient, outfall upgrade or a connection to another line would be made.

The NMUSA would also require a new pump station along with a new sanitary sewer line (2010 NMUSA EA). An off-site sanitary pump station for both Founders Hall and NMUSA will be installed via a 6-foot main line along Old Accotink Road south of the Proposed Action area. During the design stage of the NMUSA, all design will be coordinated with and approved by American Water.

At this time it is proposed that the sewer line to Founders Hall and NMUSA will be co-located with the electricity and communication lines and will tie into a sewer manhole east of John Kingman Road (just west of the Un-Named Tributary), then run along the south side of the FBMRR corridor, then up to Old Accotink Road and to the Founders Hall and NMUSA buildings.

The threshold of significance would be reached if the Proposed Action or No Action Alternative would cause an unsustainable or a significant increase in demand on the current or upgraded discharge capacity.

3.10.3 Natural Gas

Fort Belvoir's natural gas system is owned and operated by Washington Gas. As of 2000, natural gas was distributed to Fort Belvoir through 25 miles of gas main and 11 miles of service lines, mostly servicing housing areas.

The Proposed Action is not currently serviced by natural gas. The natural gas utility will be installed north of the FBMRR coming from the east; however, the exact route has not yet been determined.

At peak usage times, Founders Hall is expected to require approximately 1,500 cubic feet per hour of natural gas. This peak usage is expected to be well within the capacity of the existing infrastructure. During the design stage of Founders Hall, the designers would send a load letter to Washington Gas to ensure that sufficient capacity is available. The U.S. Army would also adhere to all applicable local, state, and federal laws.

3.10.4 Electricity

Dominion Virginia Power (DVP) owns the entire on-post electrical system, including the distribution feeder system. As of 2000, ten electrical sub-stations were located at Fort Belvoir. These sub-stations were used to transform from the DVP substation to a Fort Belvoir-owned combination substation to switching stations (U.S. Army Garrison Fort Belvoir, 1998a), prior to DVP ownership.

Three-phase electrical power is currently available to the proposed site from an elevated line located along John J. Kingman Road, located approximately 750 feet southeast of the NMUSA. However, this line requires further evaluation to determine if it would meet Founders Hall and NMUSA's needs (2010 NMUSA EA).

The estimated peak demand of Founders hall is not expected to exceed 6,000 kilowatt hour (kWh)

and should be within the capacity of the existing infrastructure. During the design stage of Founders Hall, a load letter would be sent to VDP, and the U.S. Army would adhere to all applicable local, state, and federal laws.

The electricity to Founders Hall and NMUSA will come from the east along the south side of the FBMRR corridor, then up to Old Accotink Road and to the Founders Hall and NMUSA buildings.

3.10.5 Communications

The installation owns the entire Fort Belvoir communications system, including copper and fiber optic cables, utility poles, and computerized switchboard systems. Most distribution cable is carried overhead on utility poles, while most fiber-optic cable is carried through an underground duct bank, along with some conventional cable (2010 NMUSA EA).

Copper telecommunication lines are currently available to the Proposed Action. In addition, fiber optic cables are available to the Defense Logistics Agency (DLA) facility located to the east of the site. The nearest fiber optic connection appears to be located approximately 4,200 feet from the Founders Hall Proposed Action, at the intersection of John J. Kingman Road and Beulah Street (2010 NMUSA EA).

It is not currently known if the existing communications infrastructure is sufficient, because the communications needs of Founders Hall have not been established. Once these needs are determined, the U.S. Army would provide the necessary infrastructure. At this time it is proposed that the communications line (IT) to Founders Hall and NMUSA will be co-located with the electricity and sewer lines coming from the east along the south side of the FBMRR corridor, then up to Old Accotink Road and to the Founders Hall and NMUSA buildings.

3.10.6 Solid Waste

Fort Belvoir has an Integrated Solid Waste Management Plan, last updated in 1999. The planning goal is to reduce solid waste management costs and environmental effects by reducing the quantity of materials that must be disposed of by incineration or landfilling. Fort Belvoir has a mandatory post-wide Qualified Recycling Program (QRP) which collects white paper, colored paper, newspaper, aluminum cans, tin/steel cans, scrap metal, cardboard, glass bottles, plastic containers, and toner cartridges. The collected materials are managed at the post's Recycling Center, Debris Collecting Yard, and Landscape Composting Facility. Items such as tires and lead acid batteries go to the Defense Reutilization and Marketing Office (DRMO) for recycling. Controlled non-regulated solid waste (special and universal waste), such as tires, used oil, paint, fluorescent lights, batteries, pesticides, thermostats, mercury-containing equipment, and scrap metal is handled through the Fort Belvoir ENRD in accordance with the RCRA (40 CFR Part 273).

The Fort Belvoir recycling program is consistent with the U.S. Army's Sustainable Management of Waste in Military Construction, Renovation, and Demolition Activities policy (U.S. Army, 2006b). This policy requires that all military construction, renovation, and demolition projects include contract performance requirements for the diversion of a minimum of 50 percent of construction and demolition waste, by weight, from landfill disposal. Diversion comprises the redirection of waste, ordinarily disposed of in a landfill or burned in an incinerator, to a recycling facility, a composting yard, or another destination for reclamation or reuse.

Household and office building trash generated at Fort Belvoir is disposed of off post at the I-95 Energy/Resource Recovery Facility, a waste-to-energy facility privately owned and operated by Covanta Fairfax, Inc. The Fairfax County Division of Solid Waste Disposal and Resource Recovery oversees operation of the facility. The disposal capacity of the facility is over 3,000 tons per day (Fairfax County, 2012). The facility sells up to 95 megawatts of heat energy produced during the combustion of municipal solid waste to DVP for conversion into electricity. A letter of agreement between Fort Belvoir and the Fairfax County Division of Solid Waste Disposal and Resource Recovery caps Fort Belvoir municipal solid waste disposed of at the I-95 Energy/Resource Recovery Facility at 100 tons per day (Meoli, pers. comm., February 16, 2007, as cited in U.S. Army, 2007a). From June 2006 through January 2007, Fort Belvoir disposed of an average of approximately 450 tons of municipal solid waste per month, or about 15 tons per day.

The amount of solid waste generated by the operation of the NMUSA and Founders Hall is primarily determined by the following three factors.

1. The number of full-time employees at the site.
2. The number of visitors at the site.
3. The number of meals served at the site.

The NMUSA and Founders Hall Proposed Action are expected to require up to 185 employees and volunteers and an average of 2,200 visitors per day (Economics Research Associates, April 2006). Approximately 1,500 meals would be served each day at the NMUSA and Founders Hall (2010 NMUSA EA). Based on an estimated solid waste generation rate of one pound (lb) per day per employee, 0.25 lbs per day per visitor, and two lbs per meal, the NMUSA is expected to generate approximately 4,400 lbs of solid waste per day, or 1,600,500 lbs (800 tons) per year. The anticipated solid waste generated by the NMUSA and Founders Hall is expected to be well within the capacity of Fort Belvoir's existing infrastructure and contractual arrangements.

3.10.7 Consequences of the Proposed Action: Infrastructure and Utilities

Under the Proposed Action, slight changes to infrastructure and increases in utilities are expected but are not anticipated to exceed current capacity of local suppliers or cause shortages for other existing customers. Minor, temporary impacts are expected along the existing golf cart path during the installation of the waterlines east of the Proposed Action area. Minor impacts are expected from the installation of an off-site sanitary pump station via a 6-foot main along Old Accotink Road south of the Proposed Action area. Impacts from the installation of utilities are discussed in Sections 3.3, 3.4 and 3.5. If current capacities are deemed insufficient during the planning and construction phases, then upgrades will be evaluated and applied as needed. There would be a slight increase in electrical demand during construction and operation of Founders Hall. Potable water use and wastewater production increases would be anticipated due to expanded facilities for hand washing, toilet flushing, food-handling and other water uses associated with construction, operation, and maintenance of Founders Hall. Solid wastes, such as construction and worker debris, will be generated during the construction and operation of Founders Hall facility. Sufficient existing landfill space is available in area landfills to handle the temporary construction debris and projected additional waste for long-term operation of Founders Hall.

No significant impacts on Infrastructure and Utilities are expected from the combined effects of the Founders Hall and NMUSA Proposed Actions. Sufficient capacity exists within local utility

suppliers to accommodate increases in demand.

3.10.8 Consequences of the No Action Alternative: Infrastructure and Utilities

Under this alternative, no changes to infrastructure or utilities would occur because there would be no increase in need or pressures on capacity.

3.11 Socioeconomics

According to EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, all programs or activities receiving federal financial assistance that affect human health or the environment are required to analyze the environmental effects, including human health, economic and social effects, of the federal action, including effects on minority communities and low-income communities. Thus, socioeconomic resources that are of particular interest for an SEA are the population characteristics; economic factors including employment and income; and public services including schools, law enforcement and emergency services. Actions that affect these socioeconomic indicators may have impacts on other socioeconomic factors such as housing availability and budgetary requirements for local governments. The ROI for the Founders Hall Proposed action is Fort Belvoir, Fairfax County, and other jurisdictions within the Greater Washington Metropolitan Area.

The current socioeconomic conditions in Fairfax County are currently undergoing growth. The threshold of impact would be reached if the Proposed Action or No Action Alternative would cause an unsustainable pattern within these topics such as a significant reduction in wages or employment opportunities; access to affordable housing, or an disproportionate level of impact would occur to low-income or minority populations.

3.11.1 Population

Population data for the Fort Belvoir Census Designated Place (CDP), Fairfax County, and Virginia are shown in **Table 3-9**. The 2000 and 2010 U.S. Census data show no growth in the Fort Belvoir CDP with a -1.1 percent change between 2000 and 2010. Fairfax County (11.6 percent) grew slower than the Commonwealth of Virginia (13.0 percent) and slighter faster than the U.S. (9.7 percent). The growth rate for the Commonwealth of Virginia showed a faster growth rate than the U.S. (U.S. Census Bureau 2000 and 2010).

Table 3-9 Population

Census	Fort Belvoir CDP	Fairfax County	Virginia	United States
2010 Population	7,100	1,081,726	8,001,024	308,745,538
2000 Population	7,176	969,749	7,078,515	281,421,906
Change	-1.1%	11.6%	13.0%	9.7%

Source: 2000 and 2010 U.S. Census

As required by EO 12898 discussed above, all federal agencies are to evaluate how their programs, policies, and activities could affect minority and low income neighborhoods. Federal agencies must examine whether their Proposed Actions are having an unfair effect on neighborhoods or communities because of their race, color, or national origin. For **Table 3-10**, the “Fort Belvoir CDP” coincides with the boundaries of Fort Belvoir, while Accotink Village is a small community

on U.S. Route 1, surrounded by Fort Belvoir property. The Fort Belvoir CDP and Fairfax County are home to slightly more non-white minorities than the state as a whole, but more than half of the population of Accotink Village (208 out of 338 residents) belongs to a racial or ethnic minority. Therefore, Accotink Village qualifies as an environmental justice community on the basis of racial or ethnic criteria.

Table 3-10 Race and Ethnicity

Jurisdiction	White	Black or African American	Hispanic or Latino	Asian	Other ¹
Fort Belvoir CDP	64.9%	21.7%	13.2%	2.5%	10.3%
Accotink Village ²	38.5%	42.3%	9.1%	7.7%	2.4%
Fairfax County	62.7%	9.2%	15.6%	17.5%	10.7%
Virginia	68.6%	19.4%	7.9%	5.5%	6.6%
United States	72.4%	12.6%	16.3%	4.8%	10.2%

Source: 2010 U.S. Census

¹ “Other” includes Native Hawaiian and Other Pacific Islander, American Indian and Alaska Native, Two or More Races, and other not-specified races.

² Block group 3 of census tract 4219, 2010 U.S. Census.

As shown in **Table 3-11**, U.S. Census Bureau estimates show that the Fort Belvoir CDP, Fairfax County, and Virginia have higher percentages of high school graduates than the U.S. In the Fort Belvoir CDP and Fairfax County, approximately 97.8 percent and 91.8 percent, respectively, of persons age 25 and above have a high school credential or higher compared to 87.5 percent for the Commonwealth of Virginia and 86.0 percent for the U.S. However, the percentage of the Fairfax County population with a Bachelor’s degree or higher is well above the Fort Belvoir CDP, Virginia, and the national averages.

Table 3-11 Educational Attainment

Percent of Persons Age 25+	Fort Belvoir CDP	Fairfax County	Virginia	United States
High school graduate or higher	97.8%	91.8%	87.5%	86.0%
Bachelor's degree or higher	37.9%	58.6%	35.2%	28.8%

Source: U.S. Census Bureau 2009-2013 American Community Survey 5-Year Estimates

3.11.2 Income and Poverty

Income and poverty data are shown in **Table 3-12**. Median household income in the Fort Belvoir CDP is above the National and State averages while those in Fairfax County are above the State, National, and the Fort Belvoir CDP averages. Median household income for Fairfax County is approximately twice the National average while Virginia is slightly above the National average and approximately 50 percent of Fairfax County. Median household income for Fort Belvoir is approximately 13 percent higher than the State and close to 34 percent less than Fairfax County. The poverty rates for Fort Belvoir, Fairfax County and Virginia of 1.7, 5.9 and 11.3 percent, respectively, are below the National poverty rate of 15.4 percent (U.S. Census Bureau 2013).

Table 3-12 Income and Poverty

	Fort Belvoir CDP	Fairfax County	Virginia	United States
Per capita income, 2013 Estimate	\$22,018	\$50,532	\$33,493	\$28,155
Median Household Income, 2013 Estimate	\$72,444	\$110,292	\$63,907	\$53,046
Median Household Income as a percent of the United States, 2013 Estimate	136.6%	207.9%	120.5%	100%
Percent persons of all ages below poverty level, 2013 Estimate	1.7%	5.9%	11.3 %	15.4%

Source: U.S. Census Bureau 2009-2013 American Community Survey 5-Year Estimates

No 2010 Census poverty data are available for Accotink Village alone. However, the most recent available income data from 1999 indicate that the median household income in Accotink Village at that time was \$31,696, as opposed to \$81,050 for Fairfax County and \$46,677 for Virginia as a whole (2010 NMUSA EA). Thus, Accotink Village is significantly poorer than the surrounding jurisdictions, and qualifies as an environmental justice community on the basis of income.

3.11.3 Housing

Housing data are shown in **Table 3-13**. The homeowner vacancy rates for Fairfax County (1.1 percent) and Virginia (2.1 percent) are below the national average (2.4 percent). The rental vacancy rates for Fairfax County and Virginia, 5.1 and 7.6 percent respectively, are below the national rate of 9.2 percent. The 2010 Census shows that there are about 391,627 housing units in Fairfax County, approximately 16,371 of which are vacant.

Table 3-13 Housing Units

Geographic Area	Total Housing Units	Occupied			Homeowner Vacancy Rate*	Rental Vacancy Rate**	Vacant Housing Units
		Units	Owner Occupied	Renter Occupied			
Fairfax County	407,998	391,627	272,233	119,394	1.1	5.1	16,371
Virginia	3,364,939	3,056,058	2,055,186	1,000,872	2.1	7.6	308,881
United States	131,704,730	116,716,292	75,986,074	40,730,218	2.4	9.2	14,988,438

Source: 2010 U.S. Census

*Homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale."

** Rental vacancy rate is the proportion of the rental inventory that is vacant "for rent."

3.11.4 Labor Force and Employment

The annual average civilian labor force in Fairfax County was 627,615 for 2014. The 2014 unemployment rate in Fairfax County was 4.1 percent compared to the Virginia average unemployment rate of 5.2 percent and the national rate of 6.2 percent (U.S. Bureau of Labor Statistics 2014).

County Business Patterns data for 2013 indicate that employment in Fairfax County is

concentrated primarily in the “professional, scientific, and technical services” (34 percent) followed by “administrative and support and waste management and remediation services” (10 percent), “health care and social assistance” (9 percent), and “retail trade” (9 percent) sectors. In 2013, these sectors together accounted for 61 percent of all employment in the county compared to the 48 percent for Virginia and 44 percent for the U.S.

3.11.5 Consequences of the Proposed Action: Socioeconomics

Under this alternative, there would be an increase in the number of employees needed to staff the Founders Hall Proposed Action. Business volume in the area is expected to increase due to increased demand for products and services from construction-related activities as well as by visitors and the new employees. Impacts from the Proposed Action would not cause a significant reduction in wages or employment opportunities, access to affordable housing, or a disproportionate level of impact on low-income or minority populations. Therefore, there would be no significant socioeconomic impacts resulting from the Founders Hall Proposed Action.

3.11.6 Consequences of the No Action Alternative: Socioeconomics

Under this alternative, there would be no change to the current socioeconomic conditions because there would be no changes in population, employment, or use of area resources by the Founders Hall Proposed Action.

3.12 Community Facilities and Services

Community facilities and services include government-provided safety, security, and medical services. Community facilities are primarily schools and active and passive recreational facilities in public ownership. An increase in population living or working within a specific area can increase the need to use these services and facilities, thus pressuring governments to expand services or provide additional new facilities. Because the Proposed Action is unlikely to cause an influx of new residents, the U.S. Army has not addressed impacts on schools or hospital services in this SEA.

The assessment area for this project includes Fort Belvoir and parts of Fairfax County adjoining the Post. These communities would most likely be provided the services and facilities that would be used by Founders Hall employees, volunteers, and visitors.

3.12.1 Safety and Security Services

Safety and security issues at Fort Belvoir are handled by the Army’s Military Police (MP) and Fire and Emergency Medical Services (EMS). The MP headquarters are located on Abbot Road, on the North Post. There are three fire stations on Fort Belvoir, housing five fire companies (three engine companies, one ladder truck company, and one airport crash company), with a total staff of approximately 65 firefighters (Fort Belvoir ENRD, 2002, USACE, Mobile District, August 2007). At least 21 firefighters are on duty 24 hours a day. The closest Fort Belvoir fire station to the site is located across the Fairfax County Parkway at DAAF (Station 66) (Fairfax County GIS Website, June 2015).

Fort Belvoir also has mutual aid police and fire service agreements with Fairfax County (USACE, Mobile District, August 2007). The Fairfax County stations located closest to the site are Fairfax County Fire Station 37 at 7936 Telegraph Road, and the Franconia Police Department at 6121

Franconia Road (Fairfax County GIS Website, June 2015).

3.12.2 Recreational Facilities

Fort Belvoir offers various recreational areas that are convenient to the population they serve. Facilities include the two 18-hole golf courses at the North Post Golf Course, officers and non-commissioned officers clubs, tennis courts, swimming pools, softball and soccer fields, 3,600 acres of hunting areas, etc. In addition, the Dogue Creek Marina rents slips and dry-storage facilities. There are a number of smaller parks and picnic areas, including the Anderson Park Picnic Area, located just south of the Proposed Action on Ehlers Road, across from DAAF.

Some of Fort Belvoir's undeveloped areas are open to recreational use: two wildlife refuges; fishing at Mulligan Pond and along Gunston Cove, Accotink Creek, Dogue Creek, and Pohick Creek; bow hunting in designated areas; bird watching, hiking, nature photography, and environmental education programs at the ABWR Education Center along with 13 miles of trails. However, no trails were identified in the Proposed Action area.

There are approximately 3,600 acres of available hunting area throughout Fort Belvoir. The Founders Hall and NMUSA Proposed Actions occupy hunting area H-13. Approximately 1.5 acres is within Founders Hall LOD and 33.5 acres is within NMUSA LOD. However, 47 acres in Hunting Area H-13 will still be available for hunting. Additionally, parking for hunters will still be available south of the action area along Ehlers Road.

The Fort Belvoir Family and Morale, Welfare and Recreation (FMWR) program manages the 36-hole North Post Golf Course. The former 9-hole South Post Golf Course has been displaced to make room for the new Belvoir Community Hospital and proposed Warrior in Transition Unit (WTU) complex.

The Fairfax County Park Authority operates 388 parks on more than 23,000 acres. Facilities include nine indoor recreational centers, nature and visitor centers, eight golf courses, five nature centers, a horticulture center, a working farm, an activities/equestrian center, an indoor ice-skating rink, a skate park, a water park, campgrounds, and hundreds of athletic fields, tennis courts, picnic areas, playgrounds, historic sites and trails. A wide variety of activities and programs are operated at the county parks and recreational centers (Fairfax County Website, 2015).

3.12.3 Consequences of the Proposed Action: Community Facilities and Services

Any proposal that has the potential to increase the number of buildings, employees, or visitors to an area would have the potential to cause a proportionate increase in the demand for fire, police, and emergency medical services. However, the increase in number of buildings is minimal when compared to the number of buildings in Fairfax and the neighboring sections of Fairfax County.

Approximately 185 employees, volunteers, and contractors are expected to be associated with the NMUSA and 10 employees (additional staff and volunteers, assigned as needed) are expected to be associated with Founders Hall. Most of these people would come from Fairfax County, and, therefore, already use county services. Added to the peak daily average of 4,800 visitors per day, this impact would be minor compared to the number of Fort Belvoir employees that are presently using (22,150), or that would be using (34,880) these services by the time the NMUSA complex would be fully constructed, especially since these visitors would be likely to only spend 2 or 3

hours a visit, and their visits would be spread throughout the day. The impact of the project on these services would therefore be minimal.

Although the construction of the proposed NMUSA would cause the loss of the front nine holes on the North Post Golf Course, the construction of the proposed Founders Hall facility does not currently pose any impact on any areas of the golf course. Therefore, the construction and operation of Founders Hall would not have a significant short-term or long-term impact to golf course patrons and the FMWR program.

There would be a minor, permanent impact on the hunting areas and parking for hunters in and surrounding the Proposed Action. The impacts to other recreational facilities would be similar to the impacts on fire, police, and emergency medical services. There would be a negligible increase in the demand and pressure of the recreational areas. Some impacts to traffic entering Anderson Park would be expected. Specifically, closing the existing median break would cause an increase in travel distance, because drivers would have to perform a U-turn to enter the park.

As a recreational and educational facility itself, Founders Hall would represent an additional amenity for local residents, and would therefore have positive impact on these resources. No significant impacts to community facilities and services are expected as a result of the Founders Hall and NMUSA Proposed Actions.

3.12.4 Consequences of the No Action Alternative: Community Facilities and Services

Under this alternative, there would be no impact to the current community facilities and services because there would be no increase in need for community facilities and services.

3.13 Traffic and Transportation Systems

According to EO 13423, federal agencies are to conduct their transportation-related activities under the law in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. Thus, transportation demands and traffic impacts are of particular interest for the SEA. The ROI for the Proposed Action is Fort Belvoir and Fairfax County, Virginia. Fairfax County is currently undergoing growth and subsequent increases in transportation and traffic are anticipated. The threshold of impact would be reached if the Proposed Action or No Action Alternative would cause an unsustainable or a significant increase in transportation demands that exceeds the capacity of local transportation systems or results in unsafe traffic conditions or excessive delays.

3.13.1 Traffic Patterns in the Vicinity of the Proposed Action

Traffic on roadways surrounding Fort Belvoir is generally congested in the peak direction of traffic flow in both the morning (AM) and evening (PM) peak periods; the morning peak direction is towards DC while the evening peak direction is south and westbound. Traffic tends to flow unimpeded in the off-peak direction of flow, except for traffic queuing to turn into Fort Belvoir. Peak period traffic congestion affects all three major arteries that serve Fort Belvoir: the Fairfax County Parkway, U.S. Route 1, and I-95. I-95 is typically congested for up to three hours during each of the peak flow periods.

Congestion also occurs at intersections that are the access points or adjacent to the access points

for Fort Belvoir: U.S. Route 1 intersections with the Fairfax County Parkway, Pohick Road (Tulley Gate) and Belvoir Road (Pence Gate); and the intersection of the Fairfax County Parkway and John J. Kingman Road (Kingman Gate). During the AM peak period, Fort Belvoir often has heavy inbound flows at all the gates; queues form as people wait for security checks. Sometimes, traffic backs up onto U.S. Route 1.

Once vehicles are on the installation, some congestion occurs at key intersections scattered around Fort Belvoir: Gunston Road near Jackson Loop, where ingress and egress can be difficult for turning vehicles; the Twelfth Street, Pohick Road and Gunston Road intersection; and the Gunston and Gorgas Road intersection. Traffic congestion on Fort Belvoir is generally less severe than on U.S. Route 1 or Fairfax County Parkway.

In the PM peak period, traffic leaving Fort Belvoir is very heavy. On John J. Kingman Road and Belvoir Road, vehicles often have to wait several cycles at the traffic signals in order to get onto U.S. Route 1 or Fairfax County Parkway. These corridors are often congested in the peak direction of traffic.

During the off-peak hours, little traffic congestion occurs on roadways near the installation. Traffic turning along Gunston Road at Jackson Loop has longer wait times because drivers have to find an acceptable gap to enter the traffic stream. On Post, Gunston Road is the major internal north-south connection between North and South Posts (2010 NMUSA EA).

3.13.2 Transportation Systems in the Vicinity of the Proposed Action

The Washington Metropolitan Area Transit Authority (WMATA) operates the Richmond Highway Express (REX) along the U.S. Route 1 Corridor, linking Fort Belvoir to the Yellow Line Metrorail Station, the King Street Virginia Railway Express (VRE) commuter rail station, and the Amtrak Station to the northeast. On South Post, the route runs along Belvoir Road, 9th Street, and Jackson Loop.

The Fairfax Connector bus service, operated by Fairfax County, includes a route that provides service to the DLA complex off John J. Kingman Road on North Post. The route links North Post to the Springfield Transportation Center, where a Blue Line Metrorail Station, a VRE station, and a bus transfer station are located. VRE links to points south, and the Metrorail line provides service to Ronald Reagan National Airport, the Pentagon, and central Washington, DC, with connections to each of the other Metrorail lines. A number of private commuter bus operators have services at the Springfield Transportation Center. Metrorail stations are located within four miles (Blue Line) and seven miles (Yellow Line) of Fort Belvoir. Currently, few on-Post shuttle circulator services exist.

The FBMRR located along the north side of the Fairfax County Parkway has been reserved as right-of-way for a future transit corridor. Fort Belvoir intends to make every effort to preserve this transit corridor for future use (2010 NMUSA EA).

3.13.3 Consequences of the Proposed Action: Traffic and Transportation Systems

The Proposed Action would increase traffic volumes on regional roadways surrounding Fort Belvoir, mainly the Fairfax County Parkway. No net change in traffic for the golf course is anticipated. Little impact to the commuting traffic is expected because most traffic to and from

Founders Hall and NMUSA is predicted to occur during off-peak hours. The Founders Hall and NMUSA Proposed Actions would contribute less than 10 percent of the total traffic stream during the AM and PM peak hours. The traffic generated by the Proposed Action would increase traffic volumes on the Fairfax County Parkway during the off-peak hours but is expected to have little impact on traffic flows because sufficient capacity exists during the off-peak hours. The additional Founders Hall and NMUSA traffic that would occur during the peak hours would increase traffic volumes at key intersections and increase delays slightly.

Under the current design, all Founders Hall and NMUSA patron traffic would enter the Founders Hall and NMUSA's parking lots directly, without going through one of the Post's security gates. Patrons of the North Post Golf Course would continue to enter through one of the installation's security gates.

The existing median break for Ehlers Road and Anderson Park would need to be closed. This would require some vehicles accessing the Anderson Park to make a U-turn at the Telegraph Road interchange or at Kingman Road to enter or exit the Anderson Park, based on their origins and destinations. Overall, the impact to future traffic volumes is expected to be minor in the long-term.

Impacts to transit are expected to be negligible. As most of the visitors are expected to travel to and from Founders Hall and NMUSA during the off-peak period, it is expected that little impact to the existing transit services would occur. Currently, the site has no direct transit service. It is unknown at this time whether the site would be serviced in the future by either WMATA's Metrobus or the Fairfax Connector. These agencies periodically review their service plans and make adjustments at a regional level. The U.S. Army is currently working to develop mass transit options for Fort Belvoir which would include the NMUSA. These options are still under development and could include connections to local Metrorail stations and may include the old railroad bed mentioned above.

The number of trips to and from the site are not expected to increase due to the construction of Founders Hall, and the Founders Hall Proposed Action would utilize the same traffic design. Overall, no significant impacts to Traffic and Transportation are expected.

3.13.4 Consequences of the No Action Alternative: Traffic and Transportation Systems

Under this alternative, there would be no change to the current traffic and transportation systems near the Proposed Action area.

3.14 Impact Summary

This section will summarize how the Founders Hall Proposed Action, the Founders Hall and NMUSA combined Proposed Actions and the No Action Alternative differ in relation to potential environmental impacts. **Table 3-14** provides a summary of the impacts of the Proposed Actions compared to the No Action Alternative based on information provided by the proponent, site visits and a review of geospatial data provided by U.S. Army.

Table 3-14 Impact Summary

Issue	Founders Hall Proposed Action	Founders Hall and NMUSA Proposed Actions	No Action
Land Use, Plans and Coastal Zone Management	<p>No Significant Impact Currently, the Proposed Action area is zoned for community use. This classification allows for the use of the site as planned. This Proposed Action is in review with CZM and NCPC.</p>	<p>No Significant Impact Currently, the Proposed Action area is zoned for community use. This classification allows for the use of the site as planned and is consistent with CZM and NCPC.</p>	No Impact
Soils and Topography	<p>Likely No Significant Impact Approximately 1.24 acres of a 14 acre area will be permanently affected. Temporary impact to soil erosion may occur during the land clearing, landscaping, selective tree harvest, and building phase of construction. Implementation of VESC Plan and BMPs would be maintained to reduce erosion until permanent stabilization is achieved.</p>	<p>Likely No Significant Impact Approximately 41 acres of the 88.9 acres of area will be permanently affected. Temporary impact to soil erosion may occur during the land clearing, landscaping, selective tree harvest, and building phase of construction. Implementation of VESC Plans and BMPs would be maintained to reduce erosion until permanent stabilization is achieved.</p>	No Impact

Issue	Founders Hall Proposed Action	Founders Hall and NMUSA Proposed Actions	No Action
Vegetation and Wildlife	<p>No Significant Impact Approximately 14 acres of mixed oak forest will be affected. Selective tree removal would occur to minimize impacts to the natural surroundings and wildlife. Section 7 consultation has been completed with USFWS. Suitable habitat for NLEB is present on site. Acoustic survey results indicate the presence of NLEB. USFWS has concurred with proposed mitigation measures through the consultation process. No significant impacts to Federal or State protected species are expected.</p> <p>Minor impacts to Migratory bird habitats and PIF buffers would occur. Minor and temporary impacts are expected to special natural areas (Forest & Wildlife Corridor).</p>	<p>No Significant Impact Approximately 88.9 acres of mixed habitat will be affected. Selective tree removal would occur to minimize impacts to the natural surroundings. Section 7 consultation has been completed with USFWS. Suitable habitat for NLEB is present on site. Acoustic survey results indicate the presence of NLEB. The USFWS has concurred with proposed mitigation measures through the consultation process. No significant impacts to Federal or State protected species are expected.</p> <p>Minor impacts to Migratory bird habitats and PIF buffers would occur.</p>	<p>No Impact</p>
Surface Water, Water Quality, and Floodplains	<p>No Significant Impact Minimization measures would protect nearby surface waters during and after construction. These include adherence to: Chesapeake Bay BMPs, VESC, and SWMP to reduce erosion, control stormwater runoff, and prevent sedimentation during construction; and FBMS to prevent and manage accidental spills that might occur during construction.</p>	<p>No Significant Impact Minimization measures would protect nearby surface waters during and after construction. These include adherence to: Chesapeake Bay BMPs, VESC, and SWMP to reduce erosion, control stormwater runoff, and prevent sedimentation during construction; and FBMS to prevent and manage accidental spills that might occur during construction.</p>	<p>No Impact</p>

Issue	Founders Hall Proposed Action	Founders Hall and NMUSA Proposed Actions	No Action
Waters of the U.S., RPAs and Non-Perennial Stream Buffers	<p>No Significant Impact Approximately 0.101 acres of RPAs and 23 LF of perennial stream would be impacted. Approximately 0.011 acres of wetlands would be impacted by conversion from PFO to PEM wetlands. Minimization and mitigation measures would result in no significant impacts.</p>	<p>No Significant Impact Approximately 0.16 acres of wetland and stream impacts (includes 110 LF of streams) would occur. Approximately 0.011 acres of wetlands would be impacted by conversion from PFO to PEM wetlands. Additionally, 0.695 acres of RPAs and 0.142 acres of Non-Perennial stream buffers would be permanently impacted. Minimization and mitigation measures would result in no significant impacts.</p>	<p>No Impact</p>
Cultural Resources	<p>No Significant Impact Mitigation and minimization measures according to the 2013 Section 106 consultation for the NMUSA construction road and utility crossing will be utilized to restore the FBMRR after construction.</p>	<p>No Significant Impact Mitigation and minimization measures according to the 2013 Section 106 consultation for the NMUSA construction road and utility crossing will be utilized to restore the FBMRR after construction.</p>	<p>No Impact</p>
Petroleum and Hazardous Substances	<p>No Significant Impact Temporary, minor impacts from construction and generator tanks</p>	<p>No Significant Impact Temporary minor impacts from construction and generator tanks</p>	<p>No Impact</p>
Air Quality	<p>No Significant Impact Temporary construction impacts; impact from backup generators.</p>	<p>No Significant Impact Temporary construction impact; impact from backup generators.</p>	<p>No Impact</p>

Issue	Founders Hall Proposed Action	Founders Hall and NMUSA Proposed Actions	No Action
Noise	<p>No Significant Impact Minor temporary increases in noise would occur during construction. Following construction, no significant changes to the existing noise levels near the Proposed Action are expected.</p>	<p>No Significant Impact Short and long-term minor impacts due to construction machinery; and minor intermittent noise impacts from NMUSA ceremonies and events.</p>	<p>No Impact</p>
Infrastructure and Utilities	<p>No Significant Impact</p>	<p>No Significant Impact</p>	<p>No Impact</p>
Socioeconomics	<p>No Impact; Minor Positive Impact</p>	<p>No Impact; Positive Impact</p>	<p>No Impact</p>
Community Facilities and Services	<p>No Significant Impact Minor, permanent impacts due to the loss of hunting and parking areas</p>	<p>No Significant Impact Minor, permanent impacts due to the loss of hunting and parking areas; temporary, functional reduction of 36-hole golf course.</p>	<p>No Impact</p>
Traffic and Transportation Systems	<p>No Significant Impact During construction, localized traffic may increase. After completion of the project, impacts on roads and traffic would be minor and the capacity exists in the current transportation network to accommodate the additional workforce at the new facility.</p>	<p>No Significant Impact Minor long-term increases in traffic on local roadways.</p>	<p>No Impact</p>

4.0 CUMULATIVE IMPACTS

NEPA requires the consideration of cumulative impacts to environmental resources that may occur as a result of “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.” These actions, which considered independently, may be minor, but when considered collectively, may have a significant impact on affected resources, either beneficially or adversely. (CEQ 40 CFR 1508.7 and 1508.8)

Cumulative impacts may occur when there is a relationship between a Proposed Action and other actions expected to occur in a similar location or during a similar period. This relationship may or may not be obvious. Actions overlapping with, or in close proximity to, the Proposed Action can reasonably be expected to have more potential for cumulative impacts on “shared resources” than actions that may be geographically separated. Similarly, actions that coincide temporally would tend to offer a higher potential for cumulative impacts.

An effort is made in this SEA to identify actions in or near the Proposed Action area that are under consideration and in the planning stage at this time. These actions are included in the cumulative impacts analysis to the extent that details regarding such actions exist and the actions have a potential to interact with the Proposed Action outlined in this SEA. Although the level of detail available for those future actions varies, this approach provides the decision maker with the most current information to evaluate the consequences of the alternatives.

The analysis first discusses past actions, events and circumstances that are relevant to the environments associated with the Proposed Action. Following is a discussion of other actions, that, when combined with the construction of the Proposed Action, may result in incremental impacts.

4.1 Past, Present, and Future Actions Relevant to the Proposed Action

A number of other, reasonably foreseeable actions could contribute to impacts on the human environment along with the expected impacts from Founders Hall. In the recent past, Implementation of BRAC 2005 involved the construction of more than 40 facilities at Fort Belvoir to support realignment of Army agencies and associated transfers of personnel. Currently, in addition to Founders Hall and NMUSA, the U.S. Army foresees long-range transportation plans (circa 2030) for the Fairfax County Parkway/John J. Kingman Road intersection including the construction of an overpass to handle projected traffic volumes. This overpass would be built by the Virginia Department of Transportation whether or not Founders Hall is constructed, and the environmental impacts of its construction and operation would be analyzed in a separate NEPA document. However, the preliminary overpass design would be modified to accommodate the Founders Hall entrance and exit.

Projects to be constructed in fiscal years 2012 through 2017 are presented in the June 2015 RPMP EIS. The Draft RPMP and RPMP EIS establishes a framework for developing and managing real property on Fort Belvoir through the year 2030. The RPMP EIS encompasses all present Fort Belvoir actions and the U.S. Army. Currently there are no identified additional future actions,

during the timeframe of this analysis at Fort Belvoir that would contribute to cumulative impacts. However, 12 projects off-base have been identified near Fort Belvoir in Fairfax County that are currently being developed or will be developed in the future to include several office buildings, retail stores, light industry, commercial use, residential use and a hotel (see Appendix D, RPMP EIS Table 4-1).

4.2 Cumulative Impacts (Temporary)

The proposed action could result in temporary adverse impacts due to construction related activities. Temporary impacts would be limited to the construction phase. The following impacts would be minimized when appropriate BMPs are implemented:

- Air quality would be affected by fugitive dust emissions and other construction related emissions.
- Noise impacts may occur due to the temporary construction activities in the local area.
- Soil erosion may temporarily increase during heavy rainfall or wind.
- Impacts to vegetation may allow soils to become unstable.
- Stormwater may temporarily experience an increase in sediment.
- A historic property, FBMRR, would be temporarily graded and used as an access road; however, this historical resource would be restored to its original formation after construction is complete.

4.3 Cumulative Impacts (Permanent)

Long-term impacts to the following resources may occur as a result of the combined activities of the Proposed Action and those projects described in Section 4.1. Adverse impacts may be minimized by design criteria in order to reduce impacts to the maximum extent possible. Impacts would be insignificant if design criteria meet applicable local, federal, and state regulations. In addition, the design of new facilities should ensure that local and/or regional infrastructure has the capacity to support any increased demands. The following sections evaluate potential cumulative impacts on the resources affected by the Proposed Action and other local development.

4.3.1 Land Use, Plans, and Coastal Zone Management

Land use, plans and CZM would incur permanent minor impacts if currently undeveloped or undisturbed lands are developed where the site did not meet the land use designated by the June 2015 RPMP EIS; or where CZM resources would be affected. No major cumulative impacts on designated land use, plans, and CZM would occur if the potential land uses are consistent with land use zoning in the area, and the loss or degradation of the land is minimal in comparison to the amount of similar lands available in the region. A significant impact would occur if any action is inconsistent with adopted regional development plans or land use zoning in the area. The Proposed Action is consistent with the Fort Belvoir Draft June 2015 RPMP, RPMP EIS and CZM for the area and for other potential developments in the region. Past, present and future plans for development at Fort Belvoir currently have, currently are, or will adhere to the Fort Belvoir Draft June 2015 RPMP and RPMP EIS, and CZM requirements; therefore, no significant cumulative impact to land use, plans and CZM is anticipated.

4.3.2 Soils and Topography

No major cumulative impacts on soils use would occur if the loss or degradation of the soil is

minimal in comparison to the amount of similar soil types available in the region. Additionally, appropriate BMPs (VESC Plan) would minimize the potential for soil erosion to occur on the Proposed Action area or other nearby development. Therefore, no significant cumulative impact from soil loss (or erosion) are anticipated as a result of the Founders Hall and NMUSA Proposed Actions.

4.3.3 Vegetation and Wildlife

Potential cumulative impacts on biological resources as a result of the loss of vegetation and wildlife habitat would be considered permanent but minor because the surrounding areas and landscaping will help mitigate the loss of the vegetation. For every tree greater than 4 inches in dbh, two trees shall be planted (Fort Belvoir Tree Policy #27). Out of kind tree replacement mitigation will be conducted to off-set vegetation and habitat loss as determined by DPW-ENRD (see Section 5.3). Development on the Founders Hall and the NMUSA site and other local properties could potentially impact habitat for sensitive species or nesting migratory birds, which may lead to a minor cumulative impact on sensitive species. However, mitigation would include revegetating the grounds surrounding Founders Hall and NMUSA in accordance with mitigation measures presented in Section 5.0. Future plans for development are expected to conserve special status species habitats to the maximum extent practicable in accordance with CZM, Chesapeake Bay Ordinance, and the ESA. No USFWS designated critical habitats were identified in the Proposed Action area or adjoining properties. Minor adverse cumulative impact to vegetation and wildlife is expected from the Founders Hall and NMUSA Proposed Actions.

4.3.4 Surface Water, Water Quality, and Floodplains

BMPs or other mitigation measures may be implemented to eliminate or minimize any impacts during development. Stormwater will be managed as deemed appropriate according to the design of both Founders Hall and NMUSA in order to maintain compliance with applicable federal and state regulations. Stormwater management systems design and permitting may be affected by the increase in impervious surfaces if currently undeveloped and/or undisturbed lands are developed. Compliance with EISA and implementation of VESC and SWMP plans would ensure no significant adverse cumulative impacts would occur to surface water, water quality and floodplains as a result of the Founders Hall and NMUSA Proposed Actions.

4.3.5 Waters of the U.S., RPAs and Non-Perennial Stream Buffers

Wetlands and streams will be impacted by the construction of Founders Hall and NMUSA; therefore, the U.S. Army will obtain a USACE NWP permits 27 and 39 and VA DEQ VMP program permit (WP4). The permit process ensures that no significant impacts to wetland and stream resources would occur with each proposed project that cannot avoid development within these sensitive resources. Impacts to these resources will be mitigated to result in no net loss of these resources. Additionally, impacts to RPAs and Non-Perennial Stream buffers will be avoided to the maximum extent practicable; however, unavoidable impacts will result in restoration of RPAs and Non-Perennial buffers at a 1:1 ratio or greater to ensure no net loss. Therefore, no adverse cumulative impacts are expected to Waters of the U.S., RPAs and Non-Perennial Stream resources as a result of Founders Hall and the NMUSA Proposed Actions.

4.3.6 Cultural Resources

FBMRR is an historical property that would be temporarily graded and used as an access road;

however, this historical resource would be restored to its preconstruction condition after construction is complete as part of the required minimization measures stipulated in the 2013 Section 106 consultation with VDHR for the construction road and utility crossing. Additionally, Fort Belvoir would adhere to the management strategies of the ICRMP and coordinate with the VDHR for any future U.S. Army actions; therefore, no adverse cumulative impacts to cultural resources are expected as a result of Founders Hall and NMUSA Proposed Actions.

4.3.7 Petroleum and Hazardous Substances

Major impacts would occur if an action results in conditions that create health risks or public hazards. Construction and eventual operation of the proposed Founders Hall would not generate significant quantities of hazardous materials or wastes. Risks associated with hazardous materials during construction would be minimized by implementation of appropriate BMPs. The effects of the Proposed Actions (Founders Hall and NMUSA) combined with other ongoing and potential development in the region is not expected to generate a significant cumulative impact.

4.3.8 Air Quality

Fort Belvoir and Fairfax County are within the National Capital Interstate AQCR (AQCR 47) (40 CFR 81.12). The National Capital Interstate AQCR is in the O₃ transport region that includes 12 states and Washington, DC. The USEPA has designated Fort Belvoir and Fairfax County as the following:

- Moderate nonattainment for the 8-hour O₃ NAAQS.
- Nonattainment for the PM_{2.5} NAAQS.
- Attainment for all other criteria pollutants (40 CFR 81.347)

Permanent cumulative, albeit insignificant, impacts are expected from vehicular emissions from commuting employees and visitors. No major cumulative impacts on air quality would occur if the potential cumulative emissions do not exceed the significance thresholds and no violations of air quality standards or conflicts with the SIP result. A significant impact would occur if any action is inconsistent with emission threshold levels specified by the SIP in the region.

4.3.9 Noise

Based on the data evaluated in Section 3.9, there are no noise-sensitive receptors (residences, churches, hospitals, or schools) located within 1,000 feet of both Founders Hall and NMUSA Proposed Action areas. Because construction activities (the primary source of noise) would occur primarily during normal weekday business hours, no violation of Fort Belvoir's noise ordinances, as adopted from Fairfax County, would be anticipated. Therefore, there would be no significant major cumulative adverse noise impacts on the surrounding communities as a result of Founders Hall and NMUSA Proposed Actions.

4.3.10 Infrastructure and Utilities

Energy demand will increase due to the addition of climate controlled spaces at the Founders Hall and NMUSA Proposed Actions. Potable water and wastewater demands would be increased due to additional activity and personnel. Solid waste generation would increase as a result of construction and operation of the new facility. These actions would be considered to cause major

impacts if they require greater demand on infrastructure or utilities than can be provided by local service providers. Presently, the service providers at Fort Belvoir and Fairfax County have adequate capacity in solid waste management, energy, gas, and communications for anticipated increased demand and growth. Additionally, increases to current capacity for potable water and wastewater are planned by Fort Belvoir. Therefore, there would be no significant major cumulative adverse impacts on infrastructure and utilities as a result of Founders Hall and NMUSA Proposed Actions.

4.3.11 Socioeconomics

Employment may benefit with increased employment due to staffing of Founders Hall and NMUSA. Business volume in the area is expected to increase due to increased demand for products and services from construction related activities, as well as by visitors to Founders Hall and NMUSA. Cumulative impacts from the Proposed Actions would not cause a significant reduction in wages or employment opportunities, access to affordable housing, or have a disproportionate level of impact on low-income or minority populations. Therefore, there would be no significant cumulative socioeconomic impacts resulting from Founders Hall and NMUSA Proposed Actions.

4.3.12 Community Facilities and Services

There will be a minor, permanent impact on hunting activities due to the loss of hunting grounds and available parking for hunters in and around the Proposed Action area. Any proposal that has the potential to increase the number of buildings, employees, or visitors to an area would have the potential to cause a proportionate increase in the demand for fire, police, and emergency medical services. However, the increase in number of buildings is minimal when compared to the number of buildings at Fort Belvoir and the neighboring sections of Fairfax County.

Fewer than 185 employees, volunteers, and contractors are expected to be associated with Founders Hall and the NMUSA. Most of these people would come from Fairfax County, and therefore already use county services. Added to the peak daily average of 4,800 visitors per day, this impact would be minor compared to the number of Fort Belvoir employees that are presently using or that would be using these services by the time Founders Hall and the NMUSA would be fully constructed. These visitors would be likely to only spend 2 or 3 hours a visit, and their visits would be spread throughout the day. Therefore, there would be no significant cumulative impacts on community facilities and services resulting from Founders Hall and NMUSA Proposed Actions.

4.3.13 Traffic and Transportation Systems

Traffic volume is anticipated to increase during construction and operation of Founders Hall and subsequently, the proposed NMUSA. Currently, in addition to Founders Hall and NMUSA, the U.S. Army foresees long-range transportation plans (circa 2030) for the Fairfax County Parkway/John J. Kingman Road intersection including the construction of an overpass to handle projected traffic volumes. This overpass would be built by the Virginia Department of Transportation whether or not Founders Hall is constructed, and the environmental impacts of its construction and operation would be analyzed in a separate NEPA document. Impacts to traffic and transportation systems would be considered major if the increase exceeded the capacity of the local roads and transportation systems providing service to the area. Construction and operation of Founders Hall is not anticipated to add any significant increase on the traffic and transportation systems, other than the issues evaluated in the 2010 NMUSA EA for the proposed NMUSA.

Therefore, there would be no major cumulative impacts on traffic and transportation systems from Founders Hall and NMUSA Proposed Actions.

5.0 MITIGATION MEASURES

The following resources would not require mitigation measures to offset impacts: Surface Waters, Water Quality and Floodplains, Petroleum and Hazardous Waste, Air Quality, Noise, Infrastructure and Utilities, Socioeconomics, Community Facilities and Services, and Traffic and Transportation Services. Only those resources requiring specific mitigation for impacts are presented below.

5.1 Land Use, Plans, and Coastal Zone Management

To implement the Proposed Action, the U.S. Army must provide mitigation measures for any unavoidable impacts within the CZ. Compliance with the individual enforceable policies and corresponding regulatory requirements would adequately mitigate impacts to CZM. For example, the CZM enforceable policy for wetlands requires obtaining wetland permits. Mitigation would be required as part of the wetland permitting process (Section 3.5, 5.5).

5.2 Soils and Topography

To implement the Proposed Action, the U.S. Army construction contractor must comply with the CGP and the following mitigation measures will be utilized to stabilize soils and prevent erosion during and after construction is complete.

- Trees would be planted at a 2:1 ratio to replace those lost after clearing and grading in accordance with Fort Belvoir's Tree Policy #27. A tree restoration plan would be developed to establish tree mitigation requirements. The U.S. Army would replace trees providing habitat for PIF bird species to the extent practicable.
- Remove the least amount of native vegetation possible during clearing.
- Re-vegetate areas surrounding the Founders Hall building and parking areas. Establish a transitional vegetation buffer that would be approximately 90 feet wide in areas adjacent to the Fort Belvoir FWC. Establish herbaceous and woody species to provide for aesthetics, food and cover for wildlife.
- Re-vegetate a 90-foot buffer around the entire NMUSA complex.

5.3 Vegetation and Wildlife

In addition to complying with regulatory requirements, the U.S. Army would take additional mitigation measures to ensure that impacts from construction do not exceed the planned impact area or are unnecessarily disturbing to vegetation and wildlife. Prior to construction, the U.S. Army (or its contractors) would flag the limits of impact areas to provide a clear boundary to construction workers where they may be exceeding the project area. The contract specifications would also include any recommended measures for avoiding impacts to any special status species.

The following measures would be implemented to protect vegetation and wildlife in addition those listed in Section 5.2:

- Protect existing trees to the maximum extent possible by removing only those trees that would interfere with Founders Hall construction activities as well as selective clearing to preserve the high-value trees that do not adversely impact the visitor's view of Founders Hall as they enter the site from the Fairfax County Parkway. High value trees are

considered visually aesthetic, mature trees that could provide habitat to various wildlife species and could also obtain monetary value.

- For every tree greater than 4 inches in dbh, two trees in kind trees shall be planted (Fort Belvoir Tree Policy #27).
- Out-of-kind mitigation will also be conducted to off-set the loss of vegetation and natural habitats to include the restoration design of an 800-foot section of Mason Run creek (MR1), located off-site (**Figure 3-5**). This work will comply with the conditions of NWP #27-Aquatic Habitat Restoration, Establishment, and Enhancement Activities. In this area, the stream valley is wide, and the channel is entrenched. It flows along the left side of valley (facing downstream). The MR1 stream has experienced major head cutting in this vicinity, and some evidence of out of bank activity is present. The stream channel would then be converted into a series of connected vernal pools and wetland pockets (seepage is occurring from the sand and gravel layer). Primary treatment facilities or wetland pockets are proposed to be constructed to capture runoff from the golf course before it flows through the stream valley, which would protect the stream from high velocity flow and pre-treat pesticides and fungicides from the adjacent golf course. Additionally, strategic clean-up and plantings will improve the potential habitat and the in-stream quality of this segment of MR1. This would stabilize the system, be cost effective, and would result in minimal impacts to the existing forest.
- During the design phase, the U.S. Army would identify specimen trees to be preserved and locate dead and diseased trees to be removed. The final selection of trees would be conducted by a certified arborist after the building is framed.
- Pre-construction surveys for migratory bird nests will be conducted to avoid and minimize impacts to migratory birds. Habitat avoidance will be achieved through selective removal of trees and only disturbing areas necessary to accommodate the development of the Proposed Action.
- Identification of additional areas for possible re-vegetation to support the habitats of PIF bird species on-site or elsewhere on Fort Belvoir as identified by the Fort Belvoir ENRD.
- Planting of native wetland or water-tolerant plants in storm drainage areas which would also promotes water quality through filtration.
- Landscape with a mixture of deciduous shade and flowering trees, such as American elm cultivars (Valley Forge, New Harmony, Jefferson, or Princeton), swamp white oak (*Quercus bicolor*) and eastern redbud (*Cercis canadensis*), and plant seedlings, such as dogwood (*Cornus florida*), possumhaw (*Viburnum nudum*), and red chokeberry (*Aronia arbutifolia*) throughout the landscaping.
- The U.S. Army will implement time-of-year restrictions for tree clearing, and the mitigation measures resulting from the Section 7 Consultation with USFWS. (see Appendix A, “*Appendix C, NLEB Mitigation Plan for the National Museum of the U.S. Army, Fort Belvoir, VA*”).

5.4 Waters of the U.S., RPAs and Non-Perennial Stream Buffers

The U.S. Army will obtain USACE Nationwide Permit numbers 27 and 39 and a VA DEQ Water Protection General Permit (WP4) to authorize the proposed impacts to Waters of the U.S. and Waters of the State. The 401 water quality certification is being issued as part of the WP4. Any permanently impacted wetlands or streams would be mitigated according to the following mitigation measures submitted to the USACE in accordance with the Section 404 permit process.

- Impacts to wetlands are relatively small; therefore, credits will be purchased at a wetland bank which is the agencies' preferred method for mitigation. Once payment is made to a bank, the liability of the permittee ends. Responsibility for design, construction, ten years of monitoring, and guaranteeing successful wetland creation will belong to the wetland bank. The Founders Hall Proposed Action will require the purchase of 0.011 credits to mitigate for 0.011 acres of wetland conversion (PFO to PEM). The NMUSA Proposed Action will require the purchase 0.15 wetland credits to mitigate for 0.075 acres of PFO impacts, and will require the purchase of 0.074 wetland credits for impacts to 0.074 acres of PEM wetlands.
- Stream impacts will be mitigated through off-site stream restoration southeast of the project site in the Forest and Wildlife Corridor (see **Figure 3-5**). The stream mitigation involves restoring a 145 LF portion of perennial stream by removing a section of the abandoned railroad embankment and an aging 36-inch reinforced concrete pipe. The proposed regrading will create a funneling effect to lead wildlife directly to the existing wildlife crossing under Fairfax County Parkway. The grading will also create several drainage pathways for runoff to enter the proposed wetland areas and fill the vernal pools before draining into the unnamed tributary to Accotink Creek. To ensure channel stability, a few structures (cross-vanes, j-hooks) will be placed, and adequate floodplain benching will be provided. Restoration of this portion of the stream will include a revegetation plan that will meet regulatory requirements that will mitigate the number of trees removed to construct the project. In order to qualify as mitigation, this off-site restoration effort will be designed to meet the calculated stream mitigation requirement (285 LF credits) to be determined by the Unified Stream Methodology (USM). Final drawings will be submitted for review and approval. The Founders Hall Proposed Action would utilize approximately 21% (60 LF) and the NMUSA Proposed Action would utilize 79% (225 LF) of the stream credits produced from the restoration effort.
- To mitigate impacts to the 35-foot non-perennial stream buffer, the proposed design includes reforestation of approximately 0.204 acre of the existing golf course along the existing fairways (within the 35-foot non-perennial stream buffer) associated with golf holes #3 and #8 to the east of the project site. This area will be abandoned by the golf course when the holes are rerouted to make room for the museum site. Although reforestation will also take place just outside of the 35-foot non-perennial stream buffer, mitigation credit will only be achieved for the area within the buffer. The NMUSA Proposed Action requires this mitigation at a 1:1 ratio or greater.
- The RPA impacts will be mitigated by reforestation along the abandoned Old Accotink Road corridor within the RPA. The ratio of reforested RPA area to impacted RPA will be 1:1 or greater. Planting shall be in conformance with the Riparian Buffers Modification and Mitigation Guidance Manual (Virginia Department of Conservation and Recreation [DCR]/Chesapeake Bay Local Assistance [CBLA]-2006). The Founders Hall Proposed Action would result in 14.5% (0.101 acres) of impacts to RPAs and the NMUSA would result in 85.4% (0.594 acres) of impacts to RPAs for a total of 0.695 acres.

5.5 Cultural Resources

The FBMRR would be temporarily utilized as an access road during construction of Founders Hall and NMUSA and a communications cable running alongside the FBMRR would be relocated. The

NMUSA construction access road and utility crossing was consulted on in a separate Section 106 action in 2013, in which VDHR provided concurrence on the determination of No Adverse Effect under the condition that the rail bed be restored to its preconstruction condition. No additional mitigation will be stipulated within the amendment of the NMUSA MOA.

6.0 CONCLUSION

Based on the analysis presented in this SEA, implementation of the Proposed Action would not result in significant or major adverse impacts on any of the resources analyzed within this document and no further analysis or documentation, such as the preparation of an EIS, is required. Minor and short-term impacts would occur from implementation of the Proposed Action on Soils, Vegetation and Wildlife, Cultural Resources, Air Quality, Noise, Traffic and Transportation Systems. The impacts of the Proposed Action when combined with impacts from other present or planned development in the surrounding area are not anticipated to result in significant adverse cumulative impacts. All practical and reasonable means will be employed by the U.S. Army to minimize the potential adverse impacts on the human and natural environment. Therefore, a FNSI is warranted.

7.0 LIST OF PREPARERS AND AGENCIES AND PERSONS CONSULTED

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8.0 REFERENCES

32 Code of Federal Regulations (CFR) Part 651 Army Regulation (AR) 200-2 - "Environmental Effects of Army Actions." 2002.

40 CFR:

____. Parts 1500-1508, President's Council on Environmental Quality. "Regulations for Implementing the National Environmental Policy Act."

____. Part 273 – U.S. Environmental Protection Agency. "Standards for Universal Waste Management."

____. Part 300 – U.S. Environmental Protection Agency. "National Oil and Hazardous Substances Pollution Contingency Plan."

____. Part 81.347 – "Virginia Air Quality Control Region."

Clark-Nexsen. "The National Museum of the United States Army Traffic Study." 2005.

College, Craig E. "Record of Decision for the Implementation of 2005 Base Realignment and Closure (BRAC) Recommendations and Related Army Actions at Fort Belvoir." August 2007.

EA Engineering, Science & Technology, Inc. "Fort Belvoir Hydraulic Evaluation of the Proposed National Museum of the U.S. Army." 2008.

—. "Technical Memorandum (concerning available potable water supply.) March 2007.

—Economics Research Associates. "Market Analysis of Attendance and Physical Planning Parameters." 7 April 2006.

Energy Independence and Security Act (EISA) of 2007. H.R.6 [110th]. 2007.

Energy Policy Act of 2005. H.R.6 [109th]. 2005.

Executive Order (EO) 13423. "Strengthening Federal Environmental, Energy, and Transportation Management." 2007.

Executive Order (EO) 13514. "Federal Leadership in Environmental, Energy, and Economic Performance." 2009.

Fairfax County Website, 2010. Accessed 28 July 2010 by Janet O'Neill "Population, Housing Units and Households. <http://www.fairfaxcounty.gov/demogrph/gendemo.htm#pop>

Fairfax County Website, 2008. Accessed 9 July 2008 by Janet O'Neill, "1999 Median Household Income by Census Tract (Map) " <<http://www.farifaxcounty.gov/demogrph/medincmap.htm>>

Fairfax County Website, 2005. Accessed February 2005 by Janet O'Neill
—. <<http://www.fairfaxcounty.gov/>

—. <http://www.fairfaxcounty.gov/ps/FR/GENERAL/Fs_map.htm

—. <<http://www.fairfaxcounty.gov/maps/images/maps/handouts/pdf/emergency.pdf>>.

—. <<http://www.co.fairfax.va.us/parks/2004bond.htm>>.

Fairfax County GIS Website, 2008. Accessed by Janet O'Neill, May 2008. Now at <<http://www.fairfaxcounty.gov/gisapps/myneighborhood/#general>

Fairfax County Public Schools, Office of Facilities Planning. "Capital Improvement Program, Fiscal Years 2002-2006." 2001.

Fairfax County. "The Comprehensive Plan for Fairfax County, Virginia." Fairfax, Virginia, 1995.

Federal Interagency Committee on Noise. "Federal Agency Review of Selected Airport Noise Analysis Issues." 1992.

Hobson, C.S. "A Natural Heritage Zoological Inventory of U.S. Army Fort Belvoir, Virginia." Natural Heritage Technical Report 97-5. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. Unpublished Report submitted to U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resources Division, 1996.

J2 Engineers, Inc. 20 February 2009. Interchange Concept with Bridged Site Access, NMUSA Site, at Fairfax County/Kingman Road.

Metropolitan Washington Council of Governments. "Final State Implementations Plan Revision, Phase I Attainment Plan for the Washington DC-MD-VA Non-attainment Area." 1997.

—. "Proposed State Implementation Plan (SIP) - "Severe Area SIP" - Demonstrating Rate of Progress for 2002 and 2005 Revision to 1990 Base Year Emissions, and Severe Area Attainment Demonstration for the Washington DC-MD-VA Non-attainment Area." 2003.

—. "State Implementation Plan Revision, Phase II Attainment Plan for the Washington DC-MD-VA Non-attainment Area." 2000.

Mitchell, J. C. and J. L. Pilcicki. "The Wood Turtle (*Clemmys insculpta*) in Eastern Fairfax County, Virginia." *Catesbeiana* 20:34-38. 2000.

Mitchell, J. C. and T. S. B. Akre. "Wood Turtle Survey on Fort Belvoir, Virginia." Final Report to Paciulli, Simmons & Associates, Inc., Fairfax, Virginia, 2002.

Mitchell, J. C. "Wood Turtle (*Clemmys insculpa*) Assessments at DCEETA, Fort Belvoir, Virginia." Unpublished report submitted to the U.S. Army Garrison Fort Belvoir, 2008.

Mitchel Ecological Research Service, LLC. Wood Turtle Surveys of Potential Sites for the 338 Child Development Center, The North Post, Golf Course Realignment, and The National Museum of the United States Army, July 2009.

National Capital Planning Commission. "The Comprehensive Plan for the National Capital: Federal Elements." August 2004.

Natural Resources Conservation Service (NRCS). "Soil Survey Map Server." July 2015.

- Paciulli, Simmons & Associates. "Wetlands Mapping, Fort Belvoir, Virginia." Prepared for U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resource Division, Fort Belvoir, VA, 1997a.
- "Wetland Mitigation Site Assessment, Fort Belvoir, Virginia." Prepared for U.S. Army Garrison Fort Belvoir, Directorate of Installation Support, Environmental and Natural Resource Division, Fort Belvoir, VA, 1997b.
 - "Comprehensive Management Plan for the Fort Belvoir Refuge Complex." Prepared for the U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resource Division, Fort Belvoir, VA, 1998a.
 - "Vegetation Cover Map Project, Fort Belvoir, Virginia." Prepared for U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resource Division, Fort Belvoir, VA, 1998b.
 - "Fort Belvoir Forest and Wildlife Corridor Management Plan Update." Prepared for U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resource Division, Fort Belvoir, VA, 1999a.
 - "Wetlands Mapping Engineering Proving Grounds, Fort Belvoir, Virginia." Prepared for U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resource Division, Fort Belvoir, VA, 1999b.
 - "Invasive Exotic Vegetation Management Plan, Fort Belvoir, Virginia." Prepared for U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resource Division, Fort Belvoir, VA, 2000b.
 - "The National Museum of the United States Army Wetland Delineation Report: Gunston Site, Fort Belvoir, Virginia." Prepared for U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resource Division, Fort Belvoir, VA, 2009.
 - "The North Post Golf Course Wetland Delineation Report, Fort Belvoir, Virginia." Prepared for U.S. Army Garrison Fort Belvoir, Directorate of Public Works, Environmental and Natural Resource Division, Fort Belvoir, VA, 2010.

Partners In Flight. 2005. Accessed July 2015. <http://partnersinflight.org>

Polk, H. II, J. D. Traver and R. A. Thomas. "Phase I Survey of Fort Belvoir, Virginia Volume I." 1992. R. Christopher Goodwin & Associates, Inc. "Integrated Cultural Resource Management Plan, U.S. Army Garrison, Fort Belvoir, Virginia Preliminary Final Draft Report." Prepared for Dewberry and Davis on behalf of U.S. Army Garrison Fort Belvoir, Directorate of Installation Support, Environmental and Natural Resources Division, Fort Belvoir, Virginia, May 1999.

U.S. Army Corps of Engineers, Mobile District. "Environmental Impact Statement for Implementation of 2005 Base Realignment and Closure (BRAC) Recommendations and Related Army Actions at Fort Belvoir, Virginia." Prepared by TetraTech, August 2007.

U.S. Army Center for Military History. "Site Evaluation Study for the National Museum of the United States Army." In cooperation with the Directorate of Installation Support. March 2004.

- Army Museum Working Group: Site Study, March 2000.
- U.S. Army Garrison Fort Belvoir, "Fort Belvoir Policy Memorandum #27, Tree Removal and Protection," 26 June 2014.
- U.S. Army Garrison Fort Belvoir, Environmental and Natural Resource Division, Directorate of Installation Support. "Integrated Natural Resources Management Plan (INRMP), Fort Belvoir, Virginia." Prepared by Horne Engineering Services, Inc., 2001.
- "Environmental Assessment: Implementation of an Integrated Natural Resources Management Plan (INRMP), Fort Belvoir, Virginia." Prepared by Horne Engineering Services, Inc., 2001.
- "Environmental Assessment: The National Museum of the United States Army, Fort Belvoir, Virginia." Prepared by Paciulli, Simmons, & Associates, LTD, September 2010.
- Memorandum for U.S. Army Fort Belvoir Personnel: Fort Belvoir Policy Memorandum #27, Tree Removal and Protection. October 11, 2012.
- "Environmental Impact Statement for Short-Term Projects & Real Property Master Plan Update, Fort Belvoir, Virginia." June 2015.
- "2014 Emissions Statement." 2014.
- GIS Data 2015
- U.S. Bureau of Economic Analysis. Regional Economic Information System. 2000
<homer.ssd.census.gov/cdrom/lookup>. <142.4.24/cgi-bin/srgate>.
- U.S. Census Bureau Factfinder Website. Map for Census Tract 42185; Census 2000 Summary File 3 (SF-3) - Sample Data (Median Family and Household Median Indomes for Census Tract 4218, Blocks 1 and 2. 2008. July 9 2008 by Janet O'Neill <<http://factfinder.census.gov/servlet/>>.
- 2006 by Laurent Cartyrade <<http://factfinder.census.gov/>>.
- Census 2000 Data for the State of Virginia and Income and Poverty Levels. 1999. February 2005 by Janet O'Neill <<http://factfinder.census.gov/>>.
- U.S. Environmental Protection Agency (USEPA). 2008. Transportation Conformity Final Rule: PM2.5 and PM10 Hot-Spot Analyses in Project-Level Transportation Conformity Determinations for the PM2.5 and PM10 National Ambient Air Quality Standards. EPA420- F-06-022. February 2008.
- "USEPA Fact Sheets." 1997.
- "Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition , Volume 1: Stationary Point and Area Sources." 1995.
- "Determining Conformity of General Federal Actions to State or Federal Implementation Plans." 1993.
- "Nonroad Engine and Vehicle Emission Study." 1991.

U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA) Interim Guidance on Air Toxic Analysis in NEPA Documents. 2006.

USDOT, FHWA. "Highway Traffic Noise Analysis and Abatement: Policy and Guidance." 1995. U.S. DOT, FHWA. "Appropriate Level of Air-quality Analysis for a CE, EA/FONSI and EIS." 1986.

—. "User's Guide to MOBILE6.1 and 6.2, Module Source Emission Factor Model, EPA420-R-02-028." 2002.

U.S. Federal Emergency Management Agency. "Flood Insurance Rate Map, Fairfax County Virginia, Unincorporated Areas, Panel 125 of 150." 5 March 1990.

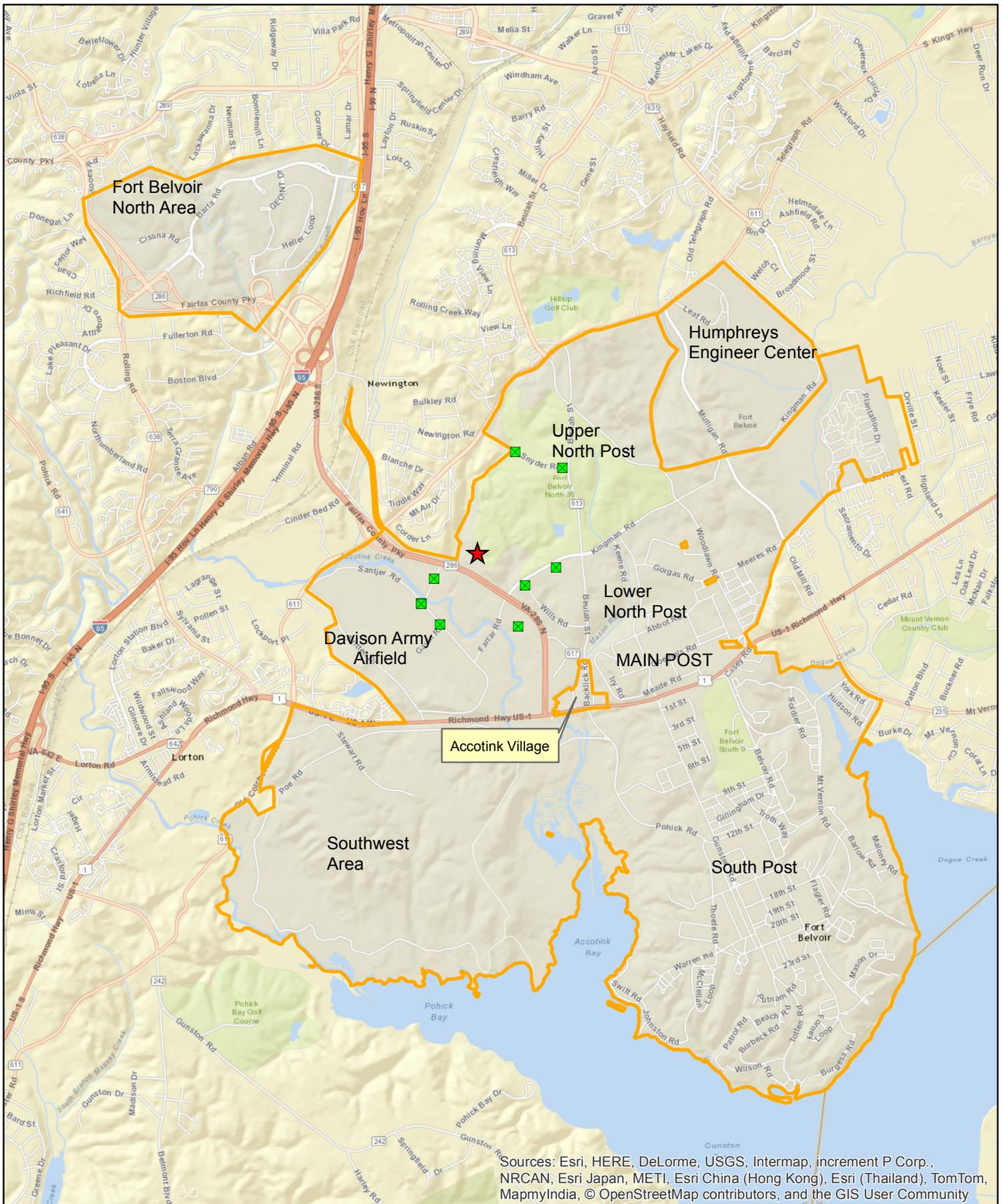
Virginia Department of Conservation and Recreation (VDCR). "Virginia Sediment and Erosion Control Handbook (3rd Edition)." 1992.

Virginia Department of Inland Game and Fisheries. Management of Bald Eagle Nests, Concentration Areas, and Communal Roosts in Virginia: A Guide for Landowners, 2012.

Watts, B.D., and Byrd, M.A. Virginia Bald Eagle Nest Survey: 2012 Breeding Season. Center for Conservation Biology, College of William and Mary and Virginia Commonwealth University, Williamsburg, VA., 2012.

W.S. Sipple Wetland & Environmental Training Consulting. Small Whorled Pogonia Re-Survey at the Site Proposed National Museum of the U.S. Army, June 2015.

FIGURES

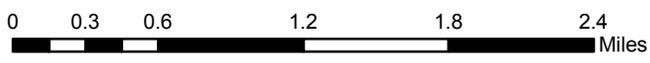


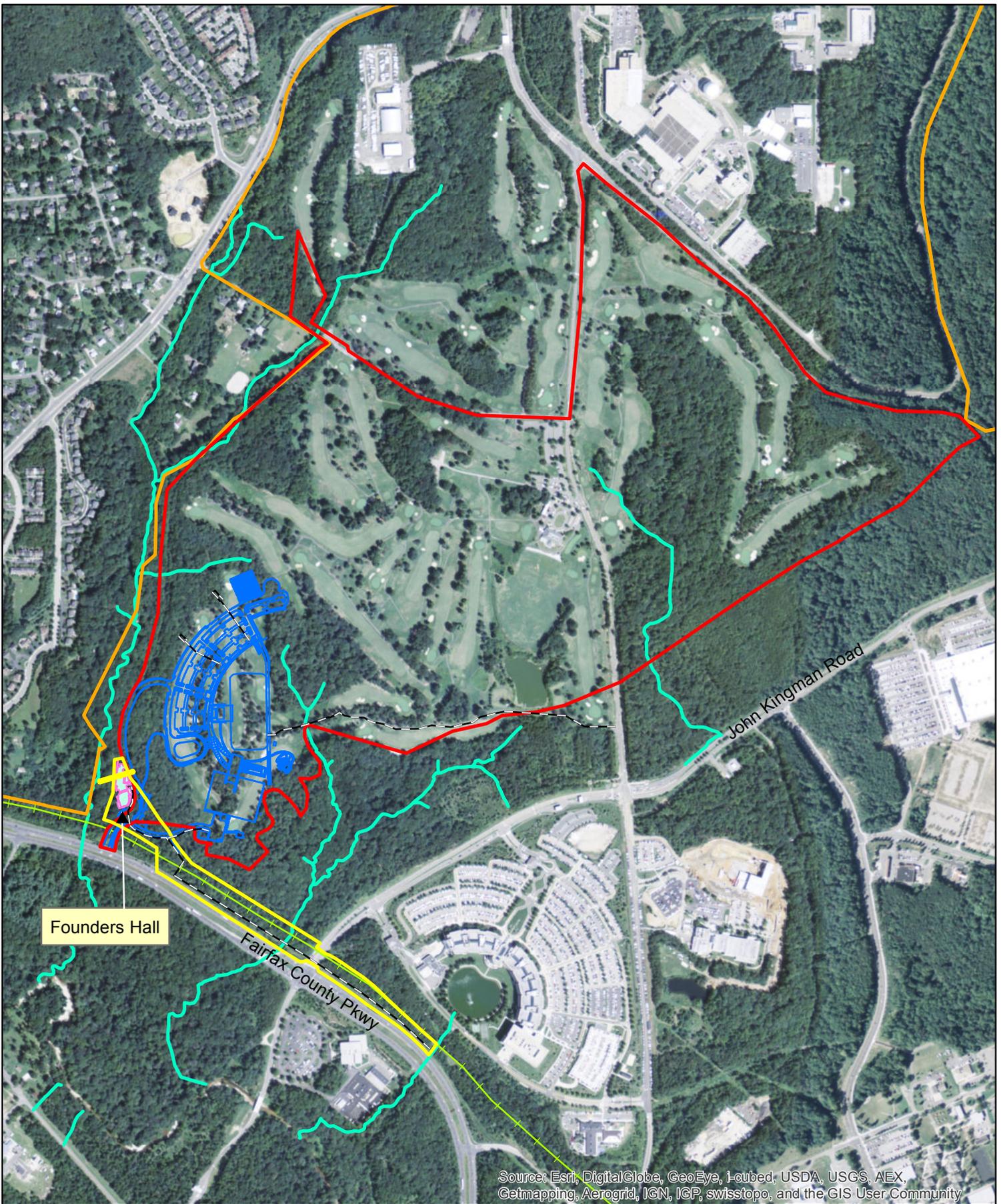
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



- Legend**
- GATE
 - ★ Proposed Action Site
 - Installation

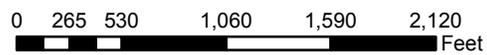
Figure 1-1 Proposed Action Vicinity Map
Fort Belvoir, Virginia





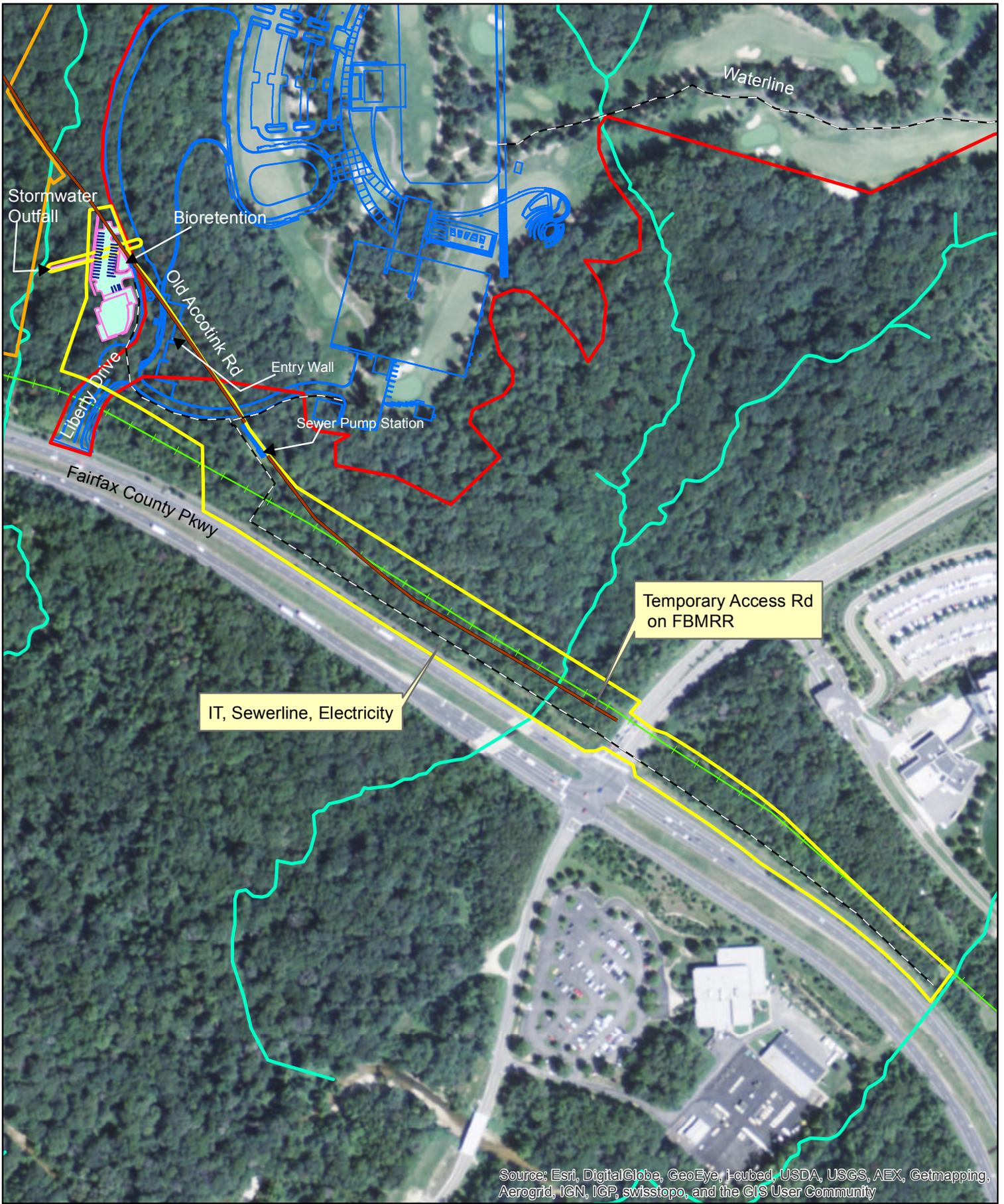
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Figure 1-2 Proposed LOD for Founders Hall and NMUSA
Fort Belvoir, Virginia



Legend

- Founders Hall
- NMUSA LOD
- STREAM
- FBMRR
- NMUSA Structure
- Utilities
- Installation Boundary
- Founders Hall LOD



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

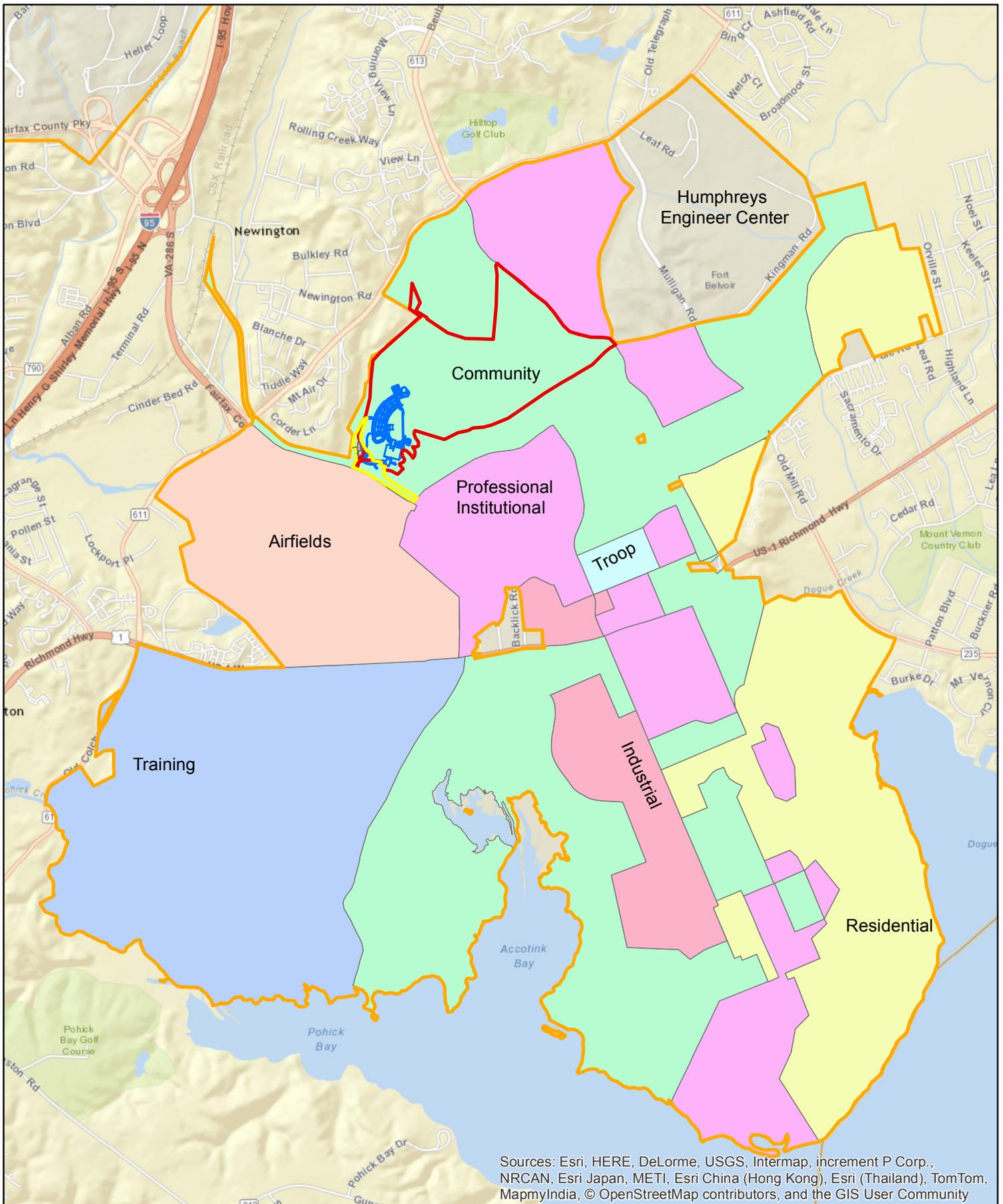
Figure 1-3 Proposed Founders Hall Plan View
Fort Belvoir, Virginia



Legend	
	Founders Hall
	NMUSA LOD
	STREAM
	FBMRR
	NMUSA Structure
	Utilities
	Installation Boundary
	Founders Hall LOD



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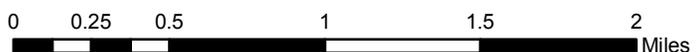


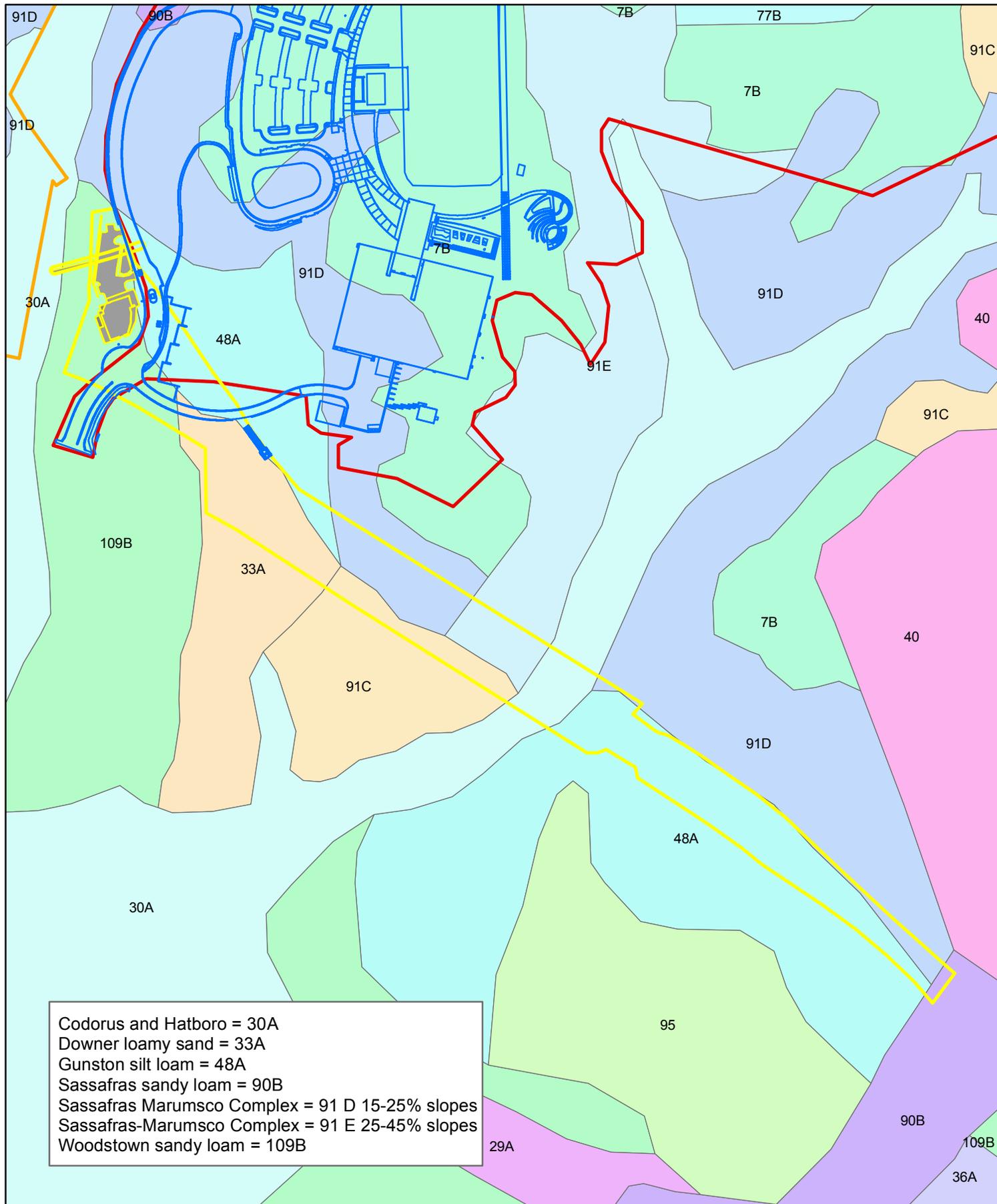
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Figure 3-1 Land Use in the Vicinity of the Proposed Action
Fort Belvoir, Virginia



- Legend**
- Founders Hall
 - NMUSA LOD
 - Future NMUSA
 - Founders Hall LOD
 - Installation





Codorus and Hatboro = 30A
 Downer loamy sand = 33A
 Gunston silt loam = 48A
 Sassafras sandy loam = 90B
 Sassafras Marumsco Complex = 91 D 15-25% slopes
 Sassafras-Marumsco Complex = 91 E 25-45% slopes
 Woodstown sandy loam = 109B

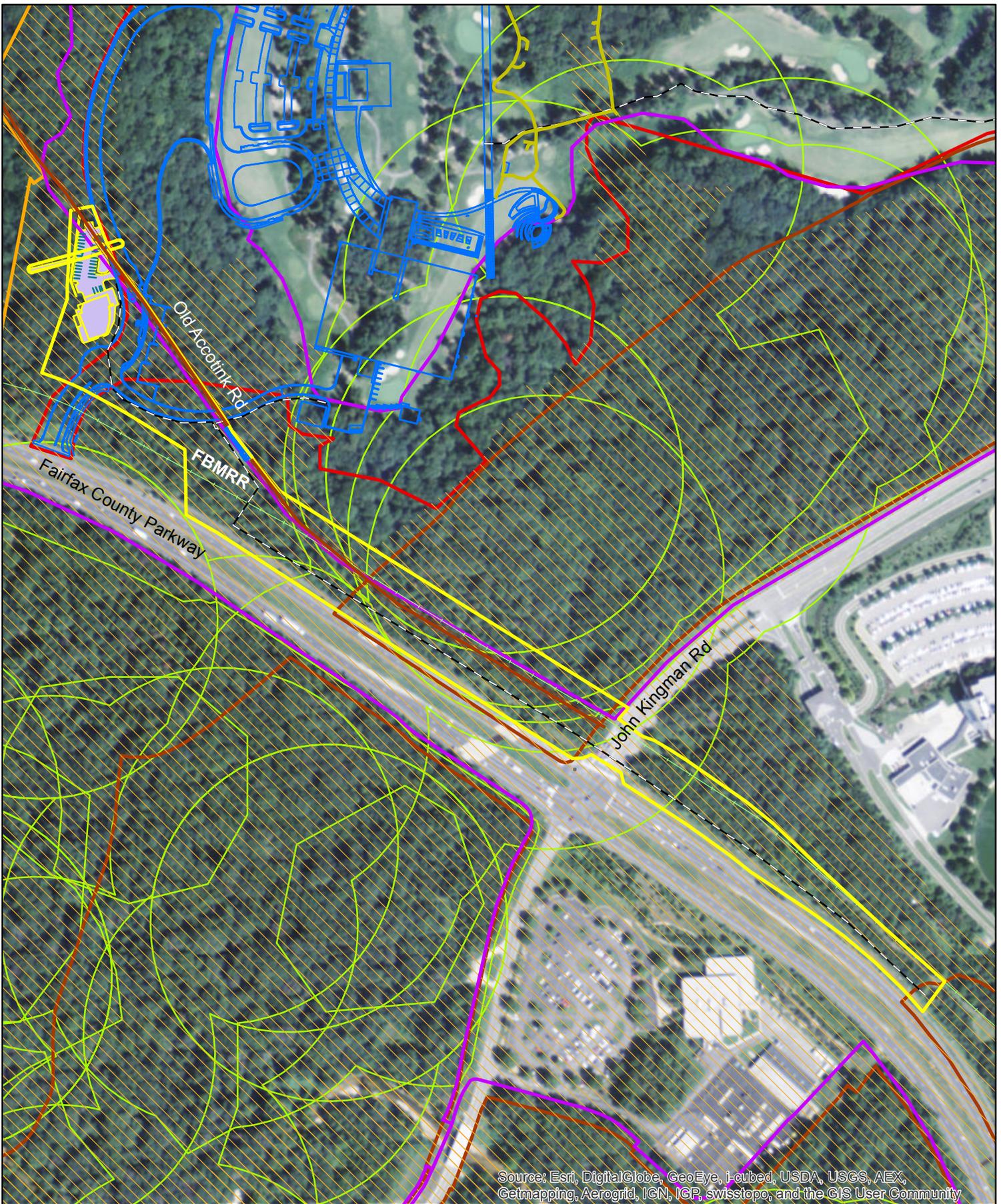


Legend

-  Founders Hall
-  NMUSA LOD
-  Future NMUSA
-  Founders Hall LOD
-  Installation Boundary

Figure 3-2 Soils in the Vicinity of the Proposed Action
Fort Belvoir, Virginia

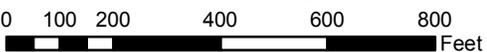


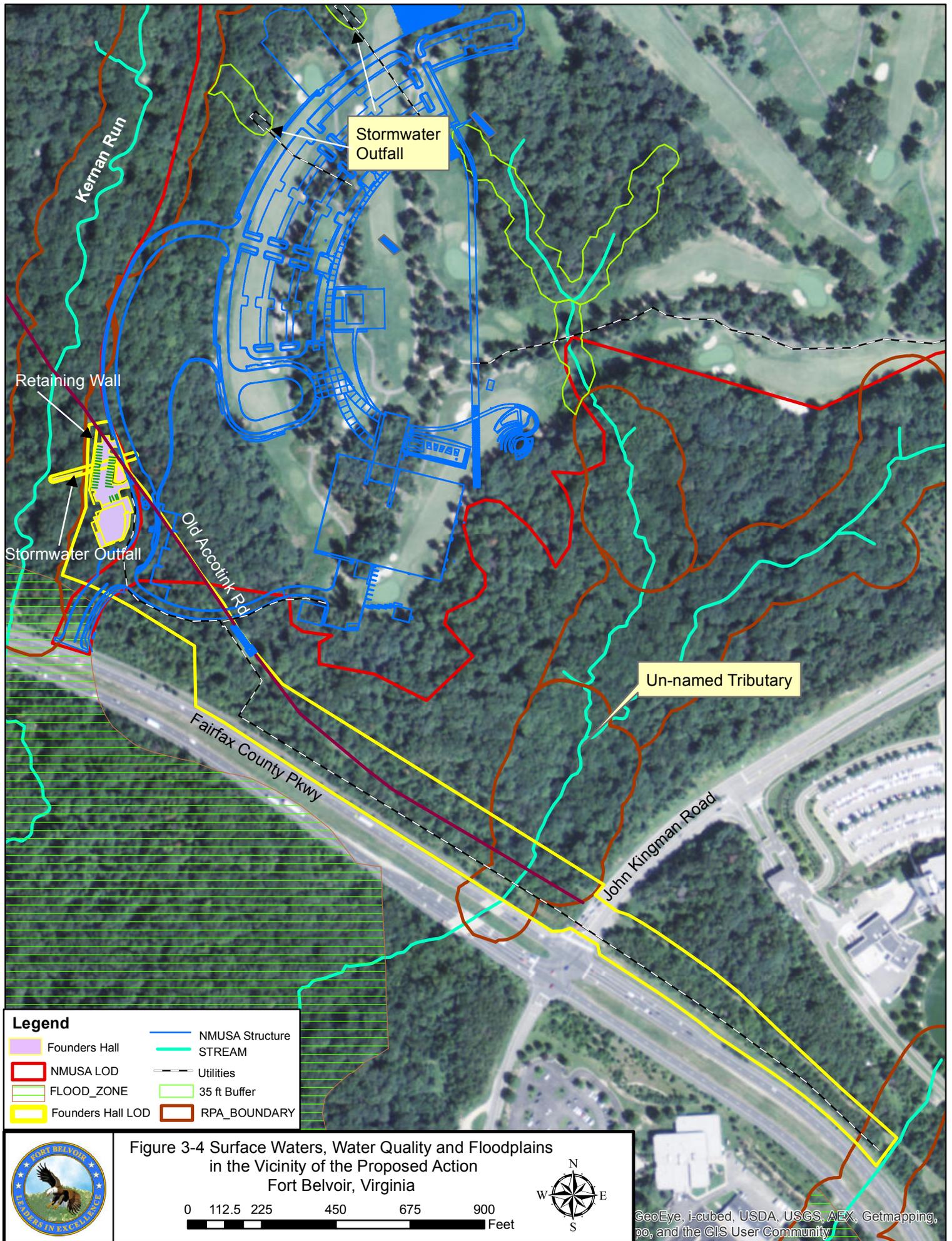


Source: Esri, DigitalGlobe, GeoEye, i-ubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, ICP, swisstopo, and the GIS User Community

	Legend		 Forest and Wildlife Corridor
	 Founders Hall	 Wood Turtle Habitat	 Utilities
 Founders Hall LOD	 Railroad	 Hunting Area	
 NMUSA Structure	 PIF Buffer		
 NMUSA LOD			

Figure 3-3 Vegetation and Wildlife in the Vicinity of the Proposed Action Fort Belvoir, Virginia





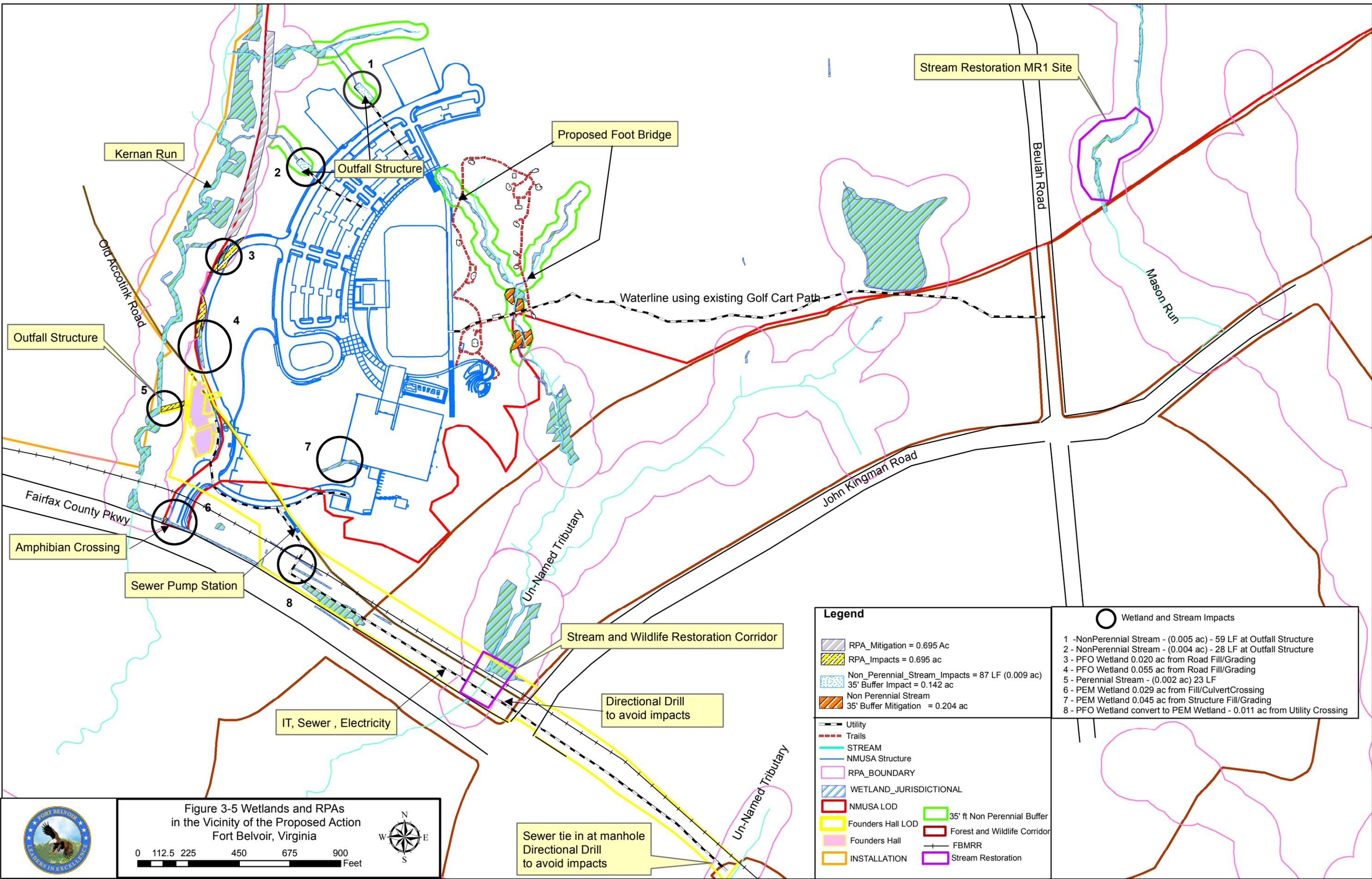
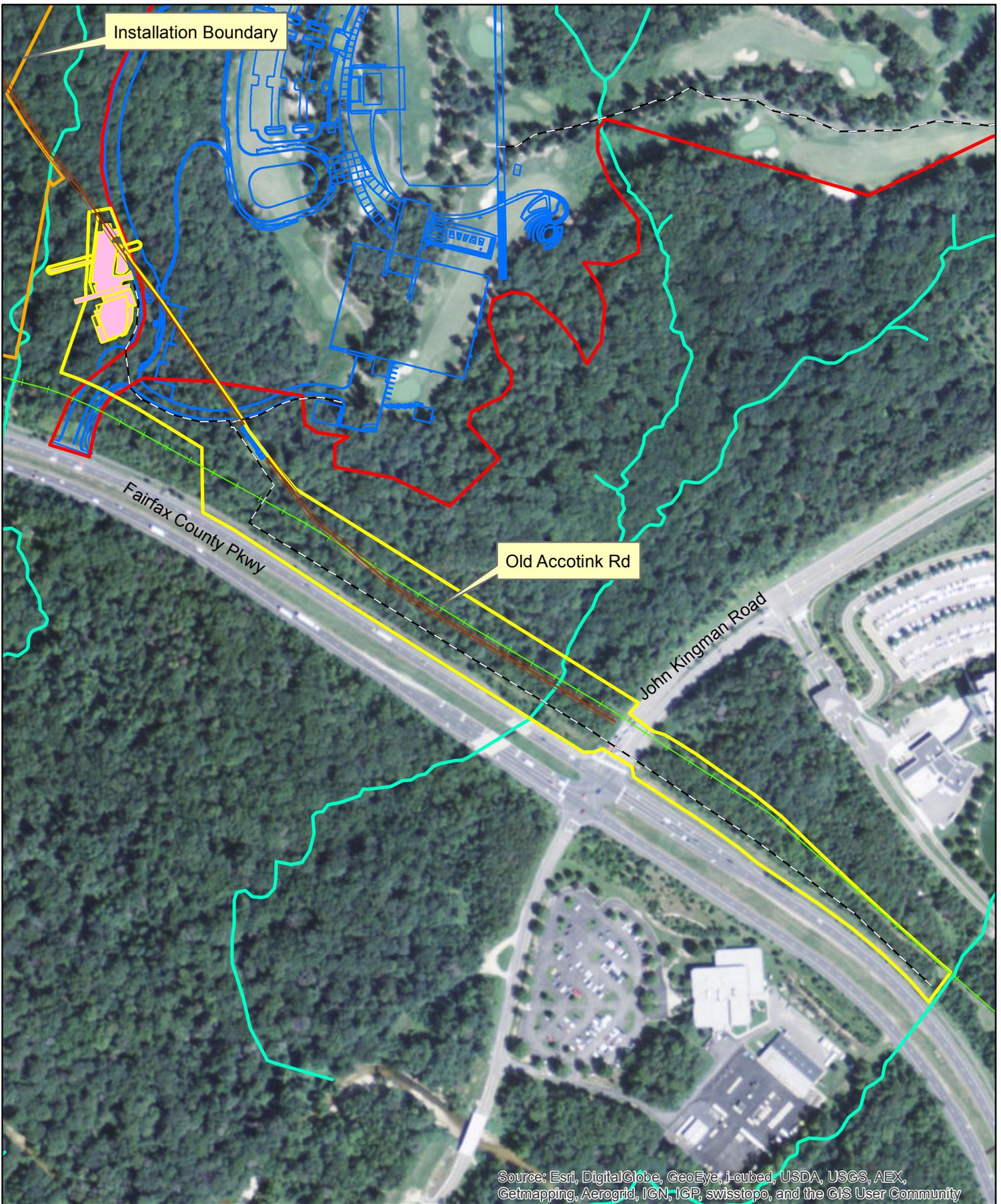


Figure 3-5 Wetlands and RPAs in the Vicinity of the Proposed Action Fort Belvoir, Virginia



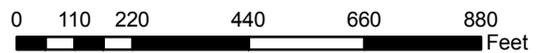
Legend		Wetland and Stream Impacts	
	RPA_Mitigation = 0.695 Ac		Wetland and Stream Impacts
	RPA_Impacts = 0.695 ac	1	-NonPerennial Stream - (0.005 ac) - 59 LF at Outfall Structure
	Non_Perennial_Stream_Impacts = 87 LF (0.009 ac)	2	- NonPerennial Stream - (0.004 ac) - 28 LF at Outfall Structure
	35' Buffer Impact = 0.142 ac	3	- PFO Wetland 0.020 ac from Road Fill/Grading
	Non Perennial Stream	4	- PFO Wetland 0.055 ac from Road Fill/Grading
	35' Buffer Mitigation = 0.204 ac	5	- Perennial Stream - (0.002 ac) 23 LF
	Utility	6	- PEM Wetland 0.029 ac from Fill/CulvertCrossing
	Trails	7	- PEM Wetland 0.045 ac from Structure Fill/Grading
	STREAM	8	- PFO Wetland convert to PEM Wetland - 0.011 ac from Utility Crossing
	NMUSA Structure		
	RPA_BOUNDARY		
	WETLAND_JURISDICTIONAL		
	NMUSA LOD		35' ft Non Perennial Buffer
	Founders Hall LOD		Forest and Wildlife Corridor
	Founders Hall		FBMRR
	INSTALLATION		Stream Restoration



Legend

- FOUNDERS_Hall
- NMUSA_structure
- NMUSA LOD
- FBMRR
- Founder's Hall LOD
- STREAM

Figure 3-6 Cultural Resources in the Vicinity of the Proposed Action Fort Belvoir, Virginia



APPENDIX A

Agency Coordination

-----Original Message-----

From: Keough, Dorothy E CIV USARMY IMCOM ATLANTIC (US)

Sent: Monday, December 07, 2015 11:10 AM

To: Mariani, Felix M CIV USARMY IMCOM ATLANTIC (US); Landgraf, Christopher W CIV USARMY USAG (US); Pilcicki, John L CIV USARMY IMCOM (US)

Cc: Pilakowski, Ashley A CIV USARMY IMCOM ATLANTIC (US); Vega, Sybille R CIV USARMY IMCOM ATLANTIC (US); Gillett, Karen S CIV USARMY IMCOM ATLANTIC (US)

Subject: FW: [Non-DoD Source] Fort Belvoir National Museum of the US Army

FWS completed the Section 7 Review for the NMUSA (quick turn-around).

FWS' concurrence with Fort Belvoir's determinations ("no effect" on small whorled pogonia and "may affect, but not likely to adversely affect" northern long-eared bat) is based on the mitigation measures specified in the Section 7 consultation package submitted to FWS (attached). Therefore, those mitigation measures must remain part of the project.

Dorothy

-----Original Message-----

From: mary_morrison@fws.gov [mailto:mary_morrison@fws.gov] On Behalf Of Virginia Field Office, FW5

Sent: Monday, December 07, 2015 9:15 AM

To: Keough, Dorothy E CIV USARMY IMCOM ATLANTIC (US)

Subject: [Non-DoD Source] Fort Belvoir National Museum of the US Army

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

Good morning Dorothy,

We have reviewed the project package received on November 25, 2015 for the referenced project. The following comments are provided under provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended, and Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended.

We concur with the determinations provided in the Species Conclusion Table dated November 18, 2015 and have no further comments. Should project plans change or if additional information on the distribution of listed species or critical habitat becomes available, this determination may be reconsidered. If you have any questions, please contact Sumalee Hoskin at sumalee_hoskin@fws.gov < Caution-mailto:sumalee_hoskin@fws.gov > or 804-824-2414.

Best,

Mary Anne

Species Conclusions Table

Project Name: Fort Belvoir National Museum of the US Army

Date: November 18, 2015

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
<p>Northern long-eared bat (<i>Myotis septentrionalis</i>)</p>	<p>Suitable summer habitat present in Action Area. The 4 May 2015 U.S. Army IMCOM <i>Informal Conference and Management Guidelines on the Northern Long-eared Bat (Myotis septentrionalis) for Ongoing Operations on Installation Management Command Installations</i> assumes presence of NLEB at Fort Belvoir (Appendix F). The 21 October 2015 <i>Memorandum of Instruction – Northern Long-eared Bat Protection on Fort Belvoir</i> serves as the primary guidance document for the protection requirements for NLEB on Ft. Belvoir (Appendix F).</p> <p>Acoustic survey findings (July/August 2015) suggests possible use of the NMUSA site by NLEB, but to date, no specimens have been captured by mist netting. Although assumed to be present, no roosting or swarming activities been observed that would conclusively document presence or occupancy on the site by NLEB at this time.</p>	<p>May affect, but not likely to adversely affect.</p>	<p>The VDCR response letter dated September 28, 2015 indicates potential for NLEB to occur within the project area, and recommends coordination with USFWS regarding impacts to this species associated with tree removal. Neither the VDCR nor VDGIF database searches indicated confirmed observations of this species within the 2-mile radius of the action area.</p> <p>For purposes of compliance with the 4 May 2015 IMCOM Guidelines, NLEBs are assumed present on Fort Belvoir. Acoustic surveys for bats, including the northern long-eared bat (NLEB) were completed during the optimal survey timeframe for Fort Belvoir by qualified surveyor, Dr. Eric Britzke (Corps ERDC) in July and August 2015. This included sampling stations (5) within or in contiguous to the NMUSA site. On 7 July 2015, NLEBs were detected at two of five locations on the NMUSA site using approved methods and equipment (USFWS, 2015). The number of NLEB detected at the two sites during the acoustic survey is not yet available from ERDC. Based on only two of three locations where NLEB echolocation signatures were acquired during the basewide acoustic survey, it is not a certainty that NLEBs are actively roosting on the site or are otherwise using the site for day-roosting, resting, foraging, and watering during their summer range movements despite suitable habitat. Additionally, attempts were made in August 2015 following the acoustic survey by Dr. Britske and Mr. Chris Hobson, VDCR) to conduct limited mist netting within the</p>

			<p>NMUSA project site under less than ideal field conditions, but in otherwise good habitat located in clear understory and within limited subcanopy flyways (<i>i.e.</i>, old, relatively open trails). No NLEBs were captured in these efforts.</p> <p>There are no known or likely NLEB hibernacula or other supporting structures that have been identified as potential hibernacula at Fort Belvoir or vicinity. There is no published literature suggesting that such hibernacula potentially available to NLEB at Ft. Belvoir actually exists. If present, NLEBs likely would utilize a variable number of roosts (<i>e.g.</i>, primary, secondary, and tertiary sites) to select use alternatively or interchangeably whenever conditions to select new sites best suits their needs.</p> <p>An area of ±21.80 ac acres of mixed hardwood forest are present within the action area that are proposed to be permanently removed as part of the proposed action. However, if the time of year restriction, afforestation, avoidance and minimization actions, environmental enhancements which help support NLEB, and all other conservation measures are adhered to as described in the full IPaC review package, the project may affect, but is not likely to adversely affect NLEB.</p> <p>In accordance with the conservation measures for construction projects described in the 4 May 2015 IMCOM Guidelines, tree cutting, and clearing for construction projects must occur during the NLEB inactive season, unless absence can be verified using the published USFWS protocols. To date, no researchers have verified NLEB absence on the NMUSA project site using approved methods of detection. In Virginia, the Active Season for NLEB is generally considered April 1 – Nov. 15, but the VAFO has mandated the dates of 15 April to 15 Sept for Fort</p>
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			<p>Belvoir, per the Memorandum of Instruction dated 21 October 2015 (Appendix F). If there is a need to remove a single or small cluster of trees during the active season, the installation will follow procedures listed in Section VI.G. of the 4 May 2015 IMCOM Guidelines to determine if such removal can be done with insignificant or discountable effects on NLEB. Tree cutting and clearing may cause loss of habitat; however, inactive season tree removal effects would be largely mitigated by following prescribed conservation measures (See Appendix C).</p> <p>Other conservation measures in the 4 May 2015 IMCOM Guidelines include implementing 100 meter buffers around areas of suitable habitat without verified absence, and angling lights away from potential foraging and roosting areas to provide protection from predators. To the extent practicable, these measures will be followed.</p> <p>The action area is not within 5 miles of a documented hibernaculum. As stated in the 4 May 2015 IMCOM Guidelines, "because all construction activities will occur >0.5 miles from hibernacula during the winter to be included as part of this informal consultation, no direct effects to NLEB will occur."</p> <p>As stated in the 4 May 2015 IMCOM Guidelines, "in conclusion, construction & maintenance activities may affect, but are not likely to adversely affect the NLEB by implementing the above screening criteria and conservation measures". The Section 7 determination for the NMUSA Project matches these guidelines.</p>
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<p>Small whorled pogonia (<i>Isotria medeoloides</i>)</p>	<p>Suitable Habitat is present.</p>	<p>Not likely to adversely affect.</p>	<p>The small whorled pogonia (<i>Isotria medeoloides</i>) has been recorded in a variety of forest types throughout its range in Virginia, occurring in both fairly young (40 to 80 years old) second and third-growth forests and in maturing stands of mixed deciduous forest dominated by oaks (<i>Quercus</i> spp.), American beech (<i>Fagus grandifolia</i>), tulip tree (<i>Liriodendron tulipifera</i>), hickories (<i>Carya</i> spp.), American holly (<i>Ilex opaca</i>), and flowering dogwood (<i>Cornus florida</i>), or in mixed deciduous/coniferous forests. The factors limiting this orchid are poorly understood and are not readily predictable in Virginia, but within the outer piedmont and coastal plain are thought to mostly limited by soil slope and moisture conditions. Sites supporting small whorled pogonia include highly acidic, generally moist to slightly dry, nutrient-poor, sandy loam soils, upper to middle slope contours on northern to eastern exposures, and an open forest floor with many sunlight gaps and free from competing vegetation and heavy shade. The species would not be expected to occur in steep or very steep terrain, in woodlands dominated by dense growths of evergreen species (such as red cedar, scrub or loblolly pines, or ericads), or in highly disturbed properties. As such, the NMUSA site supports suitable habitat of varying habitat quality for the target species.</p> <p>The draft 2008 EA analyzed the need to conduct a survey of the site for the target species. A survey was performed by a qualified surveyor in 2008 (WSS, Mr. Bill Sipple) and the survey results were negative. The NMUSA site was re-surveyed in June 2015 by WSS again with negative results. Given these circumstances and conditions, it is very unlikely the species is present on the site.</p>
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Bald eagle (<i>Haliaeetus leucocephalus</i>)	Unlikely to disturb nesting bald eagles. Does not intersect with an eagle concentration area.	No Eagle Act permit required.	Action area is not within 660 feet of a bald eagle nest; the nearest nest is greater than 2 miles southeast of the proposed action area. The VDGIF database search indicates species observations and nests for the bald eagle within the 2-mile radius, but outside the action area.
Critical Habitat	No critical habitat present.	No effect.	Action area is within Fairfax County and is not within Bland, Lee, Scott, Smyth, Russell, Tazewell, Washington, Wise, or Wythe Counties.

APPENDIX C

NLEB Mitigation Plan for the National Museum of the U.S. Army Fort Belvoir, VA

As stated in the 4 May 2015 IMCOM Guidelines (Appendix F), construction and maintenance activities may affect, but are not likely to adversely affect the NLEB by implementing the screening criteria and conservation measures such as those described below. The DPW asserts that the NMUSA Project conforms to this Section 7 determination conclusion as submitted.

To offset any potential adverse effects from the proposed action construction, the DPW offers the following mitigation plan to document compliance with ESA Section 7(a)(4), IMCOM Guidelines, the NLEB draft *Federal Register* rule, USFWS, NEPA, and U. S. Army regulations and policies. The NMUSA project Mitigation Plan includes:

Afforestation

- Based on the 13 July 2012 NCPC Final Submission planting plan (SOM, 2012), afforestation will be completed on the NMUSA site through tree replacement. These species could support NLEB when large enough for NLEB to potentially use. This approved 2012 landscape plan (at Table 1, Appendix B) calls for the replacement of $\pm 1,307$ trees within ± 21.99 ac.
- Based on the 13 September 2012 AECOM Landscape Plan Plant List (sheet LP501), a total of 20 native tree species (1,252 units) and 2 ornamental specimen tree species (12 units) and 12 species of native understory specimens (1,287 units) will be established on the NMUSA project site. Below, Table 2 (tree species) and Table 3 (understory species) summarizes the woody plantings described in the 2012 AECOM Landscape Plans.
- The existing right-of-way of Swank Road (± 0.714 ac) as part of the approved landscape plan will be replanted.

Table 2. Summary of AECOM Landscape Plan Native Canopy Tree Plant List Specifications.

Species	Stock Size	# of Units
red maple	1.5 in caliper	98
	2.5 in caliper	14
river birch	6 ft	114
	8 ft	19
	12 ft	5
pignut hickory	2.5 in caliper	10
shagbark hickory	2.5 in caliper	48
common hackberry	2.5 in caliper	3
	4.0 in caliper	18
persimmon	2.5 in caliper	38
	4.0 in caliper	5
American beech	2.5 in caliper	7
	4.0 in caliper	18
honey locust	2.5 in caliper	19
	4.0 in caliper	17
sweetgum	1.5 in caliper	16

APPENDIX C

NLEB Mitigation Plan for the National Museum of the U.S. Army Fort Belvoir, VA

	2.5 in caliper	12
	4.0 in caliper	23
tulip tree	4.0 in caliper	35
sassafras	1.5 in caliper	82
black gum	2.5 in caliper	18
	6 to 8 ft	14
white oak	2.5 in caliper	58
	4.0 in caliper	24
scarlet oak	2.5 in caliper	4
	4.0 in caliper	59
southern red oak	2.5 in caliper	48
	4.0 in caliper	28
pin oak	1.5 in caliper	16
	2.5 in caliper	31
	4.0 in caliper	10
willow oak	1.5 in caliper	48
	2.5 in caliper	41
	4.0 in caliper	26
chestnut oak	2.5 in caliper	17
	4.0 in caliper	40
northern red oak	2.5 in caliper	76
	4.0 in caliper	87
post oak	2.5 in caliper	6
TOTALS	ALL	1,252

Note: Table 2 does not include 12 units of ornamental trees (2 species, 4 to 10 ft units) to be used in courtyard planter boxes. The planting plans vary in units due to design revisions resulting in the filtered view concept.

Table 3. Summary of AECOM Landscape Plan Native Understory Plant List Specifications.

Species	Stock Size	# of Units
serviceberry	6 ft	116
	10 ft	44
red bud	10 ft	57
fringetree	10 ft	43
constellation dogwood	6 to 7 ft	62
hawthorn	6 to 7 ft	24
American holly	10 ft	9
red cedar	10 ft	83
scrub pine	10 ft	73
arborvitae	6 ft	32
red chokeberry	36 inch	93
black chokeberry	3 gallon	408
New Jersey tea	24 inch	243
TOTALS	ALL	1,287

APPENDIX C

NLEB Mitigation Plan for the National Museum of the U.S. Army Fort Belvoir, VA

Preservation

- Establishment of a 90-ft width (± 5.73 ac) strip of wooded buffer between the NMUSA facility and the remaining North 36 golf course will be preserved.
- Except as authorized by issued construction permits, additional existing Resource Protection Area buffers for Chesapeake Bay Preservation Act compliance also remain intact surrounding the Project Site and will not be disturbed by the NMUSA construction activities.
- The existing forest and wildlife corridor associated with the unnamed tributary to Accotink Creek located on the southeastern corner of the NMUSA project site just northwest of the intersection of Fairfax County Parkway and John J. Kingman Road will be preserved to the extent practicable, with minor potential impacts occurring from limited tree removals and ground disturbances to complete any required utility work. The continued preservation of the corridor will further ameliorate the environmental effects from direct tree loss resulting from NMUSA project construction.
- The forest and wildlife corridors at Fort Belvoir occupy ± 742 ac of preserved land on the base. This small area is a portion of the preserved forest and wildlife corridors on the base. The corridor would serve some vegetative buffer functions for the NMUSA project construction.

NLEB Support

- Selection of numerous native woody species in the landscape plan which are known to support summer range roosts for NLEB.
- Open grassland and native meadow habitat (± 3.65 ac) is called for on planting plans. These habitats could serve (individually and/or in aggregate) as an invertebrate prey item source for NLEB and other bats (and birds). The meadow habitats where established will utilize three different seed mixes for full sun, partial sun and edges.
- Planting plans call for establishment of emergent wetland and vernal pool habitats. This area could also serve as a potential feeding area for NLEB and other bats.
- Onsite stream channel restoration to reconfigure a stormwater-compromised perennial tributary of Accotink Creek. This improvement would serve to improve watering availability and foraging usage potential by NLEB, if present, on the site.
- Voluntary placement of bat boxes suitable for occupancy by NLEBs and other tree bats could be utilized throughout the NMUSA perimeter.
- Special evaluation of dark sky outdoor lighting implemented on the site to deflect and direct lighting away from forested areas which can be an irritant to the activities and behaviors of NLEBs if present (Appendix F).
- As required by the 4 May 2015 IMCOM Guidelines, all snags within the perimeter of the project site will be retained during the active season for NLEB (15 April to 15 September) unless there are concerns for human health and safety. All requirements of the 21

APPENDIX C

NLEB Mitigation Plan for the National Museum of the U.S. Army Fort Belvoir, VA

- October 2015 Memorandum of Instruction for NLEB on Fort Belvoir will be adhered to.
- The approved Landscape Plan shall contain a note regarding the post-construction, long-term maintenance and monitoring of dying trees and snags which may develop.
 - No NLEB roost trees if discovered would be felled unless there is human health and safety concerns, and a 100-foot radius no construction zone buffer would be established. If there is a need to remove a known roost tree DPW will follow IMCOM Guidelines and 21 October 2015 Memorandum of Instruction for NLEB on Fort Belvoir coordination procedures.
 - If any construction activities that could affect NLEB roost trees located within a 0.25 mile distance from the roost tree will be coordinated before any construction activities that remove suitable wooded habitat or trees.
 - Until further notice, the active season time of year restriction for tree removals on the project site (15 April to 15 September) will be adhered to per the 21 October 2015 Memorandum of Instruction (Appendix F). Coordination with USFWS, including approval of an absence survey for NLEB will be required otherwise. All time of year restrictions to protect and enhance NLEB habitat will be included in special notes and provisions in construction plans and development documents.
 - Special flagging or demarcation of boundaries to not be disturbed by direct construction impacts will be placed to prevent accidental encroachments in order to further protect important site features.

Minimization Actions and Conservation Measures

- Extensive design revisions demonstrating avoidance and minimization to reduce impacts to tree cover have been completed. The 13 July 2012 Planting Plan (SOM, 2012) describes that 3,250 trees will be removed and 1,307 trees will be planted across the site. Earlier iterations of the NCPC-approved plan provided for only 1,066 trees, yielding a net increase of 241 trees.
- Implementation of limited selective tree clearing to afford an iconic entrance experience and incorporating demonstrable design revisions to reduce permanent tree loss to the maximum extent practicable.
- Carefully selected and designed landscape plan components for the developed portion of the facility to include appropriate ornamental specimen trees and shrubs, and appropriate groundcovers, perennials and ornamental grasses that will aid and support the amelioration of environmental impacts.
- Implementation of native grassland meadow plantings that will potential serve as foraging areas for bats and birds.
- Limited tree removals and directional drilling operations to reduce the environmental impact footprint to implement the proposed sewerline extension to service Founder's Hall. Additionally, selection of a previously-disturbed, existing linear alignment for placement of the sewer infrastructure along the FBMRR tracks.

APPENDIX C

NLEB Mitigation Plan for the National Museum of the U.S. Army Fort Belvoir, VA

- Special roof and precipitation collection treatments to collect, re-direct, and store drainage to prevent excessive runoff;
- Restoration (daylighting) of stream reaches through culvert removals;
- Implementation of standard wetland and stream mitigation through credit acquisition at a regional commercial bank for ± (0.16 ac) wetland impacts;
- All water quality best management practices (BMPs) will be established on the project site in accordance with all appropriate and applicable regulations.
- IMCOM Guidelines mandate the implementation of other conservation measures to protect NLEB. The NMUSA project developers will follow the conservation measures for pesticide use, pest control, recreational activities, and other applicable general conservation measures as prescribed in the 4 May 2015 IMCOM Guidelines, including the Section XI Programmatic Biological Evaluation Conservation Measures.

MEMORANDUM OF AGREEMENT
BETWEEN
US ARMY GARRISON FORT BELVOIR, VIRGINIA
AND
VIRGINIA STATE HISTORIC PRESERVATION OFFICER
TO
MITIGATE ADVERSE EFFECTS OF THE CONSTRUCTION OF THE
NATIONAL MUSEUM OF THE UNITED STATES ARMY,
FORT BELVOIR, VIRGINIA

WHEREAS, the Army will construct the National Museum of the United States Army (NMUSA) at Fort Belvoir, Virginia; and

WHEREAS, the construction of the NMUSA ("Undertaking") includes construction of a 177,000 gross square foot museum and supporting facilities and reconfiguration of the Fort Belvoir North Post Golf Course as described in Environmental Assessment for the National Museum of the United States Army, Fort Belvoir, Virginia released for public comment in September 2010, and

WHEREAS, Fort Belvoir, in consultation with the Virginia State Historic Preservation Officer (SHPO), has defined the Area of Potential Effects (APE) as the limits of construction disturbance and an area extending one-quarter mile from the edge of construction disturbance, as depicted in Attachment A; and

WHEREAS, Fort Belvoir completed a survey and evaluation of the APE and determined that the Fort Belvoir Military Railroad (FBMRR; DHR Survey No. 029-5648) bed, located within the APE is eligible for listing to the National Register of Historic Places (NRHP) as a multi-property listing; and,

WHEREAS, Fort Belvoir, in consultation with the SHPO, determined that the Undertaking will adversely affect the FBMRR bed from the construction of the NMUSA access road and removal of a failing stream culvert, as depicted in the design plans in Attachment B; and

WHEREAS, Fort Belvoir notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination on the FBMRR bed on May 09, 2011, and the ACHP elected not to participate in the development of the MOA, via email on June 13, 2011; and

WHEREAS, Fort Belvoir invited the Catawba Indian Nation to participate in Section 106 consultation for this undertaking on September 23, 2009 in

accordance with 36 CFR 800.8 (c), and the tribe declined to participate in the consultation process on September 28, 2009: and

WHEREAS, in accordance with 36 CFR 800.2(d)(1), Fort Belvoir provided the public an opportunity to comment on this Undertaking through the NEPA process by means of an the *Environmental Assessment for the National Museum of the United States Army, Fort Belvoir, Virginia*, September, 2010); and

WHEREAS, Fort Belvoir invited via email on March 28, 2011 Fairfax County, the Alexandria Monthly Meeting of the Religious Society of Friends (Friends), the National Trust for Historic Preservation Woodlawn National Historic Landmark and the Woodlawn Baptist Church to participate in the development of this Memorandum of Agreement (MOA) and

WHEREAS, Fairfax County the Friends, and the NTHP elected to participate in the consultation process and have been invited to sign as concurring parties, and the Woodlawn Baptist Church declined to participate; and

WHEREAS, Fort Belvoir consulted with the SHPO in accordance with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470 et seq. (NHPA), and its implementing regulations (36 CFR Part 800.6(b)(1) to resolve the adverse effects of the Undertaking on historic properties; and

NOW THEREFORE, Fort Belvoir and the SHPO agree that Fort Belvoir shall implement the following stipulations to mitigate the adverse effects of the Undertaking on historic properties and that these stipulations shall govern the mitigation until this MOA expires or is terminated.

STIPULATIONS

Fort Belvoir shall ensure that the following stipulations are carried out.

I. FBMRR Multi-Property Evaluation

A. Fort Belvoir shall complete a draft comprehensive Virginia Landmarks Register (VLR) nomination (utilizing a National Register of Historic Places (NRHP) nomination form) for the FBMRR multiple-property listing. The draft nomination form shall be submitted to the SHPO and Fairfax County within two (2) years of execution of this MOA.

B. The SHPO and may edit the draft nomination as appropriate and forward it on to the State Review Board for listing to the VLR.

C. Fort Belvoir shall provide all reasonable assistance to the SHPO in the editing of the draft nomination to include, but not limited to, access to historic documents and other source materials in its possession, the Word

document of the nomination, and access to the resource in order to take photographs if necessary.

II. INTEGRATION OF FBMRR INTO THE NMUSA LANDSCAPE DESIGN

- A. Fort Belvoir, in consultation with the SHPO and other consulting parties to this agreement, shall develop a landscape design for the intersection of the access road and the FBMRR that is sympathetic to the historic character and presence of the railroad.
- B. The SHPO and other consulting parties shall be afforded the opportunity to review and comment on the landscape design at 65 % design. Fort Belvoir shall take into consideration all comments received within the review period from the SHPO and other consulting parties in the landscape design of the intersection.
- C. If the SHPO or other consulting parties do not respond within thirty (30) days of confirmed receipt of the complete design drawings, Fort Belvoir may assume that the non-responding party has no comment.
- D. Fort Belvoir will then provide the revised landscape design, with a description of the comments they received from the SHPO and other consulting parties and how they addressed those concerns in the plan revision within thirty (30) days.

III. INSTALLATION OF A HISTORIC MARKER

- A. Fort Belvoir shall develop and fund the fabrication and installation of an interpretive historic marker on the history of the FBMRR in consultation with the SHPO and other consulting parties. Fort Belvoir shall install the interpretive historic marker at the intersection of the access road and the FBMRR.
- B. Fort Belvoir shall submit the proposed design to the SHPO and other consulting parties for review and comment on the design, text, and layout of the interpretive historic marker. Fort Belvoir shall take into consideration all comments received within the review period from the SHPO and other consulting parties. If the SHPO or other consulting parties do not respond within thirty (30) days of receipt of the complete submission for the text of the interpretive panel, Fort Belvoir may assume that non-responding parties have no comment.
- C. Fort Belvoir will provide the revised historic marker design, with a description of the comments they received from the SHPO and other consulting parties and how they addressed those concerns in the plan revision within thirty (30) days.

IV. POST-REVIEW ARCHAEOLOGICAL DISCOVERIES

A. In the event that previously unidentified archaeological resources are discovered during ground-disturbing activities associated with the Undertaking, Fort Belvoir shall halt all construction work involving subsurface disturbance in the area of the discovery and in the surrounding area where further subsurface remains can reasonably be expected to occur and notify the SHPO and other consulting parties of the discovery within two (2) working days.

B. Fort Belvoir and the SHPO or a professionally qualified archaeologist, shall inspect the work site with two (2) working days after the SHPO is notified of the discovery and determine the area and nature of the affected archaeological resource. Construction work may then continue in the area outside the archaeological resource as defined by Fort Belvoir and the SHPO, or their designated representatives.

C. Within five (5) working days of the original notification of discovery, Fort Belvoir, in consultation with the SHPO and other consulting parties, shall determine the NRHP eligibility of the resource.

D. If the resource is determined eligible for the NRHP, Fort Belvoir shall prepare a plan for its avoidance, protection, or recovery of information within five (5) working days of the eligibility determination. Such plan shall be concurred on by the SHPO and commented on by the other consulting parties prior to implementation.

E. Work in the affected area shall not proceed until either:

1. The development and implementation of appropriate data recovery or other recommended mitigation procedures is accomplished, or
2. The determination is made that the located resources are not eligible for inclusion in the NRHP.

F. Any disputes over the evaluation or treatment of previously unidentified resources shall be resolved as provided in the section of this MOA titled Dispute Resolution.

V. HUMAN REMAINS

A. In the unlikely event that human remains and/or associated funerary objects are encountered during the implementation of this MOA. Fort Belvoir shall immediately halt all work in the area and contact the appropriate authorities. If the remains appear to be Native American in origin any such remains and/or funerary objects shall be treated in accordance with the Native American Graves Protection and Repatriation

Act (25 USC 3001; "NAGPRA") and its implementing regulations, 43 CFR Part 10.

B. If the remains are determined not to be of Native American origin, Fort Belvoir shall notify the Criminal Investigation Department (CID), and consult with the SHPO and other consulting parties, as appropriate. Prior to the archaeological excavation of any remains, the following information shall be submitted to the SHPO and other appropriate consulting parties for consultation:

1. The name of the property or archaeological site and the specific location from which the recovery is proposed. If the recovery is from a known archaeological site, a state-issued site number must be included.
2. Indication of whether a waiver of public notice is requested and why. If a waiver is not requested, a copy of the public notice (to be published in a newspaper having general circulation in the area for a minimum of four weeks prior to recovery) must be submitted.
3. A copy of the curriculum vita of the skeletal biologist who will perform the analysis of the remains.
4. A statement that the treatment of human skeletal remains and associated artifacts will be respectful.
5. An expected timetable for excavation, osteological analysis, preparation of final report, and final disposition of remains.
6. A statement of the goals and objectives of the removal (to include both excavation and osteological analysis).
7. If a disposition other than reburial is proposed, a statement of justification.

C. Fort Belvoir shall treat all human remains in a manner consistent with the ACHP "Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects" (23 February 2007).

VI. ANTI-DEFICIENCY ACT

The stipulations of this MOA are subject to the provisions of the Anti-Deficiency Act and nothing in this MOA shall be interpreted to require Fort Belvoir to violate the Anti-Deficiency Act. If compliance with the Anti-Deficiency Act would alter or impair Fort Belvoir's ability to implement the stipulations of this MOA, Fort Belvoir shall consult in accordance with the Dispute Resolution, and Amendment and Termination procedures found in Stipulations VII and VIII below.

VII. DISPUTE RESOLUTION

A. Should any signatory (or concurring party) to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, Fort Belvoir shall consult with such party to resolve the objection. If Fort Belvoir determines that such objection cannot be resolved, Fort Belvoir will:

B. Forward all documentation relevant to the dispute, including Fort Belvoir's proposed resolution, to the ACHP. The ACHP shall provide Fort Belvoir with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, Fort Belvoir shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. Fort Belvoir will then proceed according to its final decision.

B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, Fort Belvoir may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, Fort Belvoir shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.

C. Fort Belvoir's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

D. This stipulation does not preclude a member of the public from notifying the Fort Belvoir of any objection and or dispute they have as to the manner in which this MOA is being implemented. Fort Belvoir shall consider such objections and determine whether any action is necessary to respond to the public.

VIII. AMENDMENT

This MOA may be amended when such an amendment is agreed to in writing by the two signatories. The amendment will be effective on the date a copy signed by the two signatories is filed with the ACHP.

IX. AMENDMENT AND TERMINATION

A. If either of the two signatories to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation VIII, above. If within thirty (30) days (or another time period agreed to by the two

signatories) an amendment cannot be reached, either signatory may terminate the MOA upon written notification to the other signatory.

B. Once the MOA is terminated, and prior to work continuing on the undertaking, Fort Belvoir must either (a) execute an MOA pursuant to 36 CFR § 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. Fort Belvoir shall notify the other signatory as to the course of action it will pursue.

X. DURATION

This MOA shall take effect on the date it is signed by the last signatory and will remain in effect until five (5) years from that date unless terminated pursuant to Stipulation VIII.

Execution and implementation of this MOA evidences that the Fort Belvoir has afforded the ACHP a reasonable opportunity to comment on the effects of the Undertaking on historic properties. Execution and compliance with this MOA fulfills the Fort Belvoir's Section 106 responsibilities regarding this Undertaking at Fort Belvoir.

FORT BELVOIR, VIRGINIA

By:

John J. Strycula
Colonel, U.S. Army
Garrison Commander

Date: 19 Jun 2011

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

By:

Kathleen S. Kilpatrick
Director, Department of Historic Resources

Date: 7/14/11

CONCURRING PARTIES

FAIRFAX COUNTY

By:

Anthony H. Griffin
County Executive

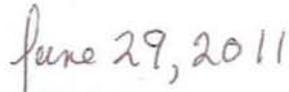
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ALEXANDRIA MONTHLY MEETING OF THE RELIGIOUS SOCIETY OF
FRIENDS

By:



Deborah Haines
Clerk of the Meeting



Date:

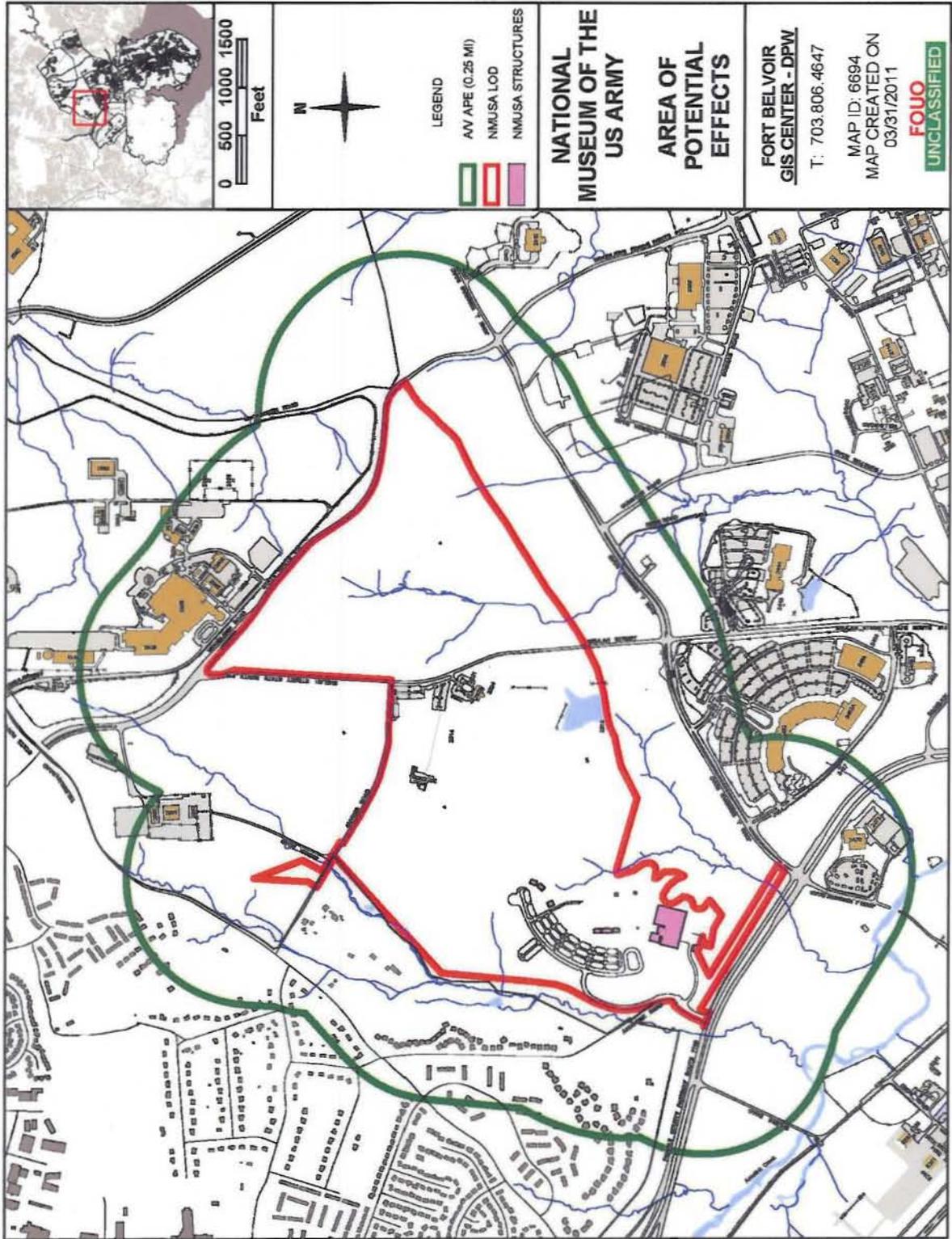
THE NATIONAL TRUST FOR HISTORIC PRESERVATION, WOODLAWN
NATIONAL HISTORIC LANDMARK

By:

Paul Edmondson
Vice President & General Council

Date:

ATTACHMENT A
Area of Potential Effect Map



ATTACHMENT B
Fort Belvoir Military Railroad
Rail Bed Removal Areas

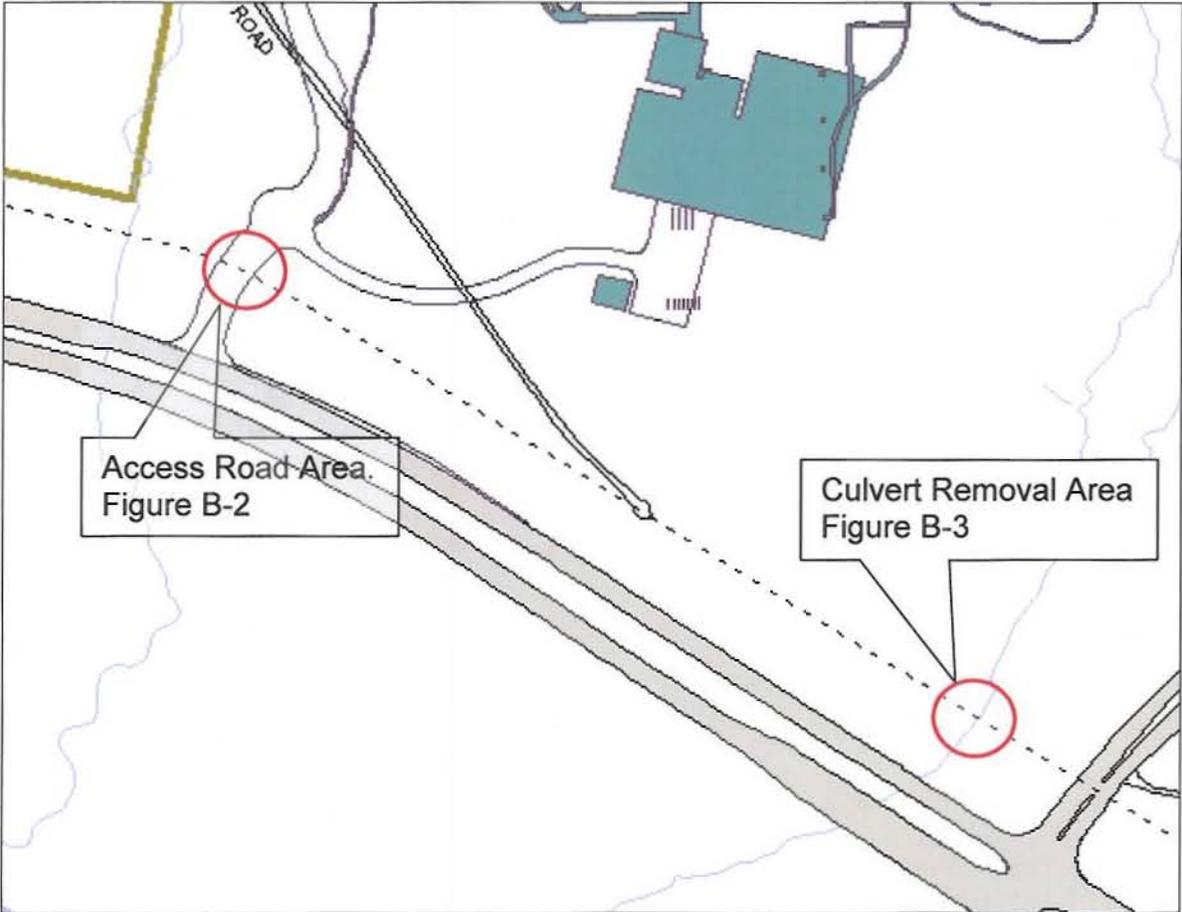


Figure B-1; Areas of Rail Bed Demolition

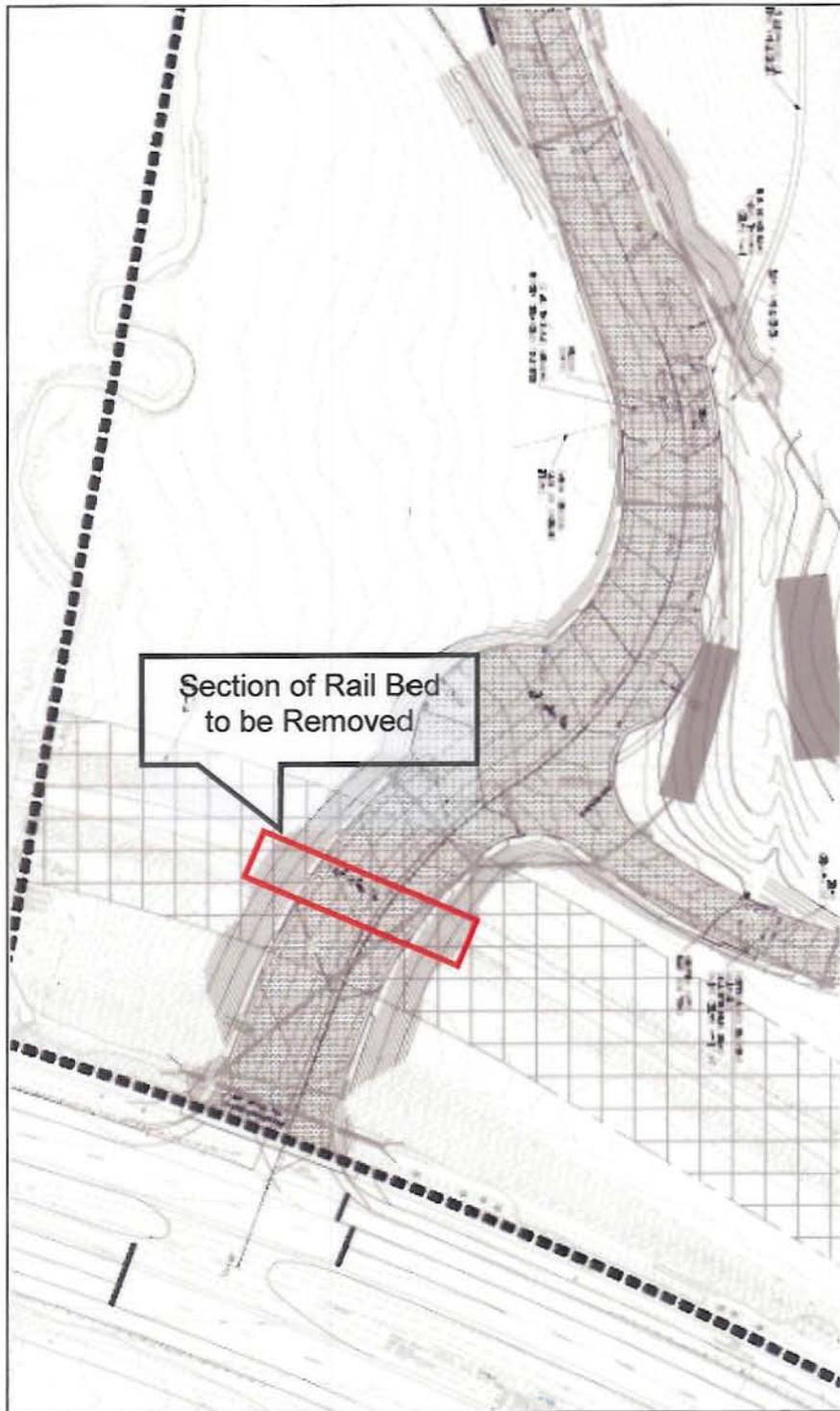


Figure B-2; Rail Bed Removal for Museum Access Road

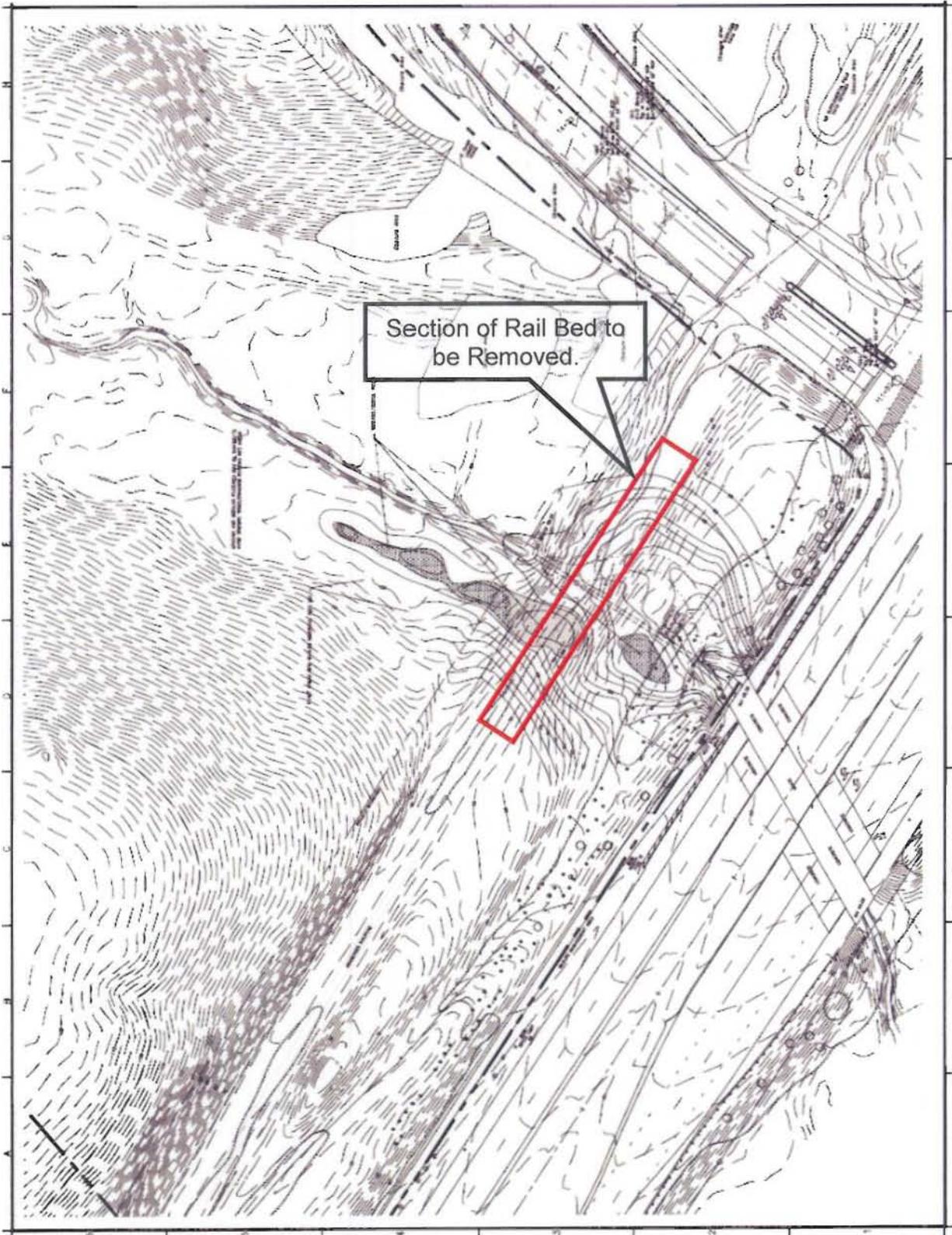


Figure B-3; Rail Bed Removal for Failed Culvert Demolition

Talbot, Alison S CIV USARMY IMCOM ATLANTIC (US)

From: Talbot, Alison S CIV USARMY IMCOM ATLANTIC (US)
Sent: Tuesday, August 25, 2015 8:42 AM
To: 'Ross Bradford'; 'linda.blank@fairfaxcounty.gov'; 'rigginjm@verizon.net'; 'Amanda Phillips'; 'marc.holma@dhr.virginia.gov'
Cc: Birge-Wilson, Adrienne CTR USARMY IMCOM ATLANTIC (US) (adrienne.birge-wilson.ctr@mail.mil)
Subject: RE: NMUSA - Amendment to 2011 MOA (UNCLASSIFIED)
Classification: UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

Good morning,

I have digitally sent everyone maps and related plans for Founders Hall and NMUSA, a proposed APE, and updated viewshed modeling for Mount Air. I sent them via the Army's secure file transfer site, AMRDEC, because of the file sizes. Please let me know if you'd like me to burn the files to a CD and mailed or sent via another web portal.

Also, the utilities are relatively staying in the same place as shown on previous plans except that they will be extended from the original museum site to Founders Hall. The utility plan can be found on page 4 of the maps/drawings PDF. Earlier we thought the water lines were going to have to be moved, but we resolved those issues. Sorry for any confusion.

Please let me know if you need anything else, and I look forward to hearing back from everyone.

Thank you,
Alison

Alison S. Talbot
Cultural Resources Manager

US Army Garrison Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division
9430 Jackson Loop
Bldg. 1442, Suite 226
Fort Belvoir, VA 22060-5516
703-806-3759
alison.s.talbot.civ@mail.mil

-----Original Message-----

From: Talbot, Alison S CIV USARMY IMCOM ATLANTIC (US)
Sent: Monday, July 27, 2015 2:08 PM
To: 'Ross Bradford'
Cc: linda.blank@fairfaxcounty.gov; rigginjm@verizon.net; Amanda Phillips; marc.holma@dhr.virginia.gov; Birge-Wilson, Adrienne CTR USARMY IMCOM ATLANTIC (US) (adrienne.birge-wilson.ctr@mail.mil)

Subject: RE: NMUSA - Amendment to 2011 MOA

Hi Ross,

I apologize for the oversight on the date stamp and the visitors' center. The Deputy Garrison Commander signed the cover letters on 20 July, and you are correct that Founders Hall is the visitors' center.

The utilities plan is still being developed so I was unable to include that within the packet. I will provide the utility plan, an updated APE map, and any other relevant documents to you and the other consulting parties as soon as I am able to.

Thank you and I look forward to working with you as well, Alison

Alison S. Talbot
Cultural Resources Manager

US Army Garrison Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division
9430 Jackson Loop
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-----Original Message-----

From: Ross Bradford [mailto:RBradford@savingplaces.org]
Sent: Monday, July 27, 2015 10:47 AM
To: Talbot, Alison S CIV USARMY IMCOM ATLANTIC (US)
Cc: linda.blank@fairfaxcounty.gov; rigginjm@verizon.net; Amanda Phillips; marc.holma@dhr.virginia.gov
Subject: NMUSA - Amendment to 2011 MOA

Ms. Talbot,

I don't think we've had a chance to meet each other yet. My name is Ross Bradford with the National Trust for Historic Preservation. I worked with your predecessor, Christopher Daniel, on Section 106 issues in and around the National Trust's historic site, Woodlawn. I just received a packet of information inviting concurring parties to participate in Fort Belvoir's proposal "to amend the existing NMUSA MOA to include a visitors' center and supporting utilities, which are not within the defined area of potential effect for the NMUSA undertaking."

Unfortunately, it appears that the materials are incomplete. Aside from the undated cover letter and a June 15, 2015 map prepared by Draper Aden Associates, there's nothing in these materials that gives any background or context to the proposed amendments to the MOA. While it's unlikely the National Trust will have any comments on the proposed changes to the MOA, we would need to know what the new APE is, where the visitor center will be located (Draper's map notates a building called "Proposed Founder's Hall" but it's not clear whether that's the visitor's center or not), and where supporting utilities would be installed before we can determine whether we have any comments on the proposed undertaking.

I look forward to hearing from you and working with you on Section 106 issues at Fort Belvoir.

Sincerely,

Ross

Ross M. Bradford | SENIOR ASSOCIATE GENERAL COUNSEL

P 202.588.6252 F 202.588.6272

NATIONAL TRUST FOR HISTORIC PRESERVATION The Watergate Office Building

2600 Virginia Avenue NW Suite 1000 Washington, DC 20037

www.PreservationNation.org <<http://www.preservationnation.org/>>

<http://www.preservationnation.org/assets/photos-images/nthp/LOGO_email.png>

CLASSIFICATION: UNCLASSIFIED



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9820 FLAGLER ROAD, SUITE 213
FORT BELVOIR, VIRGINIA 22060-5928

REPLY TO
ATTENTION OF

Directorate of Public Works

SUBJECT: Section 106 Consultation, National Museum of the United States Army Memorandum of Agreement Proposed Amendment (VDHR File #2003-1374), Fort Belvoir, Virginia

Mr. Marc Holma
Architectural Historian
Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

Dear Mr. Holma:

On July 14, 2011, the United States Army Garrison Fort Belvoir (Fort Belvoir) and the Virginia State Historic Preservation Officer (SHPO) executed the *Memorandum of Agreement between US Army Garrison Fort Belvoir, Virginia and Virginia State Historic Preservation Officer to Mitigate Adverse Effects of the National Museum of the United States Army, Fort Belvoir, Virginia* (NMUSA MOA). The MOA was developed in consultation with the SHPO and other consulting parties for the purpose of mitigating the adverse effects caused by the construction of the National Museum of the United States Army (NMUSA) on the Fort Belvoir Military Railroad, a historic property eligible for listing on the National Register of Historic Places. Fort Belvoir has identified the need to propose amendments to the MOA.

Fort Belvoir proposes to amend the existing NMUSA MOA to include a visitors' center and supporting utilities, which are not within the defined area of potential effect for the NMUSA undertaking. In addition, Fort Belvoir proposes to amend the duration of the NMUSA MOA to cover the entire NMUSA construction period. The existing NMUSA MOA will expire on July 13, 2016 if not amended.

In accordance with Stipulation IX of the NMUSA MOA, Fort Belvoir has identified the SHPO as a signatory and Fairfax County Department of Planning and Zoning; Alexandria Monthly Meeting of the Religious Society of Friends; and the National Trust for Historic Preservation, Woodlawn National Historic Landmark as concurring parties for review of the proposed amendment. At this time, Fort Belvoir invites the SHPO and all concurring parties to participate in the consultation process for the proposed amending of the NMUSA MOA. Enclosed with this correspondence are copies of the documentation specified in 36 CFR § 800.11(e).

“LEADERS IN EXCELLENCE”

Fort Belvoir's points of contact are Bill Sanders, Director of Public Works, at 703-806-3017 and Ms. Alison Talbot, Cultural Resources Manager, at 703-806-3759 or alison.s.talbot.civ@mail.mil.

Sincerely,


Michelle D. Mitchell
Colonel, U.S. Army
Commanding

Enclosures



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
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REPLY TO
ATTENTION OF

Directorate of Public Works

SUBJECT: Section 106 Consultation, National Museum of the United States Army Memorandum of Agreement Proposed Amendment (VDHR File #2003-1374), Fort Belvoir, Virginia

Ms. Linda Cornish Blank
Historic Preservation Planner
Fairfax County Department of Planning and Zoning
12055 Government Center Parkway, Suite 730
Fairfax, Virginia 22035

Dear Ms. Blank:

On July 14, 2011, the United States Army Garrison Fort Belvoir (Fort Belvoir) and the Virginia State Historic Preservation Officer (SHPO) executed the *Memorandum of Agreement between US Army Garrison Fort Belvoir, Virginia and Virginia State Historic Preservation Officer to Mitigate Adverse Effects of the National Museum of the United States Army, Fort Belvoir, Virginia* (NMUSA MOA). The MOA was developed in consultation with the SHPO and other consulting parties for the purpose of mitigating the adverse effects caused by the construction of the National Museum of the United States Army (NMUSA) on the Fort Belvoir Military Railroad, a historic property eligible for listing on the National Register of Historic Places. Fort Belvoir has identified the need to propose amendments to the MOA.

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“LEADERS IN EXCELLENCE”

Fort Belvoir's points of contact are Bill Sanders, Director of Public Works, at 703-806-3017 and Ms. Alison Talbot, Cultural Resources Manager, at 703-806-3759 or alison.s.talbot.civ@mail.mil.

Sincerely,

for  Deputy
Michelle D. Mitchell
Colonel, U.S. Army
Commanding

Enclosures



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR
9820 FLAGLER ROAD, SUITE 213
FORT BELVOIR, VIRGINIA 22060-5928

REPLY TO
ATTENTION OF

Directorate of Public Works

SUBJECT: Section 106 Consultation, National Museum of the United States Army Memorandum of Agreement Proposed Amendment (VDHR File #2003-1374), Fort Belvoir, Virginia

Ms. Judy Riggin
Alexandria Monthly Meeting
Religious Society of Friends
2405 Nemeth Court
Alexandria, Virginia 22306

Dear Ms. Riggin:

On July 14, 2011, the United States Army Garrison Fort Belvoir (Fort Belvoir) and the Virginia State Historic Preservation Officer (SHPO) executed the *Memorandum of Agreement between US Army Garrison Fort Belvoir, Virginia and Virginia State Historic Preservation Officer to Mitigate Adverse Effects of the National Museum of the United States Army, Fort Belvoir, Virginia* (NMUSA MOA). The MOA was developed in consultation with the SHPO and other consulting parties for the purpose of mitigating the adverse effects caused by the construction of the National Museum of the United States Army (NMUSA) on the Fort Belvoir Military Railroad, a historic property eligible for listing on the National Register of Historic Places. Fort Belvoir has identified the need to propose amendments to the MOA.

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“LEADERS IN EXCELLENCE”

Fort Belvoir's points of contact are Bill Sanders, Director of Public Works, at 703-806-3017 and Ms. Alison Talbot, Cultural Resources Manager, at 703-806-3759 or alison.s.talbot.civ@mail.mil.

Sincerely,


Michelle D. Mitchell
Colonel, U.S. Army
Commanding

Enclosures



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
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REPLY TO
ATTENTION OF

Directorate of Public Works

SUBJECT: Section 106 Consultation, National Museum of the United States Army Memorandum of Agreement Proposed Amendment (VDHR File #2003-1374), Fort Belvoir, Virginia

Mr. Ross Bradford
National Trust for Historic Preservation
1785 Massachusetts Avenue, NW
Washington, DC 20036

Dear Mr. Bradford:

On July 14, 2011, the United States Army Garrison Fort Belvoir (Fort Belvoir) and the Virginia State Historic Preservation Officer (SHPO) executed the *Memorandum of Agreement between US Army Garrison Fort Belvoir, Virginia and Virginia State Historic Preservation Officer to Mitigate Adverse Effects of the National Museum of the United States Army, Fort Belvoir, Virginia* (NMUSA MOA). The MOA was developed in consultation with the SHPO and other consulting parties for the purpose of mitigating the adverse effects caused by the construction of the National Museum of the United States Army (NMUSA) on the Fort Belvoir Military Railroad, a historic property eligible for listing on the National Register of Historic Places. Fort Belvoir has identified the need to propose amendments to the MOA.

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“LEADERS IN EXCELLENCE”

Fort Belvoir's points of contact are Bill Sanders, Director of Public Works, at 703-806-3017 and Ms. Alison Talbot, Cultural Resources Manager, at 703-806-3759 or alison.s.talbot.civ@mail.mil.

Sincerely,


Michelle D. Mitchell
Colonel, U.S. Army
Commanding

Enclosures

APPENDIX B

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APPENDIX C

Air Quality Analysis and Record of Non-Applicability

CONSTRUCTION EMISSIONS FROM FUGITIVE DUST

Proposed Action Construction Assumptions (Total Area of 4.8 acres)

Construction Area (0.19 ton PM10/acre-month)		
Duration of Soil Disturbance	18	months
Length		miles
Length (converted)		feet
Width		feet
Area	2.26	acres

Paved Road Construction (0.42 ton PM10/acre-month)		
Duration of Construction	6	months
Length		miles
Length (converted)	1,884	feet
Width	30	feet
Area	1.3	acres

Temporary Road Construction (0.42 ton PM10/acre-month)		
Duration of Construction	2	months
Length		miles
Length (converted)	1,797	feet
Width	30	feet
Area	1.24	acres

Construction area includes Founder's Hall Building, parking and grounds

Conversion Factors	
2.30E-05	acres per foot ²
5280	feet per mile

Projected Emissions form Construction (tons/year)

	PM10 uncontrolled	PM10 controlled	PM2.5 uncontrolled	PM2.5 controlled
Construction Area	5.15	2.58	0.52	0.26
Paved Road Construction	3.28	1.64	0.33	0.16
Temporary Road Construction	1.04	0.52	0.10	0.05
Total Emissions	9.47	4.74	0.95	0.47

Assumptions for Fugitive Emissions

-General Construction Activities Emission Factor: 0.19 ton PM10/acre-month; Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No.1), March 29, 1996. The study determined an average emission factor of 0.11 ton PM10/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM10/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions from Construction Operations, calculated the 0.19 ton PM10/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM10/acre-month) and 75% of the average emission factor (0.11 ton PM10/acre-month).

The 0.19 ton PM10/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM10/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particle (TSP) emission factor in Section 13.2.3

Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District and the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas.

-New Road Construction Emission Factor 0.42 ton PM10/acre-month; Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM10/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM10/acre-month emission factor for road construction is referenced in recent procedures documents for the USEPA National Emission Inventory (EPA 2001; EPA 2006).

PM2.5 Multiplier: 0.1

PM2.5 emissions are estimated by applying a particle size multiplier of 0.10 to PM10 emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM10 and PM2.5: 0.5

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas. Wetting controls will be applied during project construction (EPA 2006).

References:

USEPA 2001. Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999. EPA-454/R-01-006. Office of Air Quality Planning and Standards, USEPA. March 2001.

USEPA 2006. Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants. Prepared for: Emissions

Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, USEPA. July 2006

MRI 1996. Improvement of Specific Emission Factors (BACM Project No. 1). Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

COMBUSTION EMISSIONS FROM CONSTRUCTION EQUIPMENT

Proposed Action Construction Assumptions (Project Duration - 2 Years)

Construction Equipment Type	No. of units	HP Rated	hours/day	Days/year	Total HP-hours
Water Truck	1	300	8	250	600,000
Diesel Road Compactors	1	100	8	30	24,000
Diesel Dump Truck	1	300	8	90	216,000
Diesel Excavator	1	300	8	20	48,000
Diesel Hole Trenchers	1	175	8	60	84,000
Diesel Bore/Drill Rigs	1	300	8	60	144,000
Diesel Cement & Mortar Mixers	1	300	8	60	144,000
Diesel Cranes	1	175	8	120	168,000
Diesel Graders	1	300	8	15	36,000
Diesel Tractors/Loaders/Backhoes	1	100	8	90	72,000
Diesel Bulldozers	1	300	8	30	72,000
Diesel Front-End Loaders	1	300	8	120	288,000
Diesel Forklifts	2	100	8	250	400,000
Diesel Generator Set	2	40	8	250	160,000

Emission Factors ¹ (grams/HP-hour)							
Type of Construction Equipment	VOC	CO	NO _x	PM-10	PM-2.5	SO ₂	CO ₂
Water Truck	0.44	2.07	5.49	0.41	0.4	0.74	536
Diesel Road Compactors	0.37	1.48	4.9	0.34	0.33	0.74	536.2
Diesel Dump Truck	0.44	2.07	5.49	0.41	0.4	0.74	536
Diesel Excavator	0.34	1.3	4.6	0.32	0.31	0.74	536.3
Diesel Trenchers	0.51	2.44	5.81	0.46	0.44	0.74	535.8
Diesel Bore/Drill Rigs	0.6	2.29	7.15	0.5	0.49	0.73	529.7
Diesel Cement & Mortar Mixers	0.61	2.32	7.28	0.48	0.47	0.73	529.7
Diesel Cranes	0.44	1.3	5.72	0.34	0.33	0.73	530.2
Diesel Graders	0.35	1.36	4.73	0.33	0.32	0.74	536.3
Diesel Tractors/Loaders/Backhoes	1.85	8.21	7.22	1.37	1.33	0.95	691.1
Diesel Bulldozers	0.36	1.38	4.76	0.33	0.32	0.74	536.3
Diesel Front-End Loaders	0.38	1.55	5	0.35	0.34	0.74	536.2
Diesel Forklifts	1.98	7.76	8.56	1.39	1.35	0.95	690.8
Diesel Generator Set	1.21	3.76	5.97	0.73	0.71	0.81	587.3

Emission Calculations (tons/year)							
Type of Construction Equipment	VOCs	CO	NO _x	PM-10	PM-2.5	SO ₂	
Water Truck	0.291	1.369	3.63	0.271	0.264	0.489	354.4
Diesel Road Paver	0.01	0.039	0.13	0.009	0.009	0.02	14.2
Diesel Dump Truck	0.105	0.493	1.307	0.098	0.095	0.176	127.6
Diesel Excavator	0.018	0.069	0.243	0.017	0.016	0.039	28.4
Diesel Hole Cleaners\Trenchers	0.047	0.226	0.538	0.043	0.041	0.069	49.6
Diesel Bore/Drill Rigs	0.095	0.363	1.135	0.079	0.078	0.116	84.1
Diesel Cement & Mortar Mixers	0.097	0.368	1.155	0.076	0.075	0.116	84.1
Diesel Cranes	0.081	0.241	1.059	0.063	0.061	0.135	98.2
Diesel Graders	0.014	0.054	0.188	0.013	0.013	0.029	21.3
Diesel Tractors/Loaders/Backhoes	0.147	0.651	0.573	0.109	0.106	0.075	54.8
Diesel Bulldozers	0.029	0.109	0.378	0.026	0.025	0.059	42.6
Diesel Front-End Loaders	0.121	0.492	1.587	0.111	0.108	0.235	170.2
Diesel Aerial Lifts	0.873	3.421	3.773	0.613	0.595	0.419	304.5
Diesel Generator Set	0.213	0.663	1.053	0.129	0.125	0.143	103.6
Total Emissions	2.14	8.56	16.75	1.66	1.61	2.12	1,537.3

Conversion factor: 1.10E-06 tons/gram

1. Emission factors (EF) were generated using USEPA's preferred model for nonroad sources, the NONROAD 2008 model. Emissions were modeled for the 2007 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD 2008 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD 2008 model is based on the population in U.S. for the 2007 calendar year.

TRANSPORTATION EMISSIONS FROM CONSTRUCTION ACTIVITIES (COMMUTING AND DELIVERY OF MATERIALS)

Proposed Action Construction Assumptions (Project Duration - 2 Years)

Source	Fuel type	No. of vehicles	Miles driven per day	Days of travel per year	Miles driven per year
Passenger cars	Gasoline	25	30	260	195,000
Passenger truck	Gasoline	25	30	260	195,000
Light commercial truck	Diesel	2	30	260	15,600
Short-haul truck	Diesel	4	120	260	124,800
Long-haul truck	Diesel	1	80	260	20,800

Emission Factors (MOVES 2010 Emission Rates) ¹ (grams/mile)							
Source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂	CO ₂ and CO ₂ Equivalents
Passenger cars	8.497	2.892	0.576	0.019	0.018	0.005	320
Passenger truck	3.645	5.449	1.168	0.027	0.025	0.007	439
Light commercial truck	4.46	2.158	2.986	0.164	0.19	0.005	609
Short-haul truck	2.438	2.273	6.095	0.27	0.313	0.007	929
Long-haul truck	2.519	3.61	14.776	0.625	0.726	0.016	2020

Total Emission for On-Road Construction Activities (tons/year)							
Source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂	CO ₂ and CO ₂ Equivalents
Passenger cars	1.826	0.622	0.124	0.004	0.004	0.001	68.784
Passenger truck	0.783	1.171	0.251	0.006	0.005	0.002	94.363
Light commercial truck	0.077	0.037	0.051	0.003	0.003	0	10.472
Short-haul truck	0.335	0.313	0.838	0.037	0.043	0.001	127.801
Long-haul truck	0.058	0.083	0.339	0.014	0.017	0	46.315
Total Emissions	3.08	2.23	1.60	0.064	0.072	0.004	347.74

Conversion factor: 907,184.74 grams/ton

1. Emission factors were generated by USEPA preferred model MOVES2010. MOVES simulates daily motor vehicle operations and produces emission rates. MOVES emission rates include sources from engine combustion, tire wear, brake wear, evaporative fuel permeation, vapor venting and leaking (running and parking), and crankcase loss. Emission rates are daily averages for each of the criteria pollutants. The averages from a combination of vehicle operations such as: stop and go, highway travel, acceleration at on-ramps, parking, start-up, extended idle, etc.

TRANSPORTATION AIR EMISSIONS FROM OPERATION ACTIVITIES

Source	Fuel type	No. of vehicles	Miles driven per day	Days of travel per year	Miles driven per year
Passenger cars - Employee	Gasoline	20	30	260	156,000
Passenger truck - Employee	Gasoline	20	30	260	156,000
Passenger cars - Visitor	Gasoline	500	30	1	15,000
Passenger truck - Visitor	Gasoline	500	30	1	15,000
Light commercial truck	Diesel	2	30	260	15,600
Short-haul truck	Diesel	1	30	260	7,800
Long-haul truck	Diesel	1	30	260	7,800

Emission Factors (MOVES 2010 Emission Rates) ¹ (grams/mile)							
Source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂	CO ₂ and CO ₂ Equivalents
Passenger cars - Employee	8.497	2.892	0.576	0.019	0.018	0.005	320
Passenger truck - Employee	3.645	5.449	1.168	0.027	0.025	0.007	439
Passenger cars - Visitor	8.497	2.892	0.576	0.019	0.018	0.005	320
Passenger truck - Visitor	3.645	5.449	1.168	0.027	0.025	0.007	439
Light commercial truck	4.46	2.158	2.986	0.164	0.19	0.005	609
Short-haul truck	2.438	2.273	6.095	0.27	0.313	0.007	929
Long-haul truck	2.519	3.61	14.776	0.625	0.726	0.016	2,020

Total Emission for On-Road Construction Activities (tons/year)							
Source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂	CO ₂ and CO ₂ Equivalents
Passenger cars - Employee	1.461	0.497	0.099	0.003	0.003	0.001	55.027
Passenger truck - Employee	0.627	0.937	0.201	0.005	0.004	0.001	75.491
Passenger cars - Visitor	0.14	0.05	0.01	0.0003	0.0003	0.0001	5.291
Passenger truck - Visitor	0.06	0.09	0.02	0.0004	0.0004	0.0001	7.259
Light commercial truck	0.038	0.019	0.026	0.001	0.002	0.0001	5.236
Short-haul truck	0.021	0.02	0.052	0.002	0.003	0.0001	7.988
Long-haul truck	0.022	0.031	0.127	0.005	0.006	0.0001	17.368
Total Emissions	2.37	1.64	0.53	0.017	0.019	0.002	173.66

Conversion factor: 907,184.74 grams/ton

1. Emission factors were generated by USEPA preferred model MOVES2010. MOVES simulates daily motor vehicle operations and produces emission rates. MOVES emission rates include sources from engine combustion, tire wear, brake wear, evaporative fuel permeation, vapor venting and leaking (running and parking), and crankcase loss. Emission rates are daily averages for each of the criteria pollutants. The averages from a combination of vehicle operations such as: stop and go, highway travel, acceleration at on-ramps, parking, start-up, extended idle, etc.

COMBUSTION EMISSIONS FROM OPERATIONS EQUIPMENT

Emergency Generator Emissions

Emergency Generators ¹	Total Capacity (kW)	Number of Generators (units)	NOx (g/hpxhr)	NOx (tpy)	VOC (g/hpxhr)	VOC (tpy)	PM (g/hpxhr)	PM (tpy)	SOx (g/hpxhr)	SOx (tpy)
Potential to Emit	1000	1	4.8	3.6	0	0	0	0	0.2	0.1
Estimated Actual Emissions			-	0.6	-	0	-	0	-	0

-Assumed 500 hours for potential to emit and 80 hours for actual emissions.

1 Although all engines will be Tier II certified, nominal manufacturer's data were used for the NOx emission factor, CO emission factor, and PM emission factor included in these calculations. Emissions data were not provided for PM10, so it was assumed that PM10 = PM. The emission factor for SOx was obtained from USAF IERA Air Emissions Inventory Guidance for Stationary Sources at Air Force Installations, 1999, Revised December 2003. The SOx emission factor uses "S", a sulfur content of 0.05 wt%.

Boiler Emissions

	Total Heat Input (MMBtu/hr)	Total Fuel Limit (10 ⁶ cf/yr)	Nox Emission Factor (lb/10 ⁶ cf)	NOx (tpy)	VOC (lb/10 ⁶ cf)	VOC (tpy)	PM (lb/10 ⁶ cf)	PM (tpy)	SOx (lb/10 ⁶ cf)	SOx (tpy)
Natural Gas^{1a}	1.38	11.2	36	0.202	5.5	0.0308	7.6	0.0426	0.6	0.00336
	(MMBtu/hr)	(gal/yr)	(lb/10 ³ gal)	(tpy)	(lb/10 ³ gal)	(tpy)	(lb/10 ³ gal)	(tpy)	(lb/10 ³ gal)	(tpy)
No. 2 Fuel Oil^{2b}	1.38	28,800	20	0.288	0.34	0.0049	3.3	0.0475	7.2	0.10368
Total	-	-	-	0.49	-	0.036	-	0.090	-	0.11

-Assumed 8.2% of NMUSA natural gas estimate of 16.8 Mmbtu/hr (2010 NMUSA EA).

1 Heat Content 1020 BTU/cf, 345 days per year.

2 Heat Content 140,000 BTU/gallon, 20 days per year.

a Natural gas emission factors for all pollutants except NOx were obtained from USEPA's AP-42, Section 1.4 (USEPA, 1995). The low NOx burners reduce NOx emissions to 30 ppm and 15 ppm according to manufacturer specifications. Using a standard conversion: lb/MMBtu = ppm / 850, the NOx emission factor appropriate for burning natural gas in the proposed burners is 0.035 lb/MMBtu or 36 lb/MMcf, and 0.018 lb/MMBtu or 18 lb/MMcf. (This conversion assumes that the NOx concentration reflects 3% oxygen.) Conservatively assume that PM10 = PM.

b No. 2 fuel oil emission factors for all pollutants were obtained from USEPA's AP-42, Section 1.3 (USEPA, 1995). Conservatively assume that PM10 = PM. The SOx emission factor uses a sulfur content of 0.05 wt%.

Emissions Summary

SUMMARY OF EMISSIONS (tons/year)									
Emission Source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂	CO ₂	CO ₂ Equivalents	Total CO ₂
Combustion Emissions Construction Equipment	2.14	8.558	16.747	1.656	1.611	2.119	1,537.31	5,261.82	6,799.12
Construction Site-Fugitive PM-10	NA	NA	NA	4.7352	0.474	NA	NA	NA	NA
Construction Workers Commuter& Delivery	3.08	2.225	1.603	0.064	0.072	0.004	347.74	575.53	923.27
Total Emissions from Construction	5.22	10.78	18.35	6.46	2.16	2.12	1,885.04	5,837.35	7,722.39
Operations Employees and Visitors Commute	2.370	1.642	0.534	0.017	0.019	0.002	NA	173.660	173.660
Combustion Emissions Operations Equipment	0.360	NA	0.490	0.090	0.005	0.110	NA	NA	NA
Total Emissions from Operations	2.73	1.64	1.024	0.107	0.023	0.112	0.000	173.66	173.66
De minimis Thresholds	50	100	100	70	100	100	NA	NA	25,000

CO ₂ Equivalent Conversion Factors	
NOx	311
VOCs	25

Source: USEPA Greenhouse Gas Equivalencies Calculator:

<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

Record of Non-Applicability (RONA)
to the General Conformity Rule for the Construction and Operation of
Founder's Hall
at the National Museum of the U.S. Army, Fort Belvoir, Virginia

November 12, 2015

Air emissions were estimated for the construction and operation of the proposed construction and operation of Founder's Hall at the National Museum of the U.S. Army at Fort Belvoir. Emissions from land clearing and grading, construction of buildings, associated parking areas and structures, traffic control upgrades, and stormwater systems and support utility upgrades were assessed. Operational emissions from motor vehicles, emergency generators, and boilers were assessed. General Conformity under the Clean Air Act, Section 176 has been evaluated according to the requirements of 40 CFR 93.153, Subpart B. The requirements of this rule are not applicable because:

The highest total annual direct and indirect emissions from this proposed action have been estimated at 18.4 tons NO_x, 5.2 tons VOCs, 2.2 tons PM_{2.5}, and 2.1 tons SO₂ per year, which would be below the conformity threshold values of 50 tons VOCs and 100 tons for SO₂, PM_{2.5}, and NO_x, and would not be *regionally significant*.

Emissions estimations were based on the three year construction schedule as it is known at this time. Notably, the total emissions for all criteria pollutants for all three years combined would not exceed the applicability thresholds. Therefore, this determination would be accurate regardless of whatever schedule ultimately implemented.

Supported documentation and emission estimates:

- () Are Attached
- (X) Appear in the NEPA Documentation
- () Other (Not Necessary)


FOR MICHELLE D. MITCHELL
Colonel, AG
Commanding

APPENDIX D

RPMP EIS Table 4-1

**Table 4-1
Present and Future Off-Post Contributing Actions**

Project Number	Project Name	Acreage	Development Size ¹	Development Type	Description
1	Patriot Ridge	15	978,000	Office	Project currently under construction adjacent to FBNA along the west side of Backlick Road, just north of Fairfax County Parkway. Site plan consists of four high-rise office buildings designed to meet government security standards, and two parking garages. The first building, totaling 240,000 square feet, was completed in 2011 and includes retail space.
2	Springfield Mall	80	2.1 million	Retail	Planned redevelopment of existing indoor mall as mixed-use town center.
			6.0 million	Hotel, office, and residential	
3	Springfield Connectivity Study	800	Not Available (N/A)	N/A	Study provides area-wide guidance for urban design, streetscape, and place-making concepts. Portions of the Springfield community business center north and south of Old Keene Mill Road are recommended for redevelopment as an urban village and commuter parking facility, respectively. Springfield Metro Center Industrial Park parcels are being reviewed for rezoning as a mixed-use zoning district.
4	Loisdale Road Special Study	120	1.83 million	Industrial	Study includes options for vehicle sales, service centers, and office use with conditions. Fairfax County Board of Supervisors approved rezoning two parcels from R-1 to C-8 to allow for development of 200,000 square feet of office.
5	Accotink Village	27	(up to) 55,000	Retail	Redevelopment option for the enclave of privately-owned land surrounded by Fort Belvoir and administered by Fairfax County would also include up to 470 multi-family units with some single-family attached housing. Future redevelopment would require right-of-way dedication to support the planned widening of US Route 1 to six lanes.
			(up to) 16,000	Office	
6	General Services Administration Warehouse Framework Plan	N/A	N/A	Mixed-use	This plan allows for the redevelopment of a multi-modal, transit-oriented development on the site of a General Services Administration warehouse facility in Springfield.
7	Laurel Hill, Lorton-South Route 1 Subunit B2 and Lorton Corner	3,200	N/A	Mixed-use	This plan includes land use recommendations for the redevelopment of the old federal prison site and expansion of Inova medical facilities in Lorton.
8	Metro Park	37	1.3 million	Office	Eight office buildings would be built as part of project.
9	Kingstowne Town Center	150	230,000	Retail	This development is part of a 1,200-acre planned community with a capacity of 2 million square feet of office space and 6,300 residences.

Project Number	Project Name	Acreage	Development Size ¹	Development Type	Description
10	Belvoir Business Park	N/A	N/A	Commercial, office, and industrial	A major Federal Express distribution facility is currently located in this development. A portion of the site is also planned for office and/or industrial uses.
11	Hilltop Village Center	33	150,000	Grocery	The site for this project is located at the intersection of Beulah Street and Telegraph Road, and was rezoned in 2008. The development would include 953 parking spaces and is planned as an integrated mixed-use development.
			94,000	Specialty retail	
			100,000	Office	
12	Northern Virginia Industrial Park	69	N/A	Mixed-use	A Fairfax County Comprehensive Plan Amendment allows the project site on Telegraph Road to become a mix of office, hotel, retail, civic, and light industrial uses. The County Board of Supervisors also amended the Transportation Plan to show Telegraph Road planned for six lanes (formerly four lanes) from Richmond Highway to Fairfax County Parkway.
Total Development		4,531	12,853,000		
<p><u>Notes:</u> 1. Square feet unless otherwise noted.</p>					