

1                                   **Draft Finding of No Significant Impacts**  
2       **for the proposed Construction of the Training Support Facility**  
3                                   **Humphreys Engineer Center Alexandria, Virginia**

4   In compliance with the National Environmental Policy Act (NEPA), as amended, the Department  
5   of the Army, U.S. Army Corps of Engineers (USACE) Baltimore District, U.S. Special Operations  
6   Command (USSOCOM), 1st Capabilities Integration Group (1st CIG), and Humphreys Engineer  
7   Center Support Activity (HECSA) have prepared a Draft Environmental Assessment (EA) to  
8   evaluate and document the potential environmental effects associated with the proposed  
9   construction of the Training Support Facility (TSF) at Humphreys Engineer Center (HEC) in  
10  Alexandria, Virginia.

11  The purpose of the Proposed Action is to support 1st CIG and other tenants at HEC by providing  
12  necessary training, storage and administrative space to provide for more efficient, synchronized  
13  unit operations by construction of a TSF at HEC and collocating training and storage functions to  
14  one, centralized building. The need for the Proposed Action is to provide for more efficient  
15  operations for 1st CIG and other tenants by providing flexible training support, administrative  
16  and storage space at HEC. Ultimately there is a current and future need for functional training  
17  and storage space at HEC which is necessary for synchronized unit operations to execute military  
18  operations and contingency missions and for the preservation of unique and sensitive pieces of  
19  equipment and artifacts at HEC.

20  The proposed TSF would be constructed within a 3.2 acre, previously developed area, located  
21  within the central-eastern portion of HEC, east of the Kingman Building (Building 2593) and north  
22  of the Hall Building (2596) within the existing HEC soccer field/recreational area. The proposed  
23  TSF would be constructed as a two-story, approximately 66,486 square foot (ft<sup>2</sup>) sensitive  
24  compartmented information facility (SCIF) and would include training, storage and administrative  
25  space. Construction of the TSF would include special foundations, redundant power,  
26  sustainability/energy features, antiterrorism measures, a raised floor system and one, 600  
27  kilovolt (kV)-emergency generators.

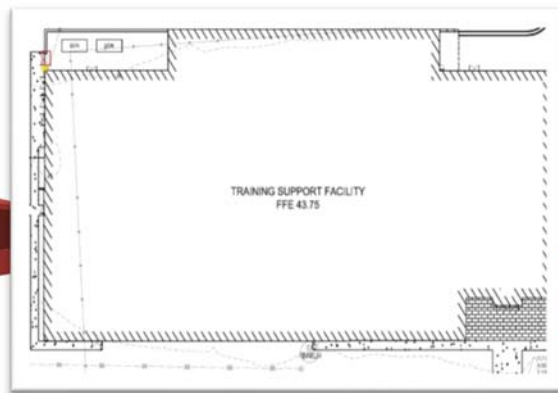
28  Construction of the TSF would take approximately 24 months and would include a buffer for  
29  antiterrorism/force protection (AT/FP) requirements. The proposed TSF would also include  
30  construction of new supporting infrastructure such as electrical, water, sewer and gas utility  
31  connections. Site and facility design would also include Americans with Disabilities Act (ADA)-  
32  accessible circulation within and around the facility.

1 Two alternatives were considered in the Environmental Assessment, including the Proposed  
2 Action and the No Action Alternative. Under the Proposed Action, the TSF would be constructed  
3 as described above. Under the No Action Alternative, the TSF would not be constructed and  
4 training and storage activities would occur in their current state at HEC. HEC would continue to  
5 lack appropriate training and storage space for 1st CIG and other tenants on HEC.

6 The Environmental Assessment analyzes impacts to the following resource areas: aesthetic and  
7 visual resources; air quality; biological resources; cultural resources; geological resources; solid  
8 and hazardous materials; infrastructure, utilities and traffic; land use; noise; community services;  
9 socioeconomics and environmental justice; and water resources. Following the environmental  
10 review of these resource areas contained in the Environmental Assessment, it has been  
11 determined that construction of the proposed TSF at HEC would not result in significant  
12 environmental impacts. As a result of this determination, a Finding of No Significant Impact has  
13 been made for the Proposed Action. The preparation of an Environmental Impact Statement is  
14 not required for this action.

15 Dale F. Stoutenburgh  
16 Director

**Draft Environmental Assessment  
Addressing the  
Proposed Construction of the Training Support Facility  
at  
Humphreys Engineer Center  
Alexandria, Virginia**



**Contract Number:  
W912DR-16-D-0010-18F0727**

7900 John J. Kingman Road  
Alexandria, Virginia 22060

**Prepared For:**  
Wiley | Wilson, Inc.  
U.S. Army Corps of Engineers, Baltimore District  
Department of the Army  
U.S. Special Operations Command  
1<sup>st</sup> Capabilities Integration Group  
Humphreys Engineer Center Support Activity

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## Executive Summary

Draft Environmental Assessment Addressing the Proposed Construction of the Training Support Facility at Humphreys Engineer Center

**Responsible Agencies:** U.S. Army Corps of Engineers-Baltimore District, Department of the Army, U.S. Special Operations Command, 1st Capabilities Integration Group, Humphreys Engineer Center Support Activity

**Affected Locations:** Humphreys Engineer Center, Alexandria, Virginia

**Abstract:** The Department of the Army, United States Army Corps of Engineers (USACE), U.S. Special Operations Command (USSOCOM) , 1st Capabilities Integration Group (1st CIG), and Humphreys Engineer Center Support Activity (HECSA) propose to a construct a Training Support Facility (TSF) at Humphreys Engineer Center (HEC) in Alexandria, Virginia.

The purpose and need of the Proposed Action is to support 1st CIG and other tenants at HEC by providing necessary training, storage and administrative space, which are currently lacking from HEC, to provide for more efficient, synchronized unit operations by construction of a TSF at HEC and collocating training and storage functions to one, centralized building. The Proposed Action would provide for more efficient operations for 1st CIG and other tenants by providing flexible training support, administrative and storage space at HEC. Ultimately there is a current and future need for functional training and storage space at HEC which is necessary for synchronized unit operations to execute military operations and contingency missions and for the preservation of unique and sensitive pieces of equipment and artifacts at HEC.

The proposed TSF would be constructed within a 3.2 acre, previously developed area, located within the central-eastern portion of HEC, east of the Kingman Building (Building 2593) and north of the Hall Building (2596) within the existing HEC soccer field/recreational area. The proposed TSF would be constructed as a two-story, approximately 66,486 square foot (ft<sup>2</sup>) sensitive compartmented information facility (SCIF) and would include training, storage and administrative space. Construction of the TSF would include special foundations, redundant power, sustainability/energy features, antiterrorism measures and a raised floor system.

Construction of the TSF would take approximately 24 months and would include a buffer for antiterrorism/force protection (AT/FP) requirements. The proposed TSF would also include construction of new supporting infrastructure such as electrical, water, sewer and gas utility connections. Site and facility design would also include Americans with Disabilities Act (ADA)-accessible circulation within and around the facility.

The first floor of the proposed TSF would be comprised of approximately 49,574 ft<sup>2</sup> and contain training aid and support space that would include climate controlled warehouse space, photo

1 studio, training space, conference rooms and office space. The 2nd floor of the TSF would be  
2 approximately 15,834 ft<sup>2</sup> and would primarily include administrative, classroom and meeting  
3 space. Lastly, one-600 kilowatt (kW) emergency diesel generator would also be installed as part  
4 of the construction. Once the TSF has been completed, approximately 200 personnel already on  
5 HEC would transfer to the TSF.

6 This Draft EA will analyze the potential for environmental, socioeconomic, and cultural impacts  
7 from the Proposed Action and the No Action Alternative and aids in determining whether a  
8 Finding of No Significant Impact (FONSI) can be prepared or an Environmental Impact Statement  
9 (EIS) is required. Under the No Action Alternative for the Proposed Action, the proposed TSF  
10 would not be constructed and training and storage activities would occur in their current state.  
11 Overall, the No Action Alternative would adversely impact the unit's mission effectiveness and  
12 readiness by continuing to operate in functionally obsolete facilities for administrative, training,  
13 and storage purposes.

1 TABLE ES-1. SUMMARY OF IMPACTS

Resource Area	Proposed Action	No Action Alternative Impacts
<b>Aesthetic and Visual Resources (Section 3.2)</b>	Short-term, direct, negligible, adverse impacts from construction and demolition. Long-term, direct, negligible to minor and beneficial impacts from operation.	Long-term, negligible and beneficial impacts would be expected from leaving the existing recreational field.
<b>Air Quality (Section 3.3)</b>	Short-term, direct, negligible to minor, adverse impacts from construction and demolition. No impacts from operation.	No impacts would occur.
<b>Biological Resources (Section 3.4)</b>	Short- and long-term, negligible to minor, adverse impacts on vegetation; short- and long-term, negligible, adverse impacts on common wildlife; and no adverse impacts to state or federally protected species; and short- and long-term, negligible, adverse impacts to migratory birds during construction and demolition. No impacts on vegetation, wildlife, state and federally protected species, and migratory birds from operation.	No impacts would occur.
<b>Cultural Resources (Section 3.5)</b>	No impacts from construction and demolition. No impacts from operation.	No impacts would occur.
<b>Geological Resources (Section 3.6)</b>	No impacts to geology, or from radon; short- and long-term, negligible to minor, adverse impacts to topography and soils from construction and demolition. No impacts to topography or geology; long-term, negligible, adverse impacts to soils and radon from operation.	No impacts would occur.
<b>Solid and Hazardous Materials (Section 3.7)</b>	Short-term, negligible, adverse impacts on solid and hazardous materials and unexploded ordnance (UXO) from construction and demolition. Long-term, negligible, adverse impacts from generation of hazardous materials and wastes; no impacts on UXO from operation.	No impacts would occur.
<b>Infrastructure, Utilities and Traffic (Section 3.8)</b>	Short-term, negligible, adverse impacts on electrical, potable water, sanitary sewer, stormwater, communications, natural gas and transportation infrastructure from construction and demolition.	Long-term, negligible, adverse impacts from the continued use of energy-inefficient facilities.

Resource Area	Proposed Action	No Action Alternative Impacts
	Long-term, negligible, beneficial impacts electrical, potable water, sanitary sewer, stormwater, communications, natural gas; and no impacts to transportation from operation.	
<b>Land Use (Section 3.9)</b>	Long-term, negligible and adverse impacts from construction and demolition. Short-term, negligible adverse impacts to land use controls from construction and demolition.  No impacts to land use or land use controls from operation.	No impacts would occur.
<b>Noise (Section 3.10)</b>	Short-term, minor, adverse impacts from construction and demolition.  Long-term, negligible, adverse impacts from operation.	No impacts would occur.
<b>Community Services (Section 3.11)</b>	Short-term, direct, negligible, adverse impacts from construction and demolition.  Long-term, beneficial impacts would result from operation.	No impacts would occur.
<b>Socioeconomics and Environmental Justice (Section 3.12)</b>	Short-term, negligible to minor, beneficial impacts from construction and demolition.  No impacts from operation.	No impacts would occur.
<b>Water Resources (Section 3.13)</b>	No impacts on surface waters, floodplains, coastal zone management, resource protection areas, or wetlands; short-term, negligible, adverse impacts on water quality and long-term, negligible impacts on groundwater from construction and demolition.  No impacts to surface waters, wetlands, floodplains, resource protection areas, groundwater or coastal zone management from operation. Water quality impacts from operation will be negligible to minor.	No impacts would occur.

### Acronyms/Abbreviations

$\mu\text{g}/\text{m}^3$	micrograms per meter cubed	FONSI	Finding of No Significant Impact
1 <sup>st</sup> CIG	1 <sup>st</sup> Capabilities Integration Group	ft <sup>2</sup>	square feet
ADA	American with Disabilities Act	GCR	General Conformity Rule
AT/FP	antiterrorism/force protection	GHG	greenhouse gases
AR	Army Regulation	GIS	Geographic Information System
APE	area of potential effect	gpd	gallons per day
AQCR	Air Quality Control Region	GWP	global warming potential
BGEPA	Bald and Golden Eagle Protection Act	HAPs	hazardous air pollutants
BMP	Best Management Practice	HEC	Humphreys Engineer Center
CAA	Clean Air Act	HECSA	Humphreys Engineer Center Support Activity
CBPA	Chesapeake Bay Preservation Act	HFCs	Hydrofluorocarbons
CEQ	Council on Environmental Quality	HVAC	Heating, ventilation and air conditioning
CH <sub>4</sub>	methane	INRMP	Integrated Natural Resources Management Plan
CO	Carbon monoxide	IT	Information Technology
CO <sub>2</sub>	Carbon dioxide	kW	kilowatt
CFR	Code of Federal Regulations	LCC	Land Cover Conservation
CRMP	Coastal Resources Management Program	LID	low impact development
CWA	Clear Water Act	LUCs	land use controls
CZMA	Coastal Zone Management Act	LUCIP	Land Use Control Implementation Plan
dB	decibel	MBTA	Migratory Bird Treaty Act
dBA	A-weighted decibels	MEC	munitions and explosives of concern
DOD	Department of Defense	MMRP	Military Munitions Response Program
DNL	day-night average sound level	MRS	munitions response site
EA	Environmental Assessment	N <sub>2</sub> O	Nitrous oxides
EIS	Environmental Impact Statement	NAAQS	National Ambient Air Quality Standards
EISA	Energy Independence and Security Act	NEPA	National Environmental Policy Act
ESA	Endangered Species Act	NHPA	National Historic Preservation Act
ESCP	erosion and sediment control plan	NIOSH	National Institute for Occupational Safety and Health
FCWA	Fairfax County Water Authority	N <sub>2</sub> O	nitrous oxides



NLEB	northern long-eared bat	SF <sub>6</sub>	Sulfur hexafluoride
NOA	Notice of Availability	SIP	State Implementation Plan
NOI	Notice of Intent	SO <sub>2</sub>	Sulfur dioxide
NOx	Nitrogen dioxides	SU-30	single unit trucks
NPDES	National Pollutant Discharge Elimination System	SCIF	Sensitive Compartmented Information Facility
NRHP	National Register of Historic Places	SWPPP	Stormwater Pollution Prevention Plan
O <sub>3</sub>	Ozone	TMDL	Total Maximum Daily Load
OTR	ozone transport region	tpy	tons per year
PCB	polychlorinated biphenyls	TSF	Training Support Facility
pCi/L	picocuries per liter	USACE	U.S. Army Corps of Engineers
PFC	perfluorocarbons	USEPA	U.S. Environmental Protection Agency
PM <sub>2.5</sub>	Aerodynamic size less than or equal to 2.5 micrometers	USSOCOM	U.S. Special Operations Command
PM <sub>10</sub>	Aerodynamic size less than or equal to 10 micrometers	VAC	Virginia Administrative Code
ppb	parts per billion	VDEQ	Virginia Department of Environmental Quality
ppm	parts per million	VOCs	volatile organic compounds
POV	personally owned vehicle	VPDES	Virginia Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act	VSMP	Virginia Stormwater Management permit
RMA	Resource Management Area	WMAs	watershed management area
ROI	region of influence		
RONA	Record of Non-Applicability		
RPA	resource protection areas		
SHPO	State Historic Preservation Society		

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## 1 **1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION**

### 2 **1.1. Introduction:**

3 Pursuant to the National Environmental Policy Act (NEPA) of 1969 (Title 42, United States Code  
4 [USC] §4321 et seq.), as amended, NEPA-implementing regulations of the Council on  
5 Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] Parts 1500-1508) and 32 CFR  
6 Part 651, Environmental Analysis of Army Actions, the Department of the Army, the U.S. Army  
7 Corps of Engineers (USACE) Baltimore District, the U.S. Special Operations Command  
8 (USSOCOM), and 1st Capabilities Integration Group (1st CIG) and Humphreys Engineer Center  
9 Support Activity (HECSA), are preparing an Environmental Assessment (EA) to evaluate the  
10 potential environmental, socioeconomic, natural and cultural resource impacts associated with  
11 the proposed construction of a Training Support Facility (TSF) at Humphreys Engineer Center in  
12 Alexandria, Virginia.

13 This Draft EA will analyze the potential for environmental and socioeconomic impacts from the  
14 Proposed Action and the No Action Alternative.

### 15 **1.2. Background:**


16 HEC, a USACE civil works installation, comprises approximately 540 acres and is located  
17 immediately north of, but not part of, adjoining Fort Belvoir and approximately 19 miles south of  
18 the USACE Headquarters in Washington D.C (**Figure 1.1**). HEC is divided into two physically  
19 distinct areas by the Piney Branch Creek. Approximately 80 acres in the northern portion of HEC  
20 are intended for construction of buildings, roads, and parking. The remaining southwest half of  
21 HEC largely consists of steeply sloping land and second-growth forests (HEC 2006).

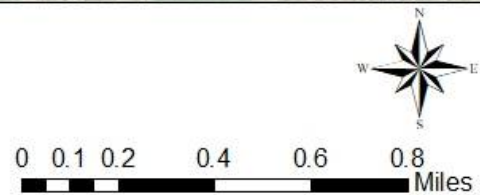
22 Four buildings on the 80-acre developed northern portion of the property house a majority of  
23 the research, administrative, training and storage functions at HEC. These buildings include the  
24 Cude Building (Building 2592), Kingman Building (Building 2593), Casey Building (Building 2594),  
25 and the Hall Building (Building 2596). The remaining facilities at HEC consist of several small  
26 maintenance and warehouse buildings and three concrete bunkers with administrative activities  
27 supporting its tenant organizations and the USACE. Approximately 1,000 personnel are currently  
28 employed at HEC (HEC 2006).

29 HECSA's mission is to operate as a Field Operating Activity of the USACE providing administrative  
30 and operational support to Headquarters-USACE (HQUSACE) and other Corps activities in the  
31 National Capital Region. HECSA also manages HEC and provides administrative support to various  
32 Corps and non-Corps tenants. USSOCOM, a Fort Belvoir and HEC tenant, develops and employs  
33 fully capable Special Operations to conduct global Special Operations and is responsible for a



**Legend**

-  HEC Boundary
-  HEC Project Area



1  
2 **FIGURE 1-1 TRAINING SUPPORT FACILITY PROJECT AREA LOCATION**

1 variety of missions including but not limited to: hostage rescue and recovery, counterinsurgency  
2 and security force assistance.

3 Existing training support facilities at HEC are limited. There are currently no dedicated training  
4 locations within HEC and it is the responsibility of each tenant to provide their own training  
5 location as they are able. Most training related functions currently occur in Building 2596,  
6 however many necessary training events are not able to happen due to a lack of adequate  
7 training space at HEC.

8 Storage space for tenants on HEC is also limited. 1st CIG is currently at capacity for receiving,  
9 processing, storing, inventorying, and maintaining sensitive and unique equipment items.  
10 Further, existing storage conditions for HECSA and 1st CIG include a lack of adequately climate  
11 controlled long-term storage which severely limits what can and cannot be stored at HEC.  
12 Training and storage space is severely limited on HEC which impacts the ability to support training  
13 and storage requirements.

#### 14 **1.3. Purpose and Need:**

15 The purpose of the Proposed Action is to support 1st CIG and other tenants at HEC by providing  
16 necessary training, storage and administrative space to provide for more efficient, synchronized  
17 unit operations by construction of a TSF at HEC and collocating training and storage functions to  
18 one, centralized building.

19 The need for the Proposed Action is to provide more efficient operations for 1st CIG and other  
20 tenants by providing flexible training support, administrative and storage space at HEC.  
21 Ultimately there is a current and future need for functional training and storage space at HEC  
22 which is currently lacking from the overall campus and is necessary for synchronized unit  
23 operations to execute military operations and contingency missions and for the preservation of  
24 unique and sensitive pieces of equipment and artifacts at HEC.

#### 25 **1.4. The NEPA Process:**

26 NEPA established the national policy for the environment and for the CEQ and provides for the  
27 consideration of environmental issues in federal agency planning and decision-making. In order  
28 to implement the NEPA policies, CEQ promulgated the Regulations for Implementing the  
29 Procedural Provisions of the National Environmental Policy Act (40 CFR Parts 1500-1508, referred  
30 to as CEQ Regulations). Both NEPA and CEQ Regulations require that federal agencies establish  
31 procedures to comply with the intended purpose of NEPA. Both also require federal agencies to  
32 encourage and facilitate public involvement as part of the NEPA process.



1 Army procedures to comply with NEPA are set forth in 32 CFR Part 651, *Environmental Analysis*  
2 *of Army Actions*, and Army Regulation (AR) 200-2, *Environmental Effects of Army Actions*. USACE  
3 procedures to comply with NEPA are set forth in AR 200-2-2, *Procedures for Implementing NEPA*.  
4 These regulations establish the Army and USACE policies and responsibilities to integrate  
5 environmental considerations early in the decision-making process. Instructions on preparing  
6 NEPA documentation and carrying out public and agency coordination are provided in the subject  
7 regulations.

8 Under guidance provided in NEPA and 32 CFR Part 651, either an Environmental Impact  
9 Statement (EIS) or an Environmental Assessment (EA) must be prepared for many federal actions,  
10 including major military construction actions. If a federal action is covered under an existing or  
11 previous NEPA action, or if required by a Categorical Exclusion, a Record of Environmental  
12 Consideration (REC) can be prepared. If it is determined that a REC is insufficient, then an EA or  
13 EIS will be prepared. An EA provides sufficient evidence and analysis for determining whether or  
14 not to prepare an EIS. The contents of an EA include the need for the proposed action,  
15 alternatives to the proposed action (i.e. the No Action Alternative), environmental impacts of the  
16 proposed action and alternatives, and documentation of public and agency coordination.

17 An evaluation of the environmental consequences of the proposed action and no action  
18 alternative includes direct, indirect, and cumulative effects, as well as qualitative and quantitative  
19 (where possible) assessment of the level of significance of these effects. The EA results in either  
20 a Finding of No Significant Impact (FONSI) or a Notice of Intent (NOI) to prepare an EIS. If HEC  
21 determines that this Proposed Action may have significant impact on the quality of the human  
22 environment, an EIS would be prepared.

### 23 **1.5. Agency and Public Coordination:**

24 NEPA requires that environmental information is made available to the public during the  
25 decision-making process and prior to actions being taken. A premise of NEPA is that the quality  
26 of federal decisions will be enhanced if proponents provide information to the public and involve  
27 the public in the planning process.

28 In compliance with NEPA, HECSA will notify relevant government agencies, stakeholders, and  
29 federally recognized tribes about the Proposed Action and alternatives. The notification process  
30 will provide these agencies and groups with the opportunity to cooperate with HECSA and to  
31 provide comments on the Proposed Action and alternatives. Appendix A contains copies of  
32 agency coordination and communication based on the Proposed Action.

33 A Notice of Availability (NOA) will be published in local newspapers including the Washington  
34 Post and the Alexandria Gazette announcing the availability of the EA for public review on January  
35 21, 2021. Copies of the EA will be available in the Lorton Branch, Kingstowne Branch and

- 1 Sherwood Regional Branch of Fairfax County Public Library system for public review. Comments
- 2 on the Draft EA will be received and reviewed, and revisions may be made to the EA prior to
- 3 finalization.

## 1    **2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES:**

2    NEPA, and the regulations of CEQ, require all reasonable alternatives to be rigorously explored  
3    and objectively evaluated. Accordingly, this chapter summarizes the project and provides a  
4    description of the subsequently selected Proposed Action and the No Action Alternative.

### 5        **2.1. Proposed Action**

6    The Proposed Action is to construct a TSF at HEC in order to provide flexible administrative,  
7    storage and training space to HEC due to a current lack of these resources and facilities. The  
8    Proposed Action includes construction of the TSF, installation of one, 600 kilowatt (kW) standby  
9    emergency diesel generator, construction of the supporting infrastructure, and demolition of  
10   existing site features. The following subsections describe in detail the construction, demolition  
11   and operational components of the Proposed Action.

#### 12            **2.1.1. Construction**

13   The proposed TSF would be constructed within a 3.2 acre, previously developed, site located  
14   within the central-eastern portion of HEC, east of the Kingman Building and north of the Hall  
15   Building parking lot within the existing HEC soccer field area/recreational area. The TSF would  
16   be constructed as a two-story, 66,486 ft<sup>2</sup> sensitive compartmented information facility (SCIF) and  
17   would include flexible training, meeting, storage and administrative space. The building would  
18   also house production and processing facilities and would include climate-controlled storage  
19   which would allow for processing, storage, inventorying, and maintenance of sensitive and  
20   unique equipment and artifacts. Construction would include special foundations, redundant  
21   power, sustainability/energy features, antiterrorism measures, and a raised access floor system.  
22   Primary components of the TSF include a training aid/support center, general purpose  
23   administrative facility and a search office/sentry facility (HECSA 2018).

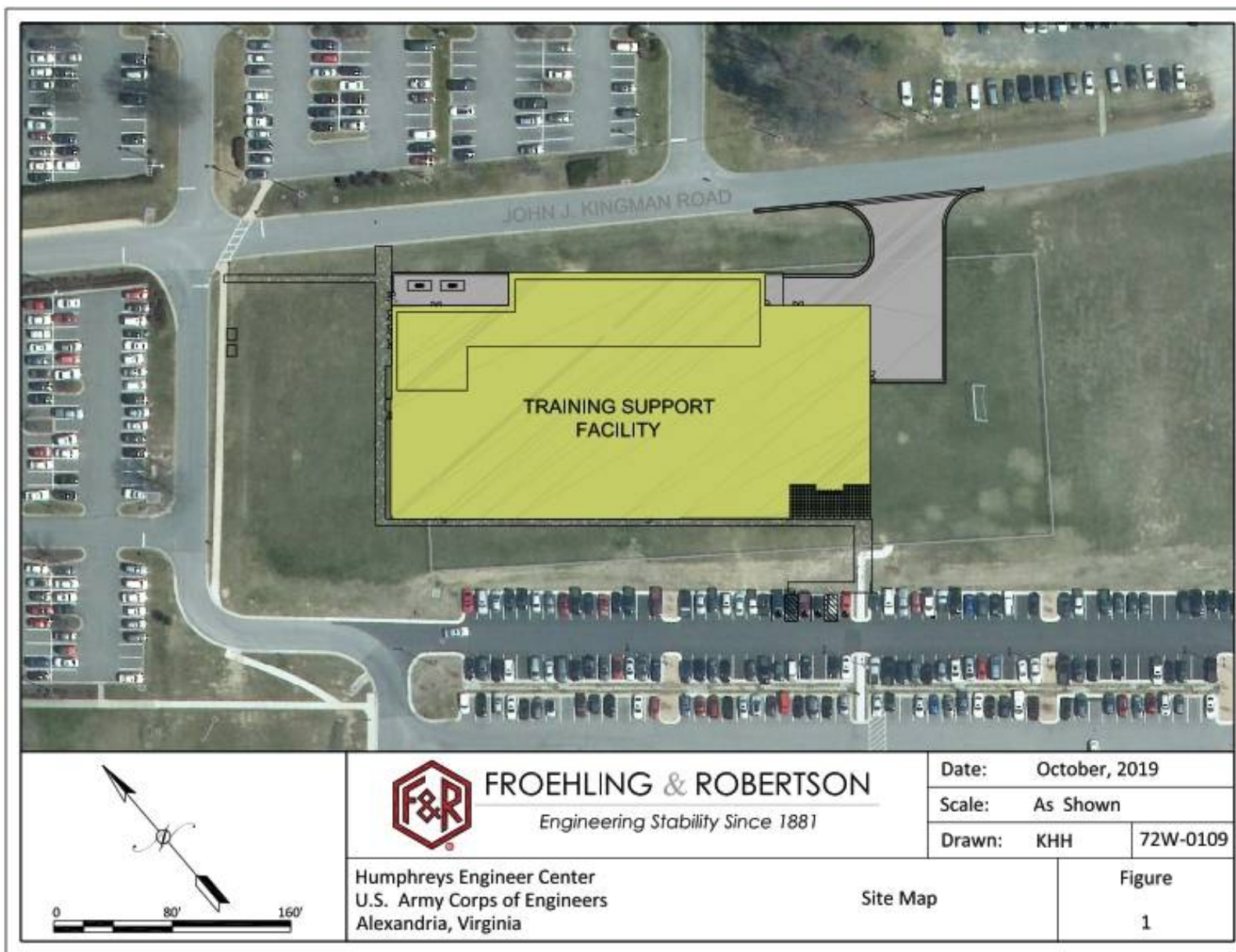
24   The TSF would also be constructed in accordance with Unified Facilities Criteria (UFC) 1-200-02,  
25   High Performance and Sustainable Building Requirements, UFC 4-010-01, Department of Defense  
26   Minimum Antiterrorism Standards for Buildings and UFC 4-010-02, Department of Defense  
27   Antiterrorism Standoff Distance for Buildings. Construction of the TSF would take approximately  
28   24 months. A grass buffer will be included with the facility for antiterrorism/force protection  
29   (AT/FP) requirements. Site and facility circulation would include connections to the existing  
30   campus sidewalks for pedestrian circulation and modification of the existing parking lot for  
31   American with Disabilities Act (ADA)-accessible parking. Striping in the Hall Building parking lot  
32   will be modified resulting in the loss of 6 personally owned vehicle (POV) spaces for 4 new ADA-  
33   accessible spaces. No new POV parking would be provided for the TSF.

1 A 48 foot wide heavy duty asphalt driveway will provide vehicular access for deliveries to the  
2 eastern corner of the proposed TSF facility and would be provided from John J. Kingman Road on  
3 the east side of the proposed facility. The driveway would include approximately 7,218 ft<sup>2</sup> of  
4 asphalt pavement (**Figure 2-1**).

5 An area for trucks to stage and turn around would also be provided as part of the design. A heavy  
6 duty reinforced concrete apron would extend 20 feet from the building to support vehicle loads  
7 from the building to the paved areas. The anticipated average vehicle trips are approximately 50  
8 single unit trucks (SU-30) per year. Vehicle access would also be provided to the northern corner  
9 of the building via mountable curb on John Kingman Road and an expanded sidewalk of heavy  
10 duty reinforced concrete pavement. The sidewalk would provide access for maintenance and  
11 delivery vehicles to the exterior mechanical yard, mechanical room and electrical room. This  
12 would also allow access for fuel vehicles to maintain fuel levels in the emergency diesel  
13 generators in the northeast equipment yard.

14 The construction would include new supporting infrastructure such as electrical, water, sewer  
15 and gas utility connections and paved walkways, gutters and curbs. Additional supporting  
16 facilities would also include a system of underground drainage pipes, treatment facilities and a  
17 detention structure for the collection, storage and release of stormwater runoff. The TSF itself  
18 would consist of consolidated training aid/support center, general purpose administrative  
19 facility, and a search office/sentry facility (HECSA 2018). One, 600 kW emergency diesel  
20 generator would also be installed in the northwestern corner of the facility located in an exterior  
21 mechanical yard. The emergency generator capacity would be designed to back up critical loads  
22 only, not the entire electrical system for the facility. This includes the Information Technology  
23 (IT) system, the Command Group area and the associated heating, ventilation and air  
24 conditioning (HVAC) equipment (USACE 2020).

25 The first story of the TSF would generally comprise approximately 49,574 ft<sup>2</sup> of warehouse and  
26 storage space and would include a climate controlled storage area, photo studio, training space,  
27 conference rooms and some office space. The second story would comprise approximately  
28 15,834 ft<sup>2</sup> of administrative, meeting space and classroom space. Pedestrian access would be  
29 provided to the TSF via interconnected concrete sidewalks and striped cross walks. Existing  
30 sidewalks within the Hall Building parking lot would be converted to ADA accessible ramps. All  
31 new sidewalks connecting to the TSF main entrance would vary in size based on their intended  
32 use and estimated foot traffic. A 5 foot wide ADA compliant ramp would also be provided from  
33 the existing parking lot up to the main entrance of the TSF. Access to the Proposed Facility would  
34 be from the parking lot southeast of the proposed TSF, currently associated with Building 2596.



1  
2

FIGURE 2-1. TRAINING SUPPORT FACILITY LOCATION

### 1                   **2.1.2. Demolition**

2     Due to the unknown age and condition of the existing infrastructure located at the site, the  
3     existing sanitary sewer line that occupies the western portion of the site will be removed to the  
4     nearest manhole. Similarly, an existing water line parallel to John Kingman Road will also be  
5     removed. Existing communication utilities located on the western portion of the site will also be  
6     demolished and relocated if possible (USACE 2020).

7     Additionally, an existing, buried, concrete wave tank foundation located along the eastern  
8     boundary of the project site, will be excavated and removed prior to development of the site.  
9     The removal of the existing concrete wave tank foundation is analyzed under a separate REC and  
10    is therefore removed from further analysis in this EA. Extensive minor to significant shallow  
11    buried metal debris will also be removed along with the existing chain link fence and sidewalk  
12    servicing the soccer field. Minor demolition of existing curb, gutter, and pavements will also be  
13    conducted to allow installation of new utilities and ADA ramps. Sidewalks within the Hall Building  
14    parking lot will also be demolished for construction of new ADA-compliant sidewalk ramps. No  
15    trees are proposed to be removed as part of this action (USACE 2020).

### 16                   **2.1.3. Operation**

17    After completion of construction, approximately 200 personnel currently at HEC would transfer  
18    to the new TSF. There would be no changes to the total number of personnel at HEC under the  
19    Proposed Action. All parking for proposed facility personnel would be accommodated in the  
20    existing Hall Building parking lot.

## 21                   **2.2. Alternatives Considered**

22    Based on the current need of the TSF and the lack of available building space on HEC, the  
23    Proposed Action and the No Action Alternative are carried forward for detailed analysis.

### 24                   **2.2.1. The Proposed Action**

25    Under this alternative, the TSF would be constructed as described under **Section 2.1.**

### 26                   **2.2.2. Alternatives Considered But Eliminated from Further Analysis**

27    Multiple alternatives were initially considered but have been eliminated from further considered  
28    in this EA based on the results of preliminary planning efforts. Based on multiple factors including  
29    limited space availability, the expansion of HEC under the proposed HEC Master Plan in an effort  
30    to make a more campus-like feel to HEC, and some areas of unsuitable terrain for development,  
31    space for the proposed TSF is limited. Natural features such as the resource protection area and  
32    wetlands make up much of the southern area of HEC and make development in these areas cost-

1 prohibitive. In an effort to eliminate other environmental impacts such as impacts to existing  
2 wetlands or other sensitive habitats, the proposed TSF was sited as to have the least  
3 environmental impacts as practicable possible with considerations such as construction in a  
4 previously disturbed area and other structures planned for development in the immediate area.

### 5 **2.2.3. No Action Alternative**

6 NEPA regulations refer to the continuation of the present course of action without the  
7 implementation of, or in the absence of, the Proposed Action, as the “No Action Alternative.”  
8 Inclusion of the No Action alternative is required by the regulations to provide a baseline against  
9 which the impacts of other alternatives can be assessed.

10 Under the No Action Alternative, the TSF would not be constructed and training and storage  
11 activities would occur in their current state at HEC. HEC would continue to lack appropriate  
12 training and storage space for 1st CIG and other tenants on HEC.

### 13 **2.3. The Preferred Alternative**

14 The Preferred Alternative is the alternative that is believed to best satisfy the purpose and need  
15 of the Proposed Action to fulfill mission requirements and responsibilities, giving consideration  
16 to economic, environmental, technical, and other factors. Furthermore, under the Preferred  
17 Alternative, the TSF would provide much needed training and storage space on HEC. Based on  
18 the need for the Proposed Action, the current Preferred Alternative is the Proposed Action as  
19 described in **Section 2.1** because it best meets the purpose and need for the project.

## 1    **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

### 2        **3.1. Introduction**

3    This section presents an analysis of the potential environmental consequences of implementing  
4    the Proposed Action and the consequences of selecting the No Action Alternative. Both  
5    alternatives were evaluated for their potential impacts on environmental, socioeconomic, and  
6    cultural resources in accordance with CEQ guidelines at 40 CFR Part 1508.8.

7    The specific criteria for evaluating the potential environmental impacts of the Proposed Action  
8    and the No Action Alternative are described in the following sections. The significance of an  
9    action is also measured in terms of its context and intensity. The context and intensity of  
10   potential environmental impacts are described in terms of duration, whether they are direct or  
11   indirect, the magnitude of the impact, and whether they are adverse or beneficial, as further  
12   defined in the following paragraphs:

### 13        **3.2. Aesthetic and Visual Resources**

#### 14            **3.2.1. Affected Environment**

15   HEC employs architectural design guidelines, outlined in the 2006 HEC Master Plan, in an effort  
16   to encompass the function and character of the buildings on HEC as well as the arrangement of  
17   buildings to one another and to their environment. These standards ensure that a consistent  
18   architectural vocabulary is employed throughout HEC. The following general architectural  
19   standards are followed at HEC (HEC 2006):

- 20        • Use simple, rectangular forms to make combined massing forms;
- 21        • Articulate entrances to buildings;
- 22        • Locate main building entrances at street elevation;
- 23        • Selecting colors that blend in with the natural surrounding;
- 24        • Use low maintenance, durable exterior building materials that are compatible with the  
25        installation and the natural environment (HEC 2006).

26   In addition to architectural guidelines, HEC also utilizes landscape design standards which  
27   enhance the visual appeal of the campus by attractive, natural and organized landscape design.  
28   Selection criteria used for landscape design include utilizing native materials for low maintenance  
29   and sustainability, avoiding incompatible colors, textures and forms, and matching the  
30   appropriate plant to the land use, situation, and environmental condition (HEC 2006).

31   Additionally, architectural design standards are further encouraged in the current development  
32   of the HEC Master Plan. The 2006 Master Plan provides for distinct design for future guidelines,



1 the Regulating Plan contained within the Master Plan provides the same guidance on height,  
2 location, and function of new construction, but it also promotes flexibility and sustainable design  
3 (HEC 2020).

4 The Proposed Action site is located within a previously developed area located in the central-  
5 eastern portion of HEC, east of the Kingman Building and north of the Hall Building. The site is  
6 approximately 3.2 acres. The site is surrounded to the south, west and north by parking areas  
7 and associated facilities (Hall Building to the south, Kingman Building to the west, and Casey  
8 Building to the north). Undeveloped land and deciduous woodlands are located east of the site,  
9 past John J. Kingman Road.

10 The Proposed Action site is primarily undeveloped, with the exception of an existing recreational  
11 field. A former wave tank foundation is located beneath the soccer field and is currently obsolete  
12 and planned for demolition under separate NEPA analysis. Aesthetics and visual resources at the  
13 site primarily consist of manicured landscaping with uninterrupted sight lines primarily to the  
14 north, west, and east. Building 2596 and its associated surface parking lot are located to the  
15 south-southwest.

### 16 **3.2.2. Environmental Consequences**

#### 17 **3.2.2.1. Threshold of Significance**

18 A Proposed Action could significantly affect aesthetic and visual resources if it results in abrupt  
19 changes to the complexity of the landscape and skyline (i.e., in terms of vegetation, topography,  
20 or structures) when viewed from points readily accessible by the public.

### 21 **3.2.3. Proposed Action**

#### 22 **3.2.3.1. Construction**

23 Construction of the proposed TSF and site preparation would take approximately 24 months to  
24 complete. Heavy equipment would be required for site preparation and construction of the  
25 proposed facility. Due to the location of the construction on the HEC campus, no portions of the  
26 construction would be visible from outside of the HEC boundary.

27 Construction activities would primarily be visible from the north, northeast, west and southern  
28 boundaries of the project site. To limit visual impacts during construction, the construction  
29 contractor would implement best management practices (BMP), such as utilizing a construction  
30 privacy fence along the perimeter of the construction site. Construction equipment (backhoes,  
31 front loaders, bulldozer, etc.) traveling to and from the site would be visible through the central  
32 portion of HEC however it would be assumed that once the heavy equipment is on site, it would  
33 remain there until completion of the project.

1 Construction equipment can not only become dust-laden during site work, but can also generate  
2 ambient fugitive emissions which can lead to nuisance concerns such as reduced visibility on  
3 nearby roadways and air quality concerns (see **Section 3.3**). To avoid these impacts, the  
4 construction contractor would use water trucks to prevent fugitive dust from being emitted into  
5 the air. Additionally, dirt and debris would be physically removed from construction vehicles (i.e.  
6 dump trucks) prior to leaving the construction site. Likewise, haul trucks transporting debris and  
7 soils would utilize hopper or bucket covers to further minimize dust emissions as they travel on  
8 HEC roadways.

9 Considering the natural view shed obstructions and incorporation of construction BMPs,  
10 construction and demolition related to the Proposed Action would have short-term, direct,  
11 negligible, adverse impacts on aesthetic and visual resources.

#### 12 **3.2.3.2. Demolition**

13 Heavy construction equipment will be utilized to remove the existing infrastructure located at  
14 the Proposed Action site. Impacts from demolition would be similar to those described under  
15 the construction subsection, **Section 3.2.3.1** because the duration of demolition activities would  
16 be shorter and smaller in scope than those of construction activities.

#### 17 **3.2.3.3. Operation**

18 The proposed TSF would be of two-story construction, and would be consistent with the existing  
19 architectural style of HEC. The surrounding vegetation and trees to the east would obstruct the  
20 view of the facility from that direction. The northern, eastern and southern portion of the site  
21 would be visible from the Hall Building, Kingman Building and Casey Building.

22 The proposed TSF would enhance the aesthetic appeal of this area of HEC by collocating similar  
23 use buildings and providing standard landscaping practices to a primarily unused portion of HEC.  
24 The proposed facility would also incorporate environmental sensitive designs with a modern  
25 façade consistent with the surrounding facilities at HEC. During operation of the facility, new  
26 landscaping within the site boundary would be professionally maintained. Landscaping of the  
27 area around the proposed facility would be limited to permanent stabilization of disturbed areas  
28 via permanent seeding or sod. No landscaping/vegetation is proposed under this project. These  
29 operational improvements would not only enhance the visual and aesthetic appeal of this part  
30 of HEC, but would also result in staff and the community having a greater sense of pride for  
31 activities of USACE, HECSA and other tenants at HEC (HEC 2006).

32 Considering the natural view shed obstructions, operation of the proposed TSF would have long-  
33 term, direct, negligible to minor and beneficial impacts on visual and aesthetic resources at HEC.

### 1                    3.2.4. No Action Alternative

2     Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
3     would continue to lack adequate training and storage of mission essential equipment. Long-  
4     term, negligible, beneficial impacts would occur to the aesthetic and visual resources at HEC  
5     under the No Action Alternative as the proposed TSF would not be constructed and the site would  
6     remain as-is however; long-term, minor, impacts would be expected to HEC under the No Action  
7     Alternative as HEC would continue to lack vital training support resources. Site conditions would  
8     remain as described under **Section 3.2.1**. No additional impacts on visual and aesthetic resources  
9     would be expected.

## 10            3.3. Air Quality

### 11                    3.3.1. Affected Environment

12     **National Ambient Air Quality Standards.** The U.S. Environmental Protection Agency (USEPA),  
13     under the requirements of the 1970 Clean Air Act (CAA) as amended in 1977 and 1990, has  
14     established National Ambient Air Quality Standards (NAAQS) for the following six contaminants,  
15     referred to as criteria pollutants (40 CFR 50):

- 16        • Carbon monoxide (CO)
- 17        • Lead
- 18        • Nitrogen dioxides (NO<sub>x</sub>)
- 19        • Ozone (O<sub>3</sub>)
- 20        • Sulfur Dioxide (SO<sub>2</sub>)
- 21        • Particulate matter (PM), divided into two size classes:
  - 22            ○ Aerodynamic size less than or equal to 10 micrometers (PM<sub>10</sub>)
  - 23            ○ Aerodynamic size less than or equal to 2.5 micrometers (PM<sub>2.5</sub>)

24     The NAAQS includes primary and secondary standards. The primary standards were established  
25     at levels sufficient to protect public health with an adequate margin of safety. The secondary  
26     standards were established to protect the public welfare from the adverse effects associated  
27     with pollutants in the ambient air. **Table 3.1** shows the primary and secondary standards (USEPA  
28     2020a).

29     The CAA, as amended in 1990, mandates that state agencies adopt State Implementation Plans  
30     (SIP) that target the elimination or reduction of the severity and number of violations of the  
31     NAAQS. SIPs set forth policies to expeditiously achieve and maintain attainment of the NAAQS.

32     While each state has the authority to adopt standards stricter than those established under the  
33     federal program, the Commonwealth of Virginia accepts federal standards.

1 Federal regulations designate Air Quality Control Regions (AQCR) that have concentrations of one  
 2 or more of the criteria pollutants that exceed the NAAQS as nonattainment areas, while AQCRs  
 3 with levels below the NAAQS are designated as attainment areas. Further, maintenance areas  
 4 are AQCRs that have previously been designated nonattainment and have been redesignated to  
 5 attainment for a probationary period through implementation of maintenance plans. According  
 6 to the severity of the pollution problem, O<sub>3</sub> and PM<sub>10</sub> nonattainment areas can be categorized as  
 7 marginal, moderate, serious, severe, or extreme. Where insufficient data exist to determine an  
 8 areas' attainment status, it is designated unclassifiable or in attainment.

9 **TABLE 3-1. NATIONAL AMBIENT AIR QUALITY STANDARDS**

NAAQS	Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide	Primary	8-hour	9 ppm	Not to be exceeded more than once per year
		1-hour	35 ppm	
Nitrogen Dioxide	Primary	1-hour	100 ppb	98 <sup>th</sup> percentile, averaged over 3 years
	Primary and secondary	Annual	53 ppb	Annual Mean
Ozone	Primary and Secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particulate Matter (PM <sub>2.5</sub> )	Primary	Annual	12 µg/m <sup>3</sup>	Annual mean, averaged over 3 years
	Secondary	Annual	15 µg/m <sup>3</sup>	Annual mean, averaged over 3 years
	Primary and Secondary	24-hour	35 µg/m <sup>3</sup>	98 <sup>th</sup> percentile, averaged over 3 years
Particulate Matter (PM <sub>10</sub> )	Primary and Secondary	24-hour	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
Lead	Primary and Secondary	Rolling 3-month average	0.15 µg/m <sup>3</sup>	Not to be exceeded
Sulfur Dioxide	Primary	1-hour	75 ppb	99 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years

NAAQS	Primary/Secondary	Averaging Time	Level	Form
	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

1 Key: ppm – parts per million; ppb – parts per billion;  $\mu\text{g}/\text{m}^3$  – micrograms per meter cubed

2 Source: USEPA 2020a

3 Fairfax County (which encompasses HEC) is within the National Capital Interstate AQCR (AQCR  
4 047 or DC-MD-VA AQCR) (40 CFR 81.12). AQCR 047 is in the ozone transport region (OTR) that  
5 includes 12 states and Washington D.C. The USEPA (as of 31 March 2019) has designated Fairfax  
6 County as marginal nonattainment for the 2015 8-hour O<sub>3</sub> NAAQS and in attainment for all other  
7 criteria pollutants (USEPA 2020a, USEPA 2020b).

8 **Clean Air Act Conformity.** The 1990 amendments to the CAA require federal agencies to ensure  
9 that their actions conform to the SIP in a nonattainment area. Under Section 176(c) of the CAA,  
10 a project is in “conformity” if it corresponds to a SIP’s purpose of eliminating or reducing the  
11 severity and number of violations of the NAAQS and achieving their expeditious attainment.

12 Conformity further requires that such activities would not:

- 13 • cause or contribute to any new violations of any standards in any area;
- 14 • increase the frequency or severity of any existing violation of any standards in any area;
- 15 or
- 16 • delay timely attainment of any standard or any required interim emission reductions or  
17 other milestones in any area.

18 The USEPA published final rules on general conformity (40 CFR Parts 51 and 93) in the Federal  
19 Register on 30 November 1993. The General Conformity Rule (GCR) applies to federal actions in  
20 nonattainment or maintenance areas for any of the criteria pollutants. The results specify *de*  
21 *minimis* emission levels by pollutant to determine the applicability of conformity requirements  
22 for a project. The corresponding *de minimis* levels for the ozone precursors for marginal O<sub>3</sub>  
23 nonattainment areas are 100 tons per year for NO<sub>x</sub> and 50 tons per year for volatile organic  
24 compounds (VOCs). A federal action is exempt from the GCR requirements if the action’s total  
25 new emissions are below the *de minimis* threshold or are otherwise exempt from 40 CFR 51.153.  
26 There are two main components to the overall process: an applicability analysis to determine  
27 whether a conformity determination is required and, if it is, a conformity determination to  
28 demonstrate that the action conforms to the SIP. The Proposed Action does not require a formal  
29 conformity determination. A Record of Non-Applicability (RONA) concerning the GCR is provided  
30 in **Appendix B**, which details the emissions estimates and the methodology used.

1 **Hazardous Air Pollutants.** In addition to the criteria pollutants discussed above, non-criteria  
2 toxic pollutants, called hazardous air pollutants (HAPs), are also regulated under CAA. USEPA has  
3 identified a total of 188 HAPs that are known or suspected to cause health effects in small doses.  
4 HAPs are emitted by a wide range of man-made and naturally occurring sources, including mobile  
5 and stationary sources. However, unlike the NAAQS for criteria pollutants, federal ambient air  
6 quality standards do not exist for non-criteria pollutants.

7 **Greenhouse Gas Emissions and Climate Change.** It is noted that EO 13783, *Promoting Energy*  
8 *Independence and Promoting Economic Growth*, rescinded the final guidance issued August 5,  
9 2016, by the CEQ that requires federal agencies to consider greenhouse gas emissions (GHG) and  
10 the effects of climate change in NEPA documents. Further, EO 13693, *Planning for Federal*  
11 *Sustainability in the Next Decade*, was also rescinded on March 17, 2018 and replaced by EO  
12 13834, *Efficient Federal Operations*. EO 13834 directs federal facilities and agencies to continue  
13 tracking and reporting on energy greenhouse gas emissions. As such, this EA estimates carbon  
14 dioxide (CO<sub>2</sub>) levels associated with the Proposed Action as appropriate for disclosure purposes.  
15 Additionally, this EA considers CO<sub>2</sub> as the representative GHG emission.

16 GHGs are considered compounds that contribute to the greenhouse effect. The greenhouse  
17 effect is a natural phenomenon where gases trap heat within the surface-troposphere (the  
18 lowest portion of the earth's atmosphere) system, causing heating at the surface of the earth.  
19 The primary long-lived GHGs directly emitted by human activities are car CO<sub>2</sub>, methane (CH<sub>4</sub>),  
20 nitrous oxides (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur  
21 hexafluoride (SF<sub>6</sub>).

22 The heating effect from these gases is considered the probable cause of the increasing global  
23 temperatures observed over the last 50 years (NASA 2019). Climate change can affect many  
24 aspects of the environment and is exacerbated by greenhouse gas (GHG) emissions. The  
25 dominant GHG gas emitted is CO<sub>2</sub> (accounting for 81.6% of all GHG emissions as of 2017, the  
26 most recent year for which data are available [USEPA 2020c]).

27 Current GHG emission sources at HEC include mobile combustion engines and other insignificant  
28 sources of emissions. Due to the small size of HEC, air quality data is not available. HEC does not  
29 currently have a Title V air quality permit.

### 30 **3.3.2. Environmental Consequences**

#### 31 **3.3.2.1. Threshold of Significance**

32 A project could have a significant air quality impact if it would result in emissions that exceed  
33 applicability thresholds, be regionally significant, or contribute to a violation of any federal, state,  
34 or local air regulations.

1                   **3.3.3. Proposed Action**

2                   **3.3.3.1. Construction**

3 HEC has considered net emissions generated from all direct and indirect sources of air emission  
4 that are reasonably foreseeable. *Direct emissions* are emissions that are caused by a federal  
5 action and occur at the same time and place as the action. *Indirect emissions* are defined as  
6 reasonably foreseeable emissions that are caused by the action but might occur later in time  
7 and/or be farther removed in distance from the action itself, and that the federal agency can  
8 practicably control.

9 Specifically, direct emissions would result from the construction, demolition and site work  
10 related to the Proposed Action. There are no anticipated indirect emissions associated with the  
11 Proposed Action.

12 As previously discussed, AQCR 047 is currently in nonattainment for the 2015 8-hour O<sub>3</sub> NAAQS.  
13 Therefore, since construction associated with the Proposed Action would result in the emissions  
14 of precursors of this nonattainment air pollutant, a review has been conducted to determine if  
15 the Proposed Action is subject to GCR.

16 Information regarding the number of pieces and types of equipment to be used on the project,  
17 the schedule of equipment use, and the approximate daily operating time was calculated using  
18 the estimations and presumptions provided for the Proposed Action and through field  
19 experience.

20 The total project construction emissions associated with the use of heavy construction  
21 equipment (e.g. bulldozers, backhoes, etc.), worker vehicles, paving off-gases, and fugitive dust  
22 from surface disturbances are presented in **Table 3.2**. Emissions for the other criteria pollutants  
23 that are considered to be negligible for various phases of construction are reported as non-  
24 applicable (N/A) in the associated table.

25 As shown in **Table 3.2**, the total estimated emissions for construction of the Proposed Action  
26 would be below the GCR *de minimis* thresholds. Therefore, construction would have a short-  
27 term, direct, and negligible to minor impact on air quality.

28                   **TABLE 3-2. TOTAL EMISSIONS FROM CONSTRUCTION OF THE PROPOSED ACTION**

Phases	Total Estimated Construction Emissions (tons per year [tpy])					
	CO	NOx	PM	SO <sub>2</sub>	VOC	CO <sub>2</sub>
<b>Heavy Construction Equipment Emissions</b>	5.4023	5.9911	0.2631	0.0154	0.9629	1401.3584

Phases	Total Estimated Construction Emissions (tons per year [tpy])					
	CO	NOx	PM	SO <sub>2</sub>	VOC	CO <sub>2</sub>
<b>Worker Vehicle Emissions</b>	1.0313	0.0911	0.0416	0.0028	0.1261	287.7637
<b>Paving Off-Gas Emission</b>	N/A	N/A	N/A	N/A	0.00023	N/A
<b>Fugitive Dust Emissions</b>	N/A	N/A	4.224	N/A	N/A	N/A
<b>Total Emissions</b>	6.4336	6.0822	4.5287	0.0182	1.0895	1689.1220
<b>GCR <i>de minimis</i> Emission Levels</b>	100	100	100	100	50	N/A

Note: N/A – Not Applicable

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2

### 3.3.3.2. Demolition

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Impacts on air quality would result from demolition activities involving removal of existing infrastructure. Impacts would primarily result from potential fugitive dust emissions related to demolition activities and would be less than those generated during construction activities as described in **Section 3.3.3.1**. The demolition contractor would implement BMPs during demolition to minimize fugitive dust, including those outlined in **Section 3.2.2**.

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### 3.3.3.3. Operation

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Operation of the proposed TSF would generate negligible amounts of emissions, primarily from operation of the one, 600 kW standby emergency diesel generators. Due to the size of the emergency generators, air permitting under the Virginia Department of Environmental Quality would not be required. The generators would be used for emergency purposes only and would only operate under those circumstances unless they are being operated for testing or maintenance purposes. No substantive new non-mobile or mobile emission sources would be created. Generally, emissions from operational activities would be expected to be generally lower than the construction-related emissions, and therefore operation of the Proposed Action also would not lead to an exceedance of the GCR *de minimis* thresholds.

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Therefore, the operation of the proposed TSF would have negligible impacts on air quality from emergency testing and operation of the emergency generators.

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### 3.3.4. No Action Alternative

21

Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit would continue to lack adequate training and storage of mission essential equipment. Long-

22



1 term, negligible, beneficial impacts would occur on Air Quality under the No Action Alternative  
2 as the proposed TSF would not be constructed and the site would remain as-is and no  
3 construction would occur; therefore no air quality impacts would be expected from construction  
4 nor operation of the Proposed Action under the No Action Alternative. Long-term, minor,  
5 adverse impacts to HEC would be expected from a lack of adequate training support resources.  
6 Site conditions would remain as described under **Section 3.3.1**. No additional impacts on air  
7 quality would be expected.

### 8 **3.4. Biological Resources**

9 Biological resources include both plants and animals, including species protected under the  
10 *Endangered Species Act* (ESA), the *Migratory Bird Treaty Act* (MBTA), and the *Bald and Golden*  
11 *Eagle Protection Act* (BGEPA). The study area for this section consists of the approximately 3.2  
12 acre Proposed Action site.

#### 13 **3.4.1. Affected Environment**

14 **Vegetation.** The Proposed Action site is within the coastal plain province of Virginia. The coastal  
15 plain is characterized primarily by pine-dominated forests. The Proposed Action site is primarily  
16 composed of manicured landscaping for the recreational field. Nearly half of the HEC installation  
17 is covered with dense, secondary tree growth. Due to poor soils, topography and infrequent  
18 management of coniferous trees, hardwood trees have become dominant on HEC. Common tree  
19 species found at HEC include spruce (*Picea excels*), sitka spruce (*Picea falcate*), black pine (*Pinus*  
20 *nigra*), English yew (*Taxus baccata*), irish juniper (*Junipersur communis*) and alder (*Alnus incana*)  
21 (HEC 2006).

22 **Wildlife.** Abundant and diverse populations of wildlife occur throughout the majority of the 540  
23 acres of the installation. These wildlife species include white-tailed deer, grey squirrels, opossum  
24 and a variety of birds. Because of the proximity of existing roadways, buildings and general  
25 development around the Proposed Action site, the site has low habitat value for wildlife relative  
26 to the majority of HEC (HEC 2006). According to the Virginia Fish and Wildlife Information Service  
27 (VAFWIS) website and online report generated for the Proposed Action, 701 non-protected  
28 species have the potential to occur within 3 miles of the project area. These species include  
29 various terrestrial and aquatic animals (VAFWIS 2020a).

30 HEC and the surrounding area provide roosting, foraging, and nesting habitat for bald or golden  
31 eagles, protected under the BGEPA. Eagle nests have been documented along Dogue Creek and  
32 the Potomac River. The Proposed Action site contains no documented nesting sites, nor does it  
33 provide any significant amount of foraging or roosting habitat for the eagle.

34 **State and Federally Protected Species.** Of the 701 species (686 are non-protected species) that  
35 have potential to occur within 3 miles of the project area, 13 species are either protected at the

1 state or federal level. **Table 3.3** details the state and federally protected species that have the  
2 potential to occur within the Proposed Action site.

3 **TABLE 3-3. STATE AND FEDERAL PROTECTED SPECIES THAT HAVE POTENTIAL TO OCCUR WITHIN 3**  
4 **MILES OF THE PROJECT AREA**

Common Name	Scientific Name	Status
Atlantic Sturgeon	<i>Acipenser oxyrinchus</i>	FE, SE
Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	FT, ST
Yellow Lance	<i>Elliptio lanceolata</i>	FT
Little Brown Bat	<i>Myotis lucifugus</i>	SE
Tri-Colored Bat	<i>Perimyotis subflavus</i>	SE
Brook Floater	<i>Alasmidonta varicosa</i>	SE
Wood Turtle	<i>Glyptemys insculpta</i>	ST
Peregrine Falcon	<i>Falco peregrinus</i>	ST
Loggerhead Shrike	<i>Lanius ludovicianus</i>	ST
Henslow's Sparrow	<i>Ammodramus henslowii</i>	ST
Appalachian Grizzled Skipper	<i>Pyrgus wyandot</i>	ST
Migrant Loggerhead Shrike	<i>Lanius ludovicianus migrans</i>	ST
Spotted Turtle	<i>Clemmys guttata</i>	CC

5 Key: FE – Federally Endangered; FT – Federally Threatened; SE – State Endangered; ST – State  
6 Threatened; CC – Collection Concern

7 Source: VAFWIS 2020a

8 The Atlantic sturgeon (*Acipenser oxyrinchus*) is federally and state endangered and is known to  
9 occur in the deeper waters of the Potomac River and Chesapeake Bay basin. The Atlantic  
10 sturgeon has not been observed on HEC or on the adjacent federal property Fort Belvoir, it has  
11 been documented in the Potomac River near Fort Belvoir. There are no water bodies in the  
12 Proposed Action site that would support the Atlantic sturgeon however it could exist in the area  
13 surrounding the site, including in Dogue Creek, approximately 2,200 feet southeast of the site.  
14 Potential threats to the Atlantic sturgeon include bycatch of sturgeon in fisheries targeting other  
15 species, pollution, excessive loud noise (in water bridge or pier construction), increases in  
16 sedimentation, degradation of habitat from human activities, loss of habitat, and loss of access  
17 to spawning grounds (Fort Belvoir 2018).

18 As of 2 April 2015, the northern long-eared bat (NLEB) was listed as a federally-threatened  
19 species. The NLEB is a federal threatened and state threatened forest dwelling bat that  
20 historically used to be a common species in Virginia and that has been identified on the adjacent  
21 federal property, Fort Belvoir. The effects of White-Nose Syndrome caused by the fungus  
22 (*Pseudogymnoascus destructans*) created the need for federal and state protection. Fort Belvoir  
23 has been conducting mist net surveys and using acoustics devices since 1998 to monitor bat  
24 populations on the installation. Potential threats to the NLEB are disease, habitat destruction  
25 (roost, foraging, reproduction, and hibernacula impacts), bioaccumulation of pesticides, and  
26 predation (Fort Belvoir 2018). NLEBs winter in caves and mines, none of which are present on

1 HEC; however, in the late spring and summer the bats migrate to wooded areas and roost under  
2 loose tree bark on living or dead trees. HEC has forest stands that could be suitable for roosting  
3 during the late spring and summer months. Based on the proximity of HEC to Fort Belvoir, and  
4 that HEC would be composed of very similar NLEB habitat to Fort Belvoir, HEC would incorporate  
5 protection measures outlined in the *Memorandum of Instruction – Northern Long-eared Bat*  
6 *Protection* on Fort Belvoir, dated 21 October 2015 to mitigate any potential adverse impacts to  
7 the NLEB.

8 The Yellow Lance (*Elliptio lanceolata*) is federally-threatened and is a freshwater mussel species  
9 native to the Atlantic Slope drainages in Maryland, Virginia and North Carolina. The species  
10 occurs in streams and rivers, generally in clean, coarse to medium sands and sometimes gravel  
11 substrates. There are no water bodies in the project area that would support the Yellow Lance  
12 however the Yellow Lance could potentially exist near the project area including Dogue Creek,  
13 approximately 2,200 feet southeast from the project area. Potential threats to the Yellow Lance  
14 include declines in water quality, loss of stream flow, riparian and instream habitat  
15 fragmentation, and deterioration of instream habitats (USFWS 2018).

16 The little brown bat (*Myotis lucifugus*) is state endangered and has been added to the National  
17 Listing Workplan. The little brown bat is frequently documented foraging and roosting on Fort  
18 Belvoir, however HEC does not maintain any records regarding little brown bat foraging and  
19 roosting on HEC. The effects of White-Nose Syndrome created the need for state protection and  
20 petition for federal protection. Fort Belvoir has been conducting mist net surveys and using  
21 acoustical devices since 1998 to monitor bat populations on the installation. The little brown bat  
22 on Fort Belvoir is managed similarly to the NLEB. Potential threats to the little brown bat are  
23 disease, habitat destruction (roost, foraging, reproduction, and hibernacula impacts),  
24 bioaccumulation of pesticides, and predation (Fort Belvoir 2018).

25 The tricolored bat (*Perimyotis subflavus*) is state endangered and has been added to the National  
26 Listing Workplan. The tricolored bat is still frequently documented foraging and roosting on Fort  
27 Belvoir however HEC does not maintain any records regarding tricolored bat foraging and  
28 roosting on HEC. The effects of White-Nose Syndrome created the need for state protection and  
29 petition for federal protection. Fort Belvoir has been conducting mist net surveys and using  
30 acoustics devices since 1998 to monitor bat populations on the installation. The tricolored bat  
31 on Fort Belvoir is managed similarly to the NLEB. Potential threats to the tricolored bat are  
32 disease, habitat destruction (roost, foraging, reproduction, and hibernacula impacts),  
33 bioaccumulation of pesticides, and predation (Fort Belvoir 2018).

34 The brook floater (*Alasmidonta varicose*) is a state endangered freshwater mussel species native  
35 to the Shenandoah and Potomac River watershed. The species occurs in clear, swift waters with  
36 gravel and/or sand and gravel substrates. Typically, they are found buried in the substrate in  
37 shallow riffle and shoal areas. According to VAFWIS, the only live brook floaters that have been

1 found recently include those in the mainstem Potomac River. Potential threats to the brook  
2 floater include declines in water quality, loss of stream flow, riparian and instream habitat  
3 fragmentation, and deterioration of instream habitats (VAFWIS 2019a).

4 The wood turtle (*Glyptemys insculpta*) is a state threatened species and has been added to the  
5 National Listing Workplan. The wood turtle has been documented on Fort Belvoir in several  
6 locations. Wood turtles can occupy a wide variety of habitats including forested floodplains and  
7 nearby slopes, fields in various stages of succession, wet meadows, and farmland with the  
8 primary attribute being the presence of water. The wood turtle is very mobile, highly terrestrial  
9 species that typically uses creeks for hibernacula and mating and uses the riparian zones around  
10 the creeks during its more terrestrial stages. Wood turtle habitat has been identified on HEC by  
11 Fort Belvoir, approximately 100 feet south of the project area. Potential threats to the wood  
12 turtle include development of the riparian buffers, increased stormwater flow, and poaching of  
13 turtles for the pet trade (Fort Belvoir 2018, VAHS 2019).

14 The peregrine falcon (*Falco peregrinus*) is a state threatened species that has been occasionally  
15 reported on the Fort Belvoir shoreline. There are no records of peregrine falcons within the HEC  
16 boundary however there may be foraging areas in the areas surrounding HEC. The peregrine  
17 falcon occupies various different habitats including mountain ranges, river valleys and coastlines.  
18 Furthermore, the Peregrine Falcon in this area around HEC would be found in a broad array of  
19 habitats including urban, barrier islands, seacoasts, lake edges, or mountain ranges. Potential  
20 threats to the peregrine falcon foraging habitat include disturbances near adjacent shorelines,  
21 shoreline development, and recreational activities on waters surrounding HEC and Fort Belvoir  
22 (USFWS 2006, Fort Belvoir 2018).

23 The loggerhead shrike (*Lanius ludovicianus*) is a state threatened bird that has potential to occur  
24 in the area on and around HEC. Loggerhead shrikes prefer open country with short vegetation.  
25 Breeders usually settle near isolated trees or large shrubs (Fort Belvoir 2018). The loggerhead  
26 shrike has been observed on Fort Belvoir however there are no records of loggerhead shrike  
27 sightings or nests on HEC. Potential threats to the loggerhead shrike include loss of suitable  
28 habitat, habitat fragmentation, pesticides, and urbanization (USFWS 2000).

29 Henslow's sparrow (*Ammodramus henslowii*) is a state threatened bird that has potential to  
30 occur on or around HEC. The Fort Belvoir Integrated Natural Resources Management Plan  
31 (INRMP) does not identify any Henslow's sparrow resources on the installation. Furthermore,  
32 there are no records of Henslow's sparrow occurring or utilizing HEC property. Henslow's  
33 sparrow historically breeds in native prairie habitat but are known to also inhabit other grasslands  
34 including hayfields, pastures and wet meadows. Threats to Henslow's sparrow primarily include  
35 habitat loss and urbanization (USFWS 2012).

1 The Appalachian grizzled skipper (*Pyrgus Wyandot*) is a state threatened species that has potential  
2 to occur in the area around the project area. According to the Pennsylvania Natural Heritage list  
3 the preferred habitat for the Appalachian grizzled skipper consists of semi-open shale slopes with  
4 sparse herbaceous vegetation which tend to be surrounded by scrubby oak or oak-hickory  
5 woodlands. There are no records of sightings or surveys for the Appalachian grizzled skipper on  
6 HEC. Threats to the Appalachian grizzled skipper include urbanization and are extremely  
7 vulnerable to gypsy moth spraying (Fort Belvoir 2018).

8 Migrant Loggerhead shrike is a state threatened bird (*Lanius ludovicianus migrans*) that is a  
9 migrant subspecies of *Lanius ludovicianus*. This species prefers open habitat characterized by  
10 grasses and forbs. There are no records of the migrant loggerhead shrike on HEC. Potential  
11 threats to the migrant loggerhead shrike include loss of suitable habitat, habitat fragmentation,  
12 pesticides, and urbanization (USFWS 2000, PNHP 2019).

13 The spotted turtle (*Clemmys guttata*) is a turtle common to Fort Belvoir that has recently added  
14 to the National Listing Workplan to evaluate the species' needs for federal protection. The turtle  
15 is found primarily in the flooded forested wetlands but will travel across the landscape from  
16 wetland to wetland. Potential threats to the spotted turtle include development within the  
17 riparian buffers around the wetlands, alterations to wetland hydrology, and poaching of turtles  
18 for the pet trade (Fort Belvoir 2018).

19 The rusty patched bumble bee (*Bombus affinis*) is also known to historically occur at and in the  
20 surrounding area of HEC and Fort Belvoir. Although the rust patched bumble bees have not been  
21 observed or collected in Fairfax County since the 1970s, surveys and voluntary conservation  
22 measures are strongly encouraged by USFWS for projects in Fairfax County. The rusty patched  
23 bumble bee required nesting habitat (typically abandoned rodent nests or other similar cavities),  
24 floral resources to gather pollen and nectar (typically within 0.6 miles of nests), and  
25 overwintering habitat (loose soil and/or leaf litter in or near woodlands and woodland edges that  
26 contain spring blooming herbaceous plants, shrubs, and trees) (Mullen et al. 2016, Fort Belvoir  
27 2018).

28 **Migratory Birds.** Migratory bird data is not collected on HEC; however migratory birds are well  
29 documented at the immediately adjacent Fort Belvoir. A total of 278 bird species have been  
30 identified on Fort Belvoir with approximately 32 percent being year-round residents, 26 percent  
31 are neotropical migrants, and 36 percent are temperate migrants. USFWS identifies 19 Birds of  
32 Conservation Concern that have potential to be impacted in the Proposed Action site (VAFWIS  
33 2020). Birds of Conservation Concern are species, subspecies and populations of migratory non-  
34 game birds that, without additional conservation actions, are likely to become candidates for  
35 listing under the ESA. Of these 19 birds, 16 species have been documented on the adjacent Fort  
36 Belvoir and therefore have the potential to occur in or near the Proposed Action site as a stopover  
37 on their migratory route, during the breeding season, or could occur year-round.

## 1                   **3.4.2. Environmental Consequences**

### 2                   **3.4.2.1. Threshold of Significance**

3   The threshold of significance would be exceeded if the alternative would jeopardize the  
4   continued existence of any federally listed threatened or endangered species or result in  
5   destruction of critical habitat; decrease the available habitat for commonly found species to the  
6   extent that the species could no longer exist in the area; eliminate a sensitive habitat such as  
7   breeding areas, habitats of local significance, or rare or state-designated natural communities  
8   needed for the survival of a species; or substantially degrade or minimize habit.

### 9                   **3.4.3. Proposed Action**

#### 10                  **3.4.3.1. Construction**

11   **Vegetation.** Approximately 145,055 ft<sup>2</sup> of land, a majority of which is vegetated, will be disturbed  
12   from earthmoving activities related to the Proposed Action. Approximately 65,780 ft<sup>2</sup> of  
13   impervious surfaces will also be added to HEC which will permanently impact vegetative growth.  
14   The impacts from development would be negligible because the existing vegetation is common  
15   locally around the project area. Ultimately, the Proposed Action would alter approximately less  
16   than one percent of the total land at HEC. Vegetation removal and earthwork during construction  
17   could increase the establishment of nonnative and invasive species and erosion and  
18   sedimentation because of ground disturbance. BMPs would be implemented to minimize the  
19   potential adverse impacts associated with the spread of nonnative vegetation. Therefore,  
20   impacts on vegetation from construction of the Proposed Action would be short and long-term,  
21   negligible to minor and adverse because of the temporary and permanent loss of vegetative  
22   biomass during construction related to the Proposed Action.

23   **Wildlife.** Construction activities would likely disturb or displace wildlife from noise, habitat  
24   alternation and direct physical impact at the site of the Proposed Action and immediately nearby.  
25   During construction activities, mobile wildlife would relocate to similar, adjacent habitats.  
26   Impacts to less-mobile terrestrial species (e.g. reptiles and rodents) could occur from direct  
27   physical impact (e.g. vehicular traffic, construction and demolition equipment); however, due to  
28   noise and general disturbances related to construction activities, wildlife would be expected to  
29   avoid the area and personnel would be instructed to avoid direct physical impacts. Negligible,  
30   short- and long-term, adverse impacts on common wildlife would be expected during  
31   construction related to the Proposed Action.

32   **State and Federally Protected Species.** There are no surface water bodies within the area of the  
33   Proposed Action. Impacts from sedimentation and water quality degradation downstream of the  
34   Proposed Action (i.e. Dogue Creek) would be significantly mitigated by employing appropriate  
35   BMPs during construction (See **Section 3.13.2**). Therefore, no impacts on state or federally

1 protected fish (Atlantic Sturgeon, Yellow Lance, and Brook Floater) would be expected during  
2 construction related to the Proposed Action.

3 There are no trees located at the location of the Proposed Action and therefore tree clearing  
4 would not be required. Based on a lack of habitat and lack of foraging area at the site of the  
5 Proposed Action, construction related to the Proposed Action would have no significant, adverse  
6 impacts on the northern long-eared bat, tricolor bat or the little brown bat.

7 The peregrine falcon, loggerhead shrike, Henslow's sparrow, Appalachian Grizzled Skipper,  
8 migrant loggerhead shrike have not been identified on HEC, however based on the availability of  
9 habitat, could occur there as transients or migrants. Nevertheless, because these species would  
10 likely only occur at HEC as transients or migrants, if the species were identified in the Proposed  
11 Action site, they would likely vacate the area during construction and not return until  
12 construction is complete, if at all. The noise generated during construction would also deter  
13 these species from habituating at the site, or immediately nearby. Based on the available habitat  
14 at the Proposed Action site and the habitat preferences of the peregrine falcon, loggerhead  
15 shrike, Henslow's sparrow, and the Appalachian Grizzled Skipper, these birds would be unlikely  
16 to utilize the site for nesting or other purposes. Impacts to these species would be further  
17 mitigated by conducting all vegetation removal and earthwork outside of the migratory season.  
18 Therefore, short- and long-term, negligible to minor, and adverse impacts on the peregrine  
19 falcon, loggerhead shrike, Henslow's sparrow, and Appalachian Grizzled Skipper would be  
20 expected during construction related to the Proposed Action.

21 The wood turtle and the spotted turtle are two reptiles that have potential to occur in and/or  
22 adjacent to the Proposed Action; however, the Proposed Action site is not considered wood  
23 turtle or spotted turtle habitat. Though wood turtle habitat is not identified within the site, the  
24 potential exists for the wood turtle to occur there due to its proximity to Dogue Creek. To  
25 minimize any potential impacts to wood turtles that may be present at the project area, VDGIF  
26 wood turtle protection guidelines would be adhered to as much as practicable. Those guidelines  
27 state that construction and land clearing activities should not occur within 900 feet of a stream  
28 between April 1 and September 30. Due to the location of the Proposed Action, land clearing  
29 activities within 900 feet of a stream would not be required. Therefore, short- and long-term,  
30 negligible to minor, and adverse impacts on the wood turtle and spotted turtle would be  
31 expected during construction related to the Proposed Action.

32 **Migratory Birds.** During construction, potential noise and direct physical impacts on migratory  
33 birds would be similar to those discussed previously for wildlife. Steps to prevent direct impacts  
34 to migratory nesting birds include conducting all vegetation removal and earthwork outside of  
35 the migratory season. Should any vegetation removal need to occur during migratory season, a  
36 nest survey would be conducted by qualified personnel and active nests would be avoided until  
37 all young have fledged and the nest is no longer occupied. Furthermore, observing the TOYR

1 discussed above for the NLEB would also prevent significant adverse impacts on nesting birds, as  
2 clearing would take place outside the nesting season for most birds. There would be no loss of  
3 forest cover under the Proposed Action. Therefore, short- and long-term, negligible, adverse  
4 impacts would be expected to migratory birds during construction related to the Proposed  
5 Action.

#### 6 **3.4.3.2. Demolition**

7 Impacts on biological resources from demolition of existing infrastructure would be similar to but  
8 slightly less than those described under **Section 3.4.3.1** because the duration of demolition  
9 activities would be shorter and smaller in scope than those of construction activities.

#### 10 **3.4.3.3. Operation**

11 **Vegetation.** The Proposed Action would include standard seeded grass or sod areas areas, which  
12 will require standard and routine maintenance as prescribed under the Landscape Design  
13 Guidelines outlined in the HEC 2006 Master Plan. No impacts from operation of the proposed  
14 TSF would be expected on vegetation.

15 **Wildlife.** No impacts on wildlife from operation of the proposed TSF would be expected.

16 **State and Federally Protected Species.** No impacts on state and federally protected species from  
17 operation of the proposed TSF would be expected.

18 **Migratory Birds.** No impacts on migratory birds from operation of the proposed TSF would be  
19 expected.

#### 20 **3.4.4. No Action Alternative**

21 Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
22 would continue to lack adequate training and storage of mission essential equipment. Long-  
23 term, negligible, beneficial impacts would occur to Biological Resources under the No Action  
24 Alternative as the proposed TSF would not be constructed and the site would remain as-is in a  
25 natural state. However long-term, minor, adverse impacts to HEC and the tenant unit would be  
26 expected from the lack of adequate training resources and facilities at HEC. Site conditions would  
27 remain as described under **Section 3.4.1**. No additional impacts on biological resources would  
28 be expected under the No Action Alternative.

### 29 **3.5. Cultural Resources**

#### 30 **3.5.1. Affected Environment**

31 Cultural resources for the purposes of this EA as defined under the National Historic Preservation  
32 Act (NHPA) of 1966, as amended, are namely any prehistoric or historic district, archaeological



1 site, building, structure, or object included in, or eligible for listing in the National Registry of  
2 Historic Places (NRHP). According to the 2006 HEC Master Plan, there are no historic structures  
3 on HEC. Additionally, the Virginia Department of Historic Resources (VADHR) Virginia Cultural  
4 Resources Information System was reviewed and did not identify any historic sites on HEC  
5 (VADHR 2020). Lastly, heavy past military usage of the northern portion of HEC has obliterated  
6 any historically significant remains such as buildings and foundations (HEC 2006).

7 Section 106 of NHPA requires federal agencies to consider the effects of their proposed  
8 undertakings on historic properties within the undertaking's "area of potential effects," (APE) in  
9 coordination with the State Historic Preservation Office (SHPO) with jurisdiction on the  
10 undertaking's location, and other consulting parties, as applicable. The SHPO in Virginia is the  
11 VADHR. The APE is considered the geographical area or areas within which an undertaking may  
12 directly or indirectly cause changes in the character or use of historic properties or prehistoric  
13 sites, if any are present.

14 The APE for this undertaking is the 3.2 acre footprint of the proposed TSF which includes  
15 construction staging areas, AF/FP setbacks and infrastructure demolition and realignment. The  
16 APE for the proposed TSF has not been surveyed for archaeological resources. Three  
17 archaeological sites have been identified within the proximity of the Proposed Action. The  
18 nearest site, 44FX0670 is approximately 250 feet north of the Proposed Action. This site was  
19 determined not eligible for evaluation by VDHR. Site 44FX0739, the Triplett Homestead and  
20 Cemetery is approximately 450 feet to the west of the APE however, according to VDHR the site  
21 has not yet been evaluated. The last site, 44FX1497 is located adjacent to Building 2593 (the  
22 Kingman Building) and is approximately 1,270 feet west of the APE for the Proposed Action.  
23 According to VADHR, the site was determined to not be eligible for evaluation (VADHR 2020).

24 Because there are no historic or cultural resources in the Project Area, USACE and HECSA  
25 concluded that construction of the TSF would result in "No Historic Properties Affected,"  
26 determination and requested comment from VADHR and select Native American tribes. VADHR  
27 on 16 April 2020 issued a letter concurring with the determination of "No Historic Properties  
28 Affected," (see Appendix A for VADHR documentation). No responses have been received from  
29 Native American Tribes to date, however letters provided to Native American Tribes are available  
30 in Appendix A.

### 31 **3.5.2. Environmental Consequences**

#### 32 **3.5.2.1. Threshold of Significance**

33 The Proposed Action could have an adverse impact if it caused an unavoidable adverse effect on  
34 historic properties under Section 106. Adverse effects that can be adequately minimized or

1 mitigated in compliance with Section 106 and in consultation with the SHPO and other applicable  
2 parties are generally considered less-than-significant impacts for the purposes of NEPA.

### 3 **3.5.3. Proposed Action**

#### 4 **3.5.3.1. Construction**

5 There are no archaeological sites within the APE for the Proposed Action; therefore construction  
6 of the proposed TSF would not impact archaeological resources. Sites that are outside the limits  
7 of disturbance (44FX0670, 44FX0739, 44FX1497) would not be impacted. Ground-disturbing  
8 activities associated with the Proposed Action would have the potential to impact previously  
9 undocumented cultural resources such as buried archaeological sites. Should undocumented  
10 archaeological deposits or unexpected discoveries of Native American graves, lost historic  
11 cemeteries, or human remains be discovered during any construction or demolition activity, the  
12 work would be immediately halted and HECSA would follow the appropriate provisions for  
13 unanticipated discoveries specified in the Fort Belvoir Integrated Cultural Resources  
14 Management Plan, which covers HEC (Fort Belvoir 2014). Because there are no historic structures  
15 on HEC, no impacts on historic structures would be expected from construction activities.  
16 Overall, no impacts on cultural resources would be expected from construction activities.

#### 17 **3.5.3.2. Demolition**

18 Impacts from demolition of existing infrastructure would be the same as described under **Section**  
19 **3.5.3.1**. No impacts on cultural resources would be expected from demolition activities.

#### 20 **3.5.3.3. Operation**

21 No impacts on cultural resources would be expected from operation of the proposed TSF.

#### 22 **3.5.4. No Action Alternative**

23 Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
24 would continue to lack adequate training and storage of mission essential equipment. Long-  
25 term, negligible, beneficial impacts would occur to Cultural Resources under the No Action  
26 Alternative as the proposed TSF would not be constructed and the site would remain as-is  
27 however long-term, minor, adverse impacts to HEC would be expected from the lack of adequate  
28 training resources and facilities at HEC. Site conditions would remain as described under **Section**  
29 **3.5.1**. No additional impacts on cultural resources would be expected under the No Action  
30 Alternative.

## 1           **3.6. Geological Resources**

### 2           **3.6.1. Affected Environment**

3       **Geology.** HEC is located in Fairfax County, Virginia which is located on a portion of the Shirley  
4       Formation which overlies the Potomac Foundation. The Shirley Formation is Quaternary in age  
5       and consists of light- to dark-gray, bluish-gray, and brown sand, gravel, silt, clay and peat. It  
6       constitutes surficial deposits of riverine terraces and old baymouth barriers and bay-floor plans  
7       inset below depositional surfaces of the Chuckatuck Formation. The formation is split into three  
8       different levels of gradation. Fluvial-estuarine characteristics comprises a lower pebble- to  
9       boulder-sand, overlain by fine to coarse sand interbedded with peat and clayey silt rich in organic  
10      material, including in-situ tree stumps, leaves, and seeds of cypress, oak and hickory. This grades  
11      up to medium- to thick-bedded, clayey and sandy silt and silty clay. The thickness of this  
12      formation ranges from 0 to 80 feet.

13      The Potomac formation is Cretaceous in age and consists of light-gray to pinkish- and greenish-  
14      gray quartzo-feldspathic and sand that is fine- to coarse-grained, pebbly, poorly sorted, and  
15      commonly thick-bedded and trough cross-bedded. The sand is interbedded with layers of gray  
16      to green sandy clay and silt that is commonly mottled red or reddish-brown.

17      In the inner Coastal Plain, the soil was deposited in mainly fluvial-deltaic environments and  
18      intertongues eastward with this glauconitic sands of shallow-self origin. Thickness ranges from  
19      a feathered edge at the western limit of the outcrop to more than 3,500 feet in subsurface depth  
20      in the outermost Coastal Plain (USGS and AASG 2020).

21      **Topography.** The topography at the Proposed Action site is approximately at 60 feet above sea  
22      level and is relatively flat (USGS 2016).

23      **Soils.** Approximately 100 percent of the soils at the Proposed Action site are Urban land. This  
24      soil type is characteristic of disturbed and developed land. Urban land does not resemble other  
25      soils due to modification of the soils from development and typically underlies former or existing  
26      concrete, roadways and buildings (WRWAC 2019, NRCS 2020).

27      **Naturally Occurring Asbestos.** Asbestos is a naturally formed mineral fiber that is a known  
28      human carcinogen. Approximately 11 square miles of Fairfax County are known to contain  
29      naturally occurring asbestos in the bedrock, interspersed in underlying Green Stone Rock  
30      formations of the bedrock. Based on the most recent data and maps available from the Fairfax  
31      County Division of Environmental Health, the site is not located in an area listed as having  
32      potentially naturally occurring asbestos in the subsurface geology and is therefore removed from  
33      further analysis (FCDEH 2019a).

1 **Radon.** Radon is a colorless, odorless radioactive gas that typically enters buildings from soil and  
2 can seep direct through pores in concrete. The primary entry points for radon are gaps in walls  
3 and floors. Based on a review of available U.S. Environmental Protection Agency (USEPA) and  
4 Virginia Department of Health, Fairfax County is primarily considered radon Zone 1, the highest  
5 potential for radon exposure (greater than 4.0 picocuries per liter [pCi/L]) (VDH 2019). However,  
6 Fairfax County maintains its own radon program based on radon assessments between 1986 and  
7 1988 and created a Fairfax County radon potential map (VDH 2019). This map identifies HEC  
8 within radon Zone 3 (less than 2 pCi/L) however, based on Fairfax County Health Department  
9 indoor radon testing studies, there is a 14% chance that indoor air concentrations in the county  
10 could exceed 4.0 pCi/L (FCDEH 2019b).

### 11 **3.6.2. Environmental Consequences**

#### 12 **3.6.2.1. Threshold of Significance**

13 Impacts on geology, topography, and soils are evaluated separately in the following section. The  
14 impacts on geology are analyzed based on potential changes caused by the Proposed Action to  
15 bedrock, unique sensitive landforms, or rock formations. The impacts on topography are  
16 analyzed based on potential changes to surface features, especially steep slopes. Impacts on  
17 soils are analyzed based on potential changes to soil type, erosion, and sedimentation due to  
18 implementation of the Proposed Action.

### 19 **3.6.3. Proposed Action**

#### 20 **3.6.3.1. Construction**

21 **Geology.** No impacts on geology would be expected during construction related to the Proposed  
22 Action. Although disturbance of surficial bedrock and other geological features could occur, the  
23 proposed construction would not be substantial or deep enough to significantly alter lithology,  
24 stratigraphy or the geological structures that control the distribution of aquifers.

25 **Topography.** The area of the proposed TSF would require negligible grading in order to be  
26 brought to grade with the immediately surrounding area. Topography may be altered slightly  
27 per the site design to ensure stormwater drains properly toward the east of the site. Therefore,  
28 the Proposed Action would have long-term, negligible, adverse impacts on topography.

29 **Soils.** The Proposed Action would disturb approximately 145,055 ft<sup>2</sup> of ground surface soils. Site  
30 preparation and earthmoving associated with construction would excavate soils and remove  
31 vegetative cover, disturb surface soils and compact the soil. Soil productivity, which is the  
32 capacity of the soil to produce vegetative biomass, would decline in disturbed areas and be  
33 eliminated in areas within the footprint of roadways or structures. Impacts would be minimized  
34 by restricting construction traffic to specific areas of travel where possible.

1 Exposure of the soils during construction has the potential to result in increased sedimentation  
2 of stormwater management systems and for offsite discharges of sediment-heavy runoff. To  
3 further minimize potential erosion impacts during construction, a Stormwater Pollution  
4 Prevention Plan (SWPPP) would be prepared in accordance with the appropriate Virginia  
5 Department of Environmental Quality (VDEQ) and Virginia Pollutant Discharge Elimination  
6 System (VPDES) regulations, 9 Virginia Administrative Code (VAC) 25-870-54 Stormwater  
7 Pollution Prevention Plan Requirements, and the *Virginia Stormwater Management Act*. A site  
8 specific erosion and sediment control plan (ESCP) employing appropriate soil BMPs, and a Virginia  
9 Stormwater Management permit (VSMP) would be also required for all clearing and grading  
10 activities. The ESC plan would include strict measures consistent with the Virginia Erosion and  
11 Sediment Control Handbook (1992) to minimize ESC impacts.

12 Use of standard stormwater BMPs would help minimize impacts to exposed soils during and  
13 following construction. These BMPs would include revegetating soils as soon as possible,  
14 surrounding exposed soils with silt fence and synthetic hay bales, and minimizing construction  
15 vehicle traffic on exposed soils to the maximum extent practicable. Therefore, the Proposed  
16 Action would have short- and long-term, negligible to minor, adverse impacts on soil quality.

17 **Radon.** No impacts from radon would occur during construction related to the Proposed Action.

#### 18 **3.6.3.2. Demolition**

19 Impacts on biological resources from demolition of the existing infrastructure would be similar  
20 to but slightly less than those described under **Section 3.6.3.1** because the duration of demolition  
21 activities would be shorter and smaller in scope than those of construction activities.

#### 22 **3.6.3.3. Operation**

23 No impacts on geology or topography would be expected from the operation of the proposed  
24 TSF.

25 **Soils.** Operation of the proposed TSF would include standard and scheduled landscaping within  
26 the facility property line. No impacts on soils from operation of the proposed facility would occur  
27 however, long-term, negligible, adverse impacts would be expected from the permanent loss of  
28 soil productivity within the limits of disturbance for this project.

29 **Radon.** The potential for high indoor concentrations of radon (>4.0 pCi/L) exists in Fairfax  
30 County. Long-term, adverse, negligible to minor and direct impacts would be expected from  
31 potential employee exposure to radon, however standard radon mitigation measures could be  
32 included, or a radon health assessment could be conducted to determine the type and mitigation,  
33 if necessary, that would reduce potential impacts to employees to negligible levels. No additional  
34 impacts would be expected.

### 1                    3.6.4. No Action Alternative

2     Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
3     would continue to lack adequate training and storage of mission essential equipment. Long-  
4     term, negligible, beneficial impacts would occur to Geological Resources under the No Action  
5     Alternative as the proposed TSF would not be constructed and the site would remain as-is  
6     however long-term, minor, adverse impacts to HEC would be expected from the lack of adequate  
7     training resources and facilities at HEC. Site conditions would remain as described under **Section**  
8     **3.6.1.** No additional impacts on geological resources would be expected under the No Action  
9     Alternative.

### 10                  3.7. Solid and Hazardous Materials

#### 11                    3.7.1. Affected Environment

12     Hazardous and toxic materials or substances are generally defined as materials or substances  
13     that pose a risk (i.e., through either physical or chemical reactions) to human health or the  
14     environment. Regulated hazardous substances are identified through a number of federal laws  
15     and regulations. The most comprehensive list is contained in 40 CFR 302, and identifies  
16     quantities of these substances, when released to the environment, that require notification to a  
17     federal agency. Hazardous wastes, defined in 40 CFR 261.3, are considered hazardous  
18     substances. Generally, hazardous wastes are discarded materials (e.g., solids or liquids) not  
19     otherwise excluded by 40 CFR 261.4 that exhibit a hazardous characteristic (i.e., ignitable,  
20     corrosive, reaction, or toxic), or are specifically identified within 40 CFR 261. Petroleum products  
21     are specifically exempted from 40 CFR 302 but some are also generally considered hazardous  
22     substances due to their physical characteristics (i.e. especially fuel products), and their ability to  
23     impact natural resources.

24     HEC does not currently hold a Resource Conservation and Recovery Act (RCRA) permit and no  
25     hazardous substances are currently stored on HEC. There are also no known, documented  
26     contaminated areas on HEC (HEC 2006).

27     **Unexploded Ordnance.** The Department of Defense (DOD) developed the Military Munitions  
28     Response Program (MMRP) to address munitions-related concerns, including explosive safety,  
29     environmental, and health hazards from releases of unexploded ordnance, munitions  
30     constituents, and munitions and explosives of concern (MEC). The MMRP addresses non-  
31     operational range lands with suspected or known hazards from MEC.

32     HEC currently contains one MMRP site, Demolition Area – USACE TD. Demolition Area – USACE  
33     occupies 489 acres of HEC and was used from 1940 to 1951 to train Army engineers in the use of  
34     demolition materials and to practice demolition techniques (i.e., bridge demolition). According  
35     to the December 2017 Draft Final *Decision Document for Demolition Area – USACE TD (FTBL-025-*

1 *R-01) Munitions Response Site* the probability for encountering MEC on HEC is low. Because there  
2 is still potential for contractors or HEC personnel to encounter MEC, land use controls (LUCs)  
3 have been implemented to address any MEC concern at HEC. LUCs at HEC include notations in  
4 master planning maps and Geographic Information System (GIS), construction support,  
5 education materials, public and facility staff education, warning signs and long-term monitoring  
6 with enforcement. See **Section 3.9.1.**, for additional information regarding LUCs at HEC (U.S.  
7 Army 2017).

## 8 **3.7.2. Environmental Consequences**

### 9 **3.7.2.1. Threshold of Significance**

10 For the purposes of the hazardous materials and wastes impact analysis, effects would be  
11 significant if they present a substantial human health or safety risk. Mitigation measures are  
12 proposed for any aspect of the action that could release hazardous substances or wastes into the  
13 environment.

## 14 **3.7.3. Proposed Action**

### 15 **3.7.3.1. Construction**

16 Construction activities, including site preparation, land grading, and building construction would  
17 generate typical construction wastes including but not limited to excess steel and wood. The  
18 debris would be removed from the site and disposed of or recycled by the construction  
19 contractor at USACE-approved facility. In an effort to reduce construction and demolition waste,  
20 United Facilities Guide Specification 01-74-19, *Construction Waste Management and Disposal*, in  
21 addition to Army policy, 60 percent of the construction waste would be diverted from landfills.  
22 Additionally, all construction and demolition contractors would be required to comply with  
23 USACE, U.S. Army, and local, state and federal solid and hazardous material regulations and  
24 standard operating procedures. Therefore, construction and demolition would have short-term,  
25 negligible adverse impacts on solid and hazardous materials.

26 ***Unexploded Ordnance.*** Construction and demolition personnel could be exposed to MEC during  
27 construction or ground-disturbing activities. Though the potential to encounter MEC is low,  
28 impacts from MEC on construction and demolition personnel could occur and would be  
29 significantly reduced by following prescribed land use controls for the Demolition Area – USACE  
30 TD area. These controls include the HEC Logistics Office approving any changes in construction  
31 or intrusive activities on the site, ensuring explosive ordnance disposal (EOD) personnel or  
32 unexploded ordnance (UXO) qualified personnel are available during site work, education  
33 materials provided to individuals and organizations that will be conducting ground-breaking  
34 activities, training, and warning signs (U.S Army 2017). Based on the implementation of land use

1 controls during construction and demolition activities, impacts from UXO during construction and  
2 demolition activities would be short-term, negligible and adverse.

### 3 **3.7.3.2. Demolition**

4 Impacts on solid and hazardous materials from demolition of existing infrastructure would be  
5 similar to but slightly less than those described under **Section 3.7.3.1**. Typical demolition debris  
6 would be treated similarly to that of construction debris and will be recycled as appropriate. The  
7 duration of demolition activities would be shorter and smaller in scope than those of construction  
8 activities.

### 9 **3.7.3.3. Operation**

10 The Proposed TSF will consist of administrative, classroom and storage space. Storage will consist  
11 of unique and sensitive artifacts and will not include any solid or hazardous material storage. The  
12 facility would be expected to generate minor amounts of solid waste such as paper, cardboard,  
13 and other general refuse. The amounts of solid waste generated from the operation of the  
14 proposed TSF would not be expected to exceed existing solid waste handling capabilities at HEC.

15 **Unexploded Ordnance.** No impacts on UXO would be expected from operation of the proposed  
16 TSF.

### 17 **3.7.4. No Action Alternative**

18 Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
19 would continue to lack adequate training and storage of mission essential equipment. Long-  
20 term, negligible, beneficial impacts would occur on Solid and Hazardous Materials under the No  
21 Action Alternative as the proposed TSF would not be constructed and the site would remain as-  
22 is however long-term, minor, adverse impacts to HEC would be expected from the lack of  
23 adequate resources and facilities at HEC. Site conditions would remain as described under  
24 **Section 3.7.1**. No additional impacts on solid and hazardous materials would be expected under  
25 the No Action Alternative.

## 26 **3.8. Infrastructure, Utilities and Traffic**

### 27 **3.8.1. Affected Environment**

28 **Electrical.** HEC receives electrical power from Dominion Virginia Power. Main overhead power  
29 lines enter HEC from the east through a 40-foot wide Dominion Virginia Power easement. This  
30 line feeds the original Dominion Virginia Power 2,500 kilo-volt ampere (kVA) transformer and a  
31 newer 5,000 kVA Dominion Virginia Power transformer. Both transformers are near the main  
32 HEC switching station located on the east side of the installation. A government-owned,  
33 underground 12.47 kilovolt (kV) distribution system distributes power from the transformers to



1 existing facilities at HEC. Electrical system infrastructure is available along John J. Kingman Road,  
2 northeast of the project area.

3 **Potable Water.** HEC obtains water for domestic use and fire protection exclusively from the  
4 Fairfax County Water Authority (FCWA). FCWA currently operates a 30-inch main along  
5 Telegraph Road with a 24-inch main that runs in a 20-foot easement through HEC. The facilities  
6 at HEC obtain water from both mains.

7 The existing government-owned water distribution system consists of a 12-inch main running  
8 from the FCWA 24-inch main to the center of the HEC site. This system consists primarily of  
9 branch lines that dead end at either fire hydrants or buildings. The existing HEC potable water  
10 system consists of a dead-end type distribution system which is adequate for HEC, however is  
11 not recommended under current potable water distribution standards. HEC is allocated a  
12 consumption rate of 200,000 gallons per day (gpd) from the FCWA system. The estimated  
13 consumption for HEC is approximately 80,000 gpd. Potable water infrastructure is available  
14 adjacent to the project area along John J. Kingman Road and along site access roads (HEC 2006).

15 **Sanitary Sewer.** HEC discharges 100% of its sanitary flow into the Fairfax County sanitary sewer  
16 system. Fairfax County maintains an 18-inch sanitary sewer main along the northeast edge of  
17 the installation and a 27-inch main along the eastern edge. In addition, Fairfax County owns a  
18 sanitary sewer main that runs in a ten-foot easement through the center of HEC property from  
19 northwest to southeast.

20 All buildings at HEC are served by gravity flow sewers, and they discharge cumulatively through  
21 a 10-inch government-owned main to the 27-inch Fairfax County sewer. HEC has a sewer  
22 allocation of 200,000 gpd for which Fairfax County will provide collection and treatment. Total  
23 discharge is estimated to be at approximately 67,800 gpd (HEC 2006). HEC owns and operates  
24 the private sanitary sewer system on site. Sanitary sewer infrastructure is available northwest of  
25 the project area.

26 **Stormwater Management.** The storm drainage network at HEC is made up of several  
27 independent drainage systems. Older systems within this network drain to natural outfalls while  
28 the newer or modified systems flow to stormwater detention ponds. Stormwater infrastructure  
29 at the Proposed Action site consists of swales, curbs and gutters and natural drainage features.  
30 No other stormwater management infrastructure is available at the project area.

31 **Communications.** Telephone and network services are provided to HEC principally by Verizon.  
32 Active aerial Verizon telephone cable enters the installation from the eastern boundary,  
33 connecting the installation to a central office located on Old Mount Vernon Road. An existing  
34 fiber optic telecommunication line exists immediately within the limits of the project. Two

1 different existing communications lines currently traverse the western portion of the project site  
2 (USACE 2020).

3 **Natural Gas.** Most buildings at HEC rely on both #2 fuel oil and natural gas for heating purposes  
4 through the use of dual-fired boilers. Natural gas is supplied to HEC by an existing 8" high-  
5 pressure Washington Gas Light transmission line. This transmission line is located within a 40-  
6 foot right of way which runs in a north-east to south-west direction crossing the northern portion  
7 of HEC property.

8 Approximately 204,691 therms of natural gas were used from September 2005 to August 2006  
9 at HEC for an average consumption of 17,058 therms per month. Natural gas infrastructure is  
10 available approximately 250 feet southwest of the Proposed Action site (HEC 2006).

11 **Transportation.** Access to HEC is via unsignalized intersection at Telegraph Road and Lead Road,  
12 which provides access to the main entrance (Gribble Gate). Installation circulation is broken  
13 down in branches, which evolved from a single project approach to new development. The  
14 primary circulation route, Lead Road, bisects the developed areas of HEC in a generally north-  
15 south direction. Most secondary roads on HEC branch out from Lead Road to the south, west,  
16 and east. These roads end in parking lots, service loading docks, or building drop-off areas.

17 Leaf Road is a Class "C" roadway (U.S. Army Technical Manual 5-822-2) for a two lane/two  
18 direction, flat road with a 26-foot pavement section which currently has an estimate capacity of  
19 400 cars per hour. According to the 2006 Master Plan, the current two-lane road is susceptible  
20 to congestion at rush hour since it is the only means of entering or existing HEC, and that only  
21 one lane is available in either direction (HEC 2006).

22 Parking at HEC primarily consists of surface parking lots. HEC currently possesses a total of 1,021  
23 individual, designated parking spaces. Based on a mandatory minimum of 0.8 parking space per  
24 person, a total of 852 parking spaces are required to serve the 1,065 HEC employees. The  
25 remaining 169 parking spaces are typically occupied by government contractors and/or  
26 personnel visiting HEC for various conferences or training classes. The Hall Building currently has  
27 223 associated parking spaces (HEC 2006).

## 28 **3.8.2. Environmental Consequences**

### 29 **3.8.2.1. Threshold of Significance**

30 An alternative could have significant effects on utility infrastructure or the transportation  
31 network if it would increase demand over capacity, requiring a substantial system expansion or  
32 upgrade, or if it would result in substantial system deterioration over the current condition.

### 1                   **3.8.3. Proposed Action**

#### 2                   **3.8.3.1. Construction**

3    **Electrical.** Short-term electrical interruptions could be experienced when work on existing  
4    electrical lines occurs or when electrical connections are connected to the proposed facility;  
5    however disruption of electrical services would be temporary and would be coordinated with  
6    area users prior to interruptions. Direct, negligible, short-term increases in electricity demand  
7    could be expected during construction from construction-related activities however these  
8    instances would be short in nature and would not be expected to exceed current electrical  
9    capacity at HEC. No additional impacts from construction on the electrical system under the  
10   Proposed Action would be expected.

11   **Potable Water.** Short-term interruptions could be expected as the existing water main at the far  
12   north end of the site is disconnected, relocated and ultimately reconnected to the HEC potable  
13   water supply system. Water necessary for construction would be obtained from the existing  
14   water supply system, which currently operates at approximately 40% capacity. Construction  
15   water needs would be limited, temporary and would have little to no effect on the installation's  
16   water supply. Any necessary disruptions of components of the water supply system would be  
17   temporary and coordinated with area users prior to starting work. No additional impacts from  
18   construction under the Proposed Action on the potable water supply would be expected.

19   **Sanitary Sewer.** Short-term interruptions could be experienced as the existing sanitary sewer  
20   system is connected to the proposed TSF during construction. However, any disruption of this  
21   system would be temporary in nature and would be coordinated with HEC and other area users.  
22   No additional impacts from construction under the Proposed Action on the sanitary sewer system  
23   would be expected.

24   **Stormwater Management.** Stormwater management structures within in the project footprint  
25   would be permanently altered during construction. Temporary, minor impacts would result from  
26   exposed soils resulting from site development. These impacts would be minimized by  
27   implementing appropriate erosion and sediment control measures BMPs (see **Section 3.13.2**). In  
28   compliance with Section 438 of the Energy Independence and Security Act of 2007 (EISA) the  
29   proposed stormwater infrastructure would be able to accommodate the 95<sup>th</sup> percentile rainfall  
30   event to the greatest extent feasible. Furthermore, the predevelopment hydrology with respect  
31   to rate, volume and duration of flow, would be maintained or restored to the maximum extent  
32   possible. Stormwater would be conveyed from the project area via a closed conduit underground  
33   conveyance system and natural channels toward an outfall east of the proposed TSF, and  
34   eventually to Dogue Creek.

35   Long-term, minor, adverse effects on the HEC stormwater system would be expected as a result  
36   of a net increase in impervious surfaces (65,780 ft<sup>2</sup>) associated with the Proposed Action.

1 However, long-term, minor, beneficial impacts would be expected from inclusion of modern,  
2 stormwater management features and an associated stormwater management cistern that  
3 would be designed to capture rain runoff and prevent localized flooding related to heavy rain  
4 events.

5 **Communications.** Short-term interruptions of communications infrastructure would be  
6 expected during construction and demolition activities. Impacts from interruptions in service  
7 would be temporary in nature and would be coordinated with HEC and other area users. No  
8 additional impacts on communications infrastructure would be expected during construction.

9 **Natural Gas.** Short-term interruptions in natural gas service could be experienced as the  
10 proposed TSF is connected to the existing natural gas lines at HEC; however disruption of natural  
11 gas services would be temporary and would be coordinated with area users prior to  
12 interruptions. No additional impacts on natural gas would be expected during construction.

13 **Transportation.** Short-term, negligible, adverse impacts on the HEC transportation network  
14 would be expected from construction related to the Proposed Action due to an increase in  
15 construction traffic accessing and utilizing HEC roadways. The construction phase of the  
16 Proposed Action would require delivery and removal of materials to the project site.  
17 Construction traffic would compose a small percentage of the total existing traffic on HEC.  
18 Heavier construction equipment would be driven to the site and kept on site for the duration of  
19 the project. Intermittent traffic delays and temporary road closures could occur in the immediate  
20 vicinity of site development. Potential congestion impacts could be avoided or minimized by  
21 scheduling deliveries of materials outside of the peak inbound/outbound traffic time.  
22 Construction would take approximately 24-months and construction traffic would vary during  
23 those months depending on the weather and the work being done. Increases in construction  
24 traffic would be temporary, negligible and adverse. No additional impacts on transportation  
25 under the Proposed Action would be expected during construction.

#### 26 **3.8.3.2. Demolition**

27 Impacts on infrastructure from demolition of existing infrastructure would be similar to but  
28 slightly less than those described under **Section 3.8.3.1** because the duration of demolition  
29 activities would be shorter and smaller in scope than those of construction activities.

#### 30 **3.8.3.3. Operation**

31 **Electrical.** The current electrical supply at HEC has adequate capacity to support the new facility  
32 and the associated personnel relocating from within HEC as the proposed TSF would be  
33 constructed with DOD modern, high performance and sustainable building requirements that  
34 would conserve electrical usage at the facility. Two transformers will connect to existing  
35 electrical infrastructure northwest of the proposed facility. Additionally, the project will include

1 one, 600-kV emergency backup generator. Therefore, operation of the proposed TSF would have  
2 long-term, negligible, beneficial impacts on the electrical supply at HEC.

3 **Potable Water.** HEC currently utilizes approximately 42 percent of the total available potable  
4 water capacity. The proposed facility would connect to a 12 inch water main on the west side of  
5 the site. Because the proposed facility would be constructed utilizing high performance and  
6 sustainable building requirements and that there would be no increase in HEC personnel working  
7 at the proposed facility, impacts on the potable water system at HEC would be long-term,  
8 negligible and beneficial.

9 **Sanitary Sewer.** HEC currently uses approximately 34 percent of the total available sanitary  
10 sewer discharged potential. The proposed gravity sanitary sewer system will convey flow from  
11 one, 6-inch building lateral on the northern side of the proposed TSF to a proposed manhole.  
12 From the new manhole, an 8-inch line is proposed to connect to existing manhole #8. Because  
13 the proposed facility would be constructed utilizing high performance and sustainable building  
14 requirements, impacts on the sanitary sewer system at HEC would be long-term, negligible and  
15 beneficial.

16 **Stormwater Management.** No impacts on stormwater management at HEC would be expected  
17 from the operation of the proposed TSF.

18 **Communications.** Long-term, negligible and adverse impacts would be expected from an  
19 additional building at HEC utilizing the communications infrastructure. The TSF will be served by  
20 two new classified and unclassified communication ductbanks which extent from the existing  
21 infrastructure north of Kingman Road and ultimately tie into existing manholes near Building  
22 2596. The existing communications network provided by Verizon has capacity to support  
23 additional personnel at HEC.

24 **Natural Gas.** Additional, negligible amounts of natural gas usage HEC would be expected from  
25 the connection of the proposed facility to the natural gas infrastructure. Natural gas would  
26 primarily be used in the heating system. Washington Gas will supply the proposed facility with  
27 natural gas from an existing line to the mechanical room of the facility. However, because the  
28 proposed facility would be constructed utilizing high performance and sustainable building  
29 requirements, impacts on the natural gas infrastructure at HEC would be long-term, negligible  
30 and beneficial.

31 **Transportation.** The proposed TSF would receive deliveries from trailer trucks approximately 50  
32 times per year. Delivery vehicles would access HEC via the Main Gate (Gribble Gate). Impacts  
33 from delivery trucks accessing HEC could be avoided or minimized by scheduling deliveries  
34 outside of peak inbound/outbound traffic time. Because no new personnel would relocated to  
35 HEC under this action and existing personnel would continue to utilize the Hall Building parking

1 lot, no impacts on the transportation system from operation of the proposed TSF would be  
2 expected.

3 No new personally owned vehicle (POV) parking will be provided for the TSF. All parking will be  
4 accommodated in the existing Hall Building parking lot. Parking lot striping will be modified  
5 resulting in the loss of six (6) POV spaces for four (4) new ADA accessible spaces. No other new  
6 parking will be provided for the Proposed Action.

#### 7 **3.8.4. No Action Alternative**

8 Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
9 would continue to lack adequate training and storage of mission essential equipment. Long-  
10 term, negligible, adverse impacts would occur to infrastructure, utilities and traffic under the No  
11 Action Alternative as the proposed TSF would not be constructed and HEC personnel would  
12 continue to utilize energy-inefficient facilities on HEC. Long-term, minor, adverse impacts to HEC  
13 would be expected from the lack of adequate resources and facilities at HEC. Site conditions  
14 would remain as described under **Section 3.8.1**. Impacts from the No Action Alternative would  
15 be long-term, negligible and adverse from the continued use of energy-efficient facilities.

### 16 **3.9. Land Use**

#### 17 **3.9.1. Affected Environment**

18 **Land Use.** HEC is approximately 580 acres in size, and was formerly part of Fort Belvoir's Upper  
19 North Post prior to 1980. Approximately 74 acres (13 percent) at the northern end of HEC is  
20 developed with administrative, research and development, and maintenance facilities. There are  
21 currently three land use categories at HEC which include: Administration (10.7% total land use),  
22 Industrial (2.1% total land use) and Open Space (87.2% total land use). The area proposed for  
23 the TSF is currently identified as administrative land use however is currently utilized as a  
24 recreational field (HEC 2006).

25 **Land Use Controls.** LUCs consist of government ordinances, codes and permit requirements that  
26 restrict the use of private, commercial or federal land. Demolition Area – USACE TD makes up  
27 approximately 489 acres (84 percent) of the HEC site. This munitions response site (MRS) was  
28 historically part of Fort Belvoir and was used to train Army engineers in the use of demolition  
29 materials and to practice demolition techniques from 1940 to 1951. During construction of the  
30 primary HEC campus, construction workers were not trained in identification of MEC therefore  
31 none were identified and no definitive statement regarding the presence of MEC on HEC can be  
32 made (U.S Army 2017).

33 Though there are no known areas of elevated MEC density, and the potential for exposure to  
34 MEC is low, LUCs have been implemented to address potential residual MEC at HEC. The LUCs,  
35 which are implemented through the Land Use Control Implementation Plan (LUCIP), include

1 notations in master planning maps and GIS, construction support for personnel performing  
2 ground disturbing construction activities, educational materials, public and facility staff  
3 education, warning signs, and long-term monitoring with enforcement (U.S Army 2017).

#### 4 **3.9.2. Environmental Consequences**

##### 5 **3.9.2.1. Threshold of Significance**

6 Impacts on land use can occur when the implementation of a project creates an inconsistency  
7 between the actual use of the land and the underlying land use designation, or when a project is  
8 incompatible with adjacent or surrounding land uses (i.e. siting an industrial facility in a  
9 residential area). Land use impacts may also occur when the implementation of a project  
10 conflicts with or prevents the implementation of the goals, objectives, and policies of relevant  
11 planning documents, studies, and/or nearby, unrelated development projects.

#### 12 **3.9.3. Proposed Action**

##### 13 **3.9.3.1. Construction**

14 The proposed TSF will be used for storage, classroom functions, training space, and various other  
15 administrative-type activities. Construction of the Proposed Action would not require conversion  
16 of the existing land use. No impacts to adjacent land uses would be expected from the Proposed  
17 Action. Therefore, no impacts on land use designations would be anticipated however, long-  
18 term, negligible, adverse impacts would be expected from the conversation of the existing  
19 recreational field to administrative/storage space.

20 **Land Use Controls.** Adherence to LUCs on HEC would be required during construction related to  
21 the Proposed Action. The HEC Logistics Office would be required to approve any changes in land  
22 use and construction activities prior to implementation and any ground disturbing activities.  
23 Construction support is also required to be available during any demolition or construction  
24 activities. Educational materials will be provided to construction workers on response actions  
25 for any potential UXO or MEC. Because there are no known areas of elevated MEC density, the  
26 potential for exposure to MEC is low, and in addition to the existing LUCs, impacts on LUCs and  
27 construction personnel would be short-term, negligible, and adverse.

##### 28 **3.9.3.2. Demolition**

29 Impacts on infrastructure from demolition of existing infrastructure would be similar to but  
30 slightly less than those described under **Section 3.9.3.2** because the duration of demolition  
31 activities would be shorter and smaller in scope than those of construction activities.

##### 32 **3.9.3.3. Operation**

33 No impacts on land use would be expected from operation of the proposed TSF.

### 1                    3.9.4. No Action Alternative

2     Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
 3     would continue to lack adequate training and storage of mission essential equipment. Long-  
 4     term, negligible, beneficial impacts to land use would occur under the No Action Alternative as  
 5     the proposed TSF would not be constructed and the site would remain as-is however long-term,  
 6     minor, adverse impacts to HEC would be expected from the lack of adequate resources and  
 7     facilities at HEC. Site conditions would remain as described under **Section 3.9.1**. No additional  
 8     impacts on land use would be expected under the No Action Alternative.

### 9                    3.10. Noise

10    Sound occurs when vibrations that travel through a medium are interpreted by the biological  
 11    elements of the ear. Noise occurs when sounds become undesirable, unpleasant, or damaging.  
 12    Noise-sensitive receptors include residences, hospitals, recreational areas, and religious  
 13    institutions.

14    Sound pressure levels are quantified in decibels (dB), which is dependent on both frequency and  
 15    intensity, and is given a level on a logarithmic scale. The way the human ear hears sound intensity  
 16    is quantified in A-weighted decibels (dBA), which are level “A” weights according to weighting  
 17    curves. Sound levels for common activities and construction work are presented in **Table 3.4**.

18    The National Institute for Occupational Safety and Health (NIOSH) recommends that individuals  
 19    working in an environment of 85 dBA or louder for an eight-hour work day limit their exposure  
 20    to this noise level and wear protective earwear to help manage and prevent hearing loss due to  
 21    noise exposure.

22    The day-night average sound level (DNL) is a useful descriptor for noise because it approximates  
 23    the response characteristics of human hearing. It is the average noise level over a 24-hour period  
 24    with nighttime hours adjusted with a 10-dB increase. The higher the DNL, the louder the sound.  
 25    A-weighted DNL is commonly used to assess aircraft noises.

26    The *Noise Control Act* of 1972 (PL 92-574) directs federal agencies to comply with applicable  
 27    federal, state, interstate, and local noise control regulations. The Fairfax County Code prohibits  
 28    the creation of sound louder than 55 dB in a residential area, and 60 dB in a commercial area.

29                    **TABLE 3-4. COMMON HOUSEHOLD, INDUSTRIAL, AND CONSTRUCTION SOUND LEVELS**

Sound Level (dBA)	Common Sounds	Effect
<b>140</b>	Jet engine	Painful
<b>130</b>	Near air-raid siren	Painful
<b>120</b>	Jet plane takeoff, siren	Painful
<b>110</b>	Chainsaw, thunder, garbage truck	Extremely Loud



Sound Level (dBA)	Common Sounds	Effect
100	Hand drill	Extremely Loud
90	Subway, passing motorcycle	Extremely Loud
85	Backhoe, paver	Very Loud
80	Blow-dryer, kitchen blender, food processor, cement mixer, power saw	Very Loud
70	Busy traffic, vacuum cleaner, alarm clock	Loud
60	Typical conversation, dishwasher, clothes dryer	Moderate
50	Moderate rainfall	Moderate
40	Quiet room	Moderate
30	Whisper, quiet library	Faint

Source: ASHA 2017

It also prohibits 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). Construction and demolition activities are, however, exempt from the Fairfax County ordinance, provided they occur between 7:00AM and 9:00PM.

### 3.10.1. Affected Environment

The most commonly occurring noise at HEC is from vehicular traffic. Other sources of noise include heating, ventilation and air conditioning systems; landscape maintenance; and other general maintenance activities. None of these sources produce excessive noise levels. There are no noise-sensitive receptors such as schools, churches, or hospitals located within HEC. The nearest noise-sensitive receptors to the Proposed Action site and their distances from the site are included in **Table 3.5**.

**TABLE 3-5. NOISE SENSITIVE RECEPTORS NEAR THE PROJECT AREA**

Noise-Sensitive Receptor	Distance from Project Area (ft)
Hayfield Residential Neighborhood	1,320
Hayfield Elementary School	3,115
Faith Fellowship Church	3,432
Hayfield High school	4,118

Source: USEPA 2020

1                   **3.10.2. Environmental Consequences**

2                   **3.10.2.1. Threshold of Significance**

3   Noise impacts would be significant if the Proposed Action created applicable long-term noise  
4   increases in areas of incompatible land use.

5                   **3.10.3. Proposed Action**

6                   **3.10.3.1. Construction**

7   Sources of noise would include construction equipment used to demolish existing infrastructure,  
8   groundmoving and site work activities and ultimately construction of the proposed TSF. Noise  
9   produced by construction equipment would vary depending on the type, duration, and activity  
10  being performed by the specific piece of equipment. Construction equipment associated with  
11  the Proposed Action would include cement and mortar mixers, cranes, excavators, forklifts,  
12  graders, pavers, rollers, and skid steer loaders.

13  Construction equipment would be equipped with noise-dampening equipment operated  
14  according to the manufacturers' instructions, and would be turned off and shutdown when not  
15  in use. Construction would take place during daylight hours unless there was a specific action  
16  that would directly impact construction work.

17  Potential impacts of noise from construction equipment on construction workers would be  
18  mitigated by following Occupational Safety and Health Administration (OSHA) regulations and  
19  USACE *Safety and Health Requirements Manual EM 385-1-1* (USACE 2014). OSHA regulations  
20  require that employers make hearing protectors available to those employees who are exposed  
21  to work conditions at or above 85 dBA (OSHA 2002).

22  Personnel and other contractors working at HEC may experience temporary, negligible adverse  
23  impacts from construction while walking between facilities on HEC or from vehicles to buildings.  
24  These instances would be temporary in nature as personnel would be exposed to noise while  
25  they were outside. The interior of facilities on HEC would provide adequate protection from  
26  noise during construction. Furthermore, residents of the Hayfield community located northeast  
27  of the project site could experience intermittent noise associated with construction activities  
28  however the noise would be temporary in nature.

29  Construction noise would be further dampened by vegetation on HEC, in addition to the existing  
30  facilities also blocking some construction noise; therefore, construction noises would be  
31  minimally evident to nearby noise-sensitive receptors. Overall, construction noise would have  
32  short-term, minor, adverse impacts on construction personnel and HEC personnel, and no  
33  impacts on sensitive-noise receptors outside of the HEC boundary.

### 1                   **3.10.3.2. Demolition**

2   Impacts on infrastructure from demolition of existing infrastructure would be similar to but  
3   slightly less than those described under **Section 3.10.3.1** because the duration of demolition  
4   activities would be shorter and smaller in scope than those of construction activities.

### 5                   **3.10.3.3. Operation**

6   Noise generated from operation of the proposed TSF would consist of standard building noise  
7   (HVAC system, landscaping, etc.) and would be minimal in nature. Noise would also be generated  
8   from trucks making deliveries however deliveries would generally be once a week and would not  
9   be expected to significantly impact the existing noise environment at HEC. Therefore, long-term,  
10   negligible, adverse impacts from noise associated with operation of the proposed TSF would be  
11   expected.

### 12                  **3.10.4. No Action Alternative**

13   Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
14   would continue to lack adequate training and storage of mission essential equipment. Long-  
15   term, negligible, beneficial impacts to the noise environment would occur under the No Action  
16   Alternative as the proposed TSF would not be constructed and the site would remain as-is  
17   however long-term, adverse impacts would be expected from the lack of adequate resources and  
18   facilities at HEC. Site conditions would remain as described under **Section 3.10.1**. No additional  
19   impacts on noise would be expected under the No Action Alternative.

## 20                  **3.11. Community Services**

### 21                  **3.11.1. Affected Environment**

22   **Emergency Services.** Fire protection for the surrounding community is provided by Fairfax Fire  
23   and Rescue Station Number 37, in addition to the Gunston and Lorton Fire Stations. Police  
24   protection is provided by the Franconia District Station Manager and the Mount Vernon District  
25   Station. HEC receives its police and fire protection through an inter-service support agreement  
26   at Fort Belvoir.

27   **Community Resources.** HEC is a USACE Civil Works site and does not contain any residential  
28   areas, health care facilities, schools or religious institutions. The area around HEC includes five  
29   elementary, one middle and two high schools. The nearest religious institution to HEC is  
30   approximately 0.6 miles to the north (HEC 2006). The nearest health care facility is located on  
31   Fort Belvoir, approximately 2.6 miles south. The nearest off-site health care facility is located 3.4  
32   miles east (USEPA 2020).

1                   **3.11.2. Environmental Consequences**

2                   **3.11.2.1. Threshold of Significance**

3    An impact on community services is deemed significant if it exceeds the ability of the current  
4    emergency and community resources to accommodate the implementation of an alternative.

5                   **3.11.3. Proposed Action**

6                   **3.11.3.1. Construction**

7    Construction related to the Proposed Action has the potential to cause injuries to workers using  
8    machinery and associated construction equipment. To minimize the potential for injuries, the  
9    construction contractor would implement BMPs to ensure the safety of workers is maintained  
10   throughout the construction period. These BMPs would include the use of safety equipment (i.e.,  
11   hard hats, reflective vests, hearing protection); maintaining safety equipment in good condition  
12   and proper working order; and providing workers with any specialized safety training needed to  
13   perform a specific job function.

14   In the event that an accident occurs during construction related to the Proposed Action,  
15   emergency response services would be provided by Fort Belvoir emergency response personnel.  
16   Fort Belvoir currently supplies emergency response services to HEC and has sufficient emergency  
17   response capacity to respond to potential accidents at the Proposed Action site without  
18   decreasing the level of service elsewhere at Fort Belvoir.

19   Therefore, during construction of the proposed facility, there would be short-term, direct,  
20   negligible, adverse impacts on emergency services.

21                   **3.11.3.2. Demolition**

22   Impacts on infrastructure from demolition of existing infrastructure would be similar to but  
23   slightly less than those described under **Section 3.11.3.1** because the duration of demolition  
24   activities would be shorter and smaller in scope than those of construction activities.

25                   **3.11.3.3. Operation**

26   Operation of the proposed TSF would not be anticipated to result in an increase of burden or  
27   demand for fire and rescue calls, which would be provided by Fort Belvoir once the facility is  
28   operational. All operational staff working in the storage area portion of the proposed facility  
29   would be highly trained and equipped with appropriate safety gear required to perform assigned  
30   duties without causing injury to themselves or others according to appropriate safety protocols.  
31   Other activities occurring at the TSF would be administrative in nature would not be expected to  
32   result in adverse working conditions. Should an accident occur at the proposed TSF, the Fort  
33   Belvoir emergency services have sufficient capacity to respond without decreasing the level of

1 service elsewhere within the immediate area. Long-term, beneficial impacts would result from  
 2 personnel working in a more modern, safer facility. Therefore, operation of the Proposed Action  
 3 would have no impact on Fairfax County emergency services.

#### 4 **3.11.4. No Action Alternative**

5 Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
 6 would continue to lack adequate training and storage of mission essential equipment. Long-  
 7 term, negligible, beneficial impacts to community services would occur under the No Action  
 8 Alternative as the proposed TSF would not be constructed and the site would remain as-is  
 9 however long-term, minor, adverse impacts to HEC would be expected from the lack of adequate  
 10 resources and facilities at HEC. Site conditions would remain as described under **Section 3.11.1.**  
 11 No additional impacts on community services would be expected under the No Action  
 12 Alternative.

### 13 **3.12. Socioeconomics and Environmental Justice**

#### 14 **3.12.1. Affected Environment**

15 Socioeconomics is a combination of both the elements of economic activity and social processes.  
 16 Socioeconomics in relation to the social standing or class of individuals measures a combination  
 17 of their education, income, and occupation.

18 HEC is located in Fairfax County, Virginia, which is the region of interest (ROI) for this project.  
 19 **Table 3.6** shows the populations in the ROI and Virginia in 2010, the estimated population in  
 20 2018, and the percentage change.

21 **TABLE 3-6. POPULATION ESTIMATES**

Area	2010 Census	2018 Estimate	Percent Change
Fairfax County, VA	1,081,726	1,150,795	6.4%
Virginia	8,001,024	8,517,685	6.5%%

22 Source: USCB 2019, USCB 2020a

23 **Table 3.7** shows the percentage of the total population who are working in the ROI and in  
 24 Virginia. Of the total working population in Fairfax County, 9,976 people are part of the labor  
 25 force associated with the Armed Forces; in Virginia, 117,988, people are associated with the  
 26 Armed Forces. Also detailed in this table are the number and percentages of the total working  
 27 population in various occupational categories.

28 **Environmental Justice.** Population data is important in determining the presence of  
 29 Environmental Justice populations. EO 12898, *Federal Actions to Address Environmental Justice*  
 30 *in Minority Populations and Low-Income Populations*, directs all federal departments and  
 31 agencies to incorporate environmental justice considerations in achieving their mission.

1 **TABLE 3-7. EMPLOYMENT SUMMARY**

	Virginia		Fairfax County	
Percent population 16 years and over in Labor Force (2018)	65.4%		71.7%	
Employment Categories	Population	Percent	Population	Percent
Agriculture, forestry, fishing and hunting, and mining	39,008	0.9	931	0.2
Construction	286,162	6.8	33,403	5.4
Manufacturing	294,616	7.0	14,135	2.3
Wholesale Trade	70,856	1.7	4,783	0.8
Retail Trade	423,982	10.1	47,211	7.6
Transportation and warehousing, and utilities	194,452	4.7	23,990	3.9
Information	76,293	1.8	14,892	2.4
Finance and insurance, real estate, and rental leasing	253,063	6.1	41,036	6.6
Professional, scientific, and management and administrative and waste management services	653,649	15.6	162,060	26.2
Education services, and health care and social assistance	923,908	22.1	114,571	18.5
Arts, entertainment, and recreation, and accommodation and food services	372,216	8.9	51,612	8.3
Other services, except public administration	219,960	5.3	38,947	6.3
Public Administration	372,750	8.9	71,981	11.6

2 Source: USCB 2020b

3 CEQ provides guidance on EO 12898 by stating that “minority populations should be identified  
4 where either: (a) the minority population of the affected area exceeds 50 percent or (b) the  
5 minority population percentage of the affected area is meaningfully greater than the minority  
6 population percentage in the general population or other appropriate unit of geographic analysis  
7 (CEQ 1997).

8 Each federal department of agency is to accomplish this by conducting programs, policies, and  
9 activities that substantially affect human health or the environment in a manner that does not  
10 exclude communities from participation in, deny communities the benefits of, nor subject  
11 communities to discrimination under such actions because of their race, color, or national origin.

1 The Proposed Action would be constructed on HEC, which is a USACE Civil Works site, does not  
2 contain any neighborhood or residential areas, and is not accessible by the public. Construction  
3 of the Proposed Action would not be visible from outside of HEC, and any noise that would travel  
4 off the site would be negligible, and temporary in nature (See **Section 3.10.2**). No impacts on  
5 low-income or minority groups would be expected and therefore Environmental Justice is  
6 removed from further analysis.

### 7 **3.12.2. Environmental Consequences**

#### 8 **3.12.2.1. Threshold of Significance**

9 An impact on socioeconomics is deemed significant if it exceeds the ability of the ROI to  
10 accommodate a departure or influx of households, personnel and their families, or school-aged  
11 children, corresponding to more than half of the forecasted growth in the community.

### 12 **3.12.3. Proposed Action**

#### 13 **3.12.3.1. Construction**

14 Construction and site work related to the Proposed Action would require approximately 20  
15 construction workers during the anticipated 24-month construction period. It is expected that  
16 these construction workers would be hired from the available labor pool in Fairfax County or  
17 Virginia, which are both sufficiently large enough to absorb this demand without negatively  
18 impacting labor availability elsewhere in the local area or state. No specialty labor would be  
19 required under this Proposed Action and the temporary increase in local workers would not  
20 result in an increase in population or need for new housing within the ROI.

21 The construction of the proposed TSF would require purchasing materials from local suppliers,  
22 to the maximum extent practicable. This purchasing, as well as spending by construction workers  
23 at local businesses, would have a positive impact on the local economy.

24 Therefore, construction of the Proposed Action would be anticipated to have short-term,  
25 negligible to minor, beneficial impacts on socioeconomics.

#### 26 **3.12.3.2. Demolition**

27 Impacts on infrastructure from demolition of existing infrastructure would be similar to but  
28 slightly less than those described under **Section 3.12.3.1** because the duration of demolition  
29 activities would be shorter and smaller in scope than those of construction activities.

#### 30 **3.12.3.3. Operation**

31 Operation of the Proposed Action would require approximately 200 personnel, all who would be  
32 transferred from existing facilities already on HEC. These personnel would likely already have

1 housing in the immediate area and would not require relocation. Because staff that would  
2 occupy the TSF already live in the area surrounding HEC and that the proposed action would not  
3 require any relocation of personnel, no impacts on socioeconomics from operation of the  
4 proposed TSF would be expected.

#### 5 **3.12.4. No Action Alternative**

6 Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
7 would continue to lack adequate training and storage of mission essential equipment. Long-  
8 term, negligible, beneficial impacts to socioeconomics and environmental justice would occur  
9 under the No Action Alternative as the proposed TSF would not be constructed and the site would  
10 remain as-is however long-term, minor, adverse impacts to HEC would be expected from the lack  
11 of adequate resources and facilities at HEC. Site conditions would remain as described under  
12 **Section 3.12.1**. No additional impacts on socioeconomics or environmental justice would be  
13 expected under the No Action Alternative.

#### 14 **3.13. Water Resources**

15 This section addresses surface water, water quality, wetlands, floodplains, resource protection  
16 areas (RPA), groundwater and coastal zone management. It also considers water quality  
17 programs that are enforced as part of water resources protection regulations at the local, state  
18 and federal level. Evaluation of water resources examines the quantity and quality of the  
19 resource and its demand for various purposes.

#### 20 **3.13.1. Affected Environment**

21 **Surface Waters.** HEC, in addition to the Proposed Action site, is located in the Dogue Creek  
22 watershed, which is within the larger Potomac River drainage basin and contains about 32 miles  
23 of stream divided among five Watershed Management Areas (WMAs). Surface water drainage  
24 at the Proposed Action site primarily drains toward the northeast and southwest via existing  
25 stormwater infrastructure.

26 Piney Branch Creek, a tributary of Dogue Creek, divides HEC into two topographically distinct  
27 areas and traverses the installation from northwest to southeast. The Proposed Action site is  
28 within the Dogue Creek Mainstem WMA, which is approximately 3,776 acres and contains  
29 approximately 769 acres of impervious surfaces.

30 **Water Quality.** Water quality impacts in the waterways on HEC relate mostly to urbanization,  
31 including issues related to bacteria, changes in stream morphology from increased impervious  
32 surface, and sedimentation. Development that increases the imperviousness of watersheds  
33 generates more stormwater runoff, leading in turn to erosion of stream channels and transport  
34 of sediment, other particulates, and dissolved nutrients to downstream surface waters. Erosion



1 of stream channels can severely damage the channel and those features of the channel that  
2 provide habitat for fish, amphibians, aquatic insects, and other invertebrates. An excess of  
3 sediment and particulates could also degrade water quality downstream. For example, the  
4 Chesapeake Bay has degraded primarily in response to excess nutrient pollution.

5 Section 303(d) of the Clean Water Act (CWA) and the USEPA Water Quality Planning and  
6 Management Regulations (40 CFR Part 30) directs states to identify and list water bodies in which  
7 current controls of a specified pollutant are inadequate to achieve water quality standards.  
8 Additionally, states are required to develop Total Maximum Daily Loads (TMDL) for water bodies  
9 that are not meeting water quality standards. TMDLs represent the total pollutant loading that  
10 a water body can receive without exceeding current water quality standards. Based on a review  
11 of the *Draft 2018 305(b)/303(d) Water Quality Assessment Integrated Report*, dated 22 January  
12 2019, HEC primarily discharges in two impaired bodies of water, Piney Branch Creek and  
13 ultimately Dogue Creek. According to the 2018 Integrated Report, Piney Branch Creek is  
14 categorized as Category 5A impaired water (i.e., needing a TMDL for benthic-macroinvertebrate  
15 bioassessments and pH), and Dogue Creek is categorized as a Category 4A (i.e. with approved  
16 TMDL) impaired water for polychlorinated biphenyls (PCB) in fish tissue and dissolved oxygen.  
17 Additionally, Dogue Creek was also categorized as Category 5A impaired water requiring a TMDL  
18 for *Escherichia coli* bacteria (VDH, VDEQ, VDCR 2018).

19 In addition to identifying water bodies of concern and mandating TMDL for appropriate water  
20 bodies, the CWA also establishes federal limits, through the National Pollutant Discharge  
21 Elimination System (NPDES), on the amounts of specific pollutants that are discharged to surface  
22 waters to restore and maintain the chemical, physical, and biological integrity of the water. In  
23 Virginia, the NPDES is administered by VDEQ under the Virginia Pollutant Discharge Elimination  
24 System (VPDES). HEC does not currently hold any individual or general VPDES permits (Knically  
25 2019).

26 **Wetlands.** Based on the 2006 Master Plan for HEC, there are no wetlands or jurisdictional Waters  
27 of the United States within the Proposed Action site. The nearest wetland, identified as  
28 palustrine forested, is located 300 feet to the southwest and drains into Piney Branch Creek and  
29 Dogue Creek (USACE 2019a).

30 **Floodplains.** Per Federal Emergency Management Agency (FEMA) maps (Floor Insurance Rate  
31 Map [FIRM] 51059C0385E, effective 17 September 2010), the Proposed Action site is located  
32 outside of the 100-year floodplains and is within the area of minimal flood hazard (Zone X).  
33 Additionally, USACE completed a floodplain study of Piney Run in 2019 which concluded that the  
34 Proposed Action site is not located within the 100-year floodplain. **Figure 3.1** details the locations  
35 of mapped floodplains around the site of the Proposed Action (USACE 2019b, FEMA 2020).

1 **Resource Protection Areas.** Virginia's *Chesapeake Bay Preservation Act* (CBPA), Virginia Code  
2 10.1-2100 et seq., and its implementing Chesapeake Bay Preservation Area Designation and  
3 Management Regulations, 9 Virginia Administrative Code (VAC) 10-20-120 et seq., protect certain  
4 lands, designated as Chesapeake Bay Preservation Areas, which, if improperly developed, could  
5 result in substantial damage to the water quality of the Chesapeake Bay and its tributaries.  
6 Projects that occur on lands that are protected under the CBPA must be consistent with the Act  
7 and may be subject to the performance criteria for RPA as specified in 9 VAC 10-20-130 of the  
8 regulations. Under the CBPA, Fairfax County adopted a Chesapeake Bay Preservation Ordinance  
9 that designates RPAs and Resource Management Areas (RMA) within the county.

10 The purpose of the RPA is to maintain or restore a vegetated buffer between development and  
11 tributaries to the Chesapeake Bay, with the assumption that such a buffer traps nutrients and  
12 pollutants in runoff and groundwater before reaching the bay. RPAs include tidal wetlands; tidal  
13 shores; nontidal wetlands connected by surface flow and contiguous to tidal wetlands or  
14 waterbodies with perennial flow, and a minimum 100-foot buffer landward of the other RPA  
15 components. Development within RPA is generally restricted to water-dependent uses,  
16 maintenance of public facilities, passive recreation, water wells, and historic preservation.  
17 However, redevelopment in an already developed RPA is allowed. There are no RPAs within the  
18 area of the Proposed Action. The nearest RPA is approximately 100 feet to the southwest,  
19 associated with Piney Branch Creek. **Figure 3.2** shows the location of RPAs in reference to the  
20 Proposed Action site (Fairfax County 2020).

21 **Groundwater.** HEC is underlain by the Northern Atlantic Coastal Plain aquifer system, which  
22 consists of 6 regional aquifers in sedimentary deposits that range in age from the Early  
23 Crustaceous to Holocene. The Potomac aquifer, which consists of fine to coarse sand beds and  
24 is the most widespread aquifer in the Northern Atlantic Coastal Plain, currently sits immediately  
25 below HEC and is named for permeable sediments that are part of the Potomac Formation. The  
26 Potomac aquifer is separated from overlying aquifers everywhere by a confining unit of clay and  
27 sandy clay. The Potomac aquifer is further broken down into confined aquifers that are known  
28 as the Upper, Middle and Lower Potomac aquifers.

29 Depth to groundwater fluctuates based on different variables including precipitation, leakage,  
30 and evapotranspiration, however is typically between 10 and 25 feet below ground surface. The  
31 water table at HEC also has potential to exist closer to the ground surface near streams in the  
32 form of shallow, unconfined aquifers (USGS 2019a, USGS 2019b).

33 **Coastal Zone Management.** The *Coastal Zone Management Act* (CZMA) of 1972 (16 U.S.C. §1451  
34 et seq., as amended) provides assistance to states, in cooperation with federal and local agencies,  
35 for developing land and water use programs in coastal zones.

1 Section 307 (c)(1) of the Coastal Zone Management Act Reauthorization Amendment stipulates  
2 that federal projects that affect land uses, water uses, or coastal resources of a state’s coastal  
3 zone must be consistent to the maximum extent practicable with the enforceable policies of that  
4 state’s federally approved coastal zone management plan. The Commonwealth of Virginia has  
5 developed and implemented a federally approved Coastal Resources Management Program  
6 (CRMP) describing current coastal legislation and enforceable policies. There are enforceable  
7 policies for the following:

- 8 • Tidal and Nontidal Wetlands,
- 9 • Fisheries,
- 10 • Subaqueous Lands,
- 11 • Dunes and Beaches,
- 12 • Point Source Air Pollution,
- 13 • Point Source Water Pollution,
- 14 • Nonpoint Source Water Pollution,
- 15 • Shoreline Sanitation,
- 16 • Coastal Lands.

17 Virginia’s coastal zone land includes all of Fairfax County, including HEC; therefore federal actions  
18 at HEC are subject to federal consistency requirements. The VDEQ serves as the lead agency for  
19 consistency reviews in Virginia. The Coastal Zone Federal Consistency Determination is included  
20 as **Appendix C**.

### 21 **3.13.2. Environmental Consequences**

#### 22 **3.13.2.1. Threshold of Significance**

23 The threshold of significance for water resources would be exceeded if the alternative would  
24 result in a major physical alteration of local surface waters, a substantial degradation of water  
25 quality in violation of permitting requirements and TMDL measures, a substantial loss of wetlands  
26 or RPA that cannot be fully mitigated, or a substantial and permanent loss of degradation of  
27 groundwater.

28 The threshold of significance would be exceeded if the alternative would result in substantial  
29 degradation of wetlands without mitigation, notable adverse impacts on natural and beneficial  
30 floodplain values, or inconsistencies with Virginia’s Coastal Resources Management Plan.

#### 31 **3.13.3. Proposed Action**

##### 32 **3.13.3.1. Construction**

33 **Surface Waters.** There are no existing surface water bodies within the Proposed Action site. The  
34 nearest water body to the Proposed Action is the Piney Branch Creek, which is approximately

1 650 feet southwest of the project site. Stormwater would be managed via a closed conduit  
2 underground conveyance system and natural channels to the site outfall east of the project area.  
3 The Proposed Action does not involve any construction in or immediately adjacent to Piney  
4 Branch Creek that could result in a physical impact to the stream. Mitigation measures such as  
5 hay bales and silt fencing would be used to prevent sedimentation from reaching and impacting  
6 the Piney Branch Creek. Based on the distance from the creek and with planned mitigation  
7 measures, no impacts on surface waters would be expected during construction related to the  
8 Proposed Action.

9 **Water Quality.** Construction of the Proposed Action has potential to impact water quality  
10 through an increase in soil erosion and sedimentation into nearby water bodies, primarily during  
11 ground disturbing activities. Because construction would impact more than one acre, a VPDES  
12 General Construction permit would be required. Under the terms of this permit, a SWPPP would  
13 be developed to outline the steps and techniques to reduce pollutants in the stormwater runoff  
14 from the construction site. The SWPPP will also identify all potential pollutant sources that could  
15 enter stormwater leaving the construction site and covers methods used to reduce pollutants in  
16 stormwater runoff during construction. Furthermore, an ESCP would also be developed to  
17 manage sediment runoff from the site. The SWPPP and ESCP would provide specific mitigation  
18 measures for erosion and sedimentation and stormwater runoff including, silt fencing, use of  
19 synthetic hay bales, temporary sediment traps and other similar measures. Therefore,  
20 construction and demolition related to the Proposed Action would have short-term, negligible,  
21 adverse impacts on water quality during construction and demolition activities.

22 Additionally, a Land Cover Conservation (LCC) agreement, which is a conservation area of land  
23 that is protected from disturbance which can be credited for stormwater management water  
24 quality credits, would be executed with VDEQ to set aside land on HEC for conservation in order  
25 to meet water quality requirements for this project. The LCC was proposed on areas of HEC that  
26 are already over encumbered with various natural resources (wetlands, floodplains, forested  
27 land, etc.).

28 HECSA provided a letter and plans to VDEQ on November 19<sup>th</sup>, 2020 indicating the intent to  
29 maintain approximately 30.6 acres of low lying forested area as Land Cover Conservation area. At  
30 the time, the LCC area supported TSF with 10.0 acres of LCC and the Maintenance Supply Facility  
31 (MSF) with 5.2 Acres of LCC leaving 15.4 acres to support future development at the campus. The  
32 land conservation area for the TSF will be approximately 10 acres and will be demarcated in the  
33 field prior to commencement of construction and will allow for the project to meet water quality  
34 requirements. See Figure 3-3 for the proposed location of the LCC for the TSF.

35 **Wetlands.** Construction of the Proposed Action would not have any direct impact on wetlands.  
36 There are no jurisdictional wetlands on the site, and the nearest jurisdictional wetland is  
37 approximately 300 feet to the southwest (USACE 2019a). Indirect impacts on wetlands near the

1 Proposed Action site could result from a potential increase in erosion and sedimentation related  
2 to construction activities. However, the measures that would be included in the ESCP and the  
3 SWPPP would avoid or minimize these potential impacts; therefore based on the distance from  
4 existing wetlands and implementation of the SWPPP and ESCP, no impacts on wetlands would be  
5 expected during construction.

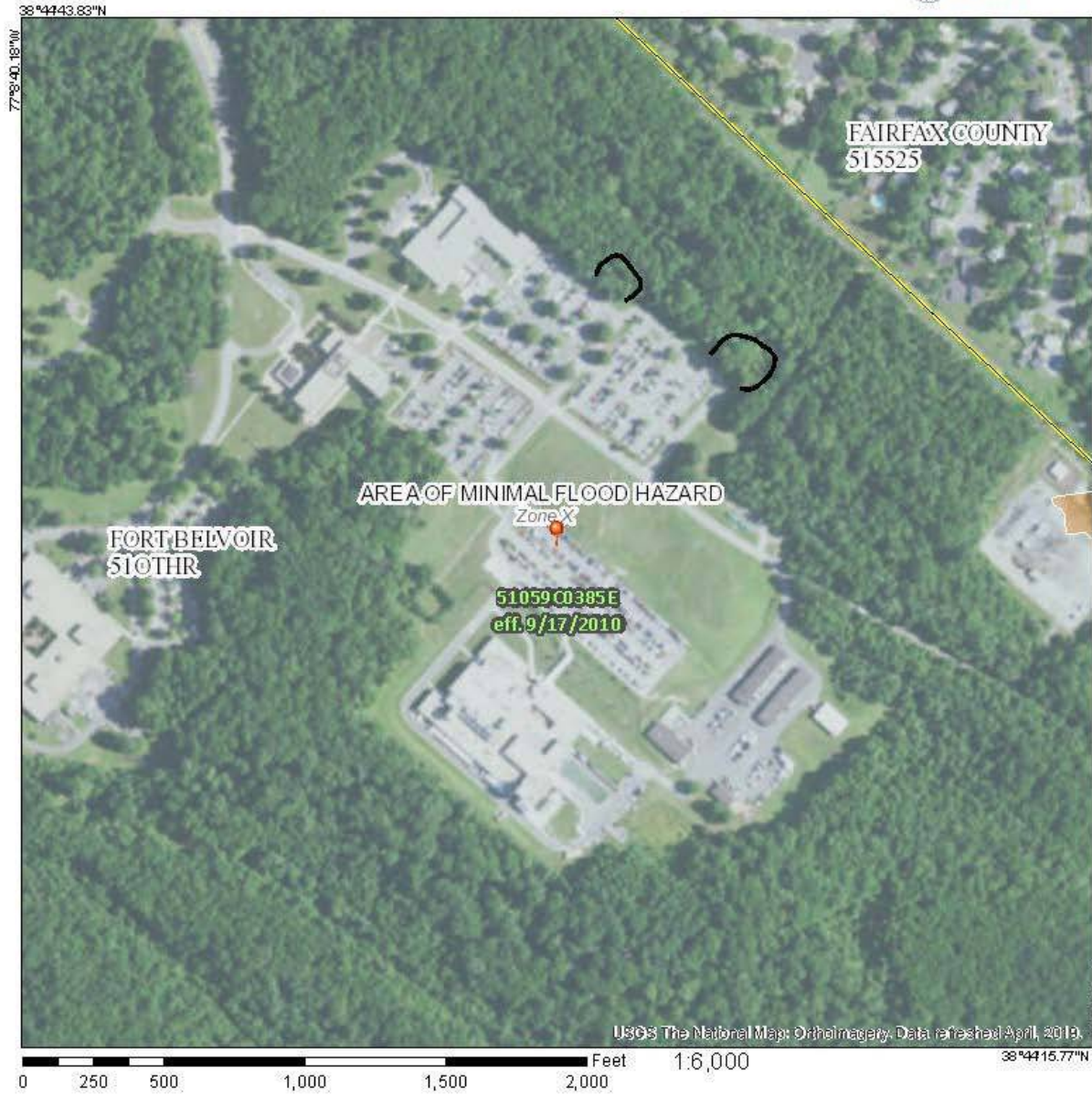
6 **Floodplains.** The Proposed Action is not located in a floodplain, therefore no impacts on  
7 floodplains would be expected.

8 **Resource Protection Areas.** No direct impacts on RPAs would be expected from construction  
9 related to the Proposed Action. Indirect impacts could result from increased runoff and  
10 sedimentation however, the ESCP, SWPPP and the additional mitigation measures described  
11 above would significantly reduce any potential impacts; therefore no impacts from construction  
12 and demolition would be expected on RPAs.

13 **Groundwater.** Overall construction of the Proposed Action would result in a net increase in  
14 impervious surfaces at the site, and at HEC overall. The increase in impervious surfaces would  
15 reduce infiltration of stormwater to groundwater resources. However, the Land Cover  
16 Conservation agreement would help offset impacts to groundwater from additional impervious  
17 surfaces at HEC. Furthermore, construction of the Proposed Action is not near any known  
18 recharge areas for the Potomac aquifer, so impacts would be restricted to the surface water  
19 table. No withdrawal of groundwater would be necessary to construct the proposed TSF;  
20 therefore the construction related to the Proposed Action would have long-term, negligible,  
21 adverse impacts on groundwater.

22 **Coastal Zone Management.** It has been determined that construction related to the Proposed  
23 Action would be consistent, to the maximum extent practicable, with the Commonwealth of  
24 Virginia CRMP's enforceable policies, as described in **Appendix C**, Coastal Zone Consistency  
25 Determination. The Coastal Zone consistency determination will be submitted to the  
26 Commonwealth of Virginia as an appendix in the EA. Complete results of this coordination,  
27 including recommendations from VDEQ, when received, will be included in **Appendix A**.

# National Flood Hazard Layer FIRMette



### Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, Y, AD9</i>
		With BFE or Depth <i>Zone AE, AD, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transsect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

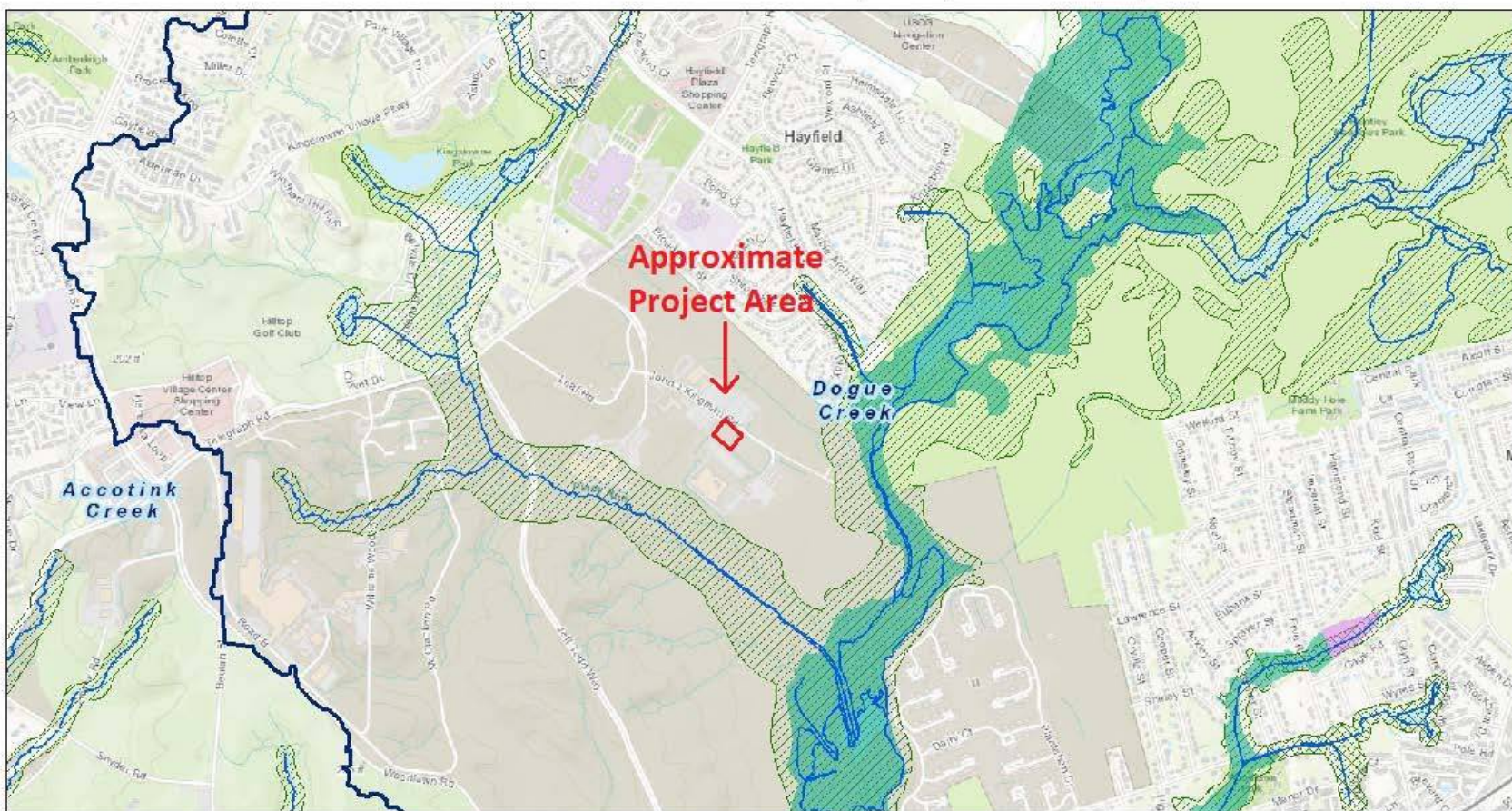
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/4/2020 at 2:03:27 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

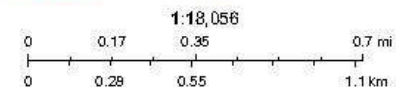
FIGURE 3-1 FLOODPLAINS AT THE PROPOSED ACTION

### Watersheds & Resource Protection Areas (RPAs) near the Proposed Action



May 4, 2020

- Watersheds
- Perennial Streams
- FEMA Flood Hazard Areas
- Zone AE
- Resource Protection Areas
- 1993 RPAs
- Zone A
- 2003 (Rev) RPAs
- 2003 RPAs



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, OpenStreetMap contributors, and the GIS User Community, Fairfax

FIGURE 3-2 RPAs NEAR THE PROPOSED ACTION





### 1                    3.13.3.2. Demolition

2     Impacts on infrastructure from demolition of existing infrastructure would be similar to but  
3     slightly less than those described under **Section 3.13.3.1** because the duration of demolition  
4     activities would be shorter and smaller in scope than those of construction activities.

### 5                    3.13.3.3. Operation

6     **Surface Waters.** Operation of the proposed TSF would not involve activities in, or near surface  
7     waters and operations occurring at the facility would have no potential to result in physical  
8     impacts to surface waters.

9     **Water Quality.** The Proposed Action would increase the amount of impervious surface on the  
10    project site as well as on HEC, which could result in a corresponding increase in the volume of  
11    stormwater runoff. Because the footprint of the proposed TSF is larger than 5,000 square feet,  
12    it would be required to comply with Section 438 of the *Energy Independence and Security Act*  
13    (EISA). Section 438 of EISA requires any development or redevelopment project involving a  
14    federal facility with a footprint that exceeds 5,000 square feet to use site planning design,  
15    construction, and maintenance strategies for the property to maintain or restore, to the  
16    maximum extent practicable, the predevelopment hydrology of the site with regard to  
17    temperature, rate, volume, and duration of flow. Compliance with Section 438 through the  
18    incorporation of LID measures in the design of the proposed maintenance facility would ensure  
19    that the Proposed Action does not result in an increase in the volume of stormwater runoff.  
20    Furthermore, the Proposed Action would execute a Land Cover Conservation agreement with  
21    VDEQ to set aside land on HEC for conservation in order to further meet operational water quality  
22    requirements. Therefore, overall impacts on water quality from operation of the Proposed  
23    Action would be expected to be negligible to minor in the short-term and negligible, long-term,  
24    impacts.

25    **Wetlands.** No direct impacts on wetlands from the operation of the proposed TSF would be  
26    expected. Indirect impacts on wetlands could potentially result from stormwater runoff from the  
27    proposed facility. However construction of the facility would include development of an SWPPP,  
28    and based on the distance the facility is from existing wetlands, no impacts on wetlands would  
29    be expected from operation of the proposed facility.

30    **Floodplains.** No impacts on floodplains would be expected from operation of the proposed TSF.

31    **Resource Protection Areas.** Operation of the proposed TSF would have no means to impact any  
32    nearby RPAs as all operations would completely within the boundary of the Proposed Action;  
33    therefore no impacts from operation of the proposed facility would be expected to RPAs.

1 **Groundwater.** No impacts on groundwater from operation of the proposed TSF would be  
2 expected because operation of the proposed facility would not require any withdrawal of  
3 groundwater from the Potomac aquifer.

4 **Coastal Zone Management.** Operation of the proposed TSF would be consistent with the  
5 Commonwealth of Virginia CRMP's enforceable policies; therefore, no adverse impacts from  
6 operation of the proposed facility would be expected on Commonwealth of Virginia's CRMP.

#### 7 **3.13.4. No Action Alternative**

8 Under the No Action Alternative, the proposed TSF would not be constructed at HEC. The unit  
9 would continue to lack adequate training and storage of mission essential equipment. Long-  
10 term, negligible, beneficial impacts to water resources would occur under the No Action  
11 Alternative as the proposed TSF would not be constructed and the site would remain as-is  
12 however long-term, minor, adverse impacts to HEC would be expected from the lack of adequate  
13 resources and facilities at HEC. Site conditions would remain as described under **Section 3.13.1.**  
14 No additional impacts on water resources would be expected under the No Action Alternative.

## 1    **4.0 CUMULATIVE IMPACTS**

2    As defined by CEQ Regulations in CFR 1508.7, a cumulative impact is that which “results from the  
3    incremental impact of the action when added to other past, present, and reasonably foreseeable  
4    future actions regardless of what agency (federal or non-federal) or person undertakes such  
5    other actions.” NEPA requires the lead federal agency to consider the cumulative environmental  
6    effects of a proposed action. Cumulative impacts can result from individually minor but  
7    collectively significant actions expected to occur in a similar location and during a similar time  
8    period.

9    The Proposed Action considered in this EA was considered in addition to several other projects  
10    occurring at HEC within a reasonable time frame as related to the Proposed Action. The following  
11    projects and their descriptions were considered as part of the cumulative impacts assessment for  
12    this EA.

- 13        • Egress Road REC/EA – This project will provide egress from HEC to Jeff Todd Way and  
14        would include construction of an access control point.
- 15        • Fenceline REC – The proposed Fenceline project at HEC will include an AT/FP fenceline  
16        that will surround the main buildings at HEC. The limits of disturbance for this project is  
17        approximately 3 acres.
- 18        • SOCOM Operations Building – This building will provide training support space to HEC.
- 19        • Concrete Pad Removal REC – This project involves the removal of the concrete pad and  
20        wave tank currently associated with the recreational field intended for the TSF  
21        development.
- 22        • Battalion Ops Facility EA – This proposed facility would house battalion and company  
23        operations for one battalion of the 1<sup>st</sup>CIG to support the administration and operations  
24        of the brigade, battalion, and company.
- 25        • Maintenance and Supply Building EA- This project includes construction of a Maintenance  
26        and Supply Facility located on the northwestern portion of HEC that will provide  
27        maintenance and administrative space to HEC and will allow HEC personnel to perform  
28        minor maintenance of vehicles on HEC as opposed to driving vehicles to Fort Belvoir for  
29        minor maintenance.
- 30        • Master Plan EA – This EA considers approximately 30 different proposed construction and  
31        demolition projects over the next 20+ years. The Master Plan breaks down projects into  
32        short-, mid-, long- and capacity-range projects that will provide a roadmap for the future  
33        buildout of the HEC campus.

### 34    **4.1. Cumulative Impacts on Resources**

35    The following analysis examines the cumulative impacts on the environment that would result  
36    from the incremental impacts of the Proposed Action in addition to the other projects discussed

1 in Section 4.0. The analysis assesses the potential for an overlap of impacts with respect to  
2 project schedules or affected areas. This section provides a qualitative analysis of the cumulative  
3 impacts of the above referenced projects associated with the Proposed Action.

4

#### 5 **4.1.1. Aesthetic and Visual Resources**

6 Short-term, minor, adverse impacts would be expected from construction projects that would be  
7 simultaneously ongoing, such as construction of the Training Support Facility and the SOCOM  
8 Operations Building. These impacts would be short-term in nature due to construction being  
9 temporary. Similarly for other projects, HEC is large enough where additional projects would be  
10 occurring in other areas of HEC that would not necessarily be visible to people from outside the  
11 installation and would not reduce the overall campus-like appeal of HEC. Furthermore,  
12 construction projects would generally be staggered wherein not all projects would be at the same  
13 phase of construction. Lastly, once the projects are all completed, long-term, minor, and  
14 beneficial impacts would be expected from the updated appearance of HEC from new  
15 construction.

#### 16 **4.1.2. Air Quality**

17 Short-term, minor, adverse cumulative impacts on air quality would occur from the activities  
18 associated with the Proposed Action when combined with the cumulative projects occurring at  
19 HEC. Criteria pollutant and GHG emissions during project construction would occur. Air  
20 emissions from the Proposed Action would be below the *de minimis* threshold surrogate of 100  
21 tons per year (tpy) of each pollutant. Based on the relative sizes of the projects, criteria pollutant  
22 emissions generated from the cumulative projects would also not be expected to exceed criteria  
23 thresholds based on the presumed size of the project. The limited annual emissions of GHGs  
24 from the Proposed Action and cumulative projects would not meaningfully contribute to the  
25 potential effects of global climate change. Therefore, no significant cumulative impacts on air  
26 quality would be expected.

#### 27 **4.1.3. Biological Resources**

28 Short- and long-term, minor, adverse cumulative impacts would occur on vegetation, wildlife,  
29 state- and federally-protected species, migratory birds, and the associated habitats from  
30 construction, demolition and operations associated with the Proposed Action when combined  
31 with cumulative projects. Construction would ultimately result in the permanent removal of  
32 existing vegetation, however, the Proposed Action and cumulative projects would be expected  
33 to remove only a small percentage of similar habitats in the immediate region. Construction  
34 would also result in temporary noise that would cause short-term, cumulative impacts on  
35 wildlife, including state- and federally-listed species and migratory birds; however, wildlife are  
36 likely habituated to noise, especially construction noise, because of the projects' proximity to

1 existing roads and other development in the immediate area. Long-term, cumulative impacts on  
2 wildlife would occur from the permanent loss of habitat; however, wildlife would be able to use  
3 adjacent habitat that is readily available to nearby project sites.

4 Additionally, injury or mortality of small, less-mobile terrestrial species (e.g. reptiles, rodents, and  
5 small mammals) could occur from direct physical impact (e.g. vehicular traffic, construction and  
6 demolition equipment), particularly because of expansion of roadways; although, like previously  
7 mentioned, wildlife in the area are likely habituated to vehicular traffic and related noise. As a  
8 result, population-level impacts would not occur. No impacts on federally listed species would  
9 occur from the Proposed Action, but the cumulative projects could have negligible to minor,  
10 adverse impacts on federally listed species depending on the siting of proposed facilities.

#### 11 **4.1.4. Cultural Resources**

12 Ground disturbing activities associated with the Proposed Action and cumulative projects would  
13 have the potential to impact undocumented cultural resources such as buried archaeological  
14 sites, potentially resulting in short-term, negligible, adverse cumulative impacts. Should  
15 undocumented archaeological deposits, Native American graves, lost historic cemeteries, or  
16 human remains, etc. be discovered during any activity, the activity would be immediately halted  
17 and consultation with the appropriate preservation officer would occur. If the unexpected  
18 discovery were to occur on HEC, the installation would follow the provisions for unanticipated  
19 discoveries specified in the Fort Belvoir Integrated Cultural Resources Management Plan.

#### 20 **4.1.5. Geological Resources**

21 Short- and long-term, minor, adverse cumulative impacts on geological resources would occur  
22 from ground-disturbing activities associated with the Proposed Action when combined with  
23 cumulative projects. Site preparation and earthmoving associated with construction and  
24 demolition would excavate soils and expose rock materials, temporarily removing vegetation in  
25 some areas and potentially exposing soils to erosion. Soil productivity would decline in disturbed  
26 areas and eliminated in areas within the footprint of roadways or structures. An overall increase  
27 of impervious surface would ultimately reduce the amount of area for stormwater to infiltrate  
28 and increase stormwater runoff. In general, accelerated soil erosion would be minimized by  
29 designed facilities while considering any soil limitations, employing construction and stabilization  
30 techniques appropriate for the soil and climate, and implementing temporary and permanent  
31 erosion control measures. BMPs could include installing silt fencing and sediment traps, applying  
32 water to disturbed soil to minimize fugitive dust, and revegetating disturbed areas as soon as  
33 possible after the disturbance, as appropriate. Therefore, impacts on soils would be minor and  
34 localized to the construction area and project areas.

**1 4.1.6. Solid and Hazardous Materials**

2 Short-term, minor, adverse cumulative impacts from the use of hazardous materials and the  
3 generation of solid and hazardous wastes would occur during construction associated with the  
4 Proposed Action when combined with cumulative projects. All hazardous materials, solid waste,  
5 petroleum products, and hazardous waste support construction would be contained and stored  
6 in accordance with the applicable regulations to minimize the potential for releases.  
7 Furthermore, solid waste generated would be expected to be recycled to the maximum extent  
8 practicable in an effort to cut down on solid waste. Therefore, no significant cumulative adverse  
9 impacts from solid and hazardous materials would occur.

**10 4.1.7. Infrastructure, Utilities and Traffic**

11 Short-term, minor, adverse cumulative impacts from temporary increases in utility and  
12 infrastructure usage from construction activities related to the Proposed Action and cumulative  
13 activities would be expected. Impacts to infrastructure and utilities would be expected to be  
14 temporary in nature as certain utilities (potable water, electrical, sanitary sewer, etc.) would be  
15 shut off to certain areas to allow for hook ups to new construction. Outages would be  
16 coordinated with area users and would not be expected to adversely impact the population on  
17 HEC. Additionally, impacts from cumulative projects would be coordinated with HECSA so that  
18 utilities and infrastructure are not shut off for extended periods of time. Ultimately, long-term,  
19 minor, adverse cumulative impacts on infrastructure and utilities would be expected from new  
20 facilities drawing on the existing infrastructure and utility system; though these new facilities  
21 would be expected to be energy efficient and would draw less on the system than some of the  
22 older facilities on HEC.

23 Short- and long-term, negligible to minor, adverse cumulative impacts on traffic and  
24 transportation at HEC would be expected from the construction of new facilities and additional  
25 personnel relocating to HEC. Construction of facilities would require the delivery of construction  
26 equipment and resources that could temporarily block and reroute HEC roadways. These impacts  
27 would be temporary and coordinated with area users and between projects prior to construction  
28 activities. Additionally, HEC would stagger development projects in the same areas in an effort  
29 to minimize construction traffic impacts. Additional cumulative impacts will result from  
30 additional personnel relocating and utilizing HEC roadways and parking lots. The anticipated  
31 number of personnel to relocate to HEC under the cumulative projects identified is not expected  
32 to be significant and it would be expected that HEC roadway infrastructure and surface parking  
33 lots could handle the additional personnel. Therefore, no significant cumulative adverse impacts  
34 on traffic at HEC would be expected.

#### 1                   **4.1.8. Land Use**

2 Long-term, negligible, adverse impacts on land use at HEC would be expected from the  
3 cumulative construction of new facilities at HEC. It would be expected that construction of  
4 facilities such as the SOCOM Operations Building and the Battalion Ops Facility that require  
5 conversion of existing land uses to more appropriate land uses. These changes would also be  
6 captured in the proposed HEC Master Plan which proposes updates to land use planning at HEC  
7 to accommodate the proposed construction of projects described within, including the  
8 cumulative action projects described above. Overall impacts on land use would be expected to  
9 be negligible because projects proposed under the HEC Master Plan have undergone careful  
10 consideration in terms of planning and alignment. Lastly, because there are no known areas of  
11 elevated MEC density, the potential for exposure to MEC is low, and in addition to the existing  
12 LUCs, impacts on LUCs and construction personnel would be short-term, negligible, and adverse.  
13 Overall, no significant cumulative adverse impacts on land use at HEC would be expected.

#### 14                   **4.1.9. Noise**

15 Short-term, minor, adverse cumulative impacts on the ambient noise environment would occur  
16 from construction associated with the Proposed Action when combined with cumulative  
17 projects. Noise from construction equipment and construction-related traffic would be  
18 temporary and last only for the duration of construction activities. Additionally, because of the  
19 secluded nature of the HEC installation, on-installation noise generated from construction would  
20 be unlikely to travel off-site. Noise generated from the cumulative projects would be additive to  
21 the noise generated from the Proposed Action as well as the existing noise environment at HEC.  
22 This cumulative noise has the potential to periodically annoy nearby residents, resulting in  
23 negligible to minor cumulative impacts. However, the added noise levels would not be expected  
24 to violate applicable federal, state or local noise regulations or ordinances, or create appreciable  
25 areas of incompatible land use off HEC. Ultimately the Proposed Action and the cumulative  
26 projects would not be expected to result in significant cumulative impacts on noise.

#### 27                   **4.1.10. Community Services**

28 Short- and long-term, negligible to minor, adverse cumulative impacts on community services  
29 would occur at HEC from the Proposed Action and cumulative projects. The Proposed Action and  
30 cumulative projects would all require construction workers who would rely on community  
31 services provided by off-installation services. Negligible to minor impacts could be expected if  
32 project construction timelines were to overlap from the potential over exasperation of  
33 community resources. HEC would coordinate construction schedules as to avoid similar  
34 construction activities from happening simultaneously. Ultimately the Proposed Action and  
35 some of the cumulative projects will increase the on-installation population of HEC. This increase  
36 in personnel at HEC would be gradual and would not be expected to impact community

1 resources. Therefore, the Proposed Action and the cumulative projects would not be expected  
2 to result in significant cumulative impacts on community services.

#### 3 **4.1.11. Socioeconomics and Environmental Justice**

4 Short-term, negligible to minor, beneficial impacts would be expected on socioeconomics from  
5 the Proposed Action and cumulative projects at HEC. The Proposed Action and cumulative  
6 projects would all require construction workers from within the surrounding area which would  
7 stimulate the regional job market by employing regional engineers, architects and construction  
8 workers. Additionally, construction companies working on HEC would likely purchase local  
9 supplies, and eat at local restaurants further stimulating the local economy immediately around  
10 HEC. Because the Proposed Action and cumulative projects at HEC would not all occur at the  
11 exact same time and would be staggered, the expected impact on the local construction  
12 economy would not be significantly impacted from over-construction at HEC. Additional short-  
13 term, negligible beneficial, cumulative impacts and long-term, negligible adverse cumulative  
14 impacts on socioeconomics resources would be expected from the increase of personnel at  
15 HEC. This increase in personnel would not be expected to adversely impact the local housing  
16 economy as the number of personnel transferring to HEC under the cumulative projects would  
17 not be expected to be significant.

18 Since all cumulative projects analyzed under this assessment would occur on HEC, and would not  
19 be expected to impact the area outside HEC, no impacts on Environmental Justice would be  
20 expected.

#### 21 **4.1.12. Water Resources**

22 Short- and long-term, minor, adverse cumulative impacts on water resources would be expected  
23 from the Proposed Action in combination with the cumulative projects. The cumulative increase  
24 in impervious surfaces from the Proposed Action and cumulative projects would be considered a  
25 minor contribution in the context of the entire watershed, but could be noticeable on a more  
26 localized level. Increased impervious surfaces could result in a reduction of groundwater  
27 recharge rates and an increase in stormwater runoff volumes. BMPs, including erosion and  
28 stormwater controls, would be implemented to reduce the potential for erosion and increased  
29 volume of stormwater. No additional impacts on water resources would be expected from the  
30 Proposed Action and cumulative projects.

#### 31 **4.2. Cumulative Actions and the Irreversible Commitment of Resources**

32 NEPA requires the identification of any irreversible and irretrievable commitment of resources  
33 that would be involved, not only in implementation of the Proposed Action, but also with the  
34 cumulative actions identified above. Irreversible and irretrievable resource commitments are  
35 primarily related to the use of nonrenewable resources and the impacts that the uses of these



1 materials and resources could potentially have on the present and future generations.  
2 Irreversible impacts primarily result from the use or destruction of a specific resource (e.g.,  
3 energy and minerals) that cannot be replaced within a reasonable timeframe. Irretrievable  
4 resource commitments involve the loss in value of an affected resource that cannot be restored  
5 as a result of the Proposed Action and cumulative actions (e.g. loss of landscape, permanent loss  
6 of green space).

7 Construction associated with the Proposed Action and cumulative actions would require  
8 consumption of raw materials typically associated with exterior and interior construction (e.g.  
9 concrete, wiring, piping, insulation, windows). Recycled materials would be used to the extent  
10 practicable, and the amount of these materials used would not significantly decrease the  
11 availability of these materials. Small amounts of nonrenewable resources would be required to  
12 be used; however, these amounts would not be appreciable and would not affect the overall  
13 availability of these resources. The Proposed Action and cumulative actions would also require  
14 consumption of fuels, including some that would be nonrenewable resources (e.g., petroleum-  
15 based fuel products for work vehicles and equipment)

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# Appendix

## A

### Agency Coordination and Public Involvement

## Agency Coordination and Public Involvement

The following agencies, persons and tribes were consulted with during the Environmental Assessment (EA) process:

Mr. Marcel Acosta Executive Director National Capital Planning Commission	Chairman David Dale Mount Vernon Council of Citizens Associations
Chief Frank Adams Upper Mattaponi Indian Tribe	Mr. Kimberly Damon-Randall Deputy Regional Administrator National Marine Fisheries Service
Chief Stephen R. Adkins Chickahominy Indian Tribe	Mr. Ray Fernald Manager Department of Game and Inland Services Section
Mr. Troy Anderson Conservation Planning Assistance Supervisor U.S. Fish and Wildlife Service	Mr. Joe Gorney Senior Environmental Planner & Staff Liaison Fairfax County Department of Planning and Zoning
Mr. Tom Blackburn President The Audubon Society of Northern Virginia	Chief Robert Gray Pamunkey Indian Tribe
Tribal Chief Kenneth Branham Monacan Indian Nation	Ms. Katry Harris Program Analyst Advisory Council on Historic Preservation
Mr. John Bricker State Conservationist U.S. Department of Agricultural	Chief William Harris Catawba Indian Nation
Chief Joe Bunch United Keetoowah Band of Cherokee Indians in Oklahoma	Chairman Pat Herrity Fairfax County Planning Commission
Mr. Kevin Casalenuovo Park Manager Pohick Bay Regional Park	Chief Arnold Hewitt Tuscarora Nation
Ms. Sandy Collins Primary Conservator Friends of Accotink Creek	Mr. Rick Keller Chair Mount Vernon Group
Mr. Sean Corson Director National Marine Fisheries Service	Mr. Kirk W. Kincannon Fairfax County Park Authority

Ms. Julie Langan  
State Historic Preservation Officer  
Virginia Department of Historic Resources

Ms. Bettina Rayfield  
Manager  
Virginia Department of Environmental Quality

Mr. Genevieve LaRouche  
Field Supervisor  
U.S Fish and Wildlife Service

Chief Anne Richardson  
Rappahannock Tribe

Mr. Jeffrey McKay  
Supervisor  
Fairfax County Board of Supervisors

Ms. Barbara Rudnick  
NEPA Program Manager  
U.S Environmental Protection Agency

Ms. Laura McKay  
Virginia Department of Environmental Quality

Ms. Karen Sheffield  
Director of Planning and Development  
Fairfax County Park Authority

Ms. Pat Montanio  
Director  
National Marine Fisheries Program

Chief Gerald A. Stewart  
Chickahominy Indians Eastern Division

Ms. Michaela E. Noble  
Director  
U.S. Department of the Interior

Supervisor Daniel G. Storck  
Fairfax County Board of Supervisors

Mr. Brian Nolan  
Planning and Development Director  
Northern Virginia Regional Park Authority

Mr. Russel Townsend  
Eastern Band of Cherokee Indians

Ms. Mary Rafferty  
Executive Director

Chairwoman Katherine Ward  
Mount Vernon Council of Citizen's Associations

Mr. Greg Weiler  
Refuge Manager  
Mason Neck National Wildlife Refuge



**A.1 – Example Scoping Letter sent to Local, State and Federal Agencies and Stakeholders**

**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS  
HUMPHREYS ENGINEER CENTER SUPPORT ACTIVITY  
7701 TELEGRAPH ROAD  
ALEXANDRIA, VA 22315-3860  
March 20, 2020

Executive Office

Mr. Marcel Acosta  
Executive Director  
National Capital Planning Commission  
401 Ninth Street NW  
Suite 500, North Lobby  
Washington, DC 20004

Dear Mr. Acosta,

The Department of the Army, U.S. Army Corps of Engineers (USACE), U.S. Special Operations Command (USSOCOM), 1st Capabilities Integration Group (1st CIG) and Humphreys Engineer Center Support Activity (HECSA) have initiated the development of an Environmental Assessment (EA) to evaluate the potential environmental, socioeconomic and cultural resource impacts from construction of a new Training Support Facility (TSF) at Humphreys Engineer Center (HEC), located in Fairfax County, Virginia.

The purpose of the Proposed Action is to support the 1st CIG and other tenants at HEC by providing necessary training, storage and administrative space to provide for more efficient, synchronized unit operations by construction of a TSF at HEC and collocating training and storage functions to one, centralized building. The need for the Proposed Action is to provide for more efficient operations for 1st CIG and other tenants by providing flexible training support, administrative and storage space at HEC. Ultimately there is a current and future need for functional training and storage space at HEC which is necessary for synchronized unit operations to execute military operations and contingency missions and for the preservation of unique and sensitive pieces of equipment and artifacts.

The proposed TSF would be constructed within an approximately 3.2 acre, previously developed, site located within the central-eastern portion of HEC, east of the Kingman Building and north of the Hall Building parking lot within the existing HEC soccer field area/recreational area. The TSF would be constructed as a two-story, 73,200 ft sensitive, compartmented information facility (SCIF) and would include flexible training, meeting, storage and administrative space. The building would also house production and processing facilities and would include climate-controlled storage which would allow for processing, storage, inventorying, and maintenance of sensitive and unique equipment and artifacts.

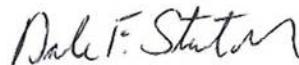
Construction of the TSF would take approximately 24 months and would include a buffer of 33 feet for antiterrorism/force protection (AT/FP) requirements. The proposed TSF would also include construction of new supporting infrastructure such as electrical, water, sewer and gas utility connections. Two, 500 kilowatt (kW) emergency diesel generators would also be installed in the northwestern corner of the facility located in an exterior mechanical yard. Site and facility design would also include Americans with Disabilities Act (ADA)-accessible circulation within and around the facility.

Select demolition of existing infrastructure located at the site would also occur and includes removal of an existing sanitary sewer, water, and communications lines. Additionally, an existing, buried concrete wave tank foundation located along the eastern boundary of the site would also be excavated and removed along with existing chain-link fencing and sidewalk along the soccer field/recreational area.

After completion of construction, approximately 200 personnel currently at HEC would transfer to the new TSF. There would be no changes to the total number of personnel at HEC under the Proposed Action. Additionally, all parking for the proposed facility personnel would be accommodated in the existing Hall Building surface parking lot.

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation and comments on the enclosed *Final Description of the Proposed Action and Alternatives Addressing Proposed Construction of the Training Support Facility at Humphreys Engineer Center Alexandria, Virginia*. Your comments will aid to help further develop the scope of the environmental analysis. The Draft EA will be distributed to your office when completed.

Please provide written comments within 30 days from the date of this letter to Mr. Victor H. Stephenson, Humphreys Engineer Center Support Activity, 7701 Telegraph Road, Alexandria, Virginia 22315. If you need further information, please contact Mr. Stephenson at 703-428-7328.



Dale F. Stoutenburgh  
Director

Enclosure: *Final Description of the Proposed Action and Alternatives Addressing Proposed Construction of the Training Support Facility at Humphreys Engineer Center, Alexandria, Virginia*

**A.2 – Example Tribal Letter**

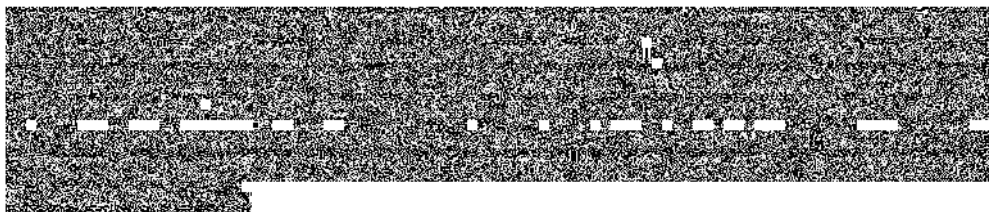
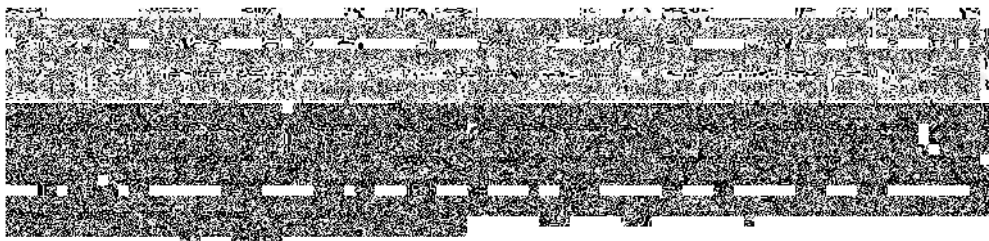
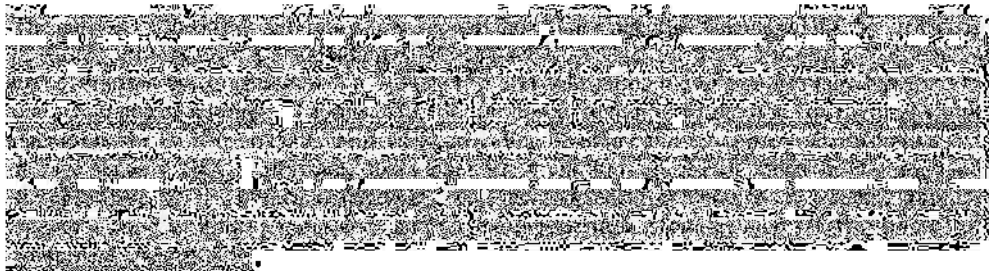


**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS  
HUMPHREYS ENGINEER CENTER SUPPORT ACTIVITY  
7701 TELEGRAPH ROAD  
ALEXANDRIA, VA 22315-3860

Chief Arnold Hewitt  
Tuscarora Nation  
5616 Walmore Road  
Lewiston, NY 14092

Dear Chief Hewitt,

The Department of the Army, U. S. Army Corps of Engineers (USACE) U.S. Special Operations



## Pg. 2

Select demolition of existing infrastructure located at the site would also occur and includes removal of an existing sanitary sewer, water, and communication lines. Additionally, an existing, buried concrete wastewater foundation located along the eastern boundary of the site would also be excavated and removed along with existing chainlink fencing and sidewalk along the eastern field/recreational area.

After completion of construction, approximately 200 personnel capacity at HEC would transfer to the new TSP. There would be no change to the total number of personnel at HEC under the Proposed Action. Additionally, all parking for the proposed facility personnel would be accommodated in the existing Hall Building surface parking lot.

In accordance with Section 106 of the National Historic Preservation Act, 36 Code of Federal Regulations § 800, and Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, your participation and comments are requested on the enclosed *Final Description of the Proposed Action and Alternatives Addressing Proposed Construction of the SOF Maintenance and Supply Facility at Humphreys Engineer Center Alexandria, Virginia*. Your comments will aid to help further develop the scope of the environmental analysis. A copy of the Draft EA will be provided once it is completed.

Please provide written comments within 30 days from the date of this letter to Mr. Victor H. Stephenson, Humphreys Engineer Center Support Activity, 7701 Telegraph Road, Alexandria, Virginia 22313. If you need further information, please contact Mr. Stephenson at 703-428-7328.

Dale F. Stoutenburgh  
Director

Enclosure: *Final Description of the Proposed Action and Alternatives Addressing Proposed Construction of the SOF Maintenance and Supply Facility at Humphreys Engineer Center, Alexandria, Virginia*

**A.3 – Section 106 Consultation Initiation Package**



**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS  
HUMPHREYS ENGINEER CENTER SUPPORT ACTIVITY  
7701 TELEGRAPH ROAD  
ALEXANDRIA, VA 22315-3860  
March 20, 2020

Executive Office

Julie Langan  
State Historic Preservation Officer  
Office of Review and Compliance  
Virginia Department of Historic Resources (VDHR)  
2801 Kensington Avenue  
Richmond, Virginia 23221

Dear Ms. Langan,

The purpose of this letter is to initiate coordination with your office under Section 106 of the National Historic Preservation Act for an undertaking by the U.S. Army Corps of Engineers (USACE) at Humphreys Engineer Center (HEC), in Fairfax County, Virginia. The Department of the Army, USACE, U.S. Special Operations Command (USSOCOM), 1st Capabilities Integration Group (1st CIG) and Humphreys Engineer Center Support Activity (HECSA) propose to construct a Training Support Facility (TSF) in the central-eastern portion of USACE's HEC property in Fairfax, Virginia.

The purpose of the Proposed Action is to support the 1st CIG and other tenants at HEC by providing necessary training, storage and administrative space to provide for more efficient, synchronized unit operations by construction of a TSF at HEC and collocating training and storage functions to one, centralized building. The need for the Proposed Action is to provide for more efficient operations for 1st CIG and other tenants by providing flexible training support, administrative and storage space at HEC. Ultimately there is a current and future need for functional training and storage space at HEC which is necessary for synchronized unit operations to execute military operations and contingency missions and for the preservation of unique and sensitive pieces of equipment and artifacts.

The proposed TSF would be constructed within an approximately 3.2 acre, previously developed, site located within the central-eastern portion of HEC, east of the Kingman Building and north of the Hall Building parking lot within the existing HEC soccer field area/recreational area. The TSF would be constructed as a two-story, 73,200 ft sensitive compartmented information facility (SCIF) and would include flexible training, meeting, storage and administrative space. The building would also house production and processing facilities and would include climate-controlled storage which would allow for processing, storage, inventorying, and maintenance of sensitive and unique equipment and artifacts.

Construction of the TSF would take approximately 24 months and would include a buffer of 33 feet for antiterrorism/force protection (AT/FP) requirements. The proposed TSF would also include construction of new supporting infrastructure such as electrical, water, sewer and gas utility connections. Two, 500 kilowatt (kW) emergency diesel generators would also be installed in the northwestern corner of the facility located in an exterior mechanical yard. Site and facility design would also include Americans with Disabilities Act (ADA)-accessible circulation within and around the facility.

Select demolition of existing infrastructure located at the site would also occur and includes removal of an existing sanitary sewer, water, and communications lines. Additionally, an existing, buried concrete wave tank foundation located along the eastern boundary of the site would also be excavated and removed along with existing chain-link fencing and sidewalk along the soccer field/recreational area.

After completion of construction, approximately 200 personnel currently at HEC would transfer to the new TSF. There would be no changes to the total number of personnel at HEC under the Proposed Action. Additionally, all parking for the proposed facility personnel would be accommodated in the existing Hall Building surface parking lot.

The Area of Potential Effect (APE) for this undertaking includes the boundaries for ground disturbance for the project and the view sheds north toward Building 2594 (the Casey Building, west toward Building 2593 (the Kingman Building) and south toward Building 2596 (the Hall Building).

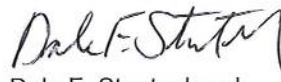
No archaeological sites have been identified by VDHR within the APE (Enclosure 1). The nearest site, 44FX0670 is approximately 250 feet north of the undertaking. This site was determined not eligible for evaluation by VDHR (Enclosure 2). Site 44FX0739, the Triplett Homestead and Cemetery, is approximately 450 feet to the west of the APE for the proposed undertaking however, according to VDHR has not yet been evaluated (Enclosure 3). 44FX1497 is located adjacent to Building 2593 (the Kingman Building) and is approximately 1,270 feet west of the APE for the undertaking. According to VDHR, the site was determined to not be eligible for evaluation (Enclosure 4).

This EA will analyze the Proposed Action and the No Action Alternative. The No Action Alternative is the continuation of current practices where the proposed Training Support Facility would not be constructed. Under the No Action Alternative, the unit would continue to lack consolidated functional storage, meeting and administrative space necessary for the preservation of unique and sensitive pieces of equipment and artifacts at HEC.

Pursuant to Section 106 of the National Historic Preservation Act, 36 Code of Federal Regulations § 800, and Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, we request your participation and comments on the

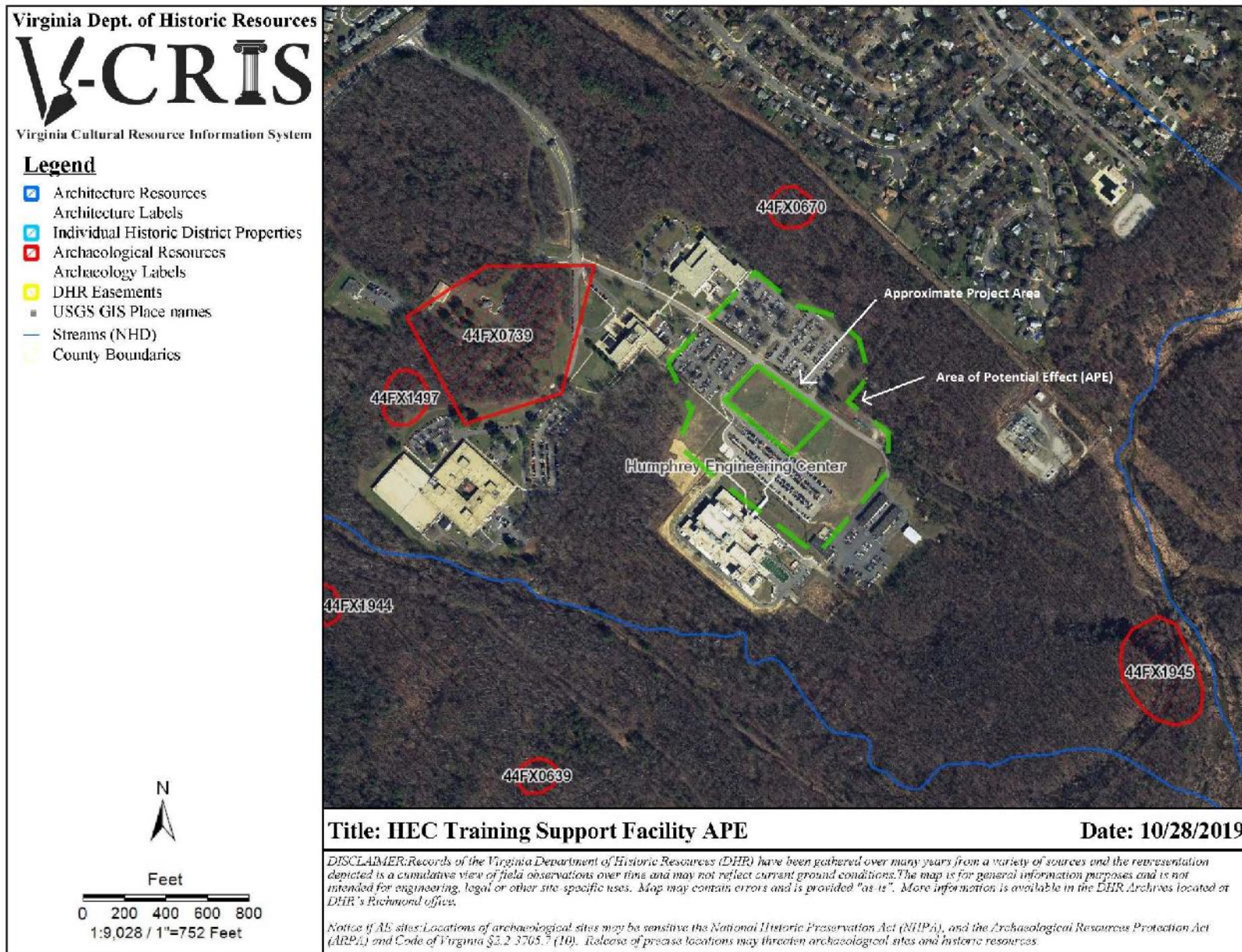
enclosed *Final Description of the Proposed Action and Alternatives Addressing Proposed Construction of the SOF Maintenance and Supply Facility at Humphreys Engineer Center Alexandria, Virginia*. Your comments will help develop the scope of our environmental review in the EA. The Draft EA will be distributed to your office when completed.

Please provide written comments within 30 days from the date of this letter to Mr. Victor H. Stephenson, Humphreys Engineer Center Support Activity, 7701 Telegraph Road, Alexandria, Virginia 22315. If you need further information, please contact Mr. Stephenson at 703-428-7328.



Dale F. Stoutenburgh  
Director

- Enclosure 1: Virginia Department of Historic Resources Archaeological Sites at Humphreys Engineer Center (HEC)
- Enclosure 2: Virginia Department of Historic Resources Archaeological Site Record for 44FX0670
- Enclosure 3: Virginia Department of Historic Resources Archaeological Site Record for 44FX0739
- Enclosure 4: Virginia Department of Historic Resources Archaeological Site Record for 44FX1497
- Enclosure 5: *Final Description of the Proposed Action and Alternatives Addressing Proposed Construction of the SOF Maintenance and Supply Facility at Humphreys Engineer Center Alexandria, Virginia*





Virginia Department of Historic Resources  
Archaeological Site Record

DHR ID: 44FX0670

**Snapshot**

Date Generated: October 21, 2019

Site Name: No Data  
 Site Classification: Terrestrial, open air  
 Year(s): No Data  
 Site Type(s): Other  
 Other DHR ID: No Data  
 Temporary Designation: No Data

**Site Evaluation Status**  
 DHR Staff: Not Eligible

**Locational Information**

USGS Quad: FORT BELVOIR  
 County/Independent City: Fairfax (County)  
 Physiographic Province: No Data  
 Elevation: No Data  
 Aspect: No Data  
 Drainage: No Data  
 Slope: No Data  
 Acreage: No Data  
 Landform: Other  
 Ownership Status: Federal Govt  
 Government Entity Name: U.S. Department of the Army

**Site Components**

**Component 1**

Category: Transportation/Communication  
 Site Type: Other  
 Cultural Affiliation: Indeterminate  
 DHR Time Period: Historic/Unknown  
 Start Year: No Data  
 End Year: No Data  
 Comments: Historic isolated find.

**Bibliographic Information**

Bibliography:  
 No Data  
 Informant Data:  
 No Data

Virginia Department of Historic Resources  
Archaeological Site Record

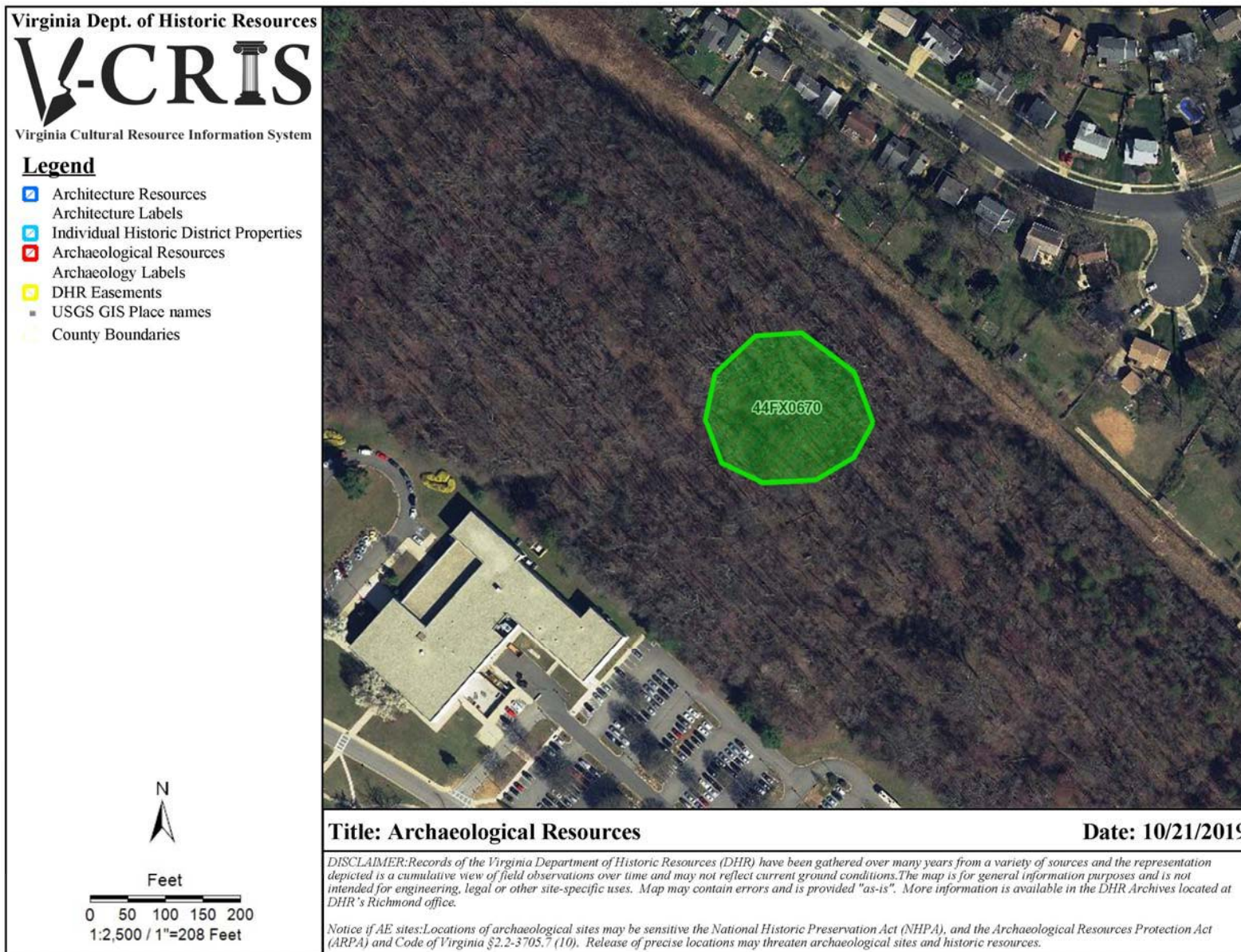
DHR ID: 44FX0670

CRM Events	
<b>Event Type: DHR Staff: Not Eligible</b>	
DHR ID:	44FX0670
Staff Name:	VDHR
Event Date:	7/20/1993
Staff Comment:	No Data
<p><b>Event Summary:</b></p> <p>Archaeological survey of the site. The site is located on the property of the Virginia Department of Transportation (VDOT) at the intersection of State Route 28 and State Route 101. The site is a 1.5-acre parcel of land. The survey was conducted by the Virginia Department of Historic Resources (VDHR) and the Virginia Department of Transportation (VDOT). The survey identified several archaeological features, including a brick foundation, a stone foundation, and a concrete foundation. The survey also identified several artifacts, including a brick, a stone, and a concrete block. The survey was conducted in accordance with the Virginia Department of Historic Resources (VDHR) and the Virginia Department of Transportation (VDOT) guidelines.</p> <p><b>Event Details:</b></p> <p><b>Event Type:</b> Survey, Phase I/Recommendations</p> <p><b>Project Number:</b> 44FX0670</p> <p><b>Project Name:</b> Training Support Facility</p>	
<p>Archaeological site data is protected under the Archaeological Resource Protection Act (ARPA, 54 USC 12201).</p>	

Virginia Department of Historic Resources  
Archaeological Site Record

DHR ID: 44FX0670

<b>Sponsoring Organization:</b>	No Data
<b>Organization/Company:</b>	Unknown (DSS)
<b>Investigator:</b>	PSI-Soil System Div.
<b>Survey Date:</b>	2/24/1983
<b>Survey Description:</b>	No Data
<b>Threats to Resource:</b>	No Data
<b>Site Conditions:</b>	No Data
<b>Survey Methods:</b>	No Data
<b>Survey Results:</b>	No Data
<b>Significance Statement:</b>	No Data
<b>Surveyor's Eligibility Recommendations:</b>	No Data
<b>Surveyor's NR Criteria Recommendations, :</b>	No Data
<b>Surveyor's NR Criteria Considerations:</b>	No Data



Virginia Department of Historic Resources  
Archaeological Site Record

DHR ID: 44FX0739

Snapshot		Date Generated: October 21, 2019
Site Name:	Triplett Homestead & Cemetery	<b>Site Evaluation Status</b>  Not Evaluated
Site Classification:	Terrestrial, open air	
Year(s):	1700 - 1799, 1800 - 1899, 1900 - 1999	
Site Type(s):	Cemetery, Farmstead	
Other DHR ID:	No Data	
Temporary Designation:	No Data	

Locational Information	
USGS Quad:	FORT BELVOIR
County/Independent City:	Fairfax (County)
Physiographic Province:	Coastal Plain
Elevation:	No Data
Aspect:	No Data
Drainage:	Potomac
Slope:	No Data
Acreage:	11.190
Landform:	Other
Ownership Status:	No Data
Government Entity Name:	No Data

Site Components	
<b>Component 1</b>	
Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Indeterminate
DHR Time Period:	Antebellum Period, Civil War, Early National Period, Reconstruction Period
Start Year:	1800
End Year:	1899
Comments:	No Data
<b>Component 2</b>	
Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Indeterminate
DHR Time Period:	Colonial/Neoclassical/Early National Period
Start Year:	1700
End Year:	1799
Comments:	No Data
<b>Component 3</b>	
Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Indeterminate
DHR Time Period:	Post Cold War, Reconstruction and Growth, The New Dominion, World War I to World War II
Start Year:	1900
End Year:	1999
Comments:	No Data
<b>Component 4</b>	

Archaeological site data is protected under the Archaeological Resource Protection Act (ARPA 1979).

Page: 1 of 4

Virginia Department of Historic Resources  
Archaeological Site Record

DHR ID: 44FX0739

<b>Category:</b>	Domestic
<b>Site Type:</b>	Farmstead
<b>Cultural Affiliation:</b>	No Data
<b>DHR Time Period:</b>	No Data
<b>Start Year:</b>	No Data
<b>End Year:</b>	No Data
<b>Comments:</b>	No Data
<b>Component 5</b>	
<b>Category:</b>	Funerary
<b>Site Type:</b>	Cemetery
<b>Cultural Affiliation:</b>	No Data
<b>DHR Time Period:</b>	No Data
<b>Start Year:</b>	No Data
<b>End Year:</b>	No Data
<b>Comments:</b>	No Data

<b>Bibliographic Information</b>
<b>Bibliography:</b> Phase I Archaeological Survey for the Historical Center and Museum, Humphreys Engineer Center, Fort Belvoir, Virginia [site could not be located]
<b>Informant Data:</b> No Data

Virginia Department of Historic Resources  
Archaeological Site Record

DHR ID: 44FX0739

CRM Events

Event Type: Other

Project Staff/Notes:

Insufficient information on file for evaluation.

Project Review File Number:

No Data

Sponsoring Organization:

No Data

Organization Name:

VA Dept of Historic Resources

Project Name:

CRM

Project Location:

VA

Project Address:

VA

Project Date:

VA

Project Description:

VA

Project Status:

VA

Project Type:

VA

Project Category:

VA

Project Subcategory:

VA

Project Subtype:

VA

Project Subtype Code:

VA

Project Subtype Description:

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VA

Virginia Department of Historic Resources  
Archaeological Site Record

DHR ID: 44FX0739

<b>Survey Strategies:</b>	No Data
<b>Specimens Collected:</b>	No Data
<b>Specimens Observed, Not Collected:</b>	No Data
<b>Artifacts Summary and Diagnostics:</b>	No Data
<b>Summary of Specimens Observed, Not Collected:</b>	No Data
<b>Current Curation Repository:</b>	No Data
<b>Permanent Curation Repository:</b>	No Data
<b>Field Notes:</b>	No Data
<b>Field Notes Repository:</b>	No Data
<b>Photographic Media:</b>	Yes
<b>Survey Reports:</b>	Yes
<b>Survey Report Information:</b>	
See report by Joseph H. Allen	
<b>Survey Report File Path:</b>	No Data
<b>Digital Library Reference Number:</b>	No Data
<b>Qualification Statement:</b>	No Data
<b>Surveyor's USGS Grid UTM Zone:</b>	No Data
<b>Surveyor's USGS Grid Easting:</b>	No Data
<b>Surveyor's USGS Grid Northing:</b>	No Data





Virginia Department of Historic Resources  
Archaeological Site Record

DHR ID: 44FX1497

**Snapshot**

Date Generated: October 21, 2019

Site Name: No Data  
 Site Classification: Terrestrial, open air  
 Year(s): 1800 - 1899  
 Site Type(s): No Data  
 Other DHR ID: No Data  
 Temporary Designation: No Data

**Site Evaluation Status**  
 DHR Staff: Not Eligible

**Locational Information**

USGS Quad: FORT BELVOIR  
 County/Independent City: Fairfax (County)  
 Physiographic Province: No Data  
 Elevation: No Data  
 Aspect: No Data  
 Drainage: No Data  
 Slope: No Data  
 Acreage: No Data  
 Landform: Other  
 Ownership Status: Federal Govt  
 Government Entity Name: U.S. Department of the Army

**Site Components**

**Component 1**

Category: No Data  
 Site Type: No Data  
 Cultural Affiliation: Indeterminate  
 DHR Time Period: Antebellum Period, Civil War, Early National Period, Reconstruction and Growth  
 Start Year: 1800  
 End Year: 1899  
 Comments: No Data

**Bibliographic Information**

Bibliography:  
 No Data  
 Informant Data:  
 No Data

Virginia Department of Historic Resources  
Archaeological Site Record

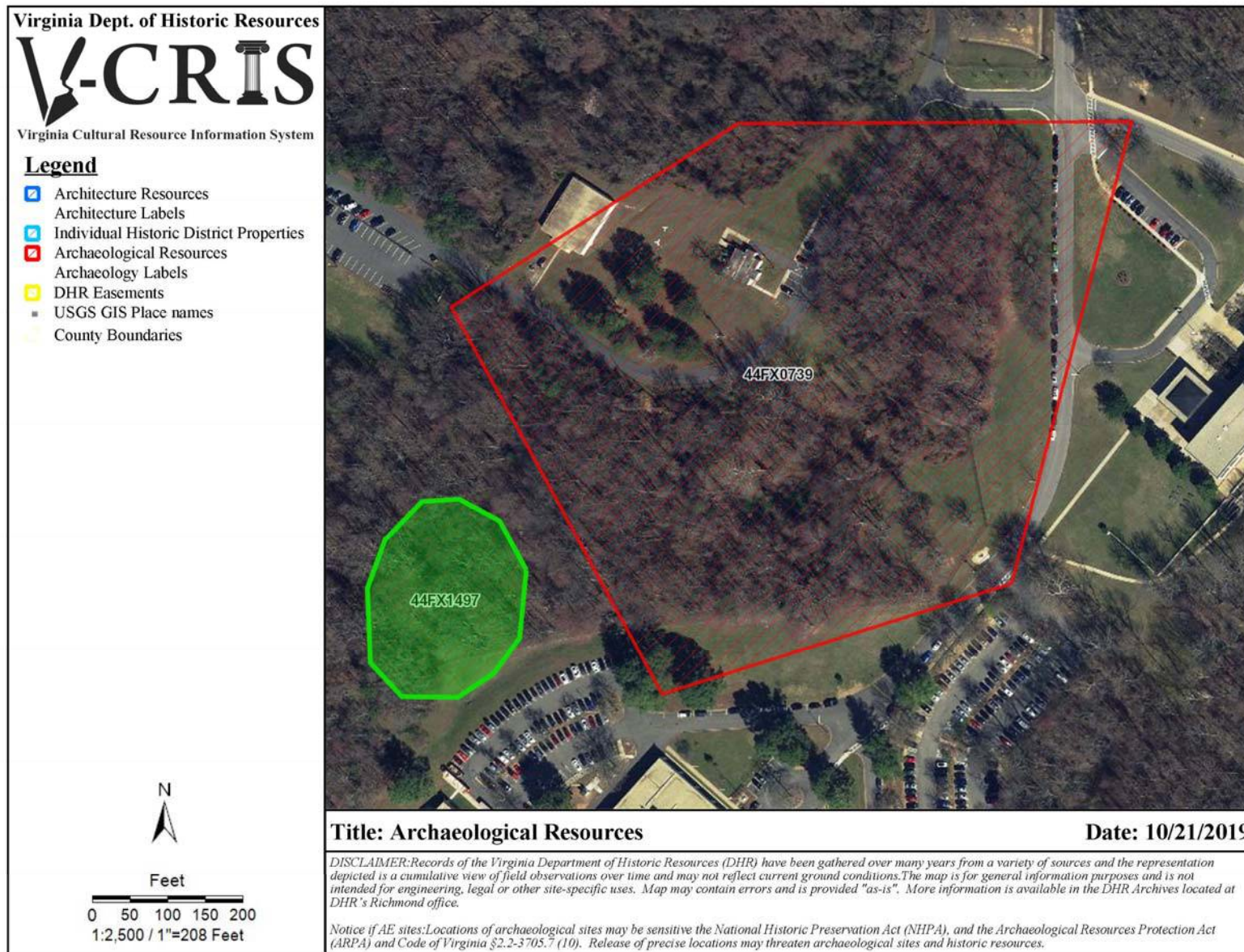
DHR ID: 44FX1497

CRM Events	
<b>Event Type: DHR Staff: Not Eligible</b>	
DHR ID:	44FX1497
Staff Name:	VDHR
Event Date:	8/17/1993
Staff Comment:	No Data
<p><b>Project Description:</b></p> <p>Construction of a new building for the Virginia Department of Historic Resources, located at the site of the former Virginia State Penitentiary, 1000 North 1st Street, Richmond, Virginia. The project consists of a new 100,000 square foot building, a parking garage, and a new sewer line. The project is located on a site that is partially covered by a parking lot and a paved area. The site is located in an urban area and is surrounded by other buildings and parking lots. The project is expected to be completed in late 1993.</p> <p><b>Project Location:</b></p> <p>1000 North 1st Street, Richmond, Virginia 23219</p> <p><b>Project Dates:</b></p> <p>Start Date: 8/17/1993 End Date: 10/31/1993</p> <p><b>Project Personnel:</b></p> <p>Project Manager: [Redacted] Archaeologist: [Redacted] Contractor: [Redacted]</p> <p><b>Project Description:</b></p> <p>The project consists of a new 100,000 square foot building, a parking garage, and a new sewer line. The project is located on a site that is partially covered by a parking lot and a paved area. The site is located in an urban area and is surrounded by other buildings and parking lots. The project is expected to be completed in late 1993.</p> <p><b>Project Location:</b></p> <p>1000 North 1st Street, Richmond, Virginia 23219</p> <p><b>Project Dates:</b></p> <p>Start Date: 8/17/1993 End Date: 10/31/1993</p> <p><b>Project Personnel:</b></p> <p>Project Manager: [Redacted] Archaeologist: [Redacted] Contractor: [Redacted]</p> <p><b>Project Description:</b></p> <p>The project consists of a new 100,000 square foot building, a parking garage, and a new sewer line. The project is located on a site that is partially covered by a parking lot and a paved area. The site is located in an urban area and is surrounded by other buildings and parking lots. The project is expected to be completed in late 1993.</p> <p><b>Project Location:</b></p> <p>1000 North 1st Street, Richmond, Virginia 23219</p> <p><b>Project Dates:</b></p> <p>Start Date: 8/17/1993 End Date: 10/31/1993</p> <p><b>Project Personnel:</b></p> <p>Project Manager: [Redacted] Archaeologist: [Redacted] Contractor: [Redacted]</p>	
<b>Event Type: Survey: Phase II Reconnaissance</b>	
Event Date:	No Data
Project Section File Number:	No Data

Virginia Department of Historic Resources  
Archaeological Site Record

DHR ID: 44FX1497

<b>Sponsoring Organization:</b>	No Data
<b>Organization/Company:</b>	Unknown (DSS)
<b>Investigator:</b>	MAI
<b>Survey Date:</b>	7/1/1988
<b>Survey Description:</b>	No Data
<b>Threats to Resource:</b>	No Data
<b>Site Conditions:</b>	No Data
<b>Survey Strategy:</b>	No Data
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
<b>Significance Statement:</b>	No Data
<b>Surveyor's Eligibility Recommendations:</b>	No Data
<b>Surveyor's NR Criteria Recommendations, :</b>	No Data
<b>Surveyor's NR Criteria Considerations:</b>	No Data



**A.4 – Section 7 Consultation Initiation Package**

**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS  
HUMPHREYS ENGINEER CENTER SUPPORT ACTIVITY  
7701 TELEGRAPH ROAD  
ALEXANDRIA, VA 22315-3860  
March 20, 2020

Executive Office

Ms. Genevieve LaRouche  
Field Supervisor  
U.S. Fish and Wildlife Service  
Annapolis Field Office  
177 Admiral Cochrane Drive  
Annapolis, Maryland 21401

Dear Ms. LaRouche,

The purpose of this letter is to initiate coordination with your office under Section 7 of the Endangered Species Act for an undertaking by the U.S. Army Corps of Engineers (USACE) at Humphreys Engineer Center (HEC), in Fairfax County, Virginia. The Department of the Army, USACE, U.S. Special Operations Command (USSOCOM), 1st Capabilities Integration Group (1<sup>st</sup> CIG) and Humphreys Engineer Center Support Activity (HECSA) propose to construct a Training Support Facility (TSF) in the central-eastern portion of USACE's HEC property in Fairfax, Virginia. The purpose of the Proposed Action is to support the 1st CIG and other tenants at HEC by providing necessary training, storage and administrative space to provide for more efficient, synchronized unit operations by construction of a TSF at HEC and collocating training and storage functions to one, centralized building. The need for the Proposed Action is to provide for more efficient operations for 1st CIG and other tenants by providing flexible training support, administrative and storage space at HEC. Ultimately there is a current and future need for functional training and storage space at HEC which is necessary for synchronized unit operations to execute military operations, contingency missions and for the preservation of unique and sensitive pieces of equipment and artifacts.

The proposed TSF would be constructed within an approximately 3.2 acre, previously developed, site located within the central-eastern portion of HEC, east of the Kingman Building and north of the Hall Building parking lot within the existing HEC soccer field area/recreational area. The TSF would be constructed as a two-story, 73,200 ft<sup>2</sup> sensitive compartmented information facility (SCIF) and would include flexible training, meeting, storage and administrative space. The building would also house production and processing facilities and would include climate-controlled storage which would allow for processing, storage, inventorying, and maintenance of sensitive and unique equipment and artifacts.

Construction of the TSF would take approximately 24 months and would include a buffer of 33 feet for antiterrorism/force protection (AT/FP) requirements. The proposed TSF would also include construction of new supporting infrastructure such as electrical,

water, sewer and gas utility connections. Two, 500 kilowatt (kW) emergency diesel generators would also be installed in the northwestern corner of the facility located in an exterior mechanical yard. Site and facility design would also include Americans with Disabilities Act (ADA)-accessible circulation within and around the facility.

Select demolition of existing infrastructure located at the site would also occur and includes removal of an existing sanitary sewer, water, and communications lines. Additionally, an existing, buried concrete wave tank foundation located along the eastern boundary of the site would also be excavated and removed along with existing chain-link fencing and sidewalk along the soccer field/recreational area.

After completion of construction, approximately 200 personnel currently at HEC would transfer to the new TSF. There would be no changes to the total number of personnel at HEC under the Proposed Action. Additionally, all parking for the proposed facility personnel would be accommodated in the existing Hall Building surface parking lot.

USACE has accessed the U.S. Fish & Wildlife Service's Information for Planning and Consultation (IPAC) website for the proposed project which produced the attached summary (Enclosure 1). Furthermore, a Self-Certification letter and species conclusion table has also been included (Enclosure 2 and 3). A Center for Conservation Biology Virginia Eagle Nest locator map (Enclosure 4) and Virginia Department of Game and In-Land Fisheries map for Northern long-eared bat Habitat and Roost Trees (Enclosure 5) have also been included with this letter.

We request any additional information your office may have on the presence of federally protected species of animals and plants listed by the Fish and Wildlife Coordination Act and Section 7 of the Endangered Species Act for the project area shown in the enclosed *Final Description of the Proposed Action and Alternatives Addressing Proposed Construction of the SOF Maintenance and Supply Facility at Humphreys Engineer Center Alexandria, Virginia* (Enclosure 6).

Please provide written comments within 30 days from the date of this letter to Mr. Victor H. Stephenson, Humphreys Engineer Center Support Activity, 7701 Telegraph Road, Alexandria, Virginia 22315. If you need further information, please contact Mr. Stephenson at 703-428-7328.



Dale F. Stoutenburgh  
Director

Enclosure 1: U.S. Fish & Wildlife Service (USFWS)'s Information for Planning and Consultation (IPAC) Species List

Enclosure 2: Self-Certification Letter  
Enclosure 3: Species Conclusion Table  
Enclosure 4: The Center for Conservation Biology Virginia Eagle Nest Location Map  
Enclosure 5: Virginia Department of Game and In-Land Fisheries map for Northern long-eared bat Habitat and Roost Trees  
Enclosure 6: *Final Description of the Proposed Action and Alternatives Addressing Proposed Construction of the SOF Maintenance and Supply Facility at Humphreys Engineer Center, Alexandria, Virginia*





## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Virginia Ecological Services Field Office

6669 Short Lane

Gloucester, VA 23061-4410

Phone: (804) 693-6694 Fax: (804) 693-9032

<http://www.fws.gov/northeast/virginiafield/>



In Reply Refer To:  
Consultation Code: 05E2VA00-2020-SLI-0359  
Event Code: 05E2VA00-2020-E-01114  
Project Name: Training Support Facility

October 25, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

#### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

10/25/2019

Event Code: 05E2VA00-2020-E-01114

2

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TCO-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/cumtaw.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

10/25/2019

Event Code: Q5E2VA00-2020-E-01114

1

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Virginia Ecological Services Field Office**  
6669 Short Lane  
Gloucester, VA 23061-4410  
(804) 693-6694

10/25/2019

Event Code: 05E2VA00-2020-E-01114

2

### Project Summary

Consultation Code: 05E2VA00-2020-SLI-0359

Event Code: 05E2VA00-2020-E-01114

Project Name: Training Support Facility

Project Type: DEVELOPMENT

Project Description: Construction of a Training Support Facility at Humphreys Engineer Center (HEC) in Alexandria, Virginia.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.74176317694656N77.13904114040486W>



Counties: Fairfax, VA

10/23/2019

Event Code: 05F2VA00-2B20-E-01114

3

## Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

10/25/2019

Event Code: 05E2VA00-2020-E-01114

1

## **USFWS National Wildlife Refuge Lands And Fish Hatcheries**

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Virginia Field Office  
6669 Short Lane  
Gloverster, VA 23061



Date: October 25, 2019

### Self-Certification Letter

Project Name: Training Support Facility EA

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 384), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. These conclusions resulted in:

- "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- "may affect, likely to adversely affect" determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016 Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat; and/or
- "no Eagle Act permit required" determinations for eagles.

Applicant

Page 2

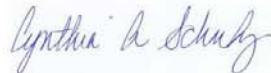
We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website [http://www.fws.gov/northeast/virginiafield/endspecies/project\\_reviews.html](http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html). If you have any questions, please contact Troy Andersen of this office at (804) 824-2428.

Sincerely,



Cindy Schulz  
Field Supervisor  
Virginia Ecological Services

Enclosures - project review package



## Species Conclusions Table

Project Name: Training Support Facility

Date: 20 March 2020

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Northern Long-eared Bat/ <i>Myotis septentrionalis</i>	No suitable habitat	May affect, not likely to adversely effect	The location of the proposed project is in a current soccer/recreational field that does not contain and trees or structures that could support <i>Myotis septentrionalis</i> .
Critical Habitat	No critical habitat present	No effect	
Bald eagle	Unlikely to disturb nesting bald eagles	No Eagle Act permit required	No nests within 660' and not within a concentration area
Bald eagle	Does not intersect with an eagle concentration area	No Eagle Act permit required	Project is not within or adjacent to an eagle concentration area



## CCB Mapping Portal



**Layers:** VA Eagle Nest Locator

**Map Center [longitude, latitude]:** [-77.13826060295105, 38.741632430145565]

**Map Link:**

[https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=17&lat=38.741632430145565&lng=-77.13826060295105&legend=legend\\_tab\\_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=World+Imagery+%28ESRI%29](https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=17&lat=38.741632430145565&lng=-77.13826060295105&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=World+Imagery+%28ESRI%29)

**Report Generated On:** 10/23/2019

The Center for Conservation Biology (CCB) provides certain data online as a free service to the public and the regulatory sector. CCB encourages the use of its data sets in wildlife conservation and management applications. These data are protected by intellectual property laws. All users are reminded to view the [Data Use Agreement](#) to ensure compliance with our data use policies. For additional data access questions, view our [Data Distribution Policy](#), or contact our Data Manager, Marie Pitts, at [mlpitts@wm.edu](mailto:mlpitts@wm.edu) or 757-221-7503.

Report generated by [The Center for Conservation Biology Mapping Portal](#).

To learn more about CCB visit [ccbbirds.org](http://ccbbirds.org) or contact us at [info@ccbbirds.org](mailto:info@ccbbirds.org)



A.5 – SHPO Response Letter



COMMONWEALTH of VIRGINIA

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Matt Strickler  
Secretary of Natural Resources

Julie V. Langm  
Director

Tel: (804) 367-2323  
Fax: (804) 367-2391  
www.dhr.virginia.gov

MEMORANDUM

DATE: 16 April 2020 DHR File # 2020-0253

TO: Mr. Victor H. Stephenson  
ARMY

FROM: *MWH* Marc E. Holma, Architectural Historian (804) 482-6090  
Office of Review and Compliance

PROJECT: proposed construction of a Training Support Facility (TSF) in the central-eastern portion of Humphrey's Engineering Center, Fairfax County, Virginia

\_\_\_ This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.

\_\_\_ This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.

\_\_\_ Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see below.**

No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.

\_\_\_ We have previously reviewed this project. Attached is a copy of our correspondence.

\_\_\_ Other (Please see comments below)

COMMENTS:

Administrative Services  
10 Courthouse Ave.  
Petersburg, VA 23803  
Tel: (804) 862-6408  
Fax: (804) 862-6196

Eastern Region Office  
2801 Kensington Avenue  
Richmond, VA 23221  
Tel: (804) 367-2323  
Fax: (804) 367-2391

Western Region Office  
962 Kime Lane  
Salem, VA 24153  
Tel: (540) 387-5443  
Fax: (540) 387-5446

Northern Region Office  
5357 Main Street  
PO Box 519  
Stephens City, VA 22655  
Tel: (540) 868-7029  
Fax: (540) 868-7033

**A.6 – HECSA Letter to Virginia Department of Environmental Quality for the Land Conservation Cover (LCC)**



**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS  
HUMPHREYS ENGINEER CENTER SUPPORT ACTIVITY  
7701 TELEGRAPH ROAD  
ALEXANDRIA, VA 22315-3860

November 19, 2020

Executive Office

April Rhodes  
Stormwater Specialist  
Virginia Department of Environmental Quality  
Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193

Dear Ms. Rhodes:

The purpose of this letter is to provide documentation of the establishment of Land Cover Conservation (LCC) areas at land owned by Humphreys Engineer Center (HEC). The LCC areas have been established to meet the water quality requirements for the Training Support Facility (DEQ SWM #2020-0075) and Maintenance and Supply Facility (DEQ SWM #2020-0281) and cover approximately 10 and 5 acres, respectively. The enclosure contains the preservation restrictions for the LCC areas that will be incorporated into the HEC Master Plan. The enclosure also includes a map of the surveyed location of the LCC sites on HEC property.

If you have any questions or concerns regarding the LCC areas or preservation restrictions, please contact Mr. Victor H. Stephenson, Deputy Director, HECSA at (703) 428-7328, or by email at [Victor.H.Stephenson@usace.army.mil](mailto:Victor.H.Stephenson@usace.army.mil).

Sincerely,

  
Dale F. Stoutenburgh  
Director

Enclosures

# Appendix

# B

Air Quality Conformity Analysis  
and Record of Non-Applicability

**Record of Non-Applicability**

In Accordance with the Clean Air Act – General Conformity Rule for the  
Proposed Construction of the SOF Maintenance and Supply Facility  
Humphreys Engineer Center, Virginia

The Department of the Army, U.S. Special Operations Command (USSOCOM) 1<sup>st</sup> Capabilities Integration Group (1<sup>st</sup> CIG) and Humphreys Engineer Center Support Activity propose to construct a Training Support Facility (TSF) at Humphreys Engineer Center (HEC) in Alexandria, Virginia.

The proposed TSF would be constructed within a 3.2 acre, previously developed area, located within the central-eastern portion of HEC, east of the Kingman Building and north of the Hall Building within the existing HEC soccer field/recreational area. The proposed TSF would be constructed as a two-story, approximately 73,000 square foot (ft<sup>2</sup>) sensitive compartmented information facility (SCIF) and would include training, storage and administrative space. Construction of the TSF would include special foundations, redundant power, sustainability/energy features, antiterrorism measures and raised floor system.

Construction of the TSF would take approximately 24 months and would include a buffer of 33 feet for antiterrorism/force protection (AT/FP) requirements. The proposed TSF would also include construction of new supporting infrastructure such as electrical, water, sewer and gas utility connections. Site and facility design would also include Americans with Disabilities Act (ADA)-accessible circulation within and around the facility.

The purpose of the Proposed Action is to support 1<sup>st</sup> CIG and other tenants at HEC by providing necessary training, storage and administrative space to provide for more efficient, synchronized unit operations by construction of a TSF at HEC and collocating training and storage functions to one, centralized building. The proposed layout and alignment of the proposed TSF is described in further detail in **Section 2.1** of the Environmental Assessment (EA) for the Proposed Construction of the Training Support Facility at HEC.

General conformity under the Clean Air Act, Section 176 has been evaluated according to the requirement of Title 40 of the Code of Federal Regulations Part 93, Subpart B. The requirements of this rule are not applicable to the action because:

The highest total annual direct and indirect emissions from the Proposed Action have been estimated at 6.4336 tons of carbon monoxide (CO), 6.0822 tons of nitrogen oxides (NO<sub>x</sub>), 4.5287 tons of particulate matter (PM), 0.0182 tons of sulfur dioxide (SO<sub>2</sub>), and 1.0895 tons of volatile organic compounds (VOCs), per year, which would be below the applicable threshold values of 50 tons for VOCs and 100 tons each for NO<sub>x</sub>, PM, CO and SO<sub>2</sub>.

Supporting documentation is provided in the following text.

---

Dale F. Stoutenburgh  
Director  
Humphreys Engineer Center Support Activity

## 1 Emissions Estimations and Methodology

2  
3 Humphreys Engineer Center (HEC) has considered all foreseeable direct and indirect sources of air  
4 emissions associated with the Proposed Action. *Direct emissions* are emissions that are caused or initiated  
5 by a federal action and occur at the same time and place as the action. *Indirect emissions* are reasonable  
6 foreseeable emissions that are caused by the action but might occur later in time and/or be farther  
7 removed in distance from the action itself, and that the federal agency can practicably control. More  
8 specifically, project-related direct emissions would result from the following:

- 9 • Construction Emissions: The use of non-road equipment (e.g. bulldozers, backhoes), work  
10 vehicles, the use of volatile organic compounds (VOCs) paints, paving off-gases, and fugitive  
11 particles from surface disturbances.
- 12 • Operational Emissions: The emissions from community personnel and equipment are exempt  
13 from permitting under 9 Virginia Administrative Code (VAC) 5-80-1105 (i.e. gaseous fuel burning  
14 units with max heat input less than 50,000,000 Btu/hour and diesel generators with electrical  
15 output of 1,125 kilowatts. Notably, the portion of an action that includes major or minor new  
16 modified stationary sources that require a permit under the new source review program (Section  
17 110[a][2][c] and Section 173 of the Clean Air Act) are exempt from the General Conformity Rule  
18 (GCR).

## 19 Total Project Construction Emissions

20  
21 The total project construction emissions associated with the use of heavy construction equipment (e.g.  
22 bulldozers, backhoes), worker vehicles, paving off-gases, and fugitive dust from surface disturbances are  
23 based on an estimated 24 month-construction schedule and presented in **Table B-1** below. The following  
24 sections outline all the calculations and assumptions made to derive the total project emission  
25 estimations in **Table B-1**. As shown in **Table B-1**, the total project emissions are below the GCR *de minimis*  
26 emissions levels.

27 **TABLE B-1. TOTAL EMISSIONS FROM CONSTRUCTION OF THE PROPOSED ACTION**

Phases	Total Estimated Construction Emissions (tons per year [tpy])					
	CO	NOx	PM	SO <sub>2</sub>	VOC	CO <sub>2</sub>
<b>Heavy Construction Equipment Emissions</b>	5.4023	5.9911	0.2631	0.0154	0.9629	1401.3584
<b>Worker Vehicle Emissions</b>	1.0313	0.0911	0.0416	0.0028	0.1261	287.7637
<b>Paving Off-Gas Emission</b>	N/A	N/A	N/A	N/A	0.00023	N/A
<b>Fugitive Dust Emissions</b>	N/A	N/A	4.224	N/A	N/A	N/A
<b>Total Emissions</b>	6.4336	6.0822	4.5287	0.0182	1.0895	1689.1220
<b>GCR <i>de minimis</i> Emission Levels</b>	100	100	100	100	50	N/A

28 Note: N/A – Not Applicable

29  
30  
31



## 1 **Heavy Construction Equipment**

2  
3 Emissions from heavy construction equipment associated with the construction of the proposed TSF were  
4 estimated for activities involving demolition of existing pavements and infrastructure, site clearing and  
5 grading, building construction and asphalt paving.

6  
7 Information regarding the number of pieces and types of construction equipment to be used on the  
8 project, the schedule of equipment use (days of use), and the approximately daily operating time (hours)  
9 were calculated using the dimensions, existing conditions and level of anticipated impact provided for the  
10 Proposed Action. The calculations are based on a 24 month construction schedule (approximately 720  
11 days). This information is provided in **Table B-2**.

12  
13 **TABLE B-2. ESTIMATED SCHEDULE OF CONSTRUCTION EQUIPMENT USE**

Heavy Construction Equipment Anticipated	Quantity	Days of Use	Hours Used/Day
<b>Site Preparation</b>			
Excavator	1	120	8
Rubber Tire Dozer	1	120	8
Tractors/loaders/backhoes	1	120	8
Dump truck	2	120	8
<b>Grading</b>			
Graders	1	400	8
Rubber Tire Dozers	1	400	8
Tractors/loaders/backhoes	2	400	8
<b>Building Construction</b>			
Cranes	1	160	7
Forklifts	2	160	8
Generator Sets	2	160	8
Tractors/loaders/backhoes	2	160	8
Welders	1	160	2
Trenchers	1	80	8
<b>Paving</b>			
Pavers	2	40	8
Paving Equipment	2	40	8
Rollers	2	40	8

14  
15 Emission factors for the heavy equipment identified in **Table B-2** were obtained from the South Coast Air  
16 Quality Management District (SCAQMD) Off Road – Model Mobile Source Emissions Factors for the year  
17 2022 (SCAQMD 2020a). Emission factors for 2022 were used as a conservative approach to estimating air  
18 emissions for the Proposed Action. These emission factors are provided in **Table B-3**.

1 **TABLE B-3. EMISSION FACTORS FOR HEAVY CONSTRUCTION EQUIPMENT**

Heavy Construction Equipment by Phase	Emission Factors (for year 2022)					
	CO	NOx	PM	SO <sub>2</sub>	VOC	CO <sub>2</sub>
	(pounds per hour)					
<b>Site Preparation</b>						
Excavator	0.5104	0.3171	0.0136	0.0013	0.0648	120
Rubber Tired Dozer	0.7353	1.3612	0.0536	0.0025	0.1919	239
Tractors/loaders/backhoes	0.3599	0.2302	0.0095	0.0008	0.0384	66.8
Dumper/Haul Truck	0.0314	0.0581	0.0022	0.0001	0.0092	7.6
<b>Grading</b>						
Graders	0.5732	0.4657	0.0218	0.0015	0.0807	133
Rubber Tired Dozers	0.7353	1.3612	0.0536	0.0025	0.1919	239
Tractors/loaders/backhoes	0.3599	0.2302	0.0095	0.0008	0.0384	66.8
<b>Building Construction</b>						
Cranes	0.3822	0.5505	0.0203	0.0014	0.0798	129
Forklifts	0.2146	0.1265	0.0044	0.0006	0.0274	54.4
Generator Sets	0.2694	0.2783	0.0117	0.0007	0.0340	61.0
Tractors/loaders/backhoes	0.3599	0.2302	0.0095	0.0008	0.0384	66.8
Welders	0.1773	0.1557	0.0078	0.0003	0.0260	25.6
<b>Trenchers</b>	0.4186	0.4094	0.0284	0.0007	0.0819	58.7
<b>Paving</b>						
Pavers	0.4840	0.4750	0.0296	0.0009	0.0870	77.9
Paving Equipment	0.40842	0.4137	0.0261	0.0008	0.0666	68.9
Rollers	0.3799	0.3198	0.0181	0.0008	0.0500	67.0

2 Source: SCAQMD 2020a

3

4 To determine the heavy construction equipment emissions in tons per year, the following formula was  
5 used, with information provided from **Table B-2** and **Table B-3**:

6

7 
$$TPY_p = (T_h \times E_{fp} \times N \times D) / C$$

8  $TPY_p$  = Tons Per Year of Pollutant9  $T_h$  = Time (hours per day of operation)10  $E_{fp}$  = Emissions Factor for the given pollutant (Information from **Table B-3**)11  $N$  = Number of pieces of equipment12  $D$  = Days of use of equipment13  $C$  = Conversion from pounds (lbs) to tons

14 A sample calculation for construction equipment for CO from the use of a grader is depicted as follows:

$$\begin{aligned}
 1 \quad & \text{TPY}_{\text{CO}} = (\text{T}_h \times \text{E}_{\text{fp}} \times \text{N} \times \text{D}) / \text{C} \\
 2 \quad & \text{TPY}_{\text{CO}} = (8 \times 0.5732 \times 1 \times 400) / 2000 \\
 3 \quad & \text{TPY}_{\text{CO}} = (922.4) / 2000 \\
 4 \quad & \text{TPY}_{\text{CO}} = 0.9170
 \end{aligned}$$

5 The annual heavy construction equipment emissions are presented in **Table B-4** for each pollutant during  
6 each phase of construction.

8 **TABLE B-4. ANNUAL ESTIMATED CONSTRUCTION EQUIPMENT EMISSIONS**

Heavy Construction Equipment by Phase	Emission Factors (for year 2022)					
	CO	NO <sub>x</sub>	PM	SO <sub>2</sub>	VOC	CO <sub>2</sub>
(pounds per hour)						
<b>Site Preparation</b>						
Excavator	0.2450	0.1522	0.0066	0.0006	0.0311	57.3981
Rubber Tire Dozer	0.3529	0.6534	0.0257	0.0012	0.0921	114.7591
Tractors/loaders/backhoes	0.1727	0.1105	0.0046	0.0004	0.0184	32.0632
Dumper/Haul Truck	0.0301	0.0558	0.0021	0.0001	0.0088	7.3194
<b>Total=</b>	<b>0.8008</b>	<b>0.9718</b>	<b>0.0390</b>	<b>0.0023</b>	<b>0.1505</b>	<b>211.5398</b>
<b>Grading</b>						
Graders	0.9170	0.7452	0.0349	0.0024	0.1291	212.3888
Rubber Tire Dozers	1.1764	2.1779	0.0858	0.0039	0.3071	382.5305
Tractors/loaders/backhoes	1.1516	0.7366	0.0305	0.0025	0.1228	213.7547
<b>Total=</b>	<b>3.2450</b>	<b>3.6596</b>	<b>0.1512</b>	<b>0.0088</b>	<b>0.5590</b>	<b>808.6740</b>
<b>Building Construction</b>						
Cranes	0.2140	0.3083	0.0114	0.0008	0.0447	72.0335
Forklifts	0.2747	0.1620	0.0056	0.0008	0.0351	69.6266
Generator Sets	0.3449	0.3562	0.0149	0.0009	0.0436	78.0706
Tractors/loaders/backhoes	0.0491	0.0744	0.0122	0.0010	0.0491	85.5019
Welders	0.0284	0.0249	0.0012	0.0001	0.0042	4.0964
Trenchers	0.1005	0.0983	0.0068	0.0002	0.0197	14.0910
<b>Total=</b>	<b>1.0115</b>	<b>1.0241</b>	<b>0.0522</b>	<b>0.0036</b>	<b>0.1962</b>	<b>323.4200</b>
<b>Paving</b>						
Pavers	0.1549	0.1520	0.0095	0.0003	0.0278	24.9385
Paving Equipment	0.1293	0.1324	0.0084	0.0003	0.0213	22.0601
Rollers	0.0608	0.0512	0.0029	0.0001	0.0080	10.7259
<b>Total=</b>	<b>0.3450</b>	<b>0.3355</b>	<b>0.0207</b>	<b>0.0007</b>	<b>0.0571</b>	<b>57.7245</b>
<b>Total Annual Emissions from Heavy Construction Equipment (tpy)</b>	<b>5.4023</b>	<b>5.9911</b>	<b>0.2631</b>	<b>0.0154</b>	<b>0.9629</b>	<b>1401.3584</b>

Note: Air emissions for CO, NO<sub>x</sub>, PM, VOCs and CO<sub>2</sub> are rounded up for a conservative estimate on construction-related emissions

1 **Construction Worker Vehicle Emissions**

2  
 3 Emissions from construction workers’ vehicles were included in this analysis. Emission factors for motor  
 4 vehicles were conservatively calculated using the SCAQMD EMFAC2007 Emission Factors for On-Road  
 5 Passenger Vehicles & Delivery Trucks mobile emissions inventory (SCAQMD 2020b). The analysis assumed  
 6 that workers would drive their vehicles 30 miles per day at an average speed of 35 miles per hour. **Table**  
 7 **B-5** details the emission factors used in this analysis.  
 8

9 **TABLE B-5. 2022 CONSTRUCTION WORKER VEHICLE EMISSION FACTORS**

	Emission Factors					
	CO	NOx	PM	SO <sub>2</sub>	VOC	CO <sub>2</sub>
<b>Worker Vehicle Emissions</b>						
pounds/mile	0.00398	0.00035	0.00016	0.00001	0.00049	1.11020

10 Source: SCAQMD 2020b

11  
 12 **Table B-6** summarizes the annual construction worker vehicle emissions. These emissions were  
 13 determined using the following equation:  
 14

$$TPY_p = (ME \times EF_p \times W) / C$$

16 TPY<sub>p</sub> = Tons Per Year of Pollutant

17 ME = Miles per employee: number of trips x miles/trip x commuting factor x days

18 *Number of trips = 2; Miles/trip = 30; Commuting Factor = 0.6; Total Days = 720*

19 W = Number of Workers

20 *Short-term Workers = 20*

21 EF<sub>p</sub> = Emission Factor for the given pollutant (pounds/mile)

22 C = Conversion from pounds (lbs) to tons  
 23

24 A sample calculation for CO emissions from construction workers’ vehicles is provided below:  
 25

$$TPY_{CO} = (ME \times EF_p \times W) / C$$

$$TPY_{CO} = (25,920 \times 0.00398 \times 20) / C$$

$$TPY_{CO} = 1,022.976 / 2000$$

$$TPY_{CO} = 0.5754$$

31 **TABLE B-6. ESTIMATED ANNUAL VEHICLE EMISSIONS FROM CONSTRUCTION WORKERS’ VEHICLES**

	Criteria Pollutants					
	CO	NOx	PM	SO <sub>2</sub>	VOC	CO <sub>2</sub>
<b>Worker Vehicle Emissions</b>						
tons/year	1.03127	0.09111	0.04160	0.00278	0.12612	287.76366

32  
 33

## 1 **Asphalt Curing Emissions**

2

3 Asphalt paving would generate emissions from:

- 4 • Asphalt curing;
- 5 • operation of on-site paving equipment, and;
- 6 • operation of motor vehicles, including paving material delivery trucks.

7

8 However, because the emissions resulting from operation of onsite paving equipment, trucks, and  
9 vehicles were included in the section **Heavy Construction Equipment**, only asphalt curing-related  
10 emissions are discussed in this section. Asphalt curing-related VOC emissions were calculated based on  
11 the amount of paving for the proposed parking areas. The following assumption was used in VOC emission  
12 calculations for asphalt curing (SCAQMD 2020a).

13

$$14 \quad E = (\text{paved area} \times 2.62 \text{ lb VOC/acre}) / 2,000 \text{ lbs/ton}$$

15

16 The calculation for VOC emissions from asphalt paving is provided below:

17

18 Paved area (asphalt) = 0.17 acres

19

$$20 \quad E = (0.17 \text{ acres} \times 2.62 \text{ lb VOC/acre}) / 2000 \text{ lb/ton}$$

21

$$E = 0.00023$$

22 Emissions for the other criteria pollutants are considered to be negligible for this phase of  
23 construction, and therefore are reported as non-applicable (N/A) in the associated table.

24

## 25 **Surface Disturbance**

26

27 The quantity of particulate emissions from construction operation is roughly proportional to the area of  
28 land being worked and the type of construction activity involved. Because the composite AP-42 emission  
29 factors for total suspended solids (TSP) can provide only a rough estimate of PM<sub>10</sub> emissions it is  
30 recommended in the *Estimating Particulate Matter Emissions from Construction Operations* 1999 report  
31 to use alternative emission factors based on different levels of the construction activity. When only the  
32 area of the construction site and the project's duration are known, two PM<sub>10</sub> emission factors are available  
33 (average conditions [0.11 ton/acre/month] and worst-case [0.42 ton/acre/month]). Worst-case refers to  
34 construction sites with active large-scale earth moving operations (USEPA 1999). Based on assumptions  
35 and the anticipated level of construction effort, the average condition PM<sub>10</sub> emission factor was used in  
36 the following calculations:

37

$$38 \quad \text{Annual PM Emissions} = \text{PM}_{10} \text{ EF} \times \text{Acres} \times 12 \text{ months}$$

$$39 \quad \text{PM}_{10} \text{ EF} = 0.11 \text{ tons/acre/month}$$

$$40 \quad \text{Project Size (acres)} = 3.2$$

$$41 \quad 12 \text{ Months Per Year}$$

42

1 Annual PM Emissions =  $(0.11 \times 3.2 \times 12)$   
2 Annual Estimated PM Emissions = 4.224 tpy

3  
4 Emissions for other criteria pollutants are considered to be negligible for this phase of construction, and  
5 therefore are reported as non-applicable (N/A) in **Table B-1**.

6

### 7 **Operational Emissions**

8 Operation of the proposed TSF would generate negligible amounts of emissions. No substantive new non-  
9 mobile or mobile emission sources would be created. Generally, emissions from operational activities  
10 would be expected to be generally lower than the construction-related emissions, and therefore  
11 operation of the Proposed Action also would not lead to an exceedance of the GCR *de minimis* thresholds.

12

### 13 **References**

- SCAQMD 2020a South Coast Air Quality Management District (SCAQMD). 2020. "Off-Road – Model Mobile Source Emissions Factors." Available online <<http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/off-road-mobile-source-emission-factors>>. Accessed 2 January 2020.
- SCAQMD 2020b SCAQMD. 2020. "Highest (Most Conservative) EMFAC2007 (version 2.3) Emission Factors for On-Road Passenger Vehicles & Delivery Trucks – Scenario Year 2020." Available online <[https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road))>. Accessed 2 January 2019.
- USEPA 1999 U.S. Environmental Protection Agency (USEPA). 1999. *Estimating Particulate Matter Emissions from Construction Operations*. 30 September 1999.

14

# Appendix

## C

Coastal Zone Federal Consistency  
Determination and Determination  
of Consistency with Virginia's  
Coastal Resources Management  
Plan

# Draft Coastal Zone Federal Consistency Determination and Determination of Consistency with Virginia's Coastal Resources Management Plan

Pursuant to Section 307 of the *Coastal Zone Management Act* of 1972, as amended, this is a Draft Federal Consistency Determination for the construction of the Training Support Facility (TSF) at Humphreys Engineer Center (HEC) in Alexandria, Virginia. The U.S. Army Corps of Engineers (USACE) is required to determine the consistency of its activities affecting Virginia's coastal resources or coastal uses with the Virginia Coastal Resources Management Program (CRMP).

This document represents an analysis of the Proposed Action in the context of established Virginia CRMP Enforceable Policies and Programs. Furthermore, submission of this consistency determination reflects the commitment of USACE to comply with those Enforceable Policies and Programs. The Proposed Action would be constructed in a manner that is consistent with the Virginia CRMP. USACE has determined that the construction of the TSF would have negligible effects on any land and water uses or natural resources of the Commonwealth of Virginia's coastal zone.

## Description of the Proposed Action

The Proposed Action would provide flexible training support, administrative, and storage space at HEC. The proposed TSF would be constructed within a 3.2 acre, previously developed area, located within the central-eastern portion of HEC, east of the Kingman Building and north of the Hall Building within the existing HEC soccer field/recreational area. The proposed TSF would be constructed as a two-story, approximately 73,000 square foot (ft<sup>2</sup>) sensitive compartmented information facility (SCIF) and would include training, storage and administrative space. Construction of the TSF would include special foundations, redundant power, sustainability/energy features, antiterrorism measures and a raised floor system.

Construction of the TSF would take approximately 24 months and would include a buffer of 33 feet for antiterrorism/force protection (AT/FP) requirements. The proposed TSF would also include construction of new supporting infrastructure such as electrical, water, sewer and gas utility connections. Site and facility design would also include Americans with Disabilities Act (ADA)-compliant circulation within and around the facility.

The first floor of the TSF would be comprised of approximately 39,000 ft<sup>2</sup> and contain training aid and support space that would include climate controlled warehouse space, photo studio, training space, conference rooms and office space. The 2<sup>nd</sup> floor of the TSF would be approximately 32,000 ft<sup>2</sup> and would primarily include administrative, classroom and meeting space. Two-500 kilowatt emergency diesel generators would also be installed as part of the construction. Once the TSF has been completed, approximately 200 personnel already on HEC would transfer to the new facility.



1 The proposed location, orientation and alignment of the new facility is described in further detail  
2 in Section 2.1 of the Environmental Assessment (EA). Construction of the proposed TSF is  
3 estimated to take approximately 24 months.

#### 4 **Assessment of Probable Effects**

5 In compliance with the National Environmental Policy Act (NEPA) of 1969, USACE has prepared  
6 an EA to evaluate the environmental, socioeconomic and cultural resource impacts potentially  
7 resulting from construction of the TSF on HEC. Through this evaluation, USACE has determined  
8 that the Proposed Action is consistent, to the maximum extent practicable, with the  
9 Commonwealth of Virginia CRMP's enforceable policies, for the following reasons:

10 **Tidal and Nontidal Wetlands.** As described under Section 3.13.1 (Water Resources) of the EA,  
11 construction of the proposed TSF would not directly or indirectly affect tidal or nontidal wetlands.  
12 No wetlands have been delineated in the immediate vicinity of the Proposed Action or within the  
13 footprint of the proposed facility. The nearest wetland is approximately 300 feet toward the  
14 southwest. No direct impacts on wetlands would be expected from the Proposed Action. Indirect  
15 impacts on nearby wetlands would be avoided or minimized through erosion and sediment  
16 control measures. If, and as needed, flags or barriers would be put in place to clearly mark out  
17 the areas to be avoided and to ensure no activities (e.g. equipment staging or parking, stocking  
18 piling or materials, etc.) take place within tidal and nontidal wetlands. Following these practices  
19 would ensure no impacts would occur to tidal and nontidal wetlands surrounding the proposed  
20 TSF.

21 **Fisheries.** The Proposed Action has no foreseeable impacts on fish or shellfish resources and  
22 would not affect the promotion of, or access to, commercial or recreational fisheries. Compliance  
23 with HEC's stormwater management plan and Virginia Erosion and Sediment Control regulations  
24 would best minimize the risk of sediment being transported off the site to Piney Run, Dogue  
25 Creek and ultimately the Potomac River Fishery. Best management practices recommended by  
26 the Virginia Department of Conservation and Recreation and Forestry would be employed.  
27 Effects on stormwater, groundwater and surface water are addressed in Section 3.13.2 (Water  
28 Resources).

29 **Subaqueous Lands.** The management program for subaqueous lands establishes conditions for  
30 granting or denying permits to use state-owned bottomlands based on considerations of  
31 potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties,  
32 anticipated public and private benefits, and water quality standards established by the Virginia  
33 Department of Environmental Quality (VDEQ) Water Division. The program is administered by  
34 the Virginia Marine Resources Commission (Virginia Code §28.2-1200 through §28.2-1213). The  
35 Proposed Action would not involve any encroachment in, on or over state-owned subaqueous  
36 lands.

37 **Dunes and Beaches.** Dune protection is carried out pursuant to the *Coastal Primary Sand Dune*  
38 *Protection Act* and is intended to prevent destruction or alteration of primary dunes. This  
39 program is administered by the Virginia Marine Resources Commission (Virginia Code §28.2-1400

1 through §28.2-1420). No permanent alteration of or construction upon any coastal sand dune  
2 would take place under this Proposed Action.

3 **Point Source Air Pollution.** Based on the presumed *de minimis* impacts on Air Quality from  
4 implementation of the Proposed Action, a draft record of non-applicability (RONA) was prepared  
5 indicating that emissions are below the applicability threshold for the attainment status of the  
6 area. Ultimately, the General Conformity Rule does not apply to this project because  
7 construction and related emissions will be below the *de minimis* threshold levels

8 **Point Source Water Pollution.** The Proposed Action would result in a new source (construction  
9 stormwater) of point source water pollution, however adverse impacts would be minimal,  
10 controlled through a stormwater pollution prevention plan, and subject to a Virginia Stormwater  
11 Management Program (VSMP) Permit. Compliance with Section 438 of the 2007 *Energy*  
12 *Independence and Security Act* (EISA) requires federal development projects with a footprint  
13 exceeding 5,000 square feet to include site planning, design, construction, and maintenance  
14 strategies to maintain or restore, to the maximum extent technically feasible, the  
15 predevelopment hydrology of the property with regard to the temperature, rate, volume, and  
16 duration of flow. These actions would minimize runoff and, in some cases, reserve adverse  
17 effects from present conditions, by compliance with EISA Section 438 and VDEQ's requirement  
18 for adequate outfall, which would also act to control water point source pollution. Effects  
19 pertaining to stormwater are discussed in Section 3.13.2 (Water Resources) of the EA. Use of on-  
20 site stormwater retention measures and incorporation of Low Impact Development Best  
21 Management Practices to comply with EISA Section 438 would reduce the amount and rate of  
22 stormwater discharging from the site after a rainfall for both short- and long-term projects.

23 **Nonpoint Source Water Pollution.** The Proposed Action would be constructed in compliance  
24 with the Virginia Erosion and Sediment Control law and regulations. The Proposed Action is  
25 therefore consistent with Virginia's non-point source pollution control program.

26 **Shoreline Sanitation.** The purpose of this program is to regulate the installation of septic tanks,  
27 set standards concerning soil types suitable for septic tanks, and specify the minimum distances  
28 that tanks must be placed away from streams, rivers, and other waters of the Commonwealth of  
29 Virginia. HEC would utilize its own sanitary sewer system and does not employ septic systems.  
30 The Proposed Action would therefore have no impact on shoreline sanitation.

31 **Coastal Lands.** Coastal Land Management is a state-local cooperator program administered by  
32 VDEQ's Water Division and 84 localities in Tidewater, Virginia, established pursuant to the  
33 Chesapeake Bay Preservation Act (Virginia Code §§ 62.1 – 44.15:67 through 62.1 – 44.15:79) and  
34 Chesapeake Bay Preservation Area Designation and Management Regulations (Virginia  
35 Administrative Code [VAC] 9 25-830-10 et seq.). The nearest resource protection area (RPA) is  
36 approximately 0.15 miles southeast of the Proposed Action location. No construction or staging  
37 of construction equipment related to the Proposed Action would occur in the RPA. Therefore  
38 the Proposed Action would have no impact on coastal land management and RPAs.

**1 Summary of Findings**

2 The preceding analysis is provided in more detail in the EA referenced above. USACE would  
3 ensure that the proposed TSF project design includes appropriate best management practices  
4 (BMPs), the construction contractor uses and maintains BMPs, project designers obtain the  
5 requisite permits and approvals, and HEC implements the appropriate mitigation measures to  
6 reduce potential impacts. Based on the analysis in the EA and the anticipated impacts of the  
7 Proposed Action, USACE has determined that the proposed construction of the TSF would be  
8 consistent to the maximum extent practicable with the federally approved enforceable policies  
9 of the Virginia CRMP, pursuant to the *Coastal Zone Management Act* of 1982, as amended, and  
10 in accordance with 15 CFR 930.30.

11 By certification that the Proposed Action is consistent with the Virginia CRMP Enforceable  
12 Policies, the Commonwealth of Virginia is hereby notified that it has 60 days from receipt of this  
13 document to concur with, or object to, this Federal Consistency Determination. However,  
14 pursuant to 15 CFR 930.62(b), if the Commonwealth of Virginia has not issued a decision within  
15 60 days from receipt of this determination, it shall notify USACE of the status of this matter and  
16 the basis for further delay. The point of contact for this project is Mr. Victor H. Stephenson via  
17 telephone at 703-428-7328, or by email at Victor.H.Stephenson@usace.army.mil.

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Dale F. Stoutenburgh  
Director