Proposed Construction and Operation of the Virginia Army National Guard State Headquarters and Re-Stationing of Company B, 429th Brigade Support Battalion at Defense Supply Center Richmond

FEDERAL PN: 510065 (FY16)/ VAFM PN: 10-0056

Final Environmental Assessment

Virginia Army National Guard
Building 316
Fort Pickett
Blackstone, VA 23824

April 2016

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ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Draft Environmental Assessment (EA) evaluates the potential environmental, socioeconomic, and cultural impacts of the Virginia National Guard's (VANG) proposed construction and operation of a new State Headquarters Building and re-stationing of the 429th Brigade Support Battalion (BSB) at Defense Supply Center Richmond (DSCR). The new facility would replace the existing headquarters at the Sandston Readiness Center (SRC) in Sandston, Virginia. As required by the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [USC] 4321 et seq.), the Council on Environmental Quality (CEQ) Regulations Implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and Environmental Analysis of Army Actions, Final Rule (32 CFR Part 651), the potential impacts of the Proposed Action and a No Action Alternative are analyzed in this document. This Draft EA will facilitate the decision-making process by VANG regarding the Proposed Action and its considered alternatives. The Draft EA is organized into the following sections:

- **Executive Summary:** Describes the Proposed Action and its considered alternatives; summarizes environmental, cultural, and socioeconomic consequences; and compares potential impacts associated with the considered alternatives, including the No Action Alternative.
- **Section 1 Purpose, Need, and Scope:** Summarizes the purpose of and need for the Proposed Action, provides relevant background information, and describes the scope of the Draft EA. This section also includes information on public and agency involvement.
- **Section 2 Description of the Proposed Action and Alternatives:** Describes the alternatives development process, the Proposed Action, the No Action Alternative, and the alternatives eliminated from further consideration.
- **Section 3 Affected Environment:** Describes relevant components of the existing environmental, cultural, and socioeconomic setting within the Region of Influence of the considered alternatives.
- **Section 4 Environmental Consequences:** Identifies individual and cumulative potential environmental, cultural, and socioeconomic effects of implementing the considered alternatives. This section also identifies proposed mitigation measures, as and where appropriate.
- **Section 5 Comparison of Alternatives and Conclusions:** Compares the environmental impacts of the considered alternatives, summarizes the significance of potential individual and cumulative impacts from these alternatives, and concludes that an Environmental Impact Statement is not required.
- **Section 6 References:** Provides bibliographical information for cited sources.
- **Section 7 Glossary:** Provides definitions of technical terms used in the document.
- **Section 8 List of Preparers:** Identifies document preparers, their experience, and their areas of expertise.

- **Section 9 Agencies and Individuals Consulted:** Lists agencies and individuals consulted during preparation of this Draft EA.
- **Appendices:** Includes copies of scoping letters sent to the parties listed in **Section 9**; provides the opportunity for VANG to respond to public comments following public review; includes copies of public notices published to announce availability of the Draft EA for public review, and includes the Coastal Resources Consistency Determination.

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✓ ***Proponent:*** Virginia Army National Guard
✓ ***Fiscal Year (FY):*** FY16

ENVIRONMENTAL ASSESSMENT SIGNATURE PAGE

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COOPERATING AGENCIES: Defense Logistics Agency

TITLE OF PROPOSED ACTION: Proposed Construction and Operation of the Virginia National Guard State Headquarters and Re-Stationing of Company B, 429th Brigade Support Battalion at Defense Supply Center Richmond

AFFECTED JURISDICTIONS: Commonwealth of Virginia; Chesterfield County (DSCR), Henrico County (Sandston, VA), and the City of Richmond

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DOCUMENT DESIGNATION: Environmental Assessment

ABSTRACT

The VANG proposes to construct and operate a new Virginia National Guard State Headquarters (VANG State HQ) and re-station the 429th BSB. The Proposed Action is necessary to support VANG's federal and state missions. The proposed facility is needed to address: existing office overcrowding in the limited multi-user space at SRC; deficiencies in authorized administrative, logistical, training, and maintenance space; and outdated modalities currently experienced by various elements of the VANG. This Draft EA addresses the potential impacts to both human and natural environments, including cultural resources, of this proposal and its alternatives.

This Draft EA evaluates the direct, indirect, and cumulative impacts of the Proposed Action (construction and operation of a new VANG State HQ) and the No Action Alternative, with respect to the following resource topics: geology, topography, and soils; water resources; biological resources; land use; hazardous and toxic materials/wastes; socioeconomics; cultural resources; noise; air quality; and infrastructure.

The evaluation performed in this Draft EA concludes that there would be no significant adverse impacts, either individually or cumulatively, to the local environment or quality of life due to implementation of the Proposed Action. Best Management Practices (BMPs) will be implemented, as and where appropriate.

EXECUTIVE SUMMARY

Purpose of and Need for Proposed Action: The Virginia Army National Guard proposes to construct and operate a new VANG State HQ and to re-station the 429th BSB at DSCR, in Chesterfield County, Virginia (**Figure 1**). A new VANG state HQ facility would greatly improve operational efficiency and readiness of the VANG, while also resolving the currently authorized organizational, personnel, logistical (training, supply/storage, and maintenance), and physical installation limitations imposed by the current service inadequacies at the SRC in Sandston, VA. The SRC was constructed in 1990 and is too small and outdated to support the VANG's mission-critical readiness. The Joint Force Headquarters (JFHQ) and Air Component Command (ACC) are currently co-located at the SRC (**Figure 2**). Sharing the SRC with these two units is Battery A, 1st Battalion, 111th Field Artillery. As a result of multiple units sharing the limited space at SRC, there is a documented deficiency in the effective performance of each unit's duties. The VANG must be able to deploy quickly and coordinate effectively with state partners in order to assist in a large-scale disaster. Continuing to operate the VANG from the SRC and the outdated facilities on DSCR increases the stress on planning and coordination efforts, jeopardizing the ability to protect Virginia and the necessity to timely muster installation forces in support of national requirements.

Proposed Action and Alternatives: Under the Proposed Action, VANG would construct and operate a new State Headquarters at DSCR and re-station the 429th BSB. The new VANG State HQ would provide adequate office and administrative space to operate and coordinate the missions of the units, thus supporting the readiness of the entire VANG. The new facility would house 193 personnel in a two-story building with 103,325 square feet, situated on a 13.6-acre parcel. It would provide parking for 175 privately owned vehicles and storage for 66 pieces of major equipment.

The CEQ Regulations for Implementing NEPA require a proponent to develop and consider all reasonable alternatives that would fulfill its purpose of and need for a Proposed Action. Reasonable alternatives include those which: 1) are practical or feasible from a technical and economic standpoint; 2) support the underlying purpose of and need for the Proposed Action; and 3) are ready for a decision. Other alternatives that were considered in the Draft EA include locating the new state headquarters at either Fort Pickett Maneuver Training Center or constructing and operating a new state headquarters to replace the existing facility at SRC.

The Proposed Action and these other options were measured against six screening criteria to determine if they were feasible. The criteria are:

1. Is the alternative located in close proximity to Virginia's leadership? The new State HQ needs to be in close proximity to Richmond, where Virginia's leadership is located.
2. Does the alternative provide a secure location? In keeping with current Anti-terrorism Force Protection, the new State HQ needs to be in a secure location that would prevent access by unauthorized personnel or vehicles.

3. Is the alternative near a major highway? Proximity to a major highway would provide ease of access.
4. Does the alternative provide sufficient open acreage to accommodate the facility? The new State HQ should be constructed in a location that would minimize ground disturbance.
5. Is the alternative compatible with current and future planned projects? The alternative must be consistent with VANG's short-term and long-term plans for its facilities.
6. Does the alternative minimize costs? The alternative should be cost-effective.

Table 1 indicates if the different alternatives meet the criteria. Given the results of the screening exercise, only the Proposed Action and the No Action Alternative (as required) were carried forward for evaluation. The Proposed Action is identified as the Preferred Action Alternative in the Draft EA. The Preferred Action Alternative meets the square footage requirements for Army National Guard (ARNG) facilities, as mentioned in National Guard Bureau (NGB) 415-12 (2015).

Table 1: Screening Criteria Matrix

Alternative/ Option	Criteria – Is/Does the Alternative…					
	Located in Close Proximity to Virginia's Leadership?	Provide a Secure Location?	Near a Major Highway?	Provide Sufficient Open Acreage to Accommodate the Facility?	Compatible with Current and Future Planned Projects?	Minimize Costs?
Preferred Action Alternative	✓	✓	✓	✓	✓	✓
No Action Alternative	✓	✓	✓			✓
Fort Pickett Alternative		✓		✓	✓	✓
Sandston Readiness Center Alternative	✓	✓	✓		✓	

Affected Environment: Section 3.0 of the Draft EA describes the location of the Proposed Action and discusses the current environmental conditions in the project study area. The Section provides a detailed description of the geology, topography, soils, water resources, biological resources, land use, hazardous and toxic materials/wastes, socioeconomics, cultural resources, noise, air quality, and infrastructure at DSCR and in the surrounding area.

Environmental Consequences: As detailed in **Table 2**, the Draft EA identifies potential less-than-significant impacts to the following resources as a result of implementing the Preferred Action Alternative: geology, topography, and soils; water resources; biological resources; land use; hazardous and toxic materials/wastes; socioeconomics; cultural resources; noise; air quality; and infrastructure. The Preferred Action Alternative meets the square footage requirements for ARNG facilities, as mentioned in NGB 415-12 (2015). It would include construction of a new facility, which would result in short-term (temporary) impacts to soils and potential long-term

(permanent) changes to geology and topography. Disturbed soils would be stabilized when construction is complete and there would be no further impacts to soils. Excavation would lead to localized permanent changes to geology and topography. Exposed soils that result from excavations would have the potential to impact surrounding water resources through increased stormwater sediment loads. The Draft EA notes that the use of appropriate Erosion and Sediment Controls (ESC) would limit these impacts and that the impacts would only last through the duration of the construction. The No Action Alternative does not involve ground disturbance and would not result in impacts to any resources.

Table 2: Comparison of Potential Environmental Consequences of the Retained Alternatives

Resource Topic	Preferred Action Alternative	No Action Alternative
Geology, Topography, and Soils *(See **Sections 3.2 and 4.1**)*	Short-term and long-term, less-than-significant adverse impacts due to construction of a new facility.	No impacts attributed to VANG action.
Water Resources *(See **Section 3.3 and 4.2**)*	Short-term less-than-significant adverse impacts due to construction of a new facility. Long-term positive impact due to implementation of Best Management Practices (BMPs).	No impacts attributed to VANG action. Due to a current lack of BMPs, sediment would continue to reach storm drains and ditches.
Biological Resources *(See **Sections 3.4 and 4.3**)*	Potential long-term less-than-significant adverse impacts to birds due to collisions with glass. Long-term less-than-significant adverse impacts to land due to elimination of vegetation and wildlife habitat.	No impacts attributed to VANG action. DSCR would continue to mow the proposed project site, maintaining the existing habitat.
Land Use (*See **Sections 3.5 and 4.4***)	Short-term less-than-significant adverse impacts due to adherence to zoning requirements, and construction of new facility in accordance with guidance from VDHR. Long term positive impact to zoning.	No impacts attributed to VANG action. The project site would continue to be mowed as needed.
Hazardous and Toxic Materials/Wastes (*See **Sections 3.6 and 4.5***)	Potential short-term less-than-significant adverse impacts during construction due to presence of an adjacent contaminated groundwater plume off the project site. Potential long-term less-than-significant adverse impacts due to adjacent contaminated groundwater plume off the project site. No hazardous or toxic materials or wastes would be generated during construction or operation of the new facility.	No impacts attributed to VANG action. Ongoing management of hazardous and toxic materials/wastes would continue at DSCR. Current BMPs would continue for the underground plume at OU 8.

Socioeconomics *(See **Sections 3.7 and 4.6**)*	Short-term and long term, less-than-significant adverse impacts due to no current employees at DSCR or Sandston needing to relocate Homes of Record.	No impacts attributed to VANG action. Personnel would continue to be assigned to their current facilities.
Cultural Resources *(See **Sections 3.8 and 4.7**)*	Potential short-term and long-term less-than-significant adverse impacts from construction of new facility through implementation of VDHR-recommended BMPs.	No impacts attributed to VANG action. No new facilities would be added, and the existing buildings would remain in their current condition.
Noise *(See **Sections 3.9 and 4.8**)*	Short-term less-than-significant adverse noise impacts due to construction activity. BMPs would be employed during construction. Long-term less-than-significant adverse impacts due to periodic use of generators.	No impacts attributed to VANG action. Ongoing ambient noise from adjacent railroad track.
Air Quality *(See **Sections 3.9 and 4.8**)*	Short-term less-than-significant adverse air impacts due to dust and equipment fumes generated during construction activity. BMPs would be employed during construction. Long-term less-than-significant adverse impacts due to periodic use of generators and boilers.	No impacts attributed to VANG action. Ongoing air emissions from DSCR operations.
Infrastructure (*See **Section 3.10 and 4.9***)	Short-term and long-term, less-than-significant impacts to transportation and utilities.	No impacts attributed to VANG action. Ongoing operations at DSCR would continue with no increase to demands on infrastructure.

Less-than-significant adverse impacts to water resources are possible under the Preferred Action Alternative. Soils and geologic material would be excavated during construction, leading to the potential for small increases in sediment loads in stormwater runoff. Adherence to proper ESC measures would minimize these impacts, and there would be less-than-significant adverse impacts to water resources as a result of implementing the Preferred Action Alternative.

Impacts to biological resources could occur under the Preferred Action Alternative, due to ground disturbance related to construction of the new VANG State HQ. During construction, human activity in the vicinity of the proposed VANG State HQ would increase. Construction would result in loss of grasses and shrubs, and could disturb wildlife species that inhabit the project site. Disturbance to wildlife patterns would only be expected to last through the duration of construction. DSCR provides ample comparable habitats for these species to retreat to during any disturbance.

Less-than-significant impacts to cultural resources are unlikely, but could occur due to ground-disturbing activities associated with the Preferred Action Alternative. However, a Programmatic

Agreement between Defense Logistics Agency Enterprise Support Richmond (DES Richmond), the Advisory Council on Historic Preservation, and the Virginia Department of Historic Resources (VDHR) identifies the project location as an area where no further archaeological testing is recommended.

Due to a history of hazardous materials use and contamination near the site of the proposed VANG State HQ, it is possible that hazardous materials impacts would occur. However, due to the lack of current industrial activities at the project site, remediation efforts at a nearby U.S. Environmental Protection Agency (EPA) high priority hazardous materials site, and a lack of known current leaking underground storage tanks (LUSTs), any impacts are likely to be less-than-significant.

Movement of the State HQ from Sandston to DSCR would generate less-than-significant socioeconomic impacts to the local community. No employees would lose their jobs, and no employees would need to relocate. Local businesses in Sandston would be unaffected by the transfer since the former VANG State Headquarters would remain an ARNG facility. Services for the construction and operation of the new State HQ would be insignificant to the local community, as none of the construction contractors would be locally based.

Pursuant to Section 307 of the Coastal Zone Management Act of 1972, VANG is obligated to determine the consistency of its activities in Virginia's coastal areas with the requirements of the 1986 Virginia Coastal Zone Management Program (VCZMP). VANG has determined that construction and operation of a new VANG State HQ would not affect land or water uses or natural resources of Virginia's coastal zone.

Scoping and Public Involvement: Scoping efforts for the Proposed Action included outreach to local, state, and federal agencies and Nation to Nation consultation with Native American tribes recognized by either Virginia or the federal government. Letters requesting comments on the Proposed Action were sent to seven agencies, 11 state tribes, and six federal tribes. Replies were received from two agencies, two state tribes, and one federal tribe.

Public involvement involved making the document available to the public for a 15-day review period and accepting written comments. A notice of availability was published in the *Richmond Times-Dispatch* on Sunday, May 01, 2016 and the *Chesterfield County Observer* on Wednesday May 04, 2016. The document was available online and at the Chesterfield County Central Library.

Conclusion: The Draft EA identifies the Proposed Action as the Preferred Action Alternative. The Preferred Action Alternative meets the square footage requirements for ARNG facilities, as mentioned in NGB 415-12 (2015). It would not significantly impact the quality of either the human or natural environment; therefore, an Environmental Impact Statement would not be

required. If this opinion is upheld following circulation of this Draft EA, a Finding of No Significant Impact (FNSI) would be signed and circulated.

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ACRONYMS AND ABBREVIATIONS

ACC	Air Component Command
ANPs	Acid Neutralizing Pits
AR	Army Regulation
Army	United States Army
ARNG	Army National Guard
ATFP	Anti-terrorism Force Protection
BDL	Below detection limits
BMP	Best Management Practice
BSB	Brigade Support Battalion
CAA	Clean Air Act
CBPA	Chesapeake Bay Preservation Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Constituent of Concern
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DCR	Virginia Department of Conservation and Recreation
DES Richmond	Defense Logistics Agency Enterprise Support Richmond
DEQ	Virginia Department of Environmental Quality
DGIF	Virginia Department of Game and Inland Fisheries
DLA	Defense Logistics Agency
DMA	Department of Military Affairs
DoD	Department of Defense
DoDI	Department of Defense Instruction
DSCR	Defense Supply Center Richmond
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EDR	Environmental Data Resources
EEE	EEE Consulting, Inc.
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
ESD	Explanation of Significant Differences
FEMA	Federal Emergency Management Agency

FHWA	Federal Highway Administration
FNSI	Finding of No Significant Impact
FY	Fiscal Year
HOR	Home of Record
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
ILE	Installation, Logistics, and Environment
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
JFHQ	Joint Forces Headquarters
LUCs	Land Use Controls
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969, as amended
NGB	National Guard Bureau
NHPA	National Historic Preservation Act
NLEB	Northern Long-eared Bat
NOx	Nitrous Oxide
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OSWER	EPA Office of Solid Waste and Emergency Response
OU	Operable Unit
PA	Programmatic Agreement
PCBs	Polychlorinated Biphenyls
PCE	Trichloroethene
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROI	Region of Influence
RONA	Record of Non-Applicability
RSL	Risk Screening Level
SHPO	State Historic Preservation Officer
SRC	Sandston Readiness Center
SPT	Standard Penetration Test
SWM	Stormwater Management
TCE	Dichloroethene
TMDL	Total Maximum Daily Load
UFC	Unified Facilities Criteria

US	United States
USARC	United States Army Reserve Center
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VaFWIS	Virginia Fish and Wildlife Information Service
VC	Vinyl Chloride
VANG	Virginia National Guard
VANG State HQ	Virginia National Guard State Headquarters
VCZMP	Virginia Coastal Zone Management Program
VDHR	Virginia Department of Historic Resources
VDOT	Virginia Department of Transportation
VFD	Volunteer Fire Department
VOC	Volatile Organic Compound
Virginia/VA	The Commonwealth of Virginia
VSMP	Virginia Stormwater Management Program
WBU	Water Bearing Unit

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SECTION 1.0: PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The VANG is proposing to construct and operate a new State HQ facility and to re-station B Company, 429th BSB at DSCR, in Chesterfield County, Virginia. Refer to **Figure 1**. The proposed facility would address overcrowding, a lack of administrative space, and outdated facilities currently encountered by various elements of the VANG.

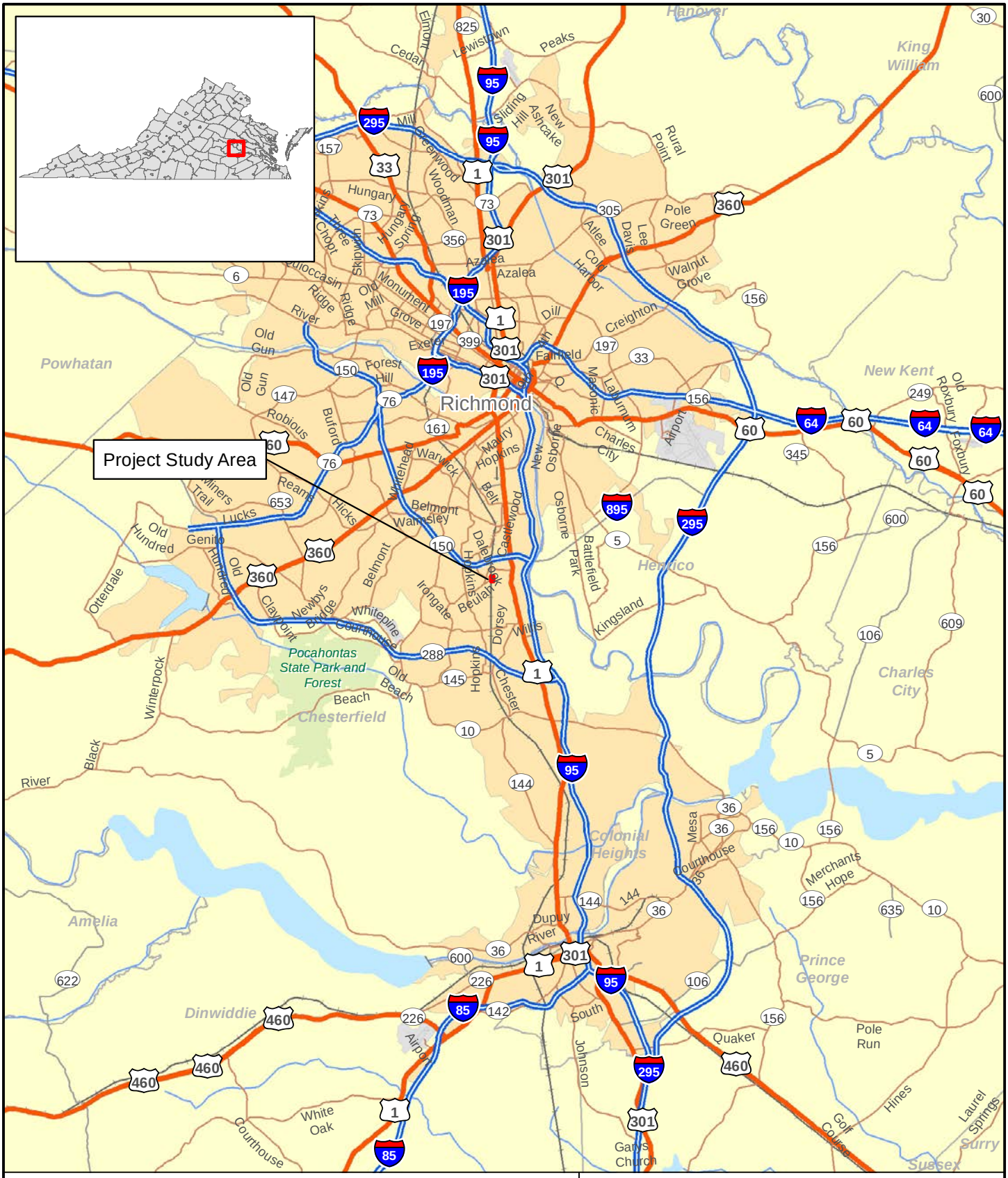
As required by the NEPA, the CEQ Regulations for Implementing NEPA, and Environmental Analysis of Army Actions, Final Rule (32 CFR Part 651), the potential impacts of the Proposed Action and a No Action Alternative are analyzed in this Environmental Assessment. This Draft EA would facilitate the decision-making process by VANG regarding the Proposed Action and its considered alternatives.

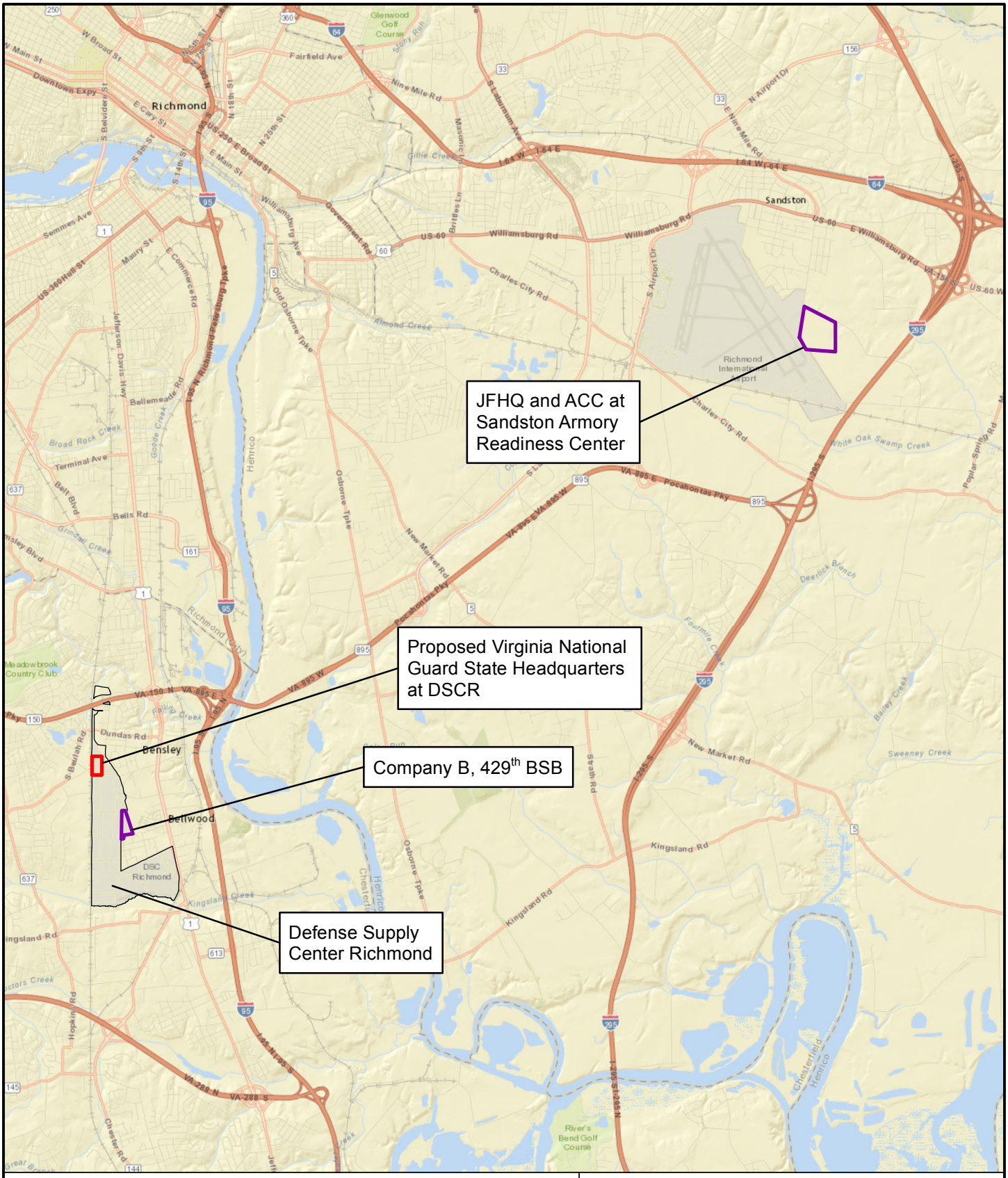
Per amendments to 10 USC 10501, described in Department of Defense (DoD) Directive 5105.77, *National Guard Bureau* (2008), the NGB is a joint activity of the DoD. NGB serves as a channel of communication and funding between the U.S. Army and State Guard organizations in the 54 US States and territories. The ARNG is a Directorate within NGB. ARNG-Installations, Logistics, and Environment (ILE) is the ARNG division responsible for ARNG environmental matters, including NEPA compliance. ARNG-ILE is the federal decision-maker for this Proposed Action and would ultimately decide if funding and construction of the Proposed Action is appropriate.

The proposed VANG State HQ would provide 103,325 square feet of office and administrative space needed to operate and coordinate the missions of the VANG. The proposed two-story facility would house the JFHQ, the ACC and Company B, 429th BSB. The facility would also house the Department of Military Affairs (DMA), the corresponding state portion of the VANG. Total estimated personnel would be 193. The VANG anticipates construction of the proposed VANG State HQ, which would provide parking for 175 privately owned vehicles and storage for 66 pieces of major equipment, to begin in June 2016.

1.1.1 Existing Conditions

Currently, the Joint elements of the JFHQ and the ACC are located at the SRC. The SRC is located on Beulah Road, east of Richmond International Airport, in Henrico County, Virginia. Refer to **Figure 2**. The facility consists of approximately 45,780 square feet and was constructed in 1990.


Project Study Area
Richmond
Hanover
King William
Powhatan
New Kent
Henrico
Chesterfield
Charles City
Colonial Heights
Prince George
Dinwiddie
Amelia
Pocahontas State Park and Forest
Airport
Courthouse
Beach
Old Gun
Forest Hill
Robious
Buford
Warwick
Belmont
Walmsley
Hicks
Lucks
Genito
Old Hundred
Otterdale
Winterpock
Black River
Claypoint
Newbys Bridge
Whitepine
Irongate
Beulah
Dorsey
Hopkins
Chester
Wills
Kingsland
Battlefield Park
Osborne
New Osborne
Maury
Belt
Castlewood
Dalebrook
Laburnum
Creighton
Dill
Fairfield
Azalea
Walnut Grove
Pole Green
Rural Point
Davis
Lee
Altee
Cold Harbor
Sliding Hill
Ashcake
Peaks
Lewistown
Cedar
Elmont
Mill
Greenwood
Woodman
Hungary
Hungary Spring
Three Chopt
Skipwith
Monument
Old Mill
Grove
Exeter
Ridge
River
Old Gun
Mechanicsville
Mosby
Mayo
Quaker
Merchants Hope
Mesa
Dupuy
South
Johnson
Gaines Church
White Oak
Courthouse
Airport
Golf Course
Hines
Pole Run
Laurel Springs
Surry
Sussex
Roxbury
Old Roxbury
Foxburn
Charles City
Airport
Maymont
Hopkins
Belmont
Belt
Dalebrook
Beulah
Dorsey
Hopkins
Chester
Wills
Kingsland
Battlefield Park
Osborne
New Osborne
Maury
Castlewood



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Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

FIGURE 2
EXISTING/PROPOSED VANG FACILITY LOCATIONS
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 1.5 3
Miles

Chesterfield, VA
Sources: ESRI; Open Street Map
Prepared by Brian Brown. June 22, 2015

Company B, 429th BSB is located on DSCR. Refer to **Figure 2**. DSCR is the aviation and supply chain center for the Defense Logistics Agency (DLA). Company B, 429th BSB is stationed in two buildings and shares a compound on DSCR with another VANG unit. The buildings were constructed in 1948 and 1950 and have not been renovated or updated.

1.1.2 Location of the Proposed Headquarters Facility

The proposed VANG State HQ site is located approximately 11 miles south of Richmond, Virginia, at DSCR in Chesterfield County. See **Figure 2**. The DSCR campus consists of approximately 631 acres and was purchased by the United States Government from private landowners in 1941. DSCR serves as the Aviation Demand and Supply Chain manager for DLA.

The proposed VANG State HQ would be situated on approximately 13.6 acres in the northwest corner of DSCR. The 13.6-acre site (**Figure 3**) is being leased by Virginia from the United States Government. It is bounded by A, C, 4th and 5th streets. **Figure 4** shows that the topography is relatively flat across the entire site. Warehouses that occupied the site were demolished in 2011, and the site surface now consists of a mix of herbaceous plants, concrete, and gravel. An asphalt roadway bisects the site north to south. Existing underground utility services including gas, water, storm sewer, and sanitary sewer are located along this roadway.

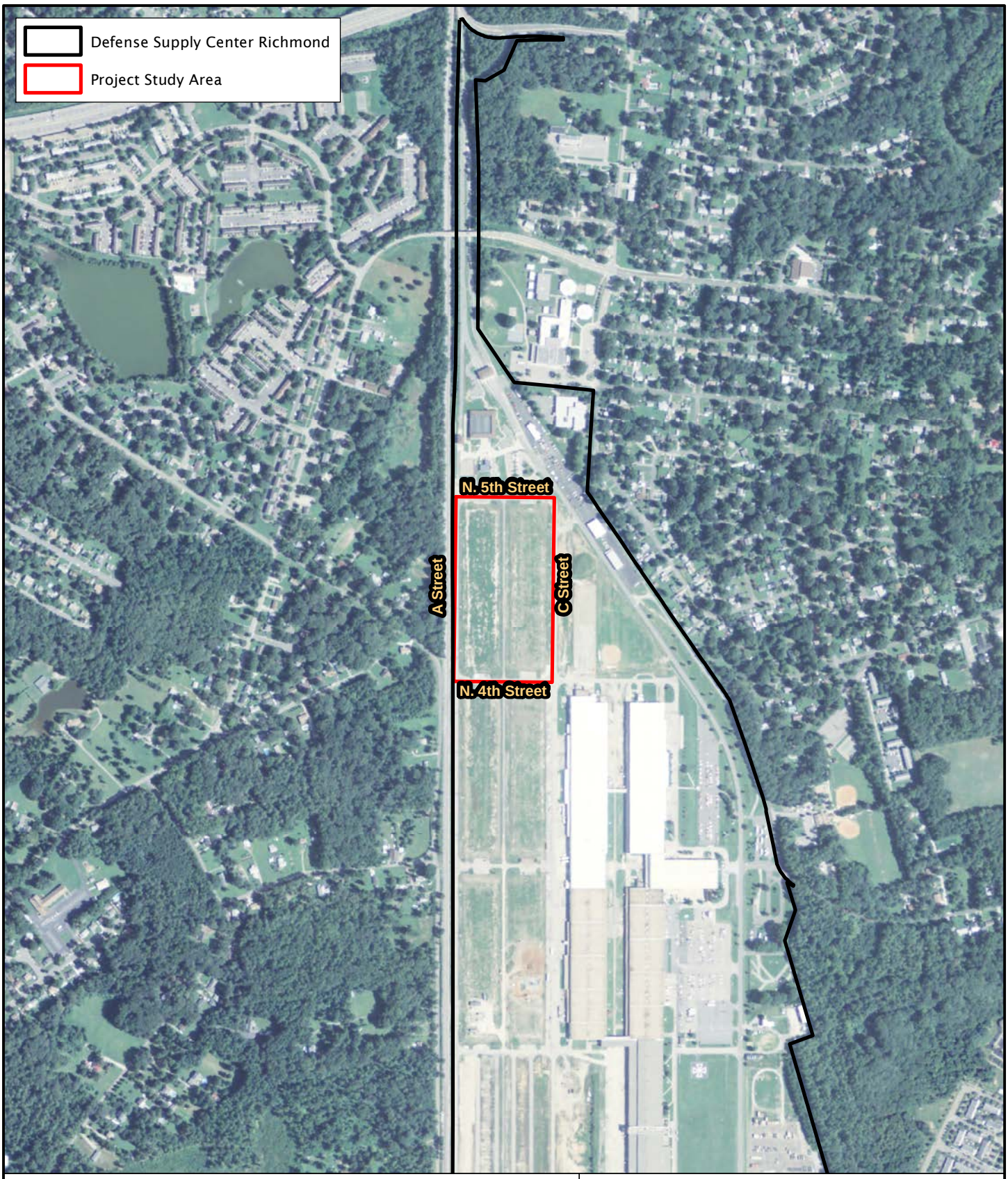
1.2 **Purpose and Need**

This section details the history of the Proposed Action, its purpose and need, and VANG's proposal for achieving the purpose and need.

1.2.1 Purpose of Proposed Action

The Proposed Action would provide a facility of sufficient size and design to meet the needs of a contemporary Virginia National Guard State Headquarters, enhancing VANG's readiness for service. Adequate space for administrative, logistical, training, and maintenance operations, and storage would be provided for the assigned units and personnel.

The geographic location of the proposed VANG State HQ in the Richmond Metropolitan Area allows for close proximity to the Commonwealth's leadership, consisting of the Virginia Emergency Operations Center and the Office of the Governor. The DSCR location would also be closer to the ARNG headquarters at Fort Pickett, 38 miles to the southwest. New joint missions require the VANG to integrate planning efforts with other state agencies, many of which are located in Richmond. The joint plans and exercises are complex, involve many different government operations, and are vital to the VANG's ability to respond effectively to a catastrophic incident. The VANG must be able to respond quickly and coordinate effectively with state partners in order to assist Virginians in a large-scale disaster.



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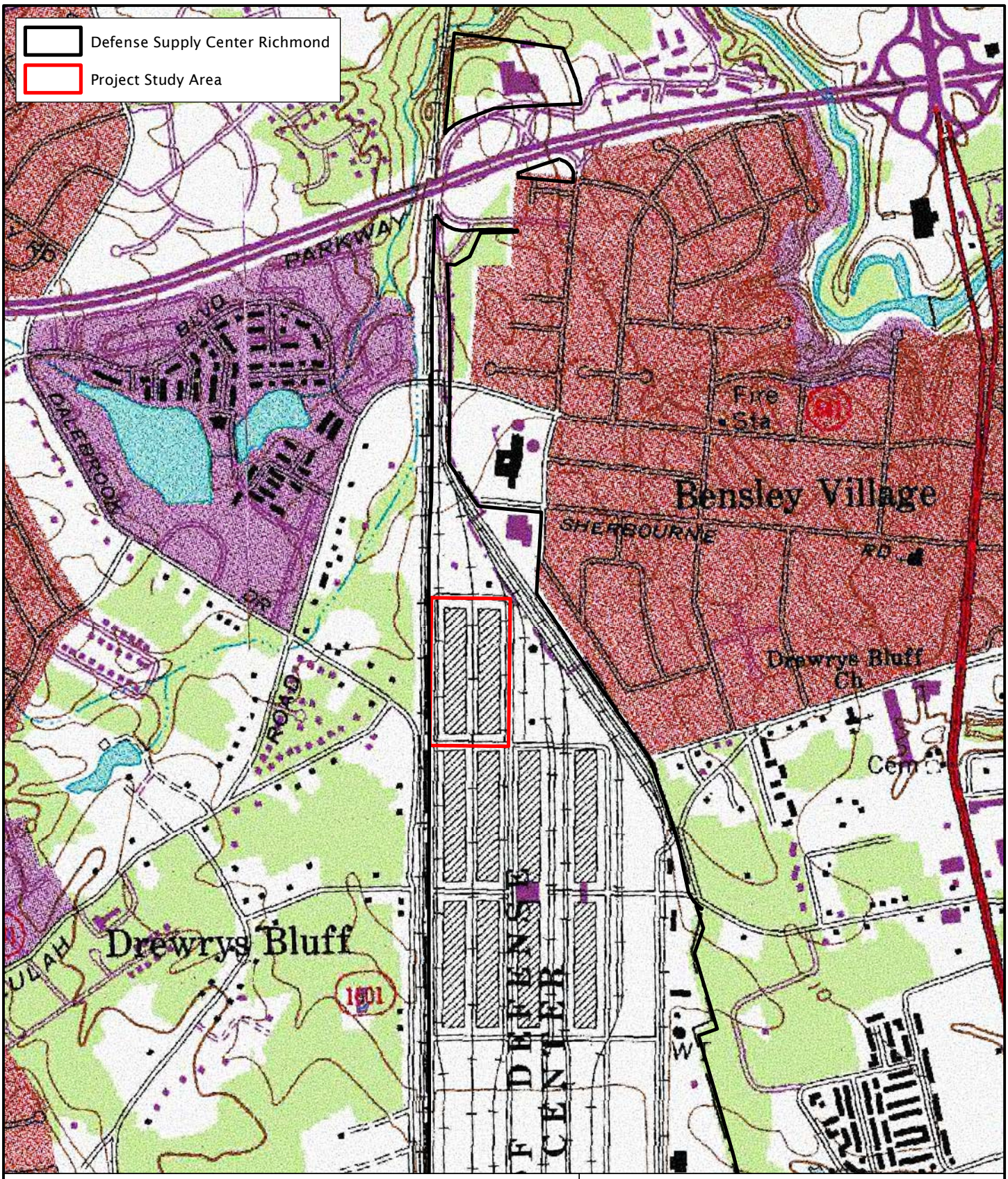
Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

FIGURE 3
PROPOSED PROJECT LOCATION
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 800 1,600
Feet

Chesterfield, VA
Sources: 2014 NAIP Imagery; FEMA panel 51041C0162D (eff. 12/18/2012)
Prepared by Brian Brown. June 22, 2015



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Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

N

FIGURE 4
TOPOGRAPHY
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 1,000 2,000
Feet

Chesterfield, VA
Sources: USGS Topo Quad Drewrys Bluff (o37077d4)
Prepared by Brian Brown. June 22, 2015

The DSCR is a secure site with external security, safe communication lines, and existing infrastructure. Proposed design elements that would help the new State HQ meet Anti-Terrorism Force Protection (ATFP) requirements include stand-off distances ranging from 82 to 123 feet, with explosive weights of I or II. In addition, decorative walls would be such that a 6-inch package placed adjacent to the wall could be observed by building occupants. The building's transformer, generator, and flammable storage would be located within the ATFP standoff areas. Access control fencing around the service yard would prevent an aggressor for concealing a 6-inch object. Door and vestibule glass would be designed to a medium level to prevent it from becoming a projectile. Finally, an emergency shut off switch would be supplied for the dedicated ventilation system. It is anticipated that the proposed Virginia National Guard State Headquarters would fit seamlessly into the current DSCR campus.

1.2.2 Need for Proposed Action

The Joint Elements of the JFHQ and ACC are currently located at the Sandston Readiness Center (**Figure 2**). Sharing the Readiness Center with these two units is Battery A, 1st Battalion, 111th Field Artillery. As a result of multiple units sharing the limited space at Sandston Readiness Center, there is a deficiency in authorized administrative, logistical, training, and maintenance space required for the effective performance of each unit's duties.

Company B, 429th Brigade Support is located on DSCR (**Figure 2**). This unit is stationed in two buildings and shares a compound on DSCR with another VANG unit. The buildings have not been renovated or updated to keep pace with Army transformation and modernization. The shared compound has resulted in overcrowding, with incompatible activities in a confined area on DSCR.

Currently, the total combined space occupied by JFHQ and ACC at Sandston and Company B, 429th BSB at DSCR, is 66,994 square feet. This is only 58 percent of the space authorized by the Department of Defense for such an activity. The facilities currently supporting the Joint Element of JFHQ, ACC, and Company B, 429th BSB do not comply with building space criteria contained in the July 2015 *Army National Guard Facilities Allowances* (National Guard PAM 415-12, 2015); Installation Status Report Mission and Quality; current code requirements; the Americans with Disabilities Act; and ATFP mandates. The current Force Protection status of the SRC is compromised by its close proximity (within 100 feet) to Beulah Road, a public thoroughfare.

Continuing to operate the VANG from the Sandston Readiness Center and outdated facilities used by B Company, 429th BSB on DSCR increases the stress on planning and coordination efforts, jeopardizing the ability to protect the Commonwealth of Virginia and the timely ability to generate forces in support of national requirements.

1.3 **Scope of the Draft EA**

This Draft EA analyzes VANG's Proposed Action to construct and operate a new VANG State HQ, as well as a No Action Alternative. The document evaluates potential impacts to

environmental and cultural resources that could result from the construction and operation of the proposed VANG State HQ.

This Draft EA provides a detailed comparative analysis of the following alternatives:

- **Proposed Action** – Implement the Proposed Action as defined in **Section 2.0** to fulfill the mission requirements of the VANG. This is the Preferred Action Alternative. The Preferred Action Alternative meets the square footage requirements for ARNG facilities, as mentioned in NGB 415-12 (2015).
- **No Action Alternative** – Continue with operations as currently conducted and do not implement the Proposed Action. The VANG would continue to lack adequate space for administrative, logistical, training, and maintenance operations.

This Draft EA analyzes the impact of these two alternatives on geology, topography, and soils, water resources, biological resources, land use, hazardous and toxic materials/wastes, socioeconomics, cultural resources, noise, air quality, and infrastructure. This Draft EA also considers the cumulative effects of the Proposed Action when added to other past, present, and reasonably foreseeable actions in the region.

In an effort to streamline NEPA documents, 40 CFR 1507.1 (a)(3) allows a project proponent to identify and eliminate from detailed study any human/natural environment topics that are not significant to a proposed action. During initial scoping with the public and state/federal agencies, no comments were received to suggest that concerns of Environmental Justice (EJ) would occur in the selection of the proposed action alternative. It was determined that the resources above were the only ones that could be impacted by implementation of either alternative. Therefore, EJ was dismissed from further analysis.

As specified under NEPA and CEQ regulations, a monetary cost-benefit analysis is not required as part of the Draft EA. The Proposed Action and its alternatives have been developed based on military training needs and mission requirements. As such, no quantitative financial assessment has been performed as part of this Draft EA. However, economic factors that would result in socioeconomic impacts to DSCR and its surrounding region of influence were considered in this evaluation, as required under NEPA.

1.4 Decision-making

The National Guard Bureau, working with VANG, would decide whether or not to fund, construct, and operate the VANG State HQ. The effect of this Proposed Action on the environment, as presented in this Draft EA, would aid in the decision-making process.

1.5 Public and Agency Involvement

As specified under NEPA and the NEPA implementing regulations promulgated by CEQ, 32 CFR 651 (Environmental Analysis of Army Actions, Final Rule, 2002), and guidance provided in *The*

Army National Guard NEPA Handbook (2011), public participation is a significant component of the EA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision making. Agencies, organizations, and members of the public with a potential interest in the Proposed Action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate. A record of public involvement, agency coordination, and Native American consultation associated with this Draft EA is provided in **Appendix A**.

1.5.1 Agency Coordination

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) is a federally mandated process for informing and coordinating with other government agencies regarding Federal Proposed Actions. Through the IICEP process, the VANG notifies relevant federal, state, and local agencies and allows them sufficient time to make known their environmental concerns specific to a Proposed Action.

Comments and concerns submitted by these agencies during the IICEP process are incorporated into the analysis of potential environmental impacts conducted as part of the Draft EA. This coordination fulfills requirements under 1982's Executive Order (EO) 12372 (superseded by 1983's EO 12416 and subsequently supplemented by EO 1999's 13132), which requires Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. It also constitutes the IICEP process for this Draft EA.

On 7 July 2015, VANG distributed scoping letters to federal, state, and local agencies and officials with regulatory jurisdiction or other interest in the resources surrounding the proposed VANG State HQ. Agencies consulted include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (EPA), Virginia Department of Environmental Quality (DEQ), Virginia Department of Conservation and Recreation (DCR) - Division of Natural Heritage, Virginia Department of Game and Inland Fisheries (DGIF), and VDHR. Recipient contact information is included in **Section 8.0**. Copies of all correspondence with consulting agencies are included in **Appendix A** (pages 69-118). This Draft EA is subject to Virginia Department of Environmental Quality (DEQ) Project Review.

On 1 September 2015, DEQ commented on the proposed project **(Appendix A, pages 81-106)**. The conclusions from the DEQ letter are as follows: "Based on comments submitted by reviewers, from the environmental perspective, DEQ has no objections to the project provided that regulatory requirements and recommendations in the enclosed comments are followed. Natural resources agencies did not identify any adverse impacts that cannot be mitigated. Provided activities are performed in accordance with the recommendations which follow, this project is unlikely to have significant effects on water quality, ambient air quality, natural heritage resources, historic resources, or state/federal-listed species."

There were limited responses and feedback from the consulted agencies, suggesting no EJ concerns existed. Therefore, EJ was not discussed in the EA. No other resource areas were removed from consideration during scoping.

1.5.2 Native American Consultation

The VANG has conducted consultation with federally recognized Native American tribes as required under Department of Defense Instruction (DoDI) 4710.02 (*DOD Interactions with Federally Recognized Tribes*, 2006), which implements the Annotated DoD American Indian Alaska Native Policy (dated 27 October 1999). Coordination is also required under Army Regulation (AR) 200-1 (*Environmental Protection and Enhancement*, 2007), NEPA, the National Historic Preservation Act (NHPA), and the Native American Graves Protection and Repatriation Act. Tribes were invited to participate in the EA and NHPA Section 106 processes as Sovereign Nations per 2000's EO 13175 (*Consultation and Coordination with Indian Tribal Governments*), and in accordance with the protocol set forth in *The Army National Guard NEPA Handbook* (2011). Additionally, tribes recognized by Virginia were invited to participate in the EA process and provide comments.

On 1 July 2015, VANG sent scoping letters to Tribes with a recorded cultural interest in the project site. **Section 8** lists the Native American tribes contacted regarding the Proposed Action. Copies of all correspondence with Native American tribes are included in **Appendix A** (pages 119-162). A Memorandum for Record (MFR) describing Native American consultation efforts is provided in **Appendix A**.

1.5.3 Public Review

The VANG, as the proponent of the Proposed Action, will publish and distribute the draft FNSI and Draft EA for a 15-day public comment period. Availability of the document at community libraries in the Richmond metropolitan area will be provided in a Notice of Availability in the *Richmond Times-Dispatch*. The general public may submit written comments during the 15-day review period. A copy of the Public Notice of availability for this document is included in **Appendix B**. All comments received during the public review period will be included and addressed in **Appendix C** of the Final EA.

1.6 **Related NEPA, Environmental, and Other Documents and Processes**

This Draft EA addresses the VANG's proposed construction and operation of a new VANG State HQ, and serves as the NEPA compliance document for an action that would occur with federal funding on federal lands. The property for the proposed VANG State HQ is part of the DSCR facility. The VANG has acquired 13.6 acres on the DSCR campus for the proposed VANG State HQ. An Environmental Baseline Survey (EBS) was conducted in May 2013 and updated in March 2016. The EBS concluded: In accordance with ASTM Designation D5746-98 (2010), the subject property has been classified as ECOP Area Type 7- "An area or parcel of real property that is unevaluated or requires additional evaluation". In accordance with AR 200-1, Chapter 15-6,

MILCON Property Site Classifications, the subject property has been classified as a Category II – "There is no known contamination, there remains some potential that contamination may be encountered during construction."

1.7 **Regulatory Framework**

This Draft EA has been prepared under the provisions of, and in accordance with NEPA, the CEQ Regulations Implementing the Procedural Provisions of NEPA (Sec. 1502.9 Draft, final, and supplemental statements), 40 CFR Parts 1500-1508, and 32 CFR 651. In addition, the document has been prepared as prescribed in AR 200-2, Environmental Analysis of Army Actions (2002). Other applicable regulations include the Endangered Species Act, the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act, the Clean Air Act (CAA), the Clean Water Act (CWA), the CZMA, and the Chesapeake Bay Preservation Act (CBPA).

1.7.1 National Environmental Policy Act

NEPA (Public Law 91-190, 83 Stat. 852, 1 January 1970) establishes a national environmental policy that all federal agencies shall, to the fullest extent possible, (1) use a systematic, interdisciplinary approach that integrates natural and social sciences and environmental design arts in planning and decision making; (2) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources; and (3) include an Environmental Impact Statement in every recommendation or report on proposals for major federal actions significantly affecting the quality of the human or natural environment. This Draft EA has been written to comply with NEPA.

1.7.2 President's Council on Environmental Quality Regulations

CEQ regulations for implementing NEPA (40 CFR 1500-1508) provided guidance on interpreting the law in an efficient manner that is grounded in sound analysis. In 1981, CEQ published a list of 40 most frequently asked questions concerning NEPA to assist in creating a uniform and efficient process. NEPA and the CEQ regulations require federal agencies to develop internal implementing procedures. This Draft EA was written to meet the standards set by the Army and the ARNG.

1.7.3 Environmental Analysis of Army Actions

The Army has developed agency-specific NEPA procedures codified in 32 CFR 651, Environmental Analysis of Army Actions (AR-200-2, 2002), which replaced policy and procedures found in 1988's AR 200–2, *Environmental Effects of Army Actions*. These regulations apply to actions of the Army and Army Reserve, to functions of the ARNG involving federal funding, and to functions for which the Army is the DoD executive agent. In response to these regulations, ARNG established its own NEPA guidance in *The Army National Guard NEPA Handbook* (2011). This Draft EA is written to comply with the agency-specific regulations prescribed in the handbook.

1.7.4 Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 703–712) was designed to protect and promote the recovery of threatened and endangered species. Both plants and animals are included on the Endangered Species List. The critical habitat of listed species is also protected. Endangered species are those that are likely to become extinct without protection, while threatened species are those that are likely to become endangered within the foreseeable future. The ESA prohibits federal agencies from authorizing, funding, or carrying out any actions that are likely to jeopardize the continued existence of a listed species. Further, the ESA prohibits "taking" any listed species. Taking includes killing, harassing, harming, pursuing, hunting, or wounding.

1.7.5 Migratory Bird Treaty Act

The MBTA of 1918 (16 U.S.C §§ 703–712) implemented a series of treaties between the United States and other countries, including Canada and Mexico. The MBTA prohibits taking, killing, or possessing migratory birds or their parts, nests, or eggs. Migratory birds are those that spend significant portions of the year in different geographic areas on a seasonal basis.

1.7.6 Clean Air Act

The CAA of 1970 (42 U.S.C. §7401 et seq.) regulates air emissions from mobile and stationary sources in order to protect the public from risks associated with air pollution. As part of the CAA, National Ambient Air Quality Standards (NAAQS) were established for pollutants considered harmful to public health or the environment. Primary NAAQS provide for public health protection by regulating air pollutants that impact sensitive populations, such as asthmatics, children, and the elderly. Secondary NAAQS provide public welfare protection by regulating air pollutants that can decrease visibility or cause damage to animals, crops, vegetation, or buildings.

1.7.7 Clean Water Act

The CWA of 1972 (33 U.S.C. §1251 et seq.) provides the basic structure for regulating the discharge of pollutants into waters of the U.S. It also establishes standards for regulating the quality of surface waters. Under the CWA, it is unlawful to discharge pollutants from point sources, such as pipes, into a navigable water without first obtaining a permit.

1.7.8 Coastal Zone Management Act

The CZMA of 1972 (16 U.S.C §§ 1451-1644) was established to encourage coastal states to develop and implement coastal zone management plans. The goal was to preserve, protect, develop, restore, or enhance coastal waters. Under the CZMA, federal activities which are reasonably likely to affect any land or water use, or natural resources, in the state's designated coastal resources management area must be consistent with the enforceable policies of the state's coastal zone management plan.

1.7.9 National Historic Preservation Act

The NHPA of 1966 (16 U.S.C. 470 et seq.) was developed to preserve historic and archaeological sites in the U.S. Under the NHPA, federal agencies must evaluate the impacts of all projects with federal funds or federal permits on historic buildings and archaeological sites in or eligible for listing in the National Register of Historic Places (NRHP), established in 2007.

1.7.10 Chesapeake Bay Preservation Act

Virginia passed the CBPA in 1988 as part of the state's non-point source management plan. The CBPA was intended to enhance water quality while allowing reasonable development to continue. The CBPA establishes a cooperative partnership between Virginia and local governments in the Tidewater portion of the state. Tidewater local governments must incorporate water quality protection measure into their comprehensive plans, zoning ordinances, and subdivision ordinances. They must also designate lands which, if improperly developed, may result in substantial damage to water quality in the Chesapeake Bay and its tributaries, as Chesapeake Bay Preservation Areas.

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SECTION 2.0: DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

This section of the Draft EA presents a description of the alternatives development process for the proposed construction and operation of a new VANG State HQ (FY 16; MILCON # 510065). It includes a discussion of the Proposed Action, the alternatives considered but dismissed from further analysis, the No Action Alternative, screening criteria for site selection, and identification of the Preferred Action Alternative. The Preferred Action Alternative meets the square footage requirements for ARNG facilities, as mentioned in NGB 415-12 (2015).

2.2 Proposed Action

The Proposed Action is the construction and operation of a new VANG State HQ and the re-stationing of B Company, 429th BSB at DSCR in Chesterfield County, Virginia. The Proposed Action would provide adequate space for administrative, logistical, and training activities for the VANG. The Preferred Action Alternative meets the square footage requirements for ARNG facilities, as mentioned in NGB 415-12 (2015). It is anticipated that construction of the facility would begin in June 2016.

The proposed Headquarters facility would be a two-story building, encompassing approximately 103,325 square feet on a 13.6-acre parcel. The facility would house 193 personnel, and would provide parking for 175 privately owned vehicles and storage for 66 pieces of major equipment. See **Figure 5** for a conceptual site plan.

2.2.1 Projected Facility Usage

The proposed construction and operation of the VANG State HQ would provide the VANG with facilities of sufficient size and a modern design such that they would meet the needs and required duties of the VANG. The facility would permit personnel to perform the necessary training and tasks to maintain and improve readiness.

In addition to its normal administrative functions, the VANG State HQ is projected to be manned 24 hours a day. During times of State Active Duty in response to events deemed appropriate by the Governor, the facility would go to surge operations. Additionally, a two-day training assembly is expected two or three times per month throughout the year.

2.2.2 Construction

The proposed VANG State HQ would be designed to last a minimum of 50 years in accordance with DoD's 2014 Unified Facilities Criteria (UFC 1-200-02), including cost effective energy efficiencies, building envelope, and integrated building systems performance. The proposed facility would be designed and constructed to a minimum of Leadership in Energy and

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Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

FIGURE 5
CONCEPTUAL SITE PLAN

VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 190 380
Feet

Chesterfield, VA
Sources: Pond & Company, 2015. ESRI World Imagery Basemap.
Prepared by MGM July 21, 2015

Environmental Design silver standard. Sustainable principles would be integrated into the design, development, and construction of the project in accordance with 1999's EO 13123: *Greening the Government through Efficient Energy Management* (1999) and other applicable laws and EOs.

Options being considered for inclusion in the design and construction include a photovoltaic system and geothermal heating. Water, sewer, electric, gas, and communication services are currently available at DSCR and would be provided to the new facility. Existing water, gas, and sewer lines would have to be relocated to accommodate the proposed VANG State HQ.

Physical security measures would be incorporated into the design in accordance with 2012's UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*. The building design would comply with NG PAM 415-12 (2015) and Anti-Terrorism/Force Protection requirements. Security measures would include maximum feasible standoff distances from roads, parking areas, and vehicle unloading areas.

The proposed VANG State HQ would be constructed on 13.6 acres at DSCR. The facility would be a two-story structure with approximately 103,325 square feet. Conceptual views of the proposed facility are provided on **Figure 6**. Construction of the facility would entail a spread footing, a steel frame, steel beams, and concrete slabs. Interiors of stairwells would consist of painted concrete masonry units, while load-bearing masonry walls within the interior of the building would be covered with furring and painted gypsum boards. Interior partitions between load-bearing walls would be constructed with metal framing and painted gypsum board. The brick façade of the Headquarters building would be selected to integrate seamlessly into the DSCR campus.

Warehouses that previously occupied the site were demolished in 2011. The site surface now consists of a mix of gravel, concrete, and herbaceous plants. No tree or shrub clearing and minimal grading would be required on the site.

2.3 Alternatives Considered

CEQ regulations require a proponent to develop and consider all reasonable alternatives that would fulfill the purpose of and need for a Proposed Action. Reasonable alternatives include those which: 1) are practical or feasible from a technical and economic standpoint; 2) support the underlying purpose of and need for the Proposed Action; and 3) are ready for a decision. Alternatives eliminated from detailed study must be identified, and a brief discussion of the reasons for eliminating them must be provided.

Only those alternatives that are determined to be reasonable relative to their ability to fulfill the need for the action warrant a detailed environmental analysis. For purposes of this analysis, an alternative was considered "reasonable" only if it would enable the VANG to accomplish the

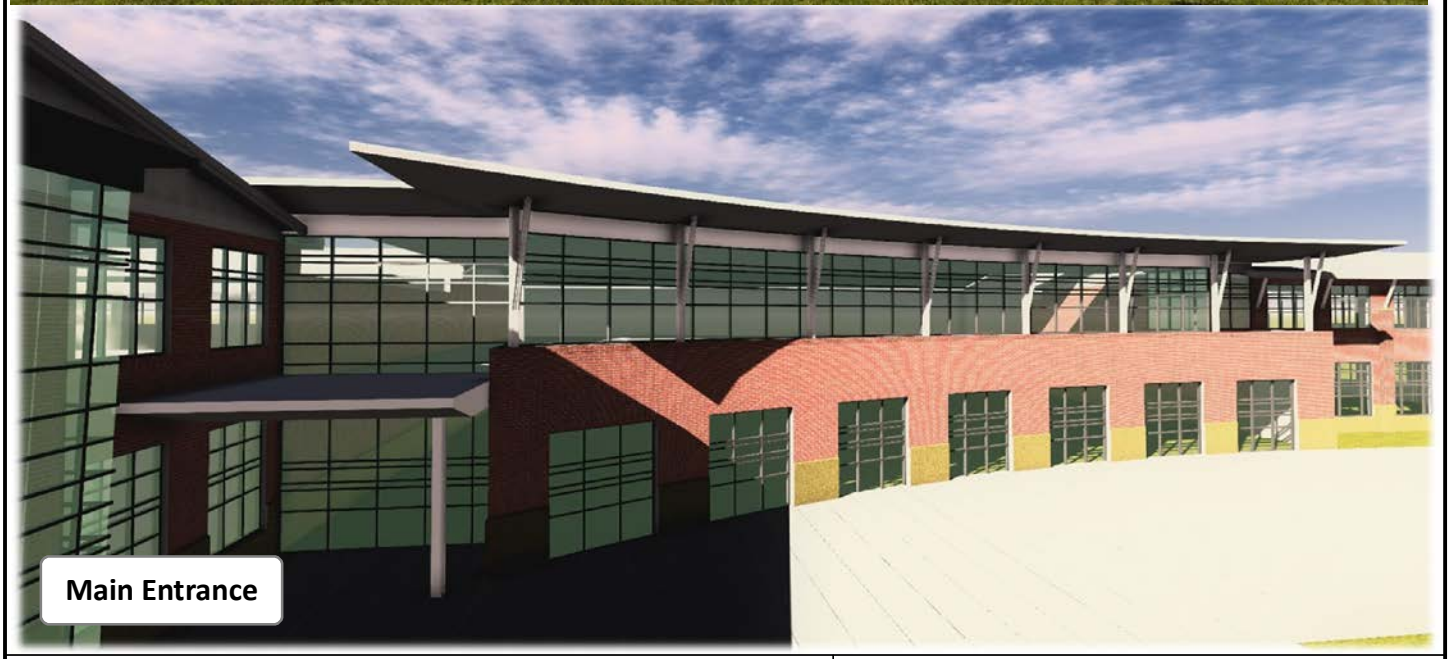

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FIGURE 6
CONCEPTUAL VIEWS
VIRGINIA NATIONAL GUARD
STATE HEADQUARTERS

Chesterfield, VA
Sources: Pond & Company, 2015.
Prepared by MGM July 21, 2015

primary mission of providing land, facilities, and resources to address a shortfall in administrative and office space in the Richmond, Virginia area. Unreasonable alternatives would not enable the VANG to meet the purpose of and need for the Proposed Action.

This NEPA analysis is necessary because the federal proposal is anticipated to change land use at the site and possibly produce other environmental effects.

2.3.1 Alternatives Development (Screening Criteria)

The VANG developed and applied the following criteria to screen and evaluate possible alternatives for the proposed Virginia National Guard State Headquarters:

- Is the alternative located in close proximity to the Commonwealth's leadership (Richmond, Virginia)?
- Does the alternative provide a secure location and communication lines?
- Is the alternative located near a major transportation route?
- Does the alternative provide sufficient open acreage to accommodate the facility?
- Is the alternative compatible with current and future planned projects?
- Does the alternative minimize costs?

After analyzing available sites, the VANG determined that the 13.6-acre DSCR site in Chesterfield County, Virginia best met the screening criteria. Constructing and operating the VANG State HQ at the DSCR site has been selected by the VANG as the Preferred Action Alternative. The Preferred Action Alternative meets the square footage requirements for ARNG facilities, as mentioned in NGB 415-12 (2015). As required by NEPA, the No Action Alternative is also evaluated in this Draft EA. **Table 3** illustrates how the Preferred Action Alternative, along with the other alternatives described in **Sections 2.3.2 and 2.3.3**, meet the screening criteria.

Table 3: Screening Criteria Matrix

Alternative/ Option	Criteria – Is/Does the Alternative…					
	Located in Close Proximity to Virginia's Leadership?	Provide a Secure Location?	Near a Major Highway?	Provide Sufficient Open Acreage to Accommodate the Facility?	Compatible with Current and Future Planned Projects?	Minimize Costs?
Preferred Action Alternative	✓	✓	✓	✓	✓	✓
No Action Alternative	✓	✓	✓			✓
Fort Pickett Alternative		✓		✓	✓	✓
Sandston Army Readiness Center Alternative	✓		✓		✓	

2.3.2 Evaluated Alternatives

This section describes the alternatives which have met the screening criteria and which would be further analyzed in this Draft EA. Because no other action alternatives met all of the screening criteria described in **Section 2.3.1**, only the Preferred Action Alternative (construction and operation of the VANG State HQ at DSCR) and the No Action Alternative are carried forward for analysis in this document.

2.3.2.1 Preferred Action Alternative

Under this alternative, the construction and operation of the VANG State HQ would be implemented. This is the VANG's Preferred Action Alternative because it best meets the screening criteria set forth in **Section 2.3.1**. It offers the best opportunity to provide needed administrative and office space for the Virginia National Guard, increasing the Guard's readiness and ability to protect Virginia. The Preferred Action Alternative meets the square footage requirements for ARNG facilities, as mentioned in NGB 415-12 (2015).

2.3.2.2 No Action Alternative

Under the No Action Alternative, VANG would not construct and operate a new VANG State HQ. The JFHQ would remain at the SRC in overcrowded conditions. The BSB unit would remain in outdated and overcrowded facilities at DSCR. The No Action Alternative does not meet the VANG's screening criteria, and has the potential to degrade overall readiness of the Virginia National Guard.

While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it was retained to provide a comparative baseline against which to analyze the effects of the Proposed Action, as required under CEQ Regulations (40 CFR Part 1502.14). The No Action Alternative reflects the status quo and serves as a benchmark against which the effects of the Proposed Action can be evaluated.

2.3.3 Alternatives Eliminated from Further Consideration

Two additional alternatives were analyzed during the early planning phases for the proposed VANG State HQ. These alternatives, which are described below, did not fully meet the VANG's screening criteria and were eliminated from further consideration.

2.3.3.1 Fort Pickett Alternative

Fort Pickett, located near Blackstone, Virginia, has adequate available acreage for the construction and operation of the VANG State HQ. However, due to its geographic location (approximately 65 miles) from Richmond, it was determined that this alternative did not meet the requirement of close proximity to the Commonwealth's leadership. The Fort Pickett Alternative is also not located near a major transportation route. This alternative was not considered feasible and is not discussed further in this Draft EA.

2.3.3.2 Sandston Readiness Center Alternative

The existing SRC in Sandston, Virginia met many of the requirements of the screening criteria. However, due to the presence of forested wetlands and intermittent streams on the site, it was determined that construction on the site was not cost effective. Filling the wetlands and streams would require construction planning and permitting, and the likely purchase of mitigation credits to offset any unavoidable impacts. Additionally, the wet soils are unstable, requiring advanced engineering and the construction of deep foundations to support the facility. Furthermore, the establishment of a new site with wetlands and stream impacts does not comply with CWA regulations requiring the implementation of the least environmental damaging practicable alternative. The current stand-off between the nearest public road and the building exterior is not in compliance with latest ATFP standards. Due to these anticipated constraints and the increased costs associated with them, the Sandston site alternative was not considered feasible or environmentally practicable and is not discussed further in this Draft EA.

2.3.4 Alternatives Impacts Comparison Matrix

Table 4 provides a summary matrix of the potential impacts of the Preferred Action Alternative and the No Action Alternative.

Table 4: Comparison of Potential Environmental Consequences of the Retained Alternatives

Resource Topic	Preferred Action Alternative	No Action Alternative
Geology, Topography, and Soils *(See **Sections 3.2 and 4.1**)*	Short-term and long-term, less-than-significant adverse impacts due to construction of a new facility.	No impacts attributed to VANG action.
Water Resources *(See **Section 3.3 and 4.2**)*	Short-term less-than-significant adverse impacts due to construction of a new facility. Long-term positive impact due to implementation of Best Management Practices (BMPs).	No impacts attributed to VANG action. Due to a current lack of BMPs, sediment would continue to reach storm drains and ditches.
Biological Resources *(See **Sections 3.4 and 4.3**)*	Potential long-term less-than-significant adverse impacts to birds due to collisions with glass. Long-term less-than-significant adverse impacts to land due to elimination of vegetation and wildlife habitat.	No impacts attributed to VANG action. DSCR would continue to mow the proposed project site, maintaining the existing habitat.
Land Use (*See **Sections 3.5 and 4.4***)	Short-term less-than-significant adverse impacts due to adherence to zoning requirements, and construction of new facility in accordance with guidance from VDHR. Long term positive impact to zoning.	No impacts attributed to VANG action. The project site would continue to be mowed as needed.

Hazardous and Toxic Materials/Wastes (*See **Sections 3.6 and 4.5***)	Potential short-term less-than-significant adverse impacts during construction due to presence of an adjacent contaminated groundwater plume off the project site. Potential long-term less-than-significant adverse impacts due to adjacent contaminated groundwater plume off the project site. No hazardous or toxic materials or wastes would be generated during construction or operation of the new facility.	No impacts attributed to VANG action. Ongoing management of hazardous and toxic materials/wastes would continue at DSCR. Current BMPs would continue for the underground plume at OU 8.
Socioeconomics *(See **Sections 3.7 and 4.6**)*	Short-term and long term, less-than-significant adverse impacts due to no current employees at DSCR or Sandston needing to relocate Homes of Record.	No impacts attributed to VANG action. Personnel would continue to be assigned to their current facilities.
Cultural Resources *(See **Sections 3.8 and 4.7**)*	Potential short-term and long-term less-than-significant adverse impacts from construction of new facility through implementation of VDHR-recommended BMPs.	No impacts attributed to VANG action. No new facilities would be added, and the existing buildings would remain in their current condition.
Noise *(See **Sections 3.9 and 4.8**)*	Short-term less-than-significant adverse noise impacts due to construction activity. BMPs would be employed during construction. Long-term less-than-significant adverse impacts due to periodic use of generators.	No impacts attributed to VANG action. Ongoing ambient noise from adjacent railroad track.
Air Quality *(See **Sections 3.9 and 4.8**)*	Short-term less-than-significant adverse air impacts due to dust and equipment fumes generated during construction activity. BMPs would be employed during construction. Long-term less-than-significant adverse impacts due to periodic use of generators and boilers.	No impacts attributed to VANG action. Ongoing air emissions from DSCR operations.
Infrastructure (*See **Section 3.10 and 4.9***)	Short-term and long-term, less-than-significant impacts to transportation and utilities.	No impacts attributed to VANG action. Ongoing operations at DSCR would continue with no increase to demands on infrastructure.

SECTION 3.0: AFFECTED ENVIRONMENT

The Affected Environment section of the Draft EA contains a description of the current (existing) environmental conditions of the area that would be affected if the Preferred Action Alternative was implemented. It represents the "as is" or "before the action" conditions (sometimes referred to as baseline conditions).

Following guidance in *The Army National Guard NEPA Handbook* (2011), this section only presents those resources that could be affected by either the Preferred Action Alternative or No Action Alternative: geology, topography, and soils; water resources; biological resources; land use; air quality; noise; hazardous materials; socioeconomics; cultural resources; and infrastructure. The study area considered for analyzing these resources is confined to an area within half a mile of the proposed VANG State HQ. The scoping process and early data collection led to the determination that there would be no impacts on EJ. Therefore EJ was eliminated from further discussion.

3.1 Location Description

The proposed VANG State HQ site is located at DSCR in Chesterfield County, Virginia, approximately 11 miles south of Richmond. See **Figure 2**. DSCR contains approximately 631 acres and is owned by DoD. As shown in **Figure 3**, the proposed VANG State HQ would be situated on 13.6 acres in the northwest corner of DSCR. It is bound by A, C, 4th, and 5th streets. The site is being leased from DoD by the Virginia ARNG.

Elk herd

There is a historically significant elk (*Cervus elaphus*) herd at DCSR. Around 1900, James Bellwood, owner of Bellwood Farms, set aside a few acres to be used as a wooded preserve and imported a pair of elk from Yosemite National Park and Washington State. Through the years the Bellwood elk herd has become an important part of the installation culture and a source of great pride among the work force.

As part of the sale agreement when the U. S. Army purchased the land upon which DSCR is now situated, the Bellwood family required the Army to maintain the elk herd. In the early years of the post, funds were allocated for the elk's upkeep; however, Government funds are no longer provided for the elk. Care of the Bellwood elk herd is currently overseen by DLA Installation Support, and funds for the care of the elk are generated through donations made through the Family Morale, Welfare, and Recreation Office, and through the installation's aluminum recycling program.

On-going Missions, Primary Activities, General Landscape, and Climatic Conditions

DLA Aviation, the primary DLA tenant housed at DSCR, provides goods and logistical services to the military. DLA Aviation is the primary field level activity of DLA. The mission of DLA

Aviation is to provide aviation weapon systems and environmental logistics support to the DoD. The installation also strives to support the overall mission of DLA while providing worldwide logistics in support of all major commands. Ongoing missions in the specific project area include Entry Control Point and Visitor Center activities to the north; an active CSX train track to the west; a vacant lot to the south; DLA Aviation offices to the southeast; and a recreation area and main thoroughfare to the east. The project site is currently a vacant lot left from the demolition of two large warehouses; the northern-most two of a set of six identical warehouses demolished in 2010-2011 between 2nd and 5th Street. No current plans exist for the additional vacant lots to the south, and a Land Use Control (LUC) restricts the development of the recreational area to the east where a baseball-diamond is located. The new visitor center and receiving Entry Point to the north provide administrative and security services for the installation. The DLA – Aviation facility provides administrative work space and mapping facilities encompassing printing and high speed, high volume duplicating operations within the two adjacent buildings to the project site.

Landscape conditions at DSCR are typical of an industrial facility. Between G Road and the western property boundary, major roads are generally parallel to each other and to the nearby railroad tracks. An exception to this is the roads south of Auburn Chase Road, which are perpendicular to G Road and the railroad tracks. There are a few vacant fields, but most areas between the roads are occupied by warehouses and other industrial-type structures. Office buildings are functional, with few aesthetic elements. East of G Road, in the central portion of the property, there are vehicle storage areas and additional warehouses. East of G road, in the southern portion of the property are more large warehouses and office buildings. There is also a recreational area with a pool, tennis courts, and landscaped greenspaces. North of Sherboure Road, the DSCR parcel narrows to approximately 125 feet, until it reaches Strathmore Road. This portion of the property is wooded. The DSCR property extends to the north, crossing Highway 150 (Chippenham Parkway). This portion of the property includes a small parcel of forested land south of Highway 150, at its intersection with Strathmore Road. North of Highway 150, the DSCR property includes a multi-story office building with parking areas and a water tower.

The nearest large City to DSCR is Richmond, Virginia, which is in the temperate climate zone. According to Climate Zone.com (2015), average annual temperatures in Richmond range from a low of 25.7 degrees Fahrenheit in January to a high of 88.4 degrees in July. Average annual precipitation is 43.2 inches, with 13.7 inches of snowfall and 29.5 inches of rainfall. July typically has the greatest monthly precipitation, while April has the least. Average relative humidity ranges from 62.5 percent in April to 73.0 percent in September. The annual average is 69 percent.

3.2 Geology, Topography, and Soils

The geology, topography, and soils of Virginia are dictated by the state's five physiographic provinces. DSCR is in the Coastal Plain province. Descriptions of the Coastal Plain province, and of the mapped topography and soils at DSCR, are provided below.

3.2.1 Geology

The Coastal Plain physiographic province extends from the Atlantic Ocean to the Fall Zone. The Virginia Coastal Plain is underlain by a thick wedge of sediments that increases in thickness from the Fall Zone to the continental shelf, where they exceed 4,000 meters in depth. These sediments rest on an eroded surface of Precambrian to early Mesozoic rock. Two-thirds of this wedge is comprised of late Jurassic and Cretaceous clay, sand, and gravel that were stripped from the Appalachian mountains, carried eastward by rivers, and deposited in deltas in the newly formed Atlantic Ocean basin. The topography of the Coastal Plain is terraced, stair-stepping down to the coast and to the major rivers. Moderate to steep slopes occur in portions of the Middle and Upper Coastal Plain, particularly adjacent to active streams. In general, the soils of the Coastal Plain are younger and sandier to the east and older and higher in clay to the west. Many soils in the Lower Coastal Plain are quite wet and have been drained for agricultural production. These soils and those lying immediately adjacent to the waters of the Chesapeake Bay are environmentally sensitive and demand careful nutrient management. Many Coastal Plain soils also are very sandy in texture and, therefore, have high leaching potentials (William and Mary, 2012; Daniels, 2006).

3.2.2 Topography

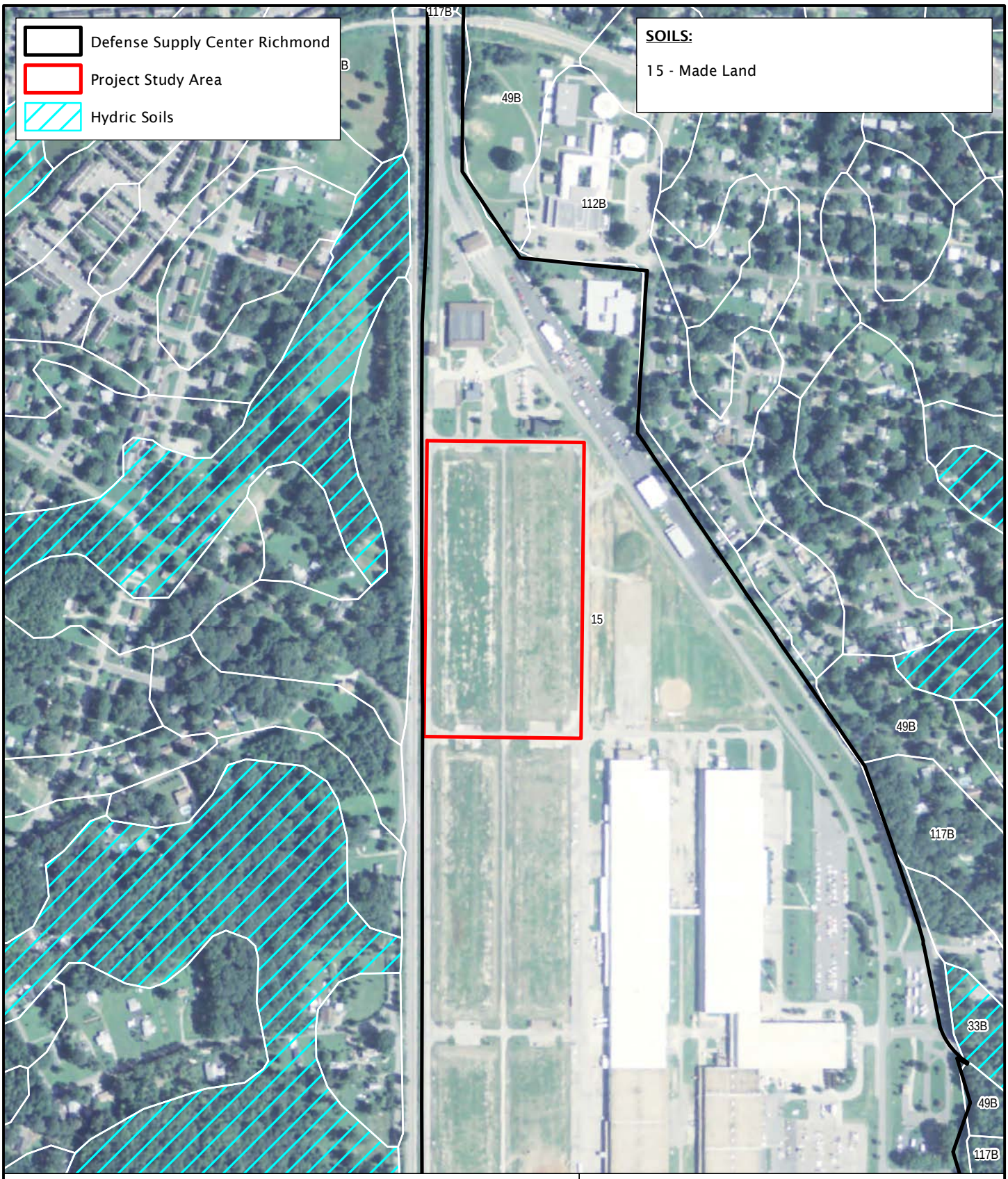
The Drewrys Bluff United States Geological Survey (USGS) topographic map shows that the land at the project site is nearly level. A 16 July 2015 site visit by EEE Consulting, Inc. (EEE) Environmental Scientists and DMA personnel confirmed this. Onsite elevation is approximately 120 feet above mean sea level. Refer to **Figure 4**.

3.2.3 Soils

According the Natural Resources Conservation Service's (NRCS) Web Soil Survey, the only mapped soil at the proposed VANG State HQ site is made land (see **Figure 7**). NRCS describes made land as consisting of soils that have been removed or reworked by machinery. Soil textures range from loamy sand to clay, and some areas are gravelly or very gravelly. These soils are often found in industrial areas.

3.3 **Water Resources**

According to DCR (2014), DSCR is situated within the James River Basin, (Hydrologic Unit Code 02080206). However, as shown on **Figure 8**, no portion of the parcel for the proposed VANG State HQ borders or abuts any surface water bodies. The James River is approximately one mile east of the proposed Headquarters. Kingsland Creek, a tributary of the James River, is adjacent to the DSCR southern boundary, approximately one mile from the proposed VANG State HQ. An unnamed tributary to the James River is located approximately 500 feet northwest of the proposed VANG State HQ.



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Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

FIGURE 7
NRCS SOILS
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 500 1,000
Feet

Chesterfield, VA
Sources: 2014 NAIP Aerial Imagery; NRCS Soils
Prepared by Brian Brown. June 22, 2015

Kingsland Creek, from its headwaters to its confluence with the James River (8.34 miles), is classified by the DEQ as an impaired river. In DEQ's latest (2014) 303(d)/305(b) report, this segment of Kingsland Creek was placed on the Virginia's 2006 Section 303(b) Total Maximum Daily Load (TMDL) Priority List due to *Escherichia coli*. Kingsland Creek was assessed as not supporting recreational use. No Name Creek, from its headwaters to its confluence with the James River (2.07 miles), is classified by DEQ as impaired. This segment of No Name Creek was placed on Virginia's 2008 Section 303(b) TMDL Priority List due to *Escherichia coli*. It is considered impaired for recreational use.

3.3.1 Groundwater

According to McFarland (1999), the regional groundwater flow system in the Coastal Plain consists of a thick wedge of sediments that form a sequence of aquifers and confining units. The local flow system consists of the unconfined Eastover aquifer (known as the upper water-bearing unit [WBU]) and the underlying confined middle Potomac aquifer (known as the lower WBU). Separating the upper WBU from the lower WBU is a silty clay confining unit known as the Aquia formation. Groundwater in the underlying Petersburg granite is present in fractures. According to the geotechnical report dated June 21, 2015 prepared by Get Solutions, Inc. no groundwater was encountered in the 19 borings conducted at the project site. The borings ranged from three feet to 30 feet in depth.

3.3.2 Wetlands

As shown on **Figure 8**, the National Wetlands Inventory (NWI) indicates that there are no wetlands at the proposed VANG State HQ site. The July 16, 2015 site visit confirmed this. The nearest NWI wetland is a small freshwater emergent wetland system approximately 365 feet northwest of the site for the proposed VANG State HQ. There is also a freshwater forested/shrub system approximately 500 feet southwest of the site.

3.3.3 Floodplains

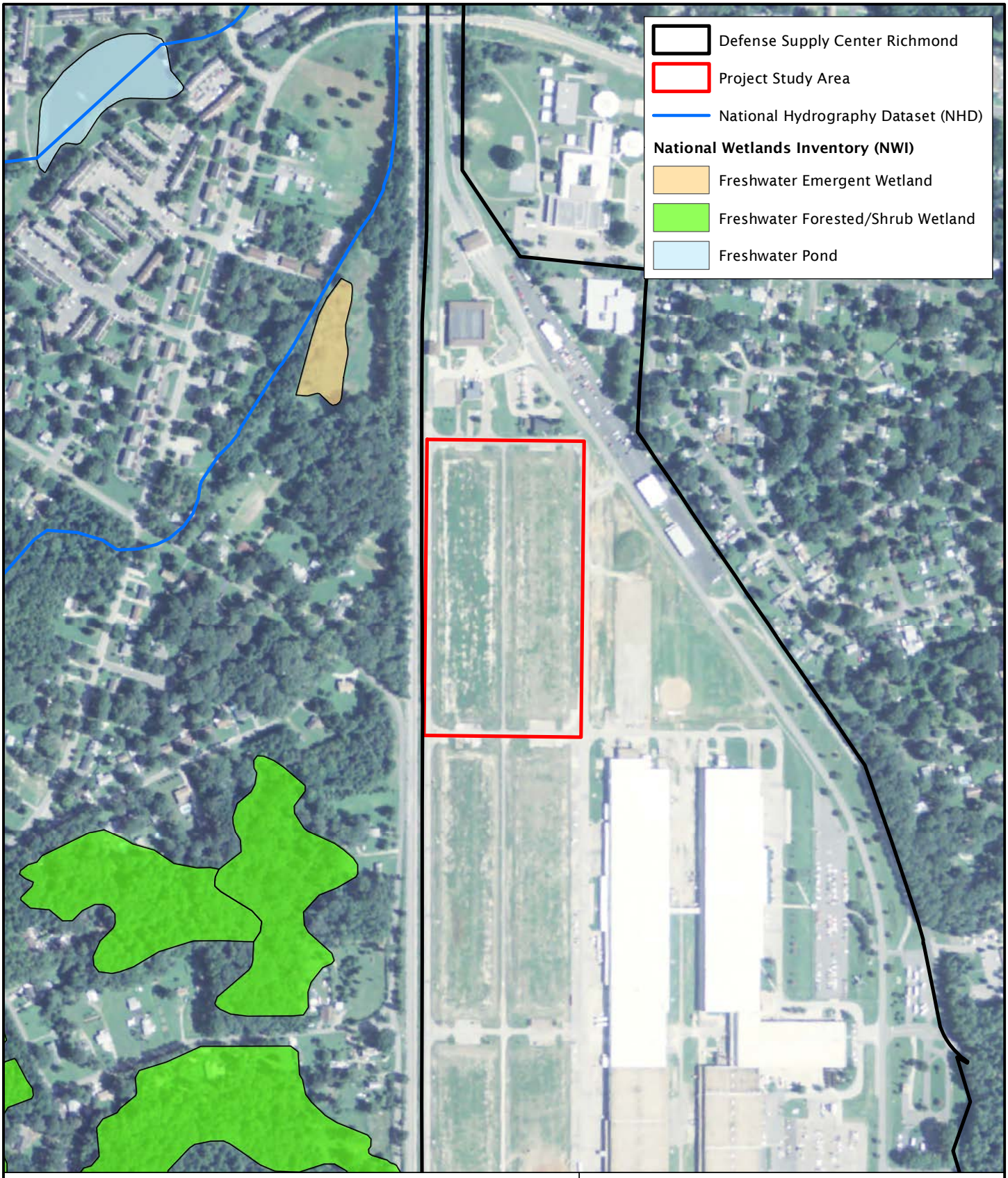
According to the Federal Emergency Management Agency (FEMA), the site for the proposed VANG State HQ is outside of both the 100-year floodplain and the 500-year floodplain. The FEMA Flood Hazards Map (2012) is provided on **Figure 9**.

3.3.4 Federal Consistency Determination

Pursuant to Section 307 of the CZMA of 1972, as amended, a Federal Consistency Determination for the proposed VANG State HQ is provided in **Appendix D**. VANG is required to determine the consistency of its activities affecting Virginia's coastal resources or coastal uses in relationship to the VCZMP.

The consistency determination is an analysis of project activities in light of established VCZMP Enforceable Programs. Submission of this consistency determination reflects the commitment of

the Army to comply with those Enforceable Programs. The proposed project would be conducted in a manner which is consistent with the VCZMP.



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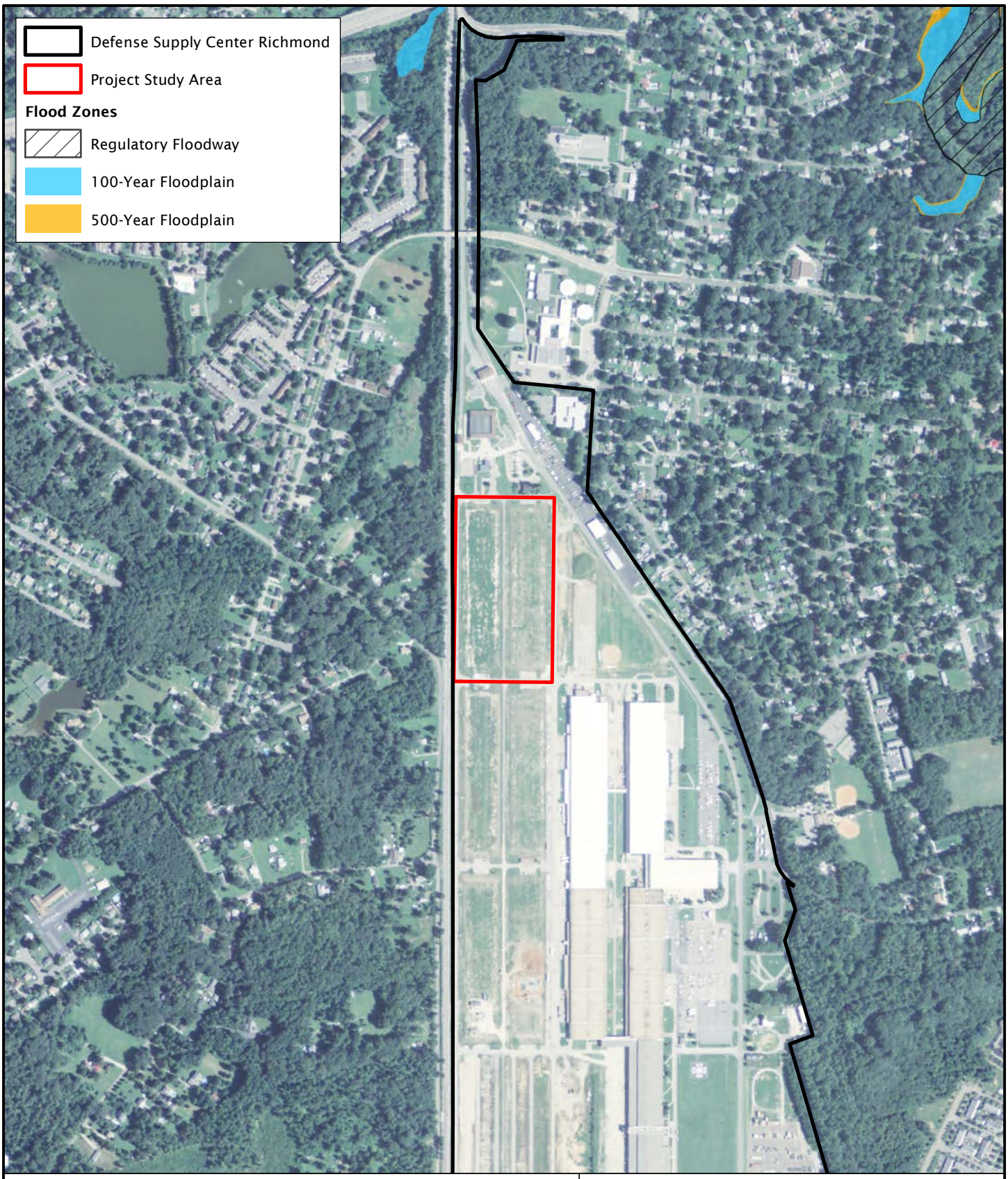
Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

FIGURE 8
MAPPED WETLANDS AND SURFACE WATERS
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 500 1,000
Feet

Chesterfield, VA
Sources: 2014 NAIP Aerial Imagery; FWS NWI Database
Prepared by Brian Brown. June 22, 2015



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Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

FIGURE 9
FEMA FLOODPLAINS
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 800 1,600
Feet

Chesterfield, VA
Sources: 2014 NAIP Imagery; FEMA panel 51041C0162D (eff. 12/18/2012)
Prepared by Brian Brown. June 22, 2015

3.4 Biological Resources

A search of the DGIF's online Virginia Fish and Wildlife Information Service (VaFWIS) database was conducted in July 2015. The search results reveal that there are 531 wildlife species likely to inhabit the area within a 2-mile radius of the proposed VANG State HQ. **Table 5** includes the 10 federal- or state-listed threatened or endangered species that appeared in the VaFWIS results. Of these 10 species, only the state-threatened Peregrine Falcon (Falco peregrinus) has been confirmed within the 2-mile search radius. DSCR environmental staff confirmed that species surveys had not identified any falcons on the property, and none were seen during the 16 July 2015 site visit. The VaFWIS also lists 12 Tier I or Tier II species, which are species with critical conservation needs. Results of the database search were sent to DGIF on 22 July 2015 for a project impact review. The DGIF response, dated 24 July 2015, indicated they were unable to review the project due to staffing limitations. Further efforts of DEQ to have DGIF review the draft EA were declined in August, 2015 during the state Environmental Impact Report process. The VA DCR provided review of the Draft EA during the same period and provided no concerns to DEQ with the proposed action alternative. Protected species information is provided in **Appendix E**.

Table 5: Federal- or State-listed Species Likely to Occur within 2 Miles of Proposed VANG State HQ

Common Name	Scientific Name	Federal Status	State Status
James Spinymussel	*Pleurobema collina*	Endangered	Endangered
Atlantic Sturgeon	*Acipenser oxyrinchus*	Endangered	Endangered
Dwarf Wedgemussel	*Alasmidonta heterodon*	Endangered	Endangered
Northern Long-eared Bat	*Myotis septentrionalis*	Threatened	N/A
Peregrine Falcon	*Falco peregrinus*	N/A	Threatened
Upland Sandpiper	*Bartramia longicauda*	N/A	Threatened
Loggerhead Shrike	*Lanius ludovicianus*	N/A	Threatened
Barking Tree Frog	*Hyla gratiosa*	N/A	Threatened
Atlantic Pigtoe Mussel	*Fusconaia masoni*	Species of Concern	Threatened
Migrant Loggerhead Shrike	*Lanius ludovicianus migrans*	N/A	Threatened

A July 2015 search of the DCR *Natural Heritage Resources* database indicated that there are no species with federal or state legal status within a 2-mile radius of the proposed VANG State HQ site. A project review request was sent to DCR on 22 July 2015. The DCR response, dated 7 August 2015, indicates this project is not anticipated to impact natural heritage resources in the project area and that no State Natural Preserves are located in the project vicinity. Correspondence with DGIF and DCR is provided in **Appendix A (**pages 75-78, 107-108, and 111-112**)**.

A 27 July 2015 search of the USFWS' *Information for Planning and Conservation* database indicates that the only federally protected species in the mapped project area is the northern long-eared bat (NLEB) (*Myotis septentrionalis*). (This species did not appear in the *Natural Heritage Resources* database, but did appear in the DGIF database.) The NLEB was proposed for listing under the ESA in 2013 (USFWS, 2013). There is no critical habitat for any species within the area that was evaluated, and no trees would be removed under the Proposed Action.

The MBTA protects birds that spend time in different geographic areas on a seasonal basis. Over 800 species are currently protected by the Act, which applies to both live and dead birds, and to their feathers, nests, and eggs. Numerous migratory birds likely pass through the region around DSCR. However, no habitat exists at the building site to harbor migratory birds, and the USFWS species list did not indicate the presence of any migratory birds in the project area.

The DSCR elk herd has thrived since the Army purchased the property in 1941. In 2012, there were 17 elk in the DSCR herd: five bulls, eight cows, and four calves (Chambers, 2013). By July 2015, the herd had grown to 26 elk (Springston, 2015). The ideal carrying capacity of the herd is reportedly 8 to 12 individuals (Chambers, 2013). There were 20 elk in the herd in 1941.

The DoD continues to honor the original elk care agreement made with the Bellwood family. In recent years, however, the DCSR Elk Council (made up of facility stakeholders) has sought to make arrangements for the transfer of some of the elk to other facilities, and a national inquiry was made to determine the best course of action for continued elk management (Chambers, 2013).

3.5 **Land Use**

The land on which DSCR sits was initially settled by the English in 1619 (DSCR 2010). Over the centuries, the land was owned by a variety of individuals. The last private owner was James Bellwood, from whom the Army purchased the land in 1941. VANG entered into a long-term lease agreement with DSCR on 1 January 2014. The lease provides VANG with use of a 13.6-acre parcel at DSCR for 50 years. VANG proposes construction of the new State HQ on this parcel.

Current land use at DSCR is industrial. The site for the proposed VANG State HQ is currently a vacant field with herbaceous weeds. Dominant weed species include sericea lespedeza (*Lespedeza cuneata*), common lespedeza (*L. striata*), white clover (*Trifolium repens*), purple clover (*T. pratense*), ragweed (*Ambrosia artemsiifolia*), crabgrass (*Digitaria* sp.), daisy fleabane (*Erigeron annuus*), hawkweed (*Hieracium* sp.), and thistle (*Cirsium vulgare*). Scattered saplings consist primarily of red maple (*Acer rubrum*) and sweetgum (*Liquidambar styraciflua*), but are cut seasonally during mowing. There is an asphalt roadway bisecting the site. The roadway is beginning to crumble. Warehouses occupied the site until 2011.

Land uses surrounding the site for the proposed VANG State HQ include DSCR structures to the north (Visitor Center, former Visitor Center), east (former water tower), southeast (DLA Distribution Mapping Warehouses), and south (former warehouses). Land use to the west consists of residential properties. However, the nearest home is over 325 feet from the project site, and there is a fence, a railroad track, and a hedgerow between the house and the building site. There are vacant lots to the east and south, both within the DSCR boundary

3.6 Hazardous and Toxic Materials/Wastes

Information related to the past use and storage of hazardous substances at the proposed VANG State HQ was compiled through a review of available site records, a search of Federal and State environmental databases, and interviews with DLA personnel.

Table 6 summarizes the search results of DEQ's *What's in my Backyard* and EPA's *Envirofacts* databases. It also summarizes the results of a 2016 report from Environmental Data Resources (EDR), a firm that specializes in searching available public records for information necessary to comply with EPA's 2006 *All Appropriate Inquiries Rule*. Details about **Table 6** are provided in the text following the table.

Table 6: Summary of Environmental Database Search Results

Environmental Record Source	EPA Sites	DEQ Sites	EDR Sites
Federal NPL site list	1	None	1
Federal RCRA generators list	2	None	3
State and tribal leaking storage tank lists	None	1	34
State and tribal registered storage tank lists	None	None	2

NPL = National Priorities List
RCRA = Resource Conservation and Recovery Act

3.6.1 Federal NPL Sites within One-Mile

The National Priorities List (NPL) is an EPA registry of the nation's worst uncontrolled or abandoned hazardous waste sites. NPL sites are targeted for long-term remedial action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). According to the 2013 EDR report, EPA's Superfund Report on DSCR (2013a), and the EPA NPL website (2015), DSCR is a NPL site. Contaminants detected include chloroform, polychlorinated biphenyls (PCBs), methylene chloride, dichlorobenzene, di-, tri-, and tetrachloroethylene, and chromium.

DoD established the Installation Restoration Program (IRP) in 1975 to provide guidance and funding for the investigation and remediation of hazardous waste sites caused by historical activities at military installations. DSCR was placed in the IRP in 1980. The fundamental goal of the DSCR IRP is to protect human health, human safety, and the environment. The IRP is carried out in accordance with all federal, state, and local laws.

DSCR implemented the IRP by publishing its own installation Environmental Restoration Program (ERP). The ERP at DSCR is conducted under CERCLA and is divided into 13 operable units (OUs). Eight OUs are located within one mile of the site for the proposed VANG State HQ (DSCR, 2012; EPA, 2013a). As shown on **Figure 10,** OUs 10, 5, and 8 are within 1,600 feet of the project site. These OUs are discussed in this EA.

OU 10 is the former site of Building 68, a small brick building surrounded by an asphalt and gravel lot. The lot is currently used for vehicle parking. From 1954 to 1972, the area served as a pesticide

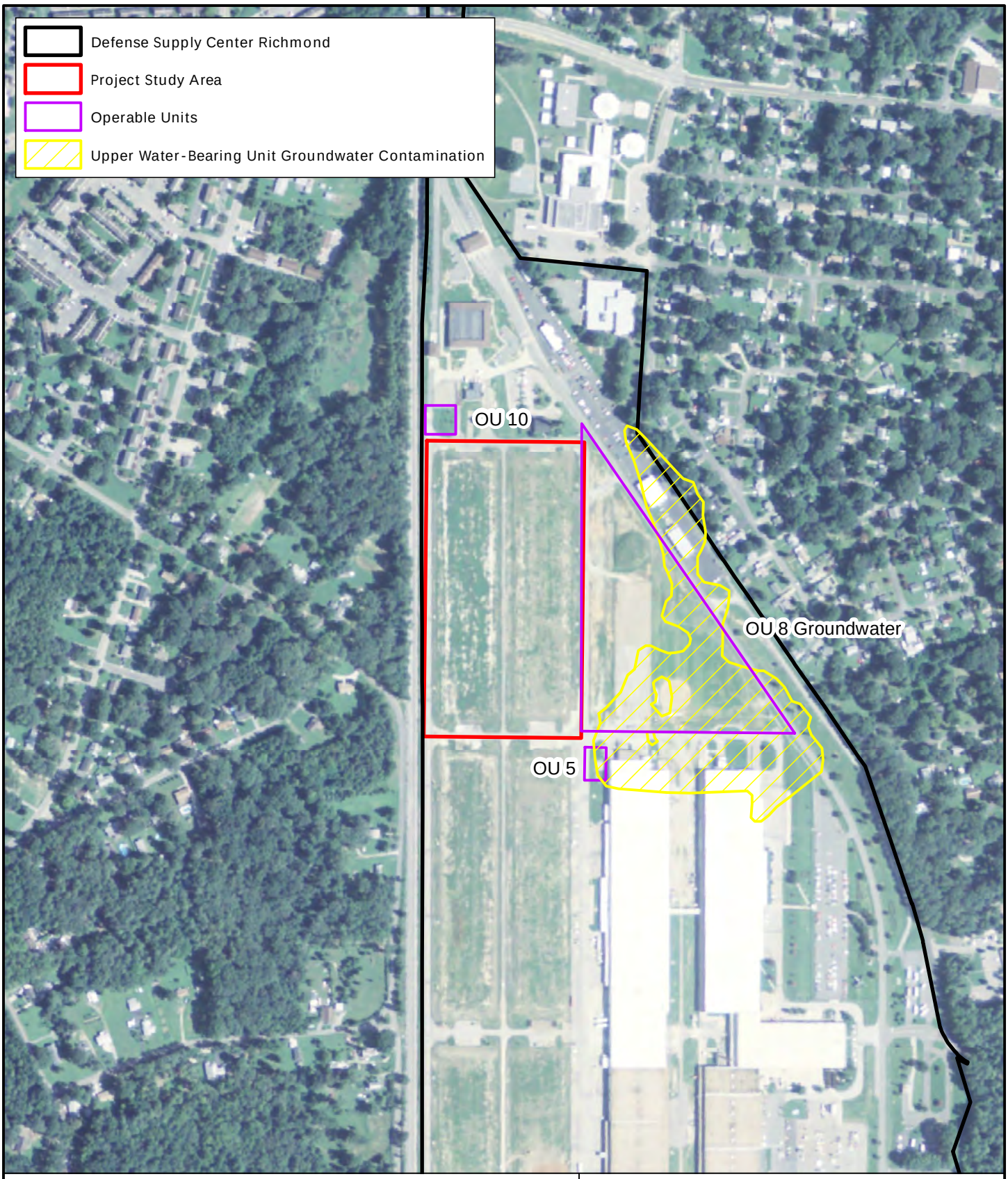

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FIGURE 10
NATIONAL PRIORITIES LIST SITES
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 500 1,000
Feet

Chesterfield, VA
Sources: 2014 NAIP Imagery
Prepared by Brian Brown. July 29, 2015

Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

storage and operations facility. Beginning in 1972 the surrounding gravel lot was used to store electrical transformers. A spill of transformer oil containing PCBs occurred in 1980. Affected soil was subsequently excavated and removed from the site. Additional hazardous materials found in OU 10 include six pesticides, toluene, 16 semi-volatile organic compounds, polyaromatic hydrocarbons, and 20 metals.

OU 5 and OU 8 served as acid neutralization pits (ANPs) from 1958 to 1985. The ANPs were concrete settling tanks located near the northern end of Warehouse 65. The pits were used as settling basins and for neutralization of acidic wastewater from metal cleaning and painting operations. The larger primary pit was built in 1958. Treated water flowed directly to the storm sewer until the secondary tank was constructed in the 1970s. The smaller secondary tank received treated water from the primary tank and discharged to the sanitary sewer. Sludge collected from the tanks was periodically disposed of offsite. The tanks were decommissioned in 1985. Sides and bottoms of the tanks were cracked and broken, indicating a possible migration pathway for constituents to affect soils. The soil near the ANPs was designated as OU 5, and the groundwater was considered separately as OU 8. Both OU 5 and OU 8 are being remediated under the ERP. OU 8 is defined as impacted groundwater in the Upper Water Bearing Unit (WBU) underlying and downgradient of OU 5, which is the primary source area of the OU 8 chlorinated VOC plume. OU 5 is located approximately 25 feet northwest of Building 65 and included ANPs and surrounding impacted soil. Neither OU 5 nor OU 8 contamination extends onto the Proposed Action property.

3.6.2 Federal RCRA Generators within One-Quarter Mile

There are three Federal Resource Conservation and Recovery Act (RCRA) generators within 0.25 miles of the Property. DSCR is a large quantity generator (EPA ID number VA397152075). There is a 90-day hazardous waste storage area located at Building 80, approximately 0.25 miles southeast of the site for the proposed VANG State HQ. No stained surfaces or other evidence of a release of hazardous materials or petroleum products was observed during site reconnaissance.

Per EPA's Facility Registration System (2013b), the Dervishian U.S. Army Reserve Center (USARC) is a conditionally exempt small quantity generator (EPA ID number VAR000005595) located approximately 0.125 miles east of the Property. No violations were reported for the USARC (EPA, 2013b).

Bensley Elementary, approximately 0.24 miles north north-east of the Property, is also a conditionally exempt small quantity generator (EPA ID number VAR988211595). No violations were reported for the elementary school.

DLA personnel indicated that no industrial activity is taking place at the project site; however, there is industrial activity at the adjacent warehouses. Neither RCRA generator site is expected to pose a threat to human health or the environment at the project site.

3.6.3 State-Registered Leaking Underground Storage Tank (LUST) Sites within 0.5 Miles

Although there are thirty-four reported leaking underground storage tanks within 0.5 miles of the site for the proposed VANG State HQ, the DEQ database indicates that all of the identified LUST sites have been closed. Case closure by DEQ indicates that no further remedial action is required and that residual petroleum contamination does not pose a concern for human health or the environment. Based on this information, any residual contamination from the LUST sites is not anticipated to impact the project site.

3.6.4 State and Tribal-Registered Underground Storage Tank (UST) Sites within 0.25 Mile

The EDR report indicated there are two registered storage tank owners within 0.25 mile of the Property. Dervishian USARC houses one UST and one aboveground storage tank. Both tanks are listed as permanently out of service and no violations or releases were reported for the tanks. Therefore, the tanks are not expected to pose a threat to human health or the environment at the site for the proposed VANG State HQ. One 8,000-gallon fiberglass UST was removed from the southwest corner of Warehouse 61 prior to demolition. Laboratory analysis conducted in July 2011 indicated no petroleum release occurred from the UST and that subsurface conditions warranted no further evaluation.

The second UST, approximately 0.21 miles north of the Property, is registered to John Cametas. The property houses one cathode-protected steel UST which is listed as permanently out of service. No violations or releases were reported for the tank. Therefore, the tank is not expected to pose a threat to human health or the environment at the site proposed for the VANG State HQ.

3.6.5 Site Visits

EEE conducted a site reconnaissance on 6 October 2011 to assess current conditions of the proposed VANG State HQ site during the initial EBS. No evidence of the use or storage of chemicals or hazardous substances was observed in or immediately adjacent to the site. The site was undergoing demolition, debris removal, and grading of previous warehouses during the site reconnaissance. According to DLA personnel, no potentially hazardous substances were stored or used on the site. Following the site visit, an Environmental Condition of Property Report was prepared.

EEE visited the site again in 16 July 2015 and March 2016. During these site visits, there was no evidence of the use or storage of chemicals or hazardous substances in or immediately adjacent to the site. The site had been graded and the demolition debris had been removed since the October 2011 site reconnaissance.

3.7 **Socioeconomics**

Currently, 3,145 employees work at DSCR. Because no housing is provided at DSCR, all employees commute from regional communities. Under the proposed action, 190 personnel currently working at the SRC, approximately 9 miles away, would work at DSCR instead.

Personnel assigned to Company B, 429th BSB would be relocated from their current facility on DSCR to the new State HQ, less than one mile away. Due to the close proximity of the current facility at RC and the proposed facility at DSCR, the Region of Influence (ROI) encompasses the contiguous counties of Henrico and Chesterfield in Virginia. Both facility locations are positioned within the interior of the counties, allowing generalities in county demographics to be representative of the ROI of each respective facility. Both counties have communities with sufficient infrastructure, shopping, housing choices, medical facilities, recreation opportunities, and public schools to be socioeconomically self-reliant from other adjacent communities. The local culture in the Central Virginia – Richmond Metropolitan Region for acceptable "journey-to-work" time is 25 miles, or 30 minutes. This distance buffer around both the current and proposed facilities is best represented by the two counties of the ROI.

The current population and economic growth for the ROI is summarized in **Table 7**. Henrico and Chesterfield Counties are very similar in their populations, with Chesterfield County having a three percent greater population and a 0.2 percent lead on population growth. Minorities represent 10 percent more of the population in Henrico County. Sales for accommodation, food services, and retail are 19 percent higher in Henrico County, yet the median household income ($61,438) is 15 percent lower than Chesterfield County ($72,514). Both counties have similar adult populations in the labor force, though employment is growing faster in Chesterfield County. The number of employer establishments is 28 percent greater in Henrico County. Overall, the primary socioeconomic differences between the two counties, though minor, are in the minority populations, sales revenue, income, and employers. Henrico County has both higher sales revenues and minority populations, while Chesterfield has higher median income and employer establishments.

Table 7: Regional Socioeconomics and Demographics

People	United States	Virginia	Henrico County	Chesterfield County
Population estimates, July 1, 2014	318,857,056	8,286,329	321,924	332,499
Population, % change - 2010 to 2014	3.3	4.8	4.9	5.1
Minority %, 2014	22.6	29.5	40.7	30.2
Accommodation and food services sales, 2012 ($1,000)	708,138,598	17,795,901	832,839	514,490
Total retail sales, 2012 ($1,000,000)	4,219,822	110,002	5,520	4,657
Median household income, 2014	53,482	64,792	61,438	72,514
Total employer establishments, 2013	7,488,353	193,907	8,868	6,919
In civilian labor force, % 16+ years of age, 2014	63.5	64.8	69.8	68.6
Total employment, % change, 2012-2013	2.0	1.4	3.5	4.9

U.S. Census Bureau. 2016. Quick Facts. http://www.census.gov/quickfacts.

The average salary of the 70 full-time employees at the State HQ is $72,050. This represents an estimated $5 Million in direct salary economic impacts to the ROI. The average salary of the employees is over $7,000 higher than the state median family income and closely matches that of Chesterfield County. However, it is 17 percent higher than Henrico County's median family income. Only nine percent of current full-time employees at the State HQ at SRC live within the local communities in Henrico County. A further 32 percent of the full-time employees have homes of record in Chesterfield County, where the proposed action alternative would be constructed. The remaining 59 percent of the current employees reside outside of the ROI in communities across the state, where the change in commute time between their current workplace and the Proposed Action Alternative would constitute a change in their commute distance to work each day of less than 10 percent. All other employees at the State HQ are part-time traditional drilling Guardsmen and Airmen of the VANG and live across the state while rotating into staff positions every one to two years from other locations. In addition to the State HQ staff currently working at SRC, a further 134 full-time employees work at Sandston ARNG facilities at Field Maintenance Shops #1 and #2, the Army Aviation Support Facility, Recruiting and Retention, and A Battery, 1-111th Field Artillery Battalion. An additional 210 part-time traditional drilling Guardsmen and Airmen of the VANG work at Sandston facilities at least one weekend per month. All of these units operate within SRC or in adjacent facilities on ARNG property. With the current uniformed service members or DoD Civilians who work at DSCR, the additional 190 employees from the proposed action alternative will constitute a 6 percent increase in personnel on the installation. Since no housing is provided at DSCR, all current and future employees will commute from regional communities.

3.8 **Cultural Resources**

In order to catalogue the archeological resources at DSCR, a Phase I inventory was completed in 2004. The accompanying report concludes that the property has undergone significant changes during the last 50 years, but that some sites retain their integrity despite the heavy usage the property has seen since the mid-twentieth century. DSCR protects archeological sites by evaluating all excavation activities in areas designated as high probability locations. Key geographical information system data gathered by investigators has been passed to the DSCR Facilities Engineers to integrate into their comprehensive project review process.

At the request of the VDHR, a revised architectural evaluation was completed in 2004. Based on the long and continuous use of the DSCR property, as well as the depot's association with significant historical events that occurred between 1941 and 1963, individual properties or landscape features from the pre-World War II and Korean War-era are recommended as eligible for inclusion in the NRHP as contributing elements to a proposed NRHP historic district. The proposed district encompassed the entire facility. However, the 2010 implementation of the DSCR Master Plan resulted in the demolition of several historic buildings at DSCR, including six warehouses near the location of the proposed VANG State HQ. The demolitions have left the NRHP status of the DSCR Historic District in question. A stipulation in the Programmatic

Agreement (PA) for the DSCR Master Plan requires DLA to re-assess the NRHP eligibility of the DSCR Historic District. To date, a reassessment of the installations' Historic District has not been completed. In July 2015, EEE conducted an archival search of VDHR records. The search identified the DSCR installation as a historic architectural resource. VDHR staff has determined that the historic district is eligible for the NRHP.

In accordance with Section 106 of the NHPA, VANG coordinated with the Virginia State Historic Preservation Officer (SHPO) in the development of the proposed VANG State HQ. DES Richmond has a Programmatic Agreement (PA) with the Advisory Council on Historic Preservation and VDHR/VA SHPO regarding the modernization of DSCR. The PA identifies the project location as an area for which no further archaeological testing is recommended. A copy of the PA is included in **Appendix F** (pages 217-232).

VANG evaluated the proposed project with regards to architectural resources. Following coordination with VDHR, they received concurrence with their No Adverse Effect determination. Refer to **Appendix F** (pages 213-216). Consultation with VDHR concerning project design development would be ongoing through the design phase, in keeping with the No Adverse Effect finding, as a condition of the finding.

DoDI 4710.02, *DoD Interaction with Federally Recognized Tribes*, provides direction for Tribal Historic Preservation Officer consultation. In accordance with DoDI 4710.02, on 1 July 2015, VANG sent consultation letters to 13 federally or state-recognized tribes with a recorded cultural affiliation and interest in lands comprising present-day DSCR. Copies of the letters are included in **Appendix A** (pages 119-162).

3.9 Noise and Air Quality

Noise

The heavy equipment used during construction of the proposed VANG State HQ would generate noise. According to the Federal Highway Administration's (FHWA) *Construction Noise Handbook* (2015), noise levels for typical construction equipment range from 74 to 90 decibels. Additional noise would be generated during operation of the new VANG State HQ, due to the movement of vehicles and personnel. Existing ambient noise sources at the proposed project site include a road and an active railroad track. Both are located within 120 feet of the project site. As of 1 January 1988, EPA regulations allow a maximum noise level for medium and heavy trucks of 80 decibels, measured 50 feet from the centerline of travel (FHWA, 2006). Under the *Train Horn Rule*, train horns must produce a sound between 96 and 110 decibels. Additional ambient noise at DSCR is generated by current military operations.

Air Quality

Air quality is defined by ambient air concentrations of pollutants determined to be of concern to health and welfare of the general public. The ambient air quality in an area can be characterized

in terms of whether or not it complies with the primary and secondary National Ambient Air Quality Standards (NAAQS). The Clean Air Act (CAA), as amended, requires the USEPA to set NAAQS for pollutants considered harmful to public health and the environment. NAAQS are provided for six principal pollutants, called "criteria pollutants" (as listed under Section 108 of the CAA): carbon monoxide; lead; nitrogen oxides; ozone; particulate matter, divided into two size classes of 1) aerodynamic size less than or equal to 10 micrometers, and 2) aerodynamic size less than or equal to 2.5 micrometers; and sulfur dioxide. Specific geographic areas are classified as either "attainment" or "nonattainment" areas for each criteria pollutant based on the comparison of measured data with the NAAQS and State standards. According to the EPA's *Green Book* (2015), Chesterfield County is designated as a maintenance area for 1-hour (1979) and 8-hour (1997) Ozone and in attainment for all other criteria pollutants. A Record of Non-Applicability (RONA) was prepared since the project is located in a maintenance area for ozone. The RONA is included in **Appendix H**.

Currently, DSCR has a State Operating Air Permit (Permit #05127) which includes facility wide emission limits. A 500 MBH gas fired boiler and a 750 KW diesel backup generator are included in the project design. The proposed additions would require an amendment to the installation's existing permit. The boiler and generator additions will not commence prior to issuance of the air permit amendment. The DSCR Air Permit Manager will secure a permit amendment from DEQ to include the proposed additions. With the addition of the diesel generator, the facility will also be required to comply with the New Source Performance Standard Part 60 – Subpart IIIII – Stationary Compression Ignition Internal Combustion Engines.

3.10 **Infrastructure**

Infrastructure resources include potable water supply, wastewater treatment, energy sources, solid waste disposal, and transportation systems. Utility infrastructure is currently in place at DSCR and the current systems would have the adequate capacity to support the increase in demand by the proposed action alternative. Utility improvements will be necessary to connect the new building to the existing utilities.

Utilities

Water and wastewater services are provided to DSCR by Chesterfield County. DSCR is covered under an Industrial Waterwater Discharge Permit (CPT0038) which allows a total maximum daily discharge of 300,000 gallons per day (gpd). Water to DSCR is provided by the Appomattox River Water Authority which provides treated water to Chesterfield County. The project site is currently serviced by a 10-inch waterline and a 6-inch sanitary sewerline. Electricity is supplied by Virginia Dominion Power and natural gas is supplied by Columbia through existing powerlines and an 8-inch natural gas line. Telecommunications (cable, phones, and internet) are supplied by DLA J8 Communications on DSCR which ties into Verizon off of the installation.

Transportation

The project area is located in an urbanized area near Interstate 95, State Route 288, and State Route 150 (Chippenham Parkway). Access to the project site is gained from G Road. Existing roads at DSCR include multiple two lane tertiary roads. The most recent traffic counts by the Virginia Department of Transportation (2013) estimated average annual daily traffic (AADT) of 15,000 vehicles (both directions) at the State Route 1/288 intersection located about 1.5 miles from the project site.

Solid Waste

Solid waste disposal at DSCR is provided through Allied Waste.

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SECTION 4.0: ENVIRONMENTAL CONSEQUENCES

This section forms the scientific and analytic basis for the comparison of alternatives, providing the decision-maker with a clear basis for a choice between reasonable alternatives. This section identifies the direct, indirect, and cumulative impacts of the Preferred Action Alternative and No Action Alternative on each of the resource areas described in the Affected Environment section. In addition, this section provides information on BMPs and proposed mitigation measures for each resource area.

Per the *Army National Guard NEPA Handbook* (2011), BMPs are "practical, economical, and effective management or control practices that reduce or prevent pollution or other adverse effects to environmental resources." They are not project specific. The NEPA Handbook defines mitigation measures as "project-specific, unique requirements designed and implemented to lower potentially significant adverse impacts."

4.1 **Geology, Topography, and Soils**

4.1.1 Impacts of the Preferred Action Alternative

The Preferred Action Alternative would result in excavation of soils and geologic material. However, the excavated material has previously been disturbed, and no native soil or geologic material would be impacted. To the greatest extent practicable, excavated materials would be stockpiled on site and protected from wind and rain erosion until construction of the proposed VANG State HQ was completed. At that time, as much material as possible would be returned to the excavated areas. There would be no changes to the topography at the project site and the short-term and long-term adverse impacts are less-than-significant for geology, topography, or soils.

The amount of impervious acreage would increase as a result of the Preferred Action Alternative. The amount of impervious acreage can have a water quality and quantity effect on the surface water receiving runoff from this area. The stormwater runoff from the Preferred Action Alternative would discharge to a tributary of Falling Creek, as shown on **Figure 8**. Falling Creek is listed as a benthically impaired surface water in DEQ's 2012 biennial assessment. As such, the Preferred Action Alternative would implement post-construction stormwater management facilities to demonstrate compliance with the Energy Independence and Security Act and the technical criteria of the Virginia Stormwater Management Program regulations. Demonstrated compliance with the water quantity requirements would ensure there are no flooding or erosion impacts to existing systems and downstream properties.

4.1.2 Impacts of the No Action Alternative

The No Action Alternative would not lead to any ground disturbance. VANG would continue to operate from its current facilities at the SRC and DSCR. No construction would occur. Therefore, there would be no impacts to geology, topography, and soils.

4.1.3 Best Management Practices

Under the Preferred Action Alternative, BMPs would be utilized to ensure there are no significant impacts to soils and geologic material. Currently, there are no BMPs in place to prevent sediment from reaching storm drains and ditches. Once the BMPs are installed under the Preferred Action Alternative, there would be a decrease in the potential for stormwater runoff, both during and after construction, thus creating a positive overall effect on sediment transport on the site. The BMPs would include development of and strict adherence to an ESC plan for land-disturbing activities during construction and a stormwater management (SWM) plan for increased impervious surface after construction is complete. The SWM would include the installation of permanent BMPs. The Preferred Action Alternative includes approximately 34 square feet dedicated for the footprint of permanent stormwater management facilities. The plans would adhere to DEQ regulations and guidelines, including the design specifications in DEQ's Stormwater BMP Clearinghouse (2014). The Clearinghouse dictates treatment volume, allowable vegetation, and filter media. No BMPs would be required under the No Action Alternative.

4.1.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impact to below significant levels.

4.2 **Water Resources**

4.2.1 Impacts of the Preferred Action Alternative

Under the Preferred Action Alternative, VANG would construct a new VANG State HQ, resulting in excavation of soils and geologic material. The use of appropriate ESCs would prevent stockpiled or exposed soils being carried by wind or water to nearby streams or wetlands. Despite these efforts, some small increases of sediment loads in stormwater runoff could occur. These increases would be of little consequence to water quality and would only be expected to last during construction. Since the proposed project would be conducted in a manner which is consistent with the VCZMP, VANG has determined that construction of the new VANG State HQ would not affect land and water uses or natural resources of Virginia's coastal zone. There would be short-term less-than-significant adverse impacts to water resources and long-term positive impact due to the implementation of stormwater BMPs at the site.

4.2.2 Impacts of the No Action Alternative

The No Action Alternative would not lead to any ground disturbance. VANG would continue to operate from its current facilities at the SRC and DSCR. No construction would occur. Therefore, there would be no impacts to water resources attributable to the VANG action. However, due to the current lack of BMPs, sediment would continue to reach storm drains and ditches.

4.2.3 Best Management Practices

Under the Preferred Action Alternative, stormwater bioretention BMPs would be utilized to ensure there are no significant impacts to water resources. Currently, there are no stormwater BMPs in

place to prevent sediment from reaching storm drains and ditches. Once the bioretention BMPS are installed, there would be a decrease in the potential for stormwater runoff, both during and after construction, thus creating an overall reduction in sediment transport to nearby waters. The stormwater BMPs would include development of and strict adherence to an ESC plan for land-disturbing activities during construction and a SWM plan for increased impervious surface after construction is complete. The SWM plan would include the installation of permanent BMPs. The Preferred Action Alternative includes approximately 34 square feet dedicated to permanent stormwater management facilities. The plans would adhere to DEQ regulations and guidelines, including the design specifications in DEQ's BMP Clearinghouse (2014). No BMPs would be required under the No Action Alternative.

4.2.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impact to below significant levels.

4.3 **Biological Resources**

4.3.1 Impacts of the Preferred Action Alternative

Under the Preferred Action Alternative, VANG would construct a new State HQ, resulting in land disturbance. Impacts could range from increased human activity at the proposed construction site to the loss of grass and small shrubs during construction. However, disturbance of any species with federal or state protection is unlikely. Of the 10 protected species listed in **Table 5**, four (James spinymussel, Atlantic sturgeon, dwarf wedgemussel, and Atlantic pigtoe mussel) are aquatic and would not be present within or adjacent to the action area. In addition, the barking tree frog requires wetlands for breeding. Since there are no surface waters at the project site, these species would not be disturbed. No trees would be cut, preventing impacts to the northern long-eared bat. Peregrine Falcons roost and nest in tall structures. While a smokestack near the project area could provide roosting habitat for falcons or bats, no work would be done in immediate proximity to the stack. The project area lacks roosting habitat for Loggerhead Shrikes, so they would not be impacted by the Preferred Action Alternative. The project site does contain habitat for the Upland Sandpiper, but according the VaFWIS, there have been no confirmed observations of this species within a 2-mile radius of the site. None were seen during the 16 July 2015 site visit. Due to the lack of habitat for protected species at the site, impacts to protected biological resources are expected to be less-than-significant. See the "Memorandum for Record," dated 19 August 2015, regarding endangered species for more information **(Appendix E)**.

The elk herd preserve at Bellwood is situated on 28 acres of partially wooded land in the southeastern corner of DCSR, approximately 7,680 feet (1.45 mi.) southeast of the proposed VANG State HQ construction site. The proposed construction site is separated from the herd by many buildings and other developed areas with military activity. The elk have maintained a stable population since its inception. Conditions at DCSR have changed over the years as activity and

mission focus have changed. No impacts from construction are anticipated to this historic elk herd.

It is possible that migratory birds pass through DSCR, and could be affected by the glass windows proposed in the building design. According to DSCR personnel no dead birds have been observed around similar designed buildings. Therefore, bird strikes are likely to be less-than-significant short-term and long-term adverse impacts.

4.3.2 Impacts of the No Action Alternative

The No Action Alternative would not lead to any ground disturbance. VANG would continue to operate from its current facilities at the SRC and DSCR. No construction would occur. Therefore, there would be no impacts to biological resources.

4.3.3 Best Management Practices

Avoiding nests during construction would allow implementation of the project without impacts to migratory birds. Therefore, DMA would, to the greatest extent practicable, avoid ground-disturbing activities between 1 May and 15 July. Since other protected species are unlikely to occur in the project area, no other BMPs would be required.

Although impacts to NLEB are not anticipated, VANG will follow the guidelines in the USFWS' 27 April 2015 *Informal Consultation and Management Guidelines for the Northern Long-eared Bat Involving Ongoing Operations on Army National Guard Property.* This includes establishing and maintaining a 120-foot open space buffer between the project site and the nearest potential habitat for NLEB, the wooded area west of the site. The purpose of the buffer is to ensure noise and vibrations generated by heavy equipment during construction do not disturb roosting bats during the active season. A fence along the edge of the railroad track would ensure that construction equipment would not encroach into the wooded habitat. VANG is committed to following all conservation measures recommended in Section V, Paragraph (D) of the USFWS document.

The only potential less-than-significant impacts that merit BMPs under the Preferred Action Alternative are potential bird collisions with the building's windows. To reduce these potentially less-than-significant impacts, VANG considered the use of window materials included in the American Bird Conservancy's *Bird-Smart Glass Program* (2015). However, VANG determined that the use of such glass would be cost-prohibitive and would raise historical preservation concerns with potential adverse effects on the building's exterior façade design by introducing visual elements that diminish the integrity of the surrounding properties' historical features. No bird-smart glass films or nets are used at DSCR. In addition, no dead birds have been observed around similar designed buildings at DSCR and there are no documented occurrences of migratory species of concern on the installation.

4.3.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impact to below significant levels.

4.4 **Land Use**

4.4.1 Impacts of the Preferred Action Alternative

Under the Preferred Action Alternative, VANG would construct a new VANG State HQ, resulting in land disturbance. Although a new structure would be built on the site, overall land use would not change. The site would remain industrial and would be consistent with zoning requirements, surrounding land use, and historical land use. The new structure would be built in a style similar to nearby buildings. Therefore, there would be short-term less-than-significant impacts to land use and positive long-term impacts due to the adherence to zoning land use of the property.

4.4.2 Impacts of the No Action Alternative

The No Action Alternative would not lead to any ground disturbance. VANG would continue to operate from its current facilities at the SRC and DSCR. No construction would occur. Therefore, there would be no impacts to land use.

4.4.3 Best Management Practices

Neither the Preferred Action Alternative nor the No Action Alternative would result in significant impacts to land use. Consultation with VDHR has resulted in plans for a new VANG State HQ that would be built in a style that matches the façade and scheme of other historic structures on DSCR. No additional BMPs would be required.

4.4.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impact to below significant levels.

4.5 **Hazardous and Toxic Materials/Wastes**

4.5.1 Impacts of the Preferred Action Alternative

Under the Preferred Action Alternative, VANG would construct a new VANG State HQ, resulting in land disturbance. There is a history of hazardous constituent groundwater contamination at OU 8 adjacent to the site of the proposed VANG State HQ. Chloroform, PCBs, methylene chloride, dichlorobenzene, di-, tri-, and tetrachloroethylene, and chromium have all been used at DSCR at some point. Additional hazardous materials found near the project site include six pesticides, toluene, 16 semi-volatile organic compounds, polyaromatic hydrocarbons, and 20 metals.

According to March 2016 EBS Update, the depth to groundwater in OU 8 in the Upper Water Bearing Unit (WBU) ranges between 10.83 and 20.04 feet below the ground surface. Historical water level measurements indicate that the groundwater flow direction in the Upper WBU at OU 8 is complex. Regional groundwater flow at OU 8 is generally towards the north-northeast, away

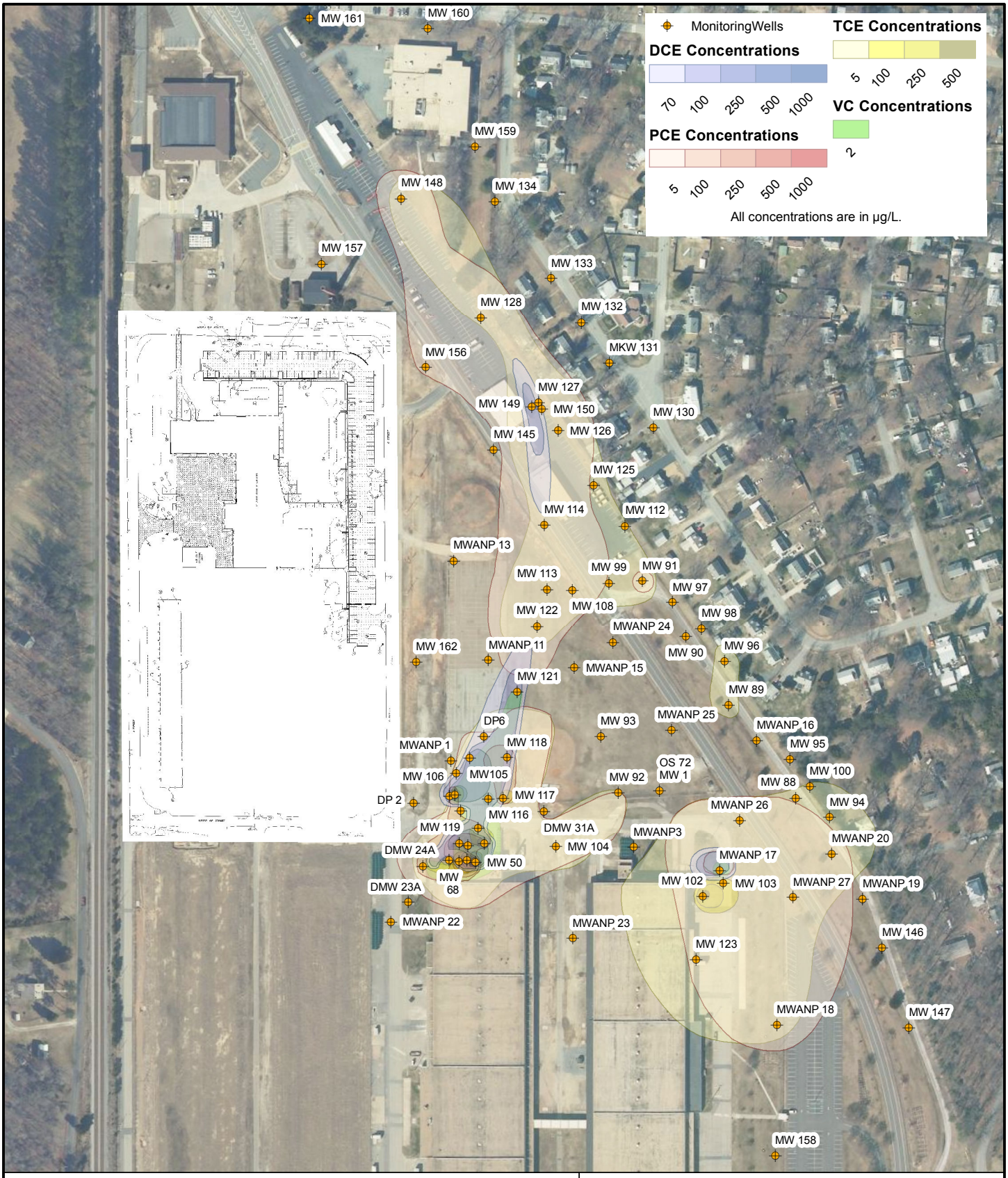
from the Proposed Action structures. Localized groundwater flow at OU 8 appears to be highly influenced by storm drains. Apparent groundwater highs in the southern portion of the site under the northern ends of Warehouses 65 and 66 are most likely caused by artificial groundwater lows caused by storm water drains that surround the warehouses. Along the eastern edge of the site, reversals in groundwater flow directions (towards the west, southwest and northwest) are related to topographic elevation changes (AECOM 2014b). The site history suggests that contaminants have impacted groundwater for over 20 years but have not migrated into the property of the VANG. Previous studies and monitoring reports detailing the contaminated groundwater plume indicate that the groundwater flow is to the northeast and therefore trends away from the project site.

Various remedial activities have taken place to reduce the mass of VOCs in the OU 8 groundwater plume, including a dual-phase extraction system that operated from 1997 to 2004 (DSCR, 2007). The OU 8 Record of Decision indicates Institutional Controls/Land Use Controls (LUCs) and monitored natural attenuation, with in-situ bioremediation as a possible contingency, as the remedy to address impacted groundwater in the Upper WBU at OU 8 (DSCR, 2007). In 2011, an Explanation of Significant Differences (ESD) to the ROD was signed to implement the in situ bioremediation contingency for OU 8 and enhanced in-situ bioremediation with monitoring, including monitoring for potential subsurface vapor intrusion, which was initiated in 2014. The enhanced in-situ bioremediation included the injection of emulsified vegetable oil (EVO). The low solubility of EVO provides for a long lasting carbon source due to its slow rate of dissolution into groundwater. In addition to providing a long lasting carbon source to drive reductive dechlorination reactions, EVO can also help sequester chlorinated ethene compounds, which will further reduce their mobility in the aquifer. The 2016 EBS Update is provided in **Appendix H.**

The March 2016 EBS Update also indicates there have been decreases in VOC concentrations within the plume since 2014. The primary Constituents of Concern (COCs) in OU 8 are trichloroethene (PCE), dichloroethene (TCE), and vinyl chloride (VC) and daughter byproducts of the natural degradation of the COCs. Monitoring wells MW162, MWANP13, MW156, and MW157 are located closest to the western boundary of the Proposed Action property. During the October 2015 groundwater sampling event, monitoring wells MW162, MWANP13, and MW157 were below detection limits (BDL) for all applicable VOC constituents within the WBU. In addition, monitoring well MW156 was BDL for cis-1,2-dichloroethene and vinyl chloride, and contained 1 µg/L TCE, which is below the MCL of 5 µg/L. Monitoring well MW156 also contained 7.7 µg/L PCE, which is 2.7 µg/L higher than the MCL of 5 µg/L. **Figure 11** illustrates the concept plan for the proposed project, and shows the groundwater isoconcentrations for the hazardous constituents identified above. Well locations between the existing plume limits and the proposed action alternative site are below detectable limits for samples taken in October 2015, suggesting that no plume has migrated onto the proposed project area.

LUCs are currently in place at OU 8 and include the following (Note: Proposed Action Alternative property is not above the OU 8 plume and not subject to any LUCs):

- Potable groundwater use has been prohibited installation-wide.
- Land use will be solely for industrial purposes until conditions allow for unlimited use and unrestricted exposure to groundwater.
- LUCs will be attached to the property deed to restrict groundwater use and prohibit residential development and land use for schools or childcare facilities, should the property change ownership in the future before completion of the remedy.
- An assessment by the DSCR environmental group will be required before construction activities can be undertaken at OU 8 to ensure that conditions will not present an unacceptable risk to construction workers.
- Prior to excavation, monitoring data will be reviewed to determine potential vapor hazards and any associated health and safety requirements.



N

3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

Prepared by JJL, 03-30-2016
Sources: Pond & Company, 2015, VBMP AERIAL IMAGERY
Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

FIGURE 11
CONCEPTUAL SITE PLAN
& CONSTITUENT ISOCONCENTRATIONS

VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 175 350
Feet

Petersburg, VA

The geotechnical report prepared by Get Solutions, Inc. indicated groundwater levels located on the project site are well below the proposed construction activities to be of significant concern. This includes all utility improvements and relocations required for the new building. In order to explore the general subsurface soil types and to aid in developing associated foundation design parameters, nine 30-foot deep Standard Penetration Test (SPT) borings (designated as B-1 through B-9) were drilled within the proposed structure's footprint. In order to explore the general subsurface soil types and to aid in developing associated pavement design parameters, six 10-foot deep SPT borings (designated as CBR-1 through CBR-6) were drilled within the proposed paved parking and drive aisle areas. To aid in developing associated stormwater management parameters, five 10-foot deep SPT borings (designated as BMP-1 through BMP-5) were drilled within the proposed stormwater management areas. Groundwater was not encountered at the boring locations to the depths explored on the project site. Borings CBR-4, CBR-5, and CBR-6 were located in the northeastern portion of the project site closest to OU 8 and were at a depth of ten feet. Borings B-6, B-7, B-8, and B-9 were located on the eastern wall of the proposed building and were at a depth of 30 feet. Therefore the construction activities at the proposed site are not anticipated to impact the confined aquifer or intercept groundwater, as none of the construction activities will have potential to penetrate the confining layer of the groundwater plume.

In addition, based on the 60 percent design plans, dated March 22, 2016, stormwater from the proposed VANG State HQ facility would be managed in six small stormwater bioretention-type 1 and 2 BMPs. The stormwater BMPs will have an impermeable clay liner component to contain stormwater from permeating into the aquifer. In addition, the post-development hydrology runoff will be less than or equal to the pre-development conditions at the project site with regard to temperature, rate, volume, and duration of flow, as the goal of the system design is to mimic current characteristics. The current infiltration rate at the project site is approximately 0.067 in/hour. Due to the infiltration rate being less than the required 0.5 feet/day for infiltration facilities, the bioretention facilities will require underdrains. The stormwater management facilities will discharge into the existing storm sewer pipes. Therefore, the potential short-term and long-term adverse effects to groundwater and the plume are considered less-than-significant.

In July 2015, a vapor intrusion investigation was completed to determine if groundwater contamination in OU 8 was causing vapor intrusion issues in two of the buildings within OU 8. The Final Technical Memorandum Subsurface Vapor Intrusion Investigation for Motor Pool and Butler Buildings, located at the United States Dervishian Army Reserve Center on the northeastern portion of the DSCR, was completed on July 2015. Indoor air, outdoor air, and near-slab vapor samples were analyzed for five (5) VOCs (Dichloroethene, Tetrachloroethene, Trichloroethene, cis-Dichloroethene, and Vinyl Chloride) that have been detected above MCLs in the OU 8 groundwater plume. No VOCs were detected in the indoor or outdoor air samples. Only one VOC (Tetrachloroethene) was detected at low concentrations of 1.4 μg/L and 1.3 μg/L in the near-slab vapor samples collected at the Motor Pool and Butler buildings, respectively. These concentrations are below the carcinogenic Risk Screening Level (RSL) of 47 μg/L and the noncarcinogenic RSL

of 180 µg/L. Similar monitoring has been completed for Warehouse 65, directly over the source of the groundwater plume at OU 5. This warehouse is situated over the highest measured concentrations of the COCs, yet the vapor levels at ground level and throughout the occupied warehouse remain below RSLs despite the groundwater COC concentrations being over 30 times that of the expanded plume leading edge. This indicates that the levels of contaminants within the extended migrating plume area are not high enough to create soil vapor intrusion conditions of concern. The potential for future soil vapor intrusion into buildings at the project site from the unlikely migration of the existing plume to the proposed action alternative property can be readily mitigated by incorporating soil vapor intrusion prevention measures such as vapor barrier and sub-slab depressurization system into the VANG State HQ facility design and the continued remediation of OU 8 in accordance with the ROD. As discussed in **Sections 4.5.3**, vapor intrusion prevention BMP measures are planned.

4.5.2 Impacts of the No Action Alternative

DLA is implementing remediation efforts and monitoring at OU 8 to ensure that the plume does not migrate onto adjacent properties. The No Action Alternative would not lead to any ground disturbance. VANG would continue to operate from its current facilities at the SRC and DSCR. No construction would occur. Therefore, there would be no hazardous materials impacts.

4.5.3 Best Management Practices

Construction documents for the proposed project would include guidelines for the appropriate management and disposal of contaminated soil or groundwater if encountered during construction. The contractor will develop a site specific Health and Safety Plan (HASP) to address any potential contamination and risks involved including a site specific environmental protection plan that would address containment and proper disposal of contaminated soil or groundwater. Though unlikely, in the event that construction workers encounter groundwater during construction, an action plan will be required to immediately analyze any potentially contaminated groundwater and protect workers from potential exposure, and identify disposal requirements for any contaminated water collected as part of de-watering construction activities.

To protect personnel who occupy the new VANG State HQ, VANG would follow guidance in EPA's Office of Solid Waste and Emergency Response (OSWER) *Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* (2015). This document provides a recommended framework for assessing vapor intrusion. It also includes guidelines for monitoring and mitigating vapor intrusion into buildings.

The latest data on the underground plume from OU 8, located east of the project site, shows no movement up-gradient towards the northwest. DSCR is continuously monitoring the OU 8 groundwater plume to detect any migration, but has not detected any further migration since the initial monitoring. Additionally, if any migration were to occur it is unlikely to approach the

project site since it is up-gradient of the plume. Should the plume begin to migrate towards the project site, DSCR would determine the most appropriate remedial measures.

To minimize any potential future soil vapor intrusion under the Preferred Action Alternative, VANG would place a permeable sheet on the surface to protect the impermeable layer, followed by Remediation Technologies' vapor barrier products. First, Liquid Boot 500 spray-applied gas vapor barrier would be used. The next steps would be applying Liquid Boot trowel-applied gas vapor barrier, Ultrashield G-1000 non-woven geotextile fabric, Ultrashield P-150 protection course, and VI-20 Geomembrane. Remediation Technologies' GeoVent gas venting system and GeoVent active/passive gas venting system would both be used. Finally, Zurn's Light Commercial adjustable floor cleanout would be installed.

The options for DSCR Environmental Staff to address any future migration of the groundwater plume from OU 8 include groundwater recirculation and/or Enhanced Reductive Dechlorination. Any remediation efforts by DSCR would consider the potential effect of stormwater infiltration at the proposed VANG State HQ facility and be conducted in accordance with EPA's OSWER Technical Guide (2015).

4.5.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impact to below significant levels.

4.6 **Socioeconomics**

4.6.1 Impacts of the Preferred Action Alternative

4.6.1.1 ***General***

Movement of the State HQ from Sandston would generate less-than-significant socioeconomic impacts on the local community. Any potential for impacts on racial minorities from moving the State HQ from Sandston to DSCR are offset by the short distance of the move. Anyone currently employed or seeking employment at the State HQ is well within the acceptable regional 25 minute daily commute to work if the facility is moved nine miles away to DSCR. The move of the State HQ will not result in changes to the population growth rate or substantially affecting the local housing market and vacancy rate in Sandston or Bellwood. The Proposed Action will result in insignificant, diminutive changes in sales volume, employment, income, and population within the Region of Influence (ROI). The anticipated changes to either Chesterfield or Henrico County from the move of workplace locations for the personnel who work at the State HQ is discountable and insignificant. The localized impact of the 12-month construction phase of the Proposed Action to the socioeconomic health of the ROI cannot be distinguished from background fluctuations in sales volume and income to the local Bellwood Community, and any small changes will have an overall beneficial effect.

The Sandston Readiness Center, which currently houses the State HQ, would continue to serve as an ARNG Armory. VANG plans to enlarge the armory and construct a permanent Army Aviation Support Facility on the property once the new VANG State HQ is finished, guaranteeing a sustained ARNG presence and resulting in no financial burden to the local community. The current 70 full-time employees who work at SRC are Federal and State employees (Active Guard-Reserve, Active Duty – Operational Support, and Federal or State Technicians). They are rotated in positions throughout the state about every two years but rarely relocate family members or change their Home of Record (HOR) during position changes; very few of the employees live near the Sandston community (nine percent) and it is highly unlikely that any employees will relocate their HOR to be closer to the proposed new facility at DSCR, nine miles away. The 32 percent of the current State HQ employees who already reside in Chesterfield County would experience a beneficial reduction in daily commute time and distance from the proposed action alternative. Therefore, no change in local business volume, employment, income, or population is expected to occur. The Town of Sandston has no businesses that rely on the current State HQ at SRC. Instead, the largely residential community is supported by the adjacent Richmond International Airport and other auxiliary businesses associated with the airport, which maintains over 2,500 jobs in the community (Capital Region Airport Commission, 2008). Any existing janitorial contracts, fuel delivery, or other procurement services would remain in place to service the armory, and would likely increase over the next 5 years as the facility is expanded.

The proposed VANG State HQ would be constructed on a military installation located in the suburban community of Bellwood, Virginia. The requirement for services to be provided for the construction and operation of the new State HQ would be insignificant to the local community. The construction contractor that has been chosen is from Virginia Beach, VA; no increase in local jobs due to construction is expected. Also, the majority of facility services will be included in existing state-wide Operation and Maintenance contracts that the VANG has arranged with larger regional businesses. A small increase in local food services revenue would occur during the construction and operation of the facility, but would not be noticeable above background levels from adjacent businesses and the rest of the DSCR installation community. The community does not host any service industries for the installation that would experience a significant increase in revenue from the operation of the new headquarters. The building on DSCR currently used to house Company B, 429th BSB would continue to be used by the unit for equipment storage, maintenance, and training space; only the administrative functions would be moved to the new State HQ building. The Proposed Action would not create a need for new or increased fire, police protection, or medical services beyond the current capability of the local community, nor would it decrease public service capacities so as to jeopardize public safety. Therefore, the potential short-term and long-term adverse effects to socioeconomics are considered less-than-significant.

4.6.1.2 ***Health and Safety***

No VANG employees will be present at the property during construction to be exposed to physical, behavioral, psychological, or chemical stressors and Endocrine disruptors. All contractors are

required to adhere to all federal OSHA requirements for employee health safety. Contractors have been notified of the OU 8 plume on adjacent property and must immediately cease work and notify the VA ARNG Environmental Office if any groundwater is encountered. No confined spaces will be created in the construction process that could potentially cause risk for workers from vapor intrusion and accumulation. Adjacent occupied buildings and parking areas on DSCR are all located over 200 feet from the project site; no stressors are projected to be added to current DoD employees on DSCR during construction or operation of the Proposed Action. The Proposed Action will not occur on a main thoroughfare on the installation where traffic safety would be of concern. A fence will be installed to preclude entry by unauthorized individuals that are not familiar with safety protocols of the construction site. The general public is protected from inadvertent entry onto DSCR by a barbed-wire fence and guarded entry control points at the installation border. Civilian neighbors on the border of the installation are protected from line-of-site and noise hazards by vegetated buffers and over 500 feet of open-space between the border and the building construction footprint.

4.6.1.3 ***Protection of Children***

No civilian visitors are permitted entry into DSCR. Because of the existing environmental conditions and the security posture at DSCR, children are not routinely permitted entry onto the installation. No public schools or day-cares are located within DSCR. No recreational facilities, community events, or other reason for children to be present during construction or operation of the State HQ exist to cause concern for potential environmental risks with children for the Proposed Action.

4.6.2 Impacts of the No Action Alternative

Under the No Action Alternative, there would be no changes to the current socioeconomic environment in either Bellwood or Sandston.

4.6.3 Best Management Practices

Neither the Preferred Action Alternative nor the No Action Alternative would result in significant socioeconomic impacts. Therefore, no BMPs would be required.

4.6.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impacts to below significant levels.

4.7 **Cultural Resources**

4.7.1 Impacts of the Preferred Action Alternative

Under the Preferred Action Alternative, VANG would construct a new VANG State HQ, resulting in land disturbance. However, no further investigation of archaeological resources would be required due to the Programmatic Agreement that DES Richmond has with the Advisory Council on Historic Preservation and VDHR. Through coordination with VDHR, DMA has received a

"No Adverse Effect" determination for impacts to architectural resources as long as the building design is compatible with the historic district. Therefore, the Preferred Action Alternative is likely to have less-than-significant impacts on cultural resources.

Under either the Preferred or No Action Alternative, VANG would continue consultation with both the SHPO and interested Federal and State tribes when appropriate. No responses were received after the initial Tribal consultation letters, dated 1 July 2015, were sent (see **Section 1.5.2**). DMA followed up with the tribes on 14 July and 4 August 2015, via phone and email. Three tribes (Rappahannock Tribe, United Keetoowah Band of Cherokee Indians in Oklahoma, and the Upper Mattaponi Indian Tribe) responded to this second outreach effort indicated that they had no comments concerning the proposed project. Refer to the 11 August 2015 Memorandum for Record regarding Tribal Consultation (see **Appendix A**) for further details. In accordance with legal requirements and DMA's *Integrated Cultural Resources Management Plan Revision for Facilities of the Virginia Army National Guard* (ICRMP) (Versar, 2014), VANG would continue to adhere to the protocol set forth in the *Standard Operating Procedure for Inadvertent Discovery of Cultural Material* included in the ICRMP. Therefore, the potential short-term and long-term adverse effects to cultural resources are considered less-than-significant.

4.7.2 Impacts of the No Action Alternative

The No Action Alternative would not lead to any ground disturbance or changes to the architecture of structure. VANG would continue to operate from its current facilities at the SRC and DSCR. No construction would occur. Therefore, there would be no cultural resources impacts.

4.7.3 Best Management Practices

VANG considered the existing cultural climate during project design. In addition, VANG has coordinated the proposed project's design features with VDHR and received a "No Adverse Effect" finding. Coordination with VDCR included site visits with the project architect to discuss building design throughout the design process. Comments provided by VDHR have been incorporated into the initial design and the subsequent design modifications. The final design will be coordinated with the VDHR.

4.7.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impact to below significant levels. To maintain the current cultural climate at DSCR, VANG would continue to coordinate any design changes with VDHR.

4.8 **Noise and Air Quality**

4.8.4 Impacts of the Preferred Action Alternative

Existing sources of noise in the project area include traffic and daily activities from the ongoing operations at DSCR, the adjacent roads, and the commercial and industrial development in the area. The proposed project is located within a highly urbanized area with existing high ambient

noise levels. While noise would be generated during the construction and operation of the proposed project, there is a road and an active railroad track to the west of the project site. The road and railroad track create ambient noise levels and vibrations that exceed the anticipated noise and vibrations generated during construction, so construction would not create impacts in excess of those already present.

Short-term air quality impacts resulting from the proposed project would be limited to pollutant emissions associated with construction activities, including airborne dust from ground disturbance, operations, combustion byproducts from construction equipment, and worker travel during construction. Long-term air quality impacts would be limited to the intermittent use of a backup generator and boilers for the new VANG State HQ. The amount of emissions generated during the construction and subsequent operation of the new VANG State HQ would be minor and would not substantially affect regional air quality in or around Richmond. DSCR has an existing air permit. DSCR will secure a permit amendment from DEQ to include the additional boiler and generator. A Record of Non-Applicability has been prepared and is included in **Appendix H**.

Therefore, the potential short-term and long-term adverse effects to noise and air quality are considered less-than-significant.

4.8.2 Impacts of the No Action Alternative

Under the No Action Alternative, there would be no change to ambient noise levels at DSCR, and there would be no additional air emissions. DSCR would continue to operate as is, and VANG would continue to use its current facilities. There would be no noise or air quality impacts under the No Action Alternative.

4.8.3 Best Management Practices

Noise impacts would be minimized by conducting construction activities during daylight hours and during the work week. The construction would be completed in full compliance with current and pending Virginia air quality regulatory requirements, through the use of compliant practices and/or products. These requirements appear in 9 VAC 5, Chapter 40 (existing stationary sources), Part II (emission standards) of the Virginia Regulations for the Control and Abatement of Air Pollution. They include:

- Article 1, Visible emissions and fugitive dust and emissions (9 VAC 5-40-60); and
- Article 40, Open burning (9 VAC 5-40-5600).

DSCR will add the new State HQ facility's boiler and back-up generator to DSCR's existing air quality permit from DEQ before any equipment is installed.

4.8.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impact to below significant levels.

4.9 Infrastructure

4.9.1 Impacts of the Preferred Action Alternative

Utilities

Under the Preferred Action Alternative, potential less-than-significant adverse impacts could occur to utility consumption from increased personnel at the site and utility extensions/relocations. The prices of utilities will not be impacted by the additional personnel or infrastructure associated with the Proposed Action. The proposed project would require minor utility extensions/relocations for electric, potable water, telecommunications (e.g., cable, phones, and Internet), and wastewater. In addition, the new building would in turn result in greater overall utility consumption. However, the current systems in place at DSCR would have the adequate capacity to support the increase in demand of the proposed 193 new employees associated with the proposed project. DSCR averaged 138,000 GPD wastewater discharge during 2015, or 46 percent of their permit limit. The additional 190 new employees multiplied by 25g/person/day would only be a 4,750 GPD increase per work day, or less than 2 percent of the installation permit. There should be no significant impact to utilities from the installation or the surrounding communities from additional employees.

Transportation

Traffic impacts to DSCR regional roadways would be anticipated due to the increase in installation use associated with the Preferred Action Alternative. The location of DSCR is in an urbanized area with multiple roadways in the vicinity of the installation, including Interstate 95, State Route 288, and State Route 150 (Chippenham Parkway), which all have the capacity to handle the additional vehicles expected with the proposed project. Therefore, the potential increases in traffic would be considered a less-than-significant adverse impact.

Short-term and long-term, less-than-significant adverse impacts are anticipated due to construction traffic and increased site usage.

4.9.2 Impacts of the No Action Alternative

The No Action Alternative would have no effect on area infrastructure or transportation. Operations at DSCR would continue as they are. Therefore, there would be no impacts to infrastructure.

4.9.3 Best Management Practices

No BMPs will be necessary to control potential impacts to infrastructure for the Proposed Action Alternative.

4.9.4 Mitigation Measures

No mitigation measures will be necessary to reduce any adverse environmental impact to below significant levels.

4.10 Mitigation Measures and BMPs

Mitigation measures are defined as project specific requirements, not routinely implemented by the VANG, that are necessary to reduce identified potentially significant adverse environmental impacts to less-than-significant levels. BMPs are regulatory compliance measures that the VANG regularly implements as part of their activities, as appropriate. Since no impacts are anticipated from implementation of the No Action Alternative, no mitigation measures are proposed. Impacts to most resources are anticipated to be minor under the Preferred Action Alternative. However, VANG would use BMPs to ensure that impacts to resources are less-than-significant.

The Preferred Action Alternative is anticipated to impact geology, soils, water resources, biological resources, hazardous and toxic materials, cultural resources, noise and air quality, socioeconomics, and infrastructure. Impacts to these resources are anticipated to be less-than-significant.

Potential hazardous and toxic materials impacts are related to prior military and industrial activities at DSCR. Impacts to the adjacent contaminated groundwater plume are expected to be less-than-significant. VANG plans to install a permeable protective membrane on the building site, followed by installation of multi-layer vapor barrier system of Remediation Technologies products to ensure there is no soil vapor intrusion to the new building if the plume were to migrate onto the project site.

BMPs that would be included as a part of this project include:

- Avoiding Unnecessary Disturbance: Project plans would preserve as much existing vegetation as possible, while maintaining project missions.
- Treating Disturbed Edges. Where existing edges are disturbed, new border-type native grass/shrub mixtures can be established to support wildlife use and retard invasive species establishment.
- Re-Establish Native Plant Communities: Where possible, areas that require clearing and grading, would be re-vegetated with communities native to the Richmond area, including oak/hickory/pine/holly plantings, along with grasses and herbs that would be expected historically on the facility. These plant communities would be tailored to both the cultural requirements of the site and the programmatic requirements of the training mission.
- Connect Plant Communities Across Larger Areas: Re-vegetation would connect plant communities compatible with the drainage systems of the site to the maximum extent practicable, creating and preserving potential wildlife corridors.
- Natural resources management would be coordinated, to the extent feasible, with DSCR's *Integrated Natural Resources Management Plan* (INRMP). The INRMP is the installation's primary natural resource planning document, and considers current and future projects and natural resource activities.
- Dust control would be conducted using application of water, soil stabilizers, or vegetation; use of enclosures, covers, silt fences, or vehicle washers.

- Noise will be limited, to the extent possible, for construction and associated heavy truck traffic between 7:00 PM to 7:00 AM. Stationary equipment and material transportation routes will be located as far away from sensitive receivers as possible. Equipment will be operated per manufacturer's recommendations, and noise-generating heavy equipment will be shut down when not needed.

VANG Section 7 Consultation resulted in the establishment and maintenance of a 120-foot wide buffer between the project site and the nearest potential habitat for NLEB located to the west of the site. The purpose of the buffer is to ensure noise and vibrations generated by heavy equipment does not temporarily disturb any roosting bats during the active season. The VANG committed to follow all other conservation measures recommended in Paragraph 5(D) of the Informal Consultation package dated 27 April 2015. This assures that any effects will be insignificant and thus supportive of the "No Effect" Section 7 determination for NLEB.

4.11 **Cumulative Impacts**

4.11.1 Introduction

As defined by CEQ Regulations (40 CFR Part 1508.7), cumulative impacts are those that "result from the incremental impact of the Preferred Action Alternative when added to other past, present, and reasonably foreseeable future actions, without regard to the agency (federal or non-federal) or individual who undertakes such other actions." Cumulative impact analysis captures the impacts that result from the Preferred Action Alternative in combination with the impacts of other actions in the Preferred Action Alternative's region of influence.

NEPA requires the analysis of cumulative environmental impacts of the Preferred Action Alternative on resources that may often be manifested only at the cumulative level, such as traffic congestion, air quality, noise, biological resources, cultural resources, socioeconomic conditions, utility system capacities, and others.

Past, present, and reasonably foreseeable actions in the immediate vicinity of DSCR include:

- ✓ Residential and commercial development;
- ✓ Infrastructure upgrades; and,
- ✓ Timbering, mining and other natural resource management.

Other notable past, present, and reasonably foreseeable actions within DSCR include:

- ✓ Training exercises;
- ✓ New construction;
- ✓ Removal/relocation of structures;
- ✓ Forest management activities; and,
- ✓ Archaeological investigations.

4.11.2 Cumulative Impacts within the Area

DSCR is located approximately 11 miles south of Richmond, Virginia, in Chesterfield County. Surrounding land use is primarily residential to the east and northwest of the facility, and primarily industrial or commercial to the southwest. Consequently, residential and commercial development has historically occurred in the area. There is little undeveloped land in the immediate project vicinity, although there are scattered patches of intact forest abutting the property to the west, east, and south. Timber harvesting has occurred in these areas and would likely continue as development progresses. Jefferson Davis Highway (US 1) forms a portion of the eastern boundary of DSCR. Infrastructure improvements near DSCR have been focused on upgrading aging facilities, such as Jefferson Davis Highway.

This growth has increased traffic congestion, air quality impacts, and other environmental impacts, and has placed some increased demands on services, utilities, and infrastructure. Development of former open space also has resulted in natural and cultural resources impacts.

Due to the density of residential development immediately west of DSCR and the distance to main travel routes, commercial development in this area would not be supported. No new travel routes are planned in this area. According to the Virginia Department of Transportation's (VDOT) Fiscal Year 2016 Six-Year Improvement Program (2015), no projects are planned for Jefferson Davis Highway in the project vicinity. In fact, VDOT has no projects planned in zip code 23297, which is the zip code in which DSCR is situated.

Chesterfield County's 2012 *Moving Forward…The Comprehensive Plan for Chesterfield County*, does not show any fire, emergency medical service, sheriff's department, school, library, parks, or trails projects near DSCR. The comprehensive plan also does not show any proposed roadway projects in the vicinity of DSCR, but it does recommend building a new police station near the intersection of Dundas Road and Jefferson Davis Highway before 2017. An August 2015 conversation with Major Kevin Smith of the Chesterfield County Police Department revealed that the Department feels the need for a station in the vicinity of, but not necessarily at, the intersection of Dundas Road and Jefferson Davis Highway. In fact, the Department is currently in negotiations with the Bensley Volunteer Fire Department (VFD) to convert the VFD's facility on Dundas Road into a police station. Major Smith said that if negotiations should fail, he would look for another facility near the Bensley VFD for the new police station. Security on DSCR has been and will remain a function of the contracted security guard and force protection personnel on the installation. The additional facility of the Proposed Action will not overwhelm the security in place.

According to the July 2015 draft *DLA Organizations at Defense Supply Center Richmond Real Property Master Plan* (CH2MHill, 2015), three courses of action are being considered for future development on the installation. Depending on which course of action is selected, up to 35 projects are planned for completion. This includes 24 in the next five years, five in the six to 10 year

timespan, and six projects more than ten years into the future. The new VANG State HQ is one of the 24 projects proposed for the next five years. Of the remaining potential projects, 12 would be within 2,500 feet of the new VANG State HQ. Nine of these are planned for the next five years (by 2020), one is planned for six to ten years between 2021 and 2025), and the other two would be built after 2025. The short-term projects include constructing a new office in Building 59C, constructing a new office in Building 59A and renovating Building 59A, moving the janitorial contractor from Building 59A to Building 80, constructing renewable energy Warehouse 66, relocating the gas station, relocating the car wash, renovating Building 65 so Document Services can relocate from Building 33C, renovating Building 60 so Disposition Administration can move from Building 4, and constructing a new truck scale by Building 205 and demolishing the existing scale at Building 76. The only proposed mid-term project is constructing a hazardous materials storage facility. The two long-term projects are constructing a second and third hazardous materials building. All proposed future projects within the vicinity of the proposed project at DSCR would not be affected by the construction of the proposed facility or impact the future operation of the VANG HQ building. All planned future activities within the area of DSCR are storage or administrative in nature and in keeping with the goals of the DLA Master Plan.

4.11.3 Cumulative Impacts of the Preferred Action Alternative

The Preferred Action Alternative would result in the impacts described throughout **Section 4**. These include continued less-than-significant adverse impacts to geology, topography, and soils; water resources; biological resources; land use; hazardous materials; socioeconomics, cultural resources, and infrastructure. These impacts would be further reduced through implementation of standard BMPs, described throughout **Section 4**.

Implementation of the Preferred Action Alternative is not expected to have a significant cumulative adverse impact on any resource area discussed in this EA. The Preferred Action Alternative would not noticeably contribute to the ongoing changing physical and environmental conditions. In terms of geology, topography, soils, water resources, biological resources, hazardous materials, land use, cultural resources, socioeconomics, and infrastructure, the Preferred Action Alternative would not significantly increase cumulative regional impacts. Regarding socioeconomics, the action involves staff and activities currently present at VANG facilities, and would not significantly increase either the number of personnel or the types and number activities occurring on DSCR. Neither the existing road networks nor the installation's entry control point capacity would be overwhelmed by the projected maximum number of personnel at the new VANG State HQ.

The areas planned for development at DSCR are all previously developed parcels where warehouses existed until recent demolition projects removed most of the impervious structures. This includes the State HQ Building project area. Therefore, the cumulative impact of impervious surfaces resulting from development of future planned projects would not exceed the management

infrastructure already in place to address the much larger sources of impervious surfaces in the area due to previous development.

4.11.4 Cumulative Impacts of the No Action Alternative

Under the No Action Alternative, the VANG would not construct and operate a new VANG State HQ. Instead, operations would continue as they presently are. This situation would not result in impacts to any of the resources evaluated in this EA. The No Action Alternative would, however, not meet the project's purpose and need.

4.11.5 Inter-relationship of Cumulative Impacts

The environment surrounding the site of the proposed VANG State HQ is slowly changing due to development and natural resource management activities. VANG's Preferred Action Alternative, to construct and operate the proposed VANG State HQ, would not result in significant impacts to natural resources or cultural resources. Furthermore, any impacts would be of little consequence to the environment when compared to the magnitude or frequency of other activities occurring around or within DSCR. Therefore, there is no direct relationship between the environmental impacts associated with the Preferred Action Alternative and the other cumulative impacts described above. Implementation of the No Action Alternative would create cumulative impacts since it would not construct one of the proposed facilities in the DLA Real Property Master Plan.

No significant adverse cumulative impacts to the environment, induced by changes under the Preferred Action Alternative or No Action Alternative, are anticipated. Close coordination between VANG, local, state, tribal, and federal planning and regulatory authorities as well as local community representatives would serve to minimize any potential future adverse impacts. Implementation of appropriate erosion and sediment controls would minimize or eliminate any potential cumulative degradation of the natural ecosystem.

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SECTION 5.0: COMPARISON OF ALTERNATIVES AND CONCLUSIONS

5.1 Comparison of the Environmental Consequences of the Alternatives

The purpose of this section is to clearly compare and contrast the environmental impacts of the Preferred Action Alternative and the No Action Alternative. **Table 8** illustrates how these two alternatives would affect the resource topics examined in this document. More detailed information is provided in **Section 4**.

Table 8: Comparison of Potential Environmental Consequences of the Retained Alternatives

Resource Topic	Preferred Action Alternative	No Action Alternative
Geology, Topography, and Soils *(See **Sections 3.2 and 4.1**)*	Short-term and long-term, less-than-significant adverse impacts due to construction of a new facility.	No impacts attributed to VANG action.
Water Resources *(See **Section 3.3 and 4.2**)*	Short-term less-than-significant adverse impacts due to construction of a new facility. Long-term positive impact due to implementation of Best Management Practices (BMPs).	No impacts attributed to VANG action. Due to a current lack of BMPs, sediment would continue to reach storm drains and ditches.
Biological Resources *(See **Sections 3.4 and 4.3**)*	Potential long-term less-than-significant adverse impacts to birds due to collisions with glass. Long-term less-than-significant adverse impacts to land due to elimination of vegetation and wildlife habitat.	No impacts attributed to VANG action. DSCR would continue to mow the proposed project site, maintaining the existing habitat.
Land Use (*See **Sections 3.5 and 4.4***)	Short-term less-than-significant adverse impacts due to adherence to zoning requirements, and construction of new facility in accordance with guidance from VDHR. Long term positive impact to zoning.	No impacts attributed to VANG action. The project site would continue to be mowed as needed.
Hazardous and Toxic Materials/Wastes (*See **Sections 3.6 and 4.5***)	Potential short-term less-than-significant adverse impacts during construction due to presence of an adjacent contaminated groundwater plume off the project site. Potential long-term less-than-significant adverse impacts due to adjacent contaminated groundwater plume off the project site. No hazardous or toxic materials or wastes would be generated during construction or operation of the new facility.	No impacts attributed to VANG action. Ongoing management of hazardous and toxic materials/wastes would continue at DSCR. Current BMPs would continue for the underground plume at OU 8.

Socioeconomics *(See **Sections 3.7 and 4.6**)*	Short-term and long term, less-than-significant adverse impacts due to no current employees at DSCR or Sandston needing to relocate Homes of Record.	No impacts attributed to VANG action. Personnel would continue to be assigned to their current facilities.
Cultural Resources *(See **Sections 3.8 and 4.7**)*	Potential short-term and long-term less-than-significant adverse impacts from construction of new facility through implementation of VDHR-recommended BMPs.	No impacts attributed to VANG action. No new facilities would be added, and the existing buildings would remain in their current condition.
Noise *(See **Sections 3.9 and 4.8**)*	Short-term less-than-significant adverse noise impacts due to construction activity. BMPs would be employed during construction. Long-term less-than-significant adverse impacts due to periodic use of generators.	No impacts attributed to VANG action. Ongoing ambient noise from adjacent railroad track.
Air Quality *(See **Sections 3.9 and 4.8**)*	Short-term less-than-significant adverse air impacts due to dust and equipment fumes generated during construction activity. BMPs would be employed during construction. Long-term less-than-significant adverse impacts due to periodic use of generators and boilers.	No impacts attributed to VANG action. Ongoing air emissions from DSCR operations.
Infrastructure (*See **Section 3.10 and 4.9***)	Short-term and long-term, less-than-significant impacts to transportation and utilities.	No impacts attributed to VANG action. Ongoing operations at DSCR would continue with no increase to demands on infrastructure.

5.2 Conclusions

The Preferred Action Alternative meets the square footage requirements for ARNG facilities, as mentioned in NGB 415-12 (2015), *Army National Guard Facilities Allowances*. The Preferred Action Alternative would not significantly impact any aspect of the quality of the human or natural environment, and no mitigation measures are proposed for geology, topography, soils, water resources, biological resources, land use, hazardous and toxic materials/wastes, cultural resources, socioeconomics, noise, air quality, or infrastructure.

Since all potential impacts are less-than-significant, an Environmental Impact Statement would not be required. If this opinion is upheld following circulation of this Draft EA, a Finding of No Significant Impact would be signed and circulated.

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SECTION 7.0: LIST OF PREPARERS

This document was prepared by EEE, with input and review from DMA. Staff members involved in the preparation of this Draft EA are listed below.

EEE Consulting, Inc.					
Name	**Certification**	**Title**	**Role**	**Degree**	**Years of Relevant Experience**
Susan Liszeski	Wetland Professional in Training	Senior Environmental Scientist	Project Manager; Primary Author, EA, Coastal Resources Consistency Determination, and FNSI	B.S., 1984, Forestry, University of Kentucky M.S., 1986, Wildlife Management, Louisiana State University	20+
Carter Teague	Professional Wetland Delineator	Senior Environmental Scientist	Quality Assurance, Quality Control	B.S., 1997, Natural Resources, University of the South	16
Brian Brown	N/A	GIS Analyst	GIS Analysis	B.A, 2012, Geography, Mary Washington University	3
Maunette Makowski	N/A	GIS Analyst	GIS Analysis	B.S., 2010, Environmental Science, Dickinson College	5

Virginia Department of Military Affairs					
Name	**Certification**	**Title**	**Role**	**Degree**	**Years of Relevant Experience**
Major James C. Shaver	N/A	Environmental Officer	Program Manager	B.S., Biology, Virginia Commonwealth University	17
Brian Webb	N/A	NEPA Compliance Specialist	Guidance on NGB NEPA Process	M.S., Environmental Science, Virginia Commonwealth University B.S. Chemistry, James Madison University	1
Susan Smead	Certification in Landscape Design	Cultural Resource Program Manager	Cultural Resource Specialist	M.A., Architectural History, University of Virginia B.A., Art History, State University of New York at Geneseo B.A., Studio Art, State University of New York at Geneseo	20+

SECTION 8.0: AGENCIES AND INDIVIDUALS CONSULTED

Federal Agencies

U.S. Army Corps of Engineers
Norfolk District
Julie Hamilton
9100 Arboretum Parkway, Suite 235
Richmond, VA 23236

U.S. Fish and Wildlife Services
Virginia Ecological Services
Attn: Cindy Schulz
Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

U.S. Environmental Protection Agency
Office of Federal Activities
Ms. Susan Bromm
1200 Pennsylvania Avenue NW
Room 7209
Washington, DC 204060

State Agencies

Virginia Department of Conservation and Recreation
Division of Natural Heritage
600 E. Main St.
Richmond, VA 23219

Virginia Department of Environmental Quality
Attn: Ellie Irons
629 E. Main St.
Richmond, VA 23218

Virginia Department of Historic Resources
State Historic Preservation Office
2801 Kensington Avenue
Richmond, VA 23221

Virginia Department of Game and Inland Fisheries
Environmental Services
P.O. Box 11104
4010 W. Broad St.
Richmond, VA 23230

Federal Tribes

Catawba Indian Nation
Attention: Mr. William Harris, Chief
996 Avenue of the Nations
Rock Hill, South Carolina 29730

Cayuga Nation Unity Council
Attention: Tribal Leader
P.O. Box 169
Seneca Falls, New York 13148

Cayuga Nation
Attention: Tribal Leader
P.O. Box 803
Seneca Falls, New York 13148

Cherokee Nation
Attn: Mr. Bill John Baker, Principal Chief
P.O. Box 948
Tahlequah, OK 74465

Eastern Band of Cherokee Indians
Attn: Mr. Michell Hicks, Principal Chief
P.O. Box 455
Cherokee, NC 28719

Tuscarora Nation
Attention: Mr. Leo Henry, Chief
2006 Mount Hope Road
Lewiston, New York 14092

United Keetoowah Band of Cherokee Indians
Attn: Mr. George Wickliffe, Chief
P.O. Box 746
Tahlequah, OK 74465

State Tribes

Cheroenhaka (Nottoway) Indian Tribe
Mr. Walt Brown, Chief
P.O. Box 397
Courtland, VA 23837

Chickahominy Indian Tribe
Mr. Stephen R. Adkins, Chief
8200 Lott Cary Road
Providence Forge, VA 23140

Chickahominy Indians – Eastern Division
Mr. Gene W. Adkins, Chief
3120 Mount Pleasant Road
Providence Forge, VA 23140

Mattaponi Indian Tribe
Mr. Mark Custalow
1467 Mattaponi Reservation Circle
West Point, VA 23181

Monacan Indian Tribe
Ms. Sharon Bryant, Chief
P.O. Box 1136
Madison Heights, VA 24572

Nansemond Indian Tribe
Mr. Barry W. Bass, Chief
3427 Galberry Road
Chesapeake, Virginia 23323

Nottoway Indian Tribe of Virginia, Inc.
Ms. Lynette Allston, Council Chair and Chief
25274 Barhams Hill Road
P.O. Box 24
Drewryville, Virginia 23844

Pamunkey Tribe
Mr. Kevin Brown, Chief
331 Pocket Road
King William, Virginia 23086

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APPENDIX A: CONSULTATION LETTERS

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COMMONWEALTH of VIRGINIA

Office of the Governor

Nancy Rodrigues
Secretary of Administration

MEMORANDUM

TO: Mr. Brian Webb, VAFM NEPA Specialist
Virginia Department of Military Affairs- Virginia Army National Guard
Building 316, Fort Pickett
Blackstone, VA 23824-6316

FROM: Nancy Rodrigues NR

DATE: September 4, 2015

RE: Comments on the draft Environmental Assessment (submitted in lieu of an Environmental Impact Report) for the Virginia Army National Guard State Headquarters at the Defense Supply Center Richmond proposed by the Department of Military Affairs in Chesterfield County (Agency Code 123, DEQ 15-130S).

Section 10.1-1188, et seq. of the Code of Virginia requires that any state agency, institution or branch of government proposing to undertake a "major state project" prepare an environmental impact report. Section 10.1-1190 of the Code makes the Governor's approval, considering the environmental impact of the project, a prerequisite to the expenditure of appropriated funds for the project. This responsibility has been delegated to the Secretary of Administration pursuant to Executive Order Number 88 (01).

After considering the comments of the Department of Environmental Quality and other information relevant to the above-referenced project, I hereby:

(X) Approve the project based on adherence to the recommendation and Regulatory and Coordination Needs presented by the Department of Environmental Quality in its comments regarding the environmental impact report and with all applicable environmental laws.

(___) Approve the project based on the following:

(___) DO NOT APPROVE the project based on the following:

Cc: DEQ, Environmental Impact Review Section
BCOM, Department of General Services
Department of Planning & Budget
Department of Accounts

Patrick Henry Building • 1111 East Broad Street • Richmond, Virginia 23219 • (804) 786-1201 • Fax (804) 692-2466 • TTY (800) 828-1120

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DEPARTMENTS OF THE ARMY AND THE AIR FORCE
OFFICE OF THE ADJUTANT GENERAL OF VIRGINIA
VIRGINIA NATIONAL GUARD
BUILDING 316, FORT PICKETT
BLACKSTONE, VIRGINIA 23824-6316

REPLY TO
ATTENTION OF

NGVA-FMO-ENV

11 August 2015

MEMORANDUM FOR RECORD

SUBJECT: Government-to-government consultation with state and federal agencies for proposed Virginia National Guard State Headquarters at Defense Supply Center Richmond (DSCR)

1. State and Federal Agency consultation was initiated via formal letter submitted by the Virginia National Guard (VANG) to four state agencies and three federal agencies with potential interest with the land area now comprising DSCR, on 1 Jul 15. The agencies received notification that the VANG is preparing environmental documentation for the proposed VANG State Headquarters facility at DSCR in Chesterfield County, VA.

2. The agencies contacted are:

Federal agencies:

US Army Corps of Engineers
USEPA, Office of Federal Activities
US Fish and Wildlife Service, Virginia Field Office

State agencies:

Virginia Department of Conservation and Recreation
Virginia Department of Environmental Quality
Virginia Department of Historic Resources
Virginia Department of Game and Inland Fisheries

3. The VANG received two responses to the consultation letters dated 30 June 2015.

a. The Virginia Department of Conservation and Recreation responded on 7 August 2015 to confirm that, through a review on their Biotics Data System, they do not anticipate that this project will adversely impact natural heritage resources.

b. The US Fish and Wildlife Service responded on 7 August 2015 to explain that they do not provide individual responses to requests for environmental reviews; all requests must be sent through an online project review system. The VANG will handle this review separately IAW the agency's specific requirements.

4. Point of contact for this action is Mr. Brian Webb at 804-436-3784 or brian.j.webb14.mil@mail.mil.

CHARLTON T. DUNN
LTC, EN, VaARNG
ACofS, Facilities Engineering
and Management

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DEPARTMENTS OF THE ARMY AND THE AIR FORCE
OFFICE OF THE ADJUTANT GENERAL OF VIRGINIA
VIRGINIA NATIONAL GUARD
BUILDING 316, FORT PICKETT
BLACKSTONE, VIRGINIA 23824-6316

REPLY TO
ATTENTION OF

NGVA-FMO-ENV

11 August 2015

MEMORANDUM FOR RECORD

SUBJECT: Government-to-government consultation with state and federally-recognized tribes for proposed Virginia National Guard State Headquarters at Defense Supply Center Richmond (DSCR)

1. Tribal consultation was initiated via formal letter submitted by the Virginia National Guard (VANG) to six federally-recognized tribes and eleven state-recognized tribes, recorded as having cultural affiliation and interest with the land area now comprising DSCR, on 1 Jul 15. The Tribes received notification that the VANG is preparing environmental documentation for the proposed VANG State Headquarters facility at DSCR in Chesterfield County, VA.

2. The tribes contacted are:

Federally-recognized tribes:

Catawba Indian Nation
Cayuga Nation/Cayuga Nation Unity Council
Cherokee Nation (of Oklahoma)
Eastern Band of Cherokee Indians
Tuscarora Nation (of New York)
United Keetoowah Band of Cherokee Indians in Oklahoma

State tribes/tribal agencies:

Cheroenhaka (Nottoway) Indian Tribe
Chickahominy Indian Tribe
Chickahominy Indians – Eastern Division
Mattaponi Indian Tribe
Monacan Indian Nation
Nansemond Indian Tribe
Nottoway Indian Tribe of Virginia, Inc.
Pamunkey Tribe
Patawomeck Indians of Virginia
Rappahannock Tribe
Upper Mattaponi Indian Tribe

3. The VANG did not receive any responses to the initial consultation letter dated 30 Jun 15. The VANG received three responses to follow-up emails and telephone calls made to the Tribes.

a. The United Keetoowah Band of Cherokee Indians in Oklahoma, Rappahannock Tribe, and the Upper Mattaponi Indian Tribe responded to the follow-up emails sent on 14 Jul 15 and 4 Aug 15.

b. No additional Tribes responded to follow up emails and telephone calls made to those from whom a response was not received.

4. On 4 Aug 15, the United Keetoowah Band of Cherokee Indians in Oklahoma communicated that they had no comment or objection. They have reserved the right to re-enter consultation on this project at any time in the future. They have further requested that, should any ground disturbance reveal an

archaeological site or human remains, all activities will cease, and tribal contacts and other appropriate agencies will be notified immediately. This is consistent with the protocol set forth in the *Standard Operating Procedure for Inadvertent Discovery of Cultural Materials*, included in the *Integrated Cultural Resources Management Plan for Facilities of the Virginia Army National Guard, Fiscal Years 2008-2012*. On 5 Aug 15, the Upper Mattaponi Indian Tribe reported that they had no comment. On 5 Aug 15, the Rappahannock Tribe declined to participate in any further consultation regarding this manner.

5. Point of contact for this action is Susan Smead at 434-298-6411 or susan.e.smead.nfg@mail.mil.

CHARLTON T. DUNN
LTC, EN, VaARNG
ACofS, Facilities Engineering
and Management

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
OFFICE OF THE ADJUTANT GENERAL OF VIRGINIA
VIRGINIA NATIONAL GUARD
BUILDING 316, FORT PICKETT
BLACKSTONE, VIRGINIA 23824-6316

REPLY TO
ATTENTION OF

May 28, 2015

Facilities Engineering and
Management

RE: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) in support of an Environmental Assessment of the Virginia National Guard's (VANG) Proposed State Headquarters Facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

U.S. Army Corps of Engineers
Ms. Julie Hamilton
9100 Arboretum Parkway, Suite 235
Richmond, VA 23236

Dear Ms. Hamilton:

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the VANG for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre site located in the northwest corner of DSCR. The 13.6 acre site was leased from the United States Government to the Commonwealth of Virginia.

As this Proposed Action is federally funded, we are preparing an Environmental Assessment (EA) that will evaluate the environmental, cultural, and socioeconomic impacts associated with the Proposed Action, pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code (USC) §4321 et seq.); the Council on Environmental Quality (CEQ) Regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508); and 32 CFR Part 651 (Environmental Analysis of Army Actions; Final Rule, 29 March 2002); as well as the NGB NEPA Manual – *Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with NEPA* (NGB, June 2006).

Information Request: While the VAARNG maintains a wealth of current environmental, cultural, and socioeconomic data concerning its facilities and other resources in the Commonwealth, we are seeking your input into this process concerning any specific environmental issues or concerns your agency may have. Information your office can provide on any of the following environmental issue areas (at or in the vicinity of the Proposed Action sites) would be appreciated:

a. Potential environmental concerns or issues; and/or

b. Planned or ongoing projects your office is conducting in the area.

Data that you make available will provide valuable and necessary input into the NEPA analytical process. As part of the NEPA process, local citizens, groups, and agencies, among others, will have ample future opportunity to review and comment on the information and alternatives addressed in the document.

Other Agencies and Organizations: A listing of agencies and organizations to which this request was sent is provided in Attachment 1. Should you know of any additional agencies or organizations that may have data or concerns relevant to this Proposed Action, please forward them a copy of this letter, include their information in your response, or contact us directly with this information.

We look forward to and welcome your participation in this analysis. We welcome any comments or suggestions you may have concerning reasonable alternatives and/or regarding significant social, economic and environmental factors to be studied. Please respond no later than 30 days from receipt of this letter. Please direct comments and questions via regular mail or e-mail (preferred) to: MAJ. Jaycee Shaver, Environmental Officer, NGVA-FMO-ENV, Building 316 Fort Pickett, Blackstone, VA 23824, or james.c.shaver.mil@mail.mil.

Thank you in advance for your assistance. Attached please find a list of contact Agencies and Organizations and a location map.

Sincerely,

Charlton T. Dunn
Lieutenant Colonel, VAARNG
Assistant Chief of Staff
Facilities Engineering and
Management

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
OFFICE OF THE ADJUTANT GENERAL OF VIRGINIA
VIRGINIA NATIONAL GUARD
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REPLY TO
ATTENTION OF

May 28, 2015

Facilities Engineering and
Management

RE: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) in support of an Environmental Assessment of the Virginia National Guard's (VANG) Proposed State Headquarters Facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

U.S. Fish and Wildlife Services
Ms. Cindy Schulz
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061

Dear Ms. Schulz:

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the VANG for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre site located in the northwest corner of DSCR. The 13.6 acre site was leased from the United States Government to the Commonwealth of Virginia.

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We look forward to and welcome your participation in this analysis. We welcome any comments or suggestions you may have concerning reasonable alternatives and/or regarding significant social, economic and environmental factors to be studied. Please respond no later than 30 days from receipt of this letter. Please direct comments and questions via regular mail or e-mail (preferred) to: MAJ. Jaycee Shaver, Environmental Officer, NGVA-FMO-ENV, Building 316 Fort Pickett, Blackstone, VA 23824, or james.c.shaver.mil@mail.mil.

Thank you in advance for your assistance. Attached please find a list of contact Agencies and Organizations and a location map.

Sincerely,

Charlton T. Dunn
Lieutenant Colonel, VAARNG
Assistant Chief of Staff
Facilities Engineering and
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DEPARTMENTS OF THE ARMY AND THE AIR FORCE
OFFICE OF THE ADJUTANT GENERAL OF VIRGINIA
VIRGINIA NATIONAL GUARD
BUILDING 316, FORT PICKETT
BLACKSTONE, VIRGINIA 23824-6316

REPLY TO
ATTENTION OF

May 28, 2015

Facilities Engineering and
Management

RE: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) in support of an Environmental Assessment of the Virginia National Guard's (VANG) Proposed State Headquarters Facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

U.S. Environmental Protection Agency
Office of Federal Activities
Ms. Susan Bromm
1200 Pennsylvania Avenue NW
Room 7209
Washington, DC 204060

Dear Ms. Bromm:

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the VANG for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre site located in the northwest corner of DSCR. The 13.6 acre site was leased from the United States Government to the Commonwealth of Virginia.

As this Proposed Action is federally funded, we are preparing an Environmental Assessment (EA) that will evaluate the environmental, cultural, and socioeconomic impacts associated with the Proposed Action, pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code (USC) §4321 et seq.); the Council on Environmental Quality (CEQ) Regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508); and 32 CFR Part 651 (Environmental Analysis of Army Actions; Final Rule, 29 March 2002); as well as the NGB NEPA Manual – *Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with NEPA* (NGB, June 2006).

Information Request: While the VAARNG maintains a wealth of current environmental, cultural, and socioeconomic data concerning its facilities and other resources in the Commonwealth, we are seeking your input into this process concerning any specific environmental issues or concerns your agency may have. Information your office can provide on any of the following environmental issue areas (at or in the vicinity of the Proposed Action sites) would be appreciated:

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Thank you in advance for your assistance. Attached please find a list of contact Agencies and Organizations and a location map.

Sincerely,

Charlton T. Dunn
Lieutenant Colonel, VAARNG
Assistant Chief of Staff
Facilities Engineering and
Management

COMMONWEALTH of VIRGINIA

DANIEL E. LONG, JR.
THE ADJUTANT GENERAL

DEPARTMENT OF MILITARY AFFAIRS
Adjutant General's Office
Building 316, Fort Pickett

BLACKSTONE, VIRGINIA
23824-6316

May 28, 2015

Facilities Engineering
and Management

Subject: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) in support of an Environmental Assessment of the Virginia National Guard's (VANG) Proposed State Headquarters Facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Ms. Rene Hypes
Virginia Department of Conservation and Recreation
600 East Main St.
Richmond, VA 23219

Dear Ms. Hypes,

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the VANG for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre site located in the northwest corner of DSCR. The 13.6 acre site was leased from the United States Government to the Commonwealth of Virginia.

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Thank you in advance for your assistance. Attached please find a list of contact Agencies and Organizations and a location map.

Sincerely,

Charlton T. Dunn
Lieutenant Colonel, VaARNG
Assistant Chief of Staff
Facilities Engineering and
Management

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Joe Elton
Deputy Director of Operations

Rochelle Altholz
Deputy Director of Administration and Finance

David Dowling
Deputy Director of Soil and Water and Dam Safety

August 7, 2015

Brian Webb, NEPA Manager
NGVA-FMO-ENV
Building 316 Fort Pickett
Blackstone, VA 23824

Re: National Guard Headquarters, Defense Supply Center Richmond

Dear Mr. Webb:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics historically documents the presence of natural heritage resources within two miles of the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at (804-367-2733) or Ernie.Aschenbach@dgif.virginia.gov.

Should you have any questions or concerns, feel free to contact me at 804-692-0984. Thank you for the opportunity to comment on this project.

Sincerely,

Alli Baird

Alli Baird, LA, ASLA
Coastal Zone Locality Liaison

COMMONWEALTH of VIRGINIA

DANIEL E. LONG, JR.
THE ADJUTANT GENERAL

DEPARTMENT OF MILITARY AFFAIRS
Adjutant General's Office
Building 316, Fort Pickett

BLACKSTONE, VIRGINIA
23824-6316

May 28, 2015

Facilities Engineering
and Management

Subject: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) in support of an Environmental Assessment of the Virginia National Guard's (VANG) Proposed State Headquarters Facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Ms. Ellie Irons
Virginia Department of Environmental Quality
629 East Main St.
P.O. BOX 1105
Richmond, VA 23218

Dear Ms. Irons,

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the VANG for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre site located in the northwest corner of DSCR. The 13.6 acre site was leased from the United States Government to the Commonwealth of Virginia.

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DEPARTMENT OF MILITARY AFFAIRS
Adjutant General's Office
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and Management

Subject: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) in support of an Environmental Assessment of the Virginia National Guard's (VANG) Proposed State Headquarters Facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Ms. Julie Langan
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Dear Ms. Langan,

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The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the VANG for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre site located in the northwest corner of DSCR. The 13.6 acre site was leased from the United States Government to the Commonwealth of Virginia.

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DEPARTMENT OF MILITARY AFFAIRS
Adjutant General's Office
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and Management

Subject: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) in support of an Environmental Assessment of the Virginia National Guard's (VANG) Proposed State Headquarters Facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Ms. Gladys Cason
Virginia Department of Inland Game and Fisheries
4010 W. Broad Street
P.O. BOX 11104
Richmond, VA 23230

Dear Ms. Cason,

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

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REPLY TO
ATTENTION OF

May 29, 2015

Facilities Engineering and
Management

RE: The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Catawba Indian Nation
Attention: Mr. William Harris, Chief
996 Avenue of the Nations
Rock Hill, South Carolina 29730

Dear Mr. Harris:

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the Virginia National Guard (VANG) for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre parcel located in the northwest corner of DSCR. The 13.6 acre property was leased from the United States Government to the Commonwealth of Virginia.

The VAARNG has determined, with reference to 36 CFR Part 800, *Protection of Historic Properties*, Section 106 of the National Historic Preservation Act of 1966, as amended, that this action constitutes an undertaking, and is writing to invite your comments according to 36 CFR Part 800.2(c)(2)(ii).

The VAARNG is conducting consultation with the Virginia Department of Historic Resources (DHR), the Virginia State Historic Preservation Office, according to 36 CFR Part 800. The project's area of potential effect for archaeology has experienced extensive ground disturbance in the past, due to construction and demolition of warehouse buildings, and DSCR and DHR have determined that no further archaeological investigations are required in this area. The parcel is located within the Bellwood-Richmond Quartermaster Depot Historic District, considered eligible for listing in the National Register of Historic Places. The DHR has concurred with the VAARNG's conditional no adverse effect finding for the proposed action, and the VAARNG is continuing to consult with DHR according to the agreed-upon conditions.

We look forward to hearing from you about your interest in this initiative. We have attached a location map of the proposed site for your review. Please respond within thirty days of receipt of this letter with comments, questions, or a request for further information.

Sincerely,

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Facilities Engineering and
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RE: The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Cayuga Nation Unity Council
Attention: Tribal Leader
P.O. Box 169
Seneca Falls, New York 13148

Dear Tribal Leader:

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the Virginia National Guard (VANG) for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre parcel located in the northwest corner of DSCR. The 13.6 acre property was leased from the United States Government to the Commonwealth of Virginia.

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Cayuga Nation
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P.O. Box 803
Seneca Falls, New York 13148

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Cherokee Nation
Attention: Mr. Bill John Baker, Principal Chief
P.O. Box 948
Tahlequah, Oklahoma 74465

Dear Mr. Baker:

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Eastern Band of Cherokee Indians
Attention: Mr. Michell Hicks, Principal Chief
P.O. Box 455
Cherokee, North Carolina 28719

Dear Mr. Hicks:

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the Virginia National Guard (VANG) for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre parcel located in the northwest corner of DSCR. The 13.6 acre property was leased from the United States Government to the Commonwealth of Virginia.

The VAARNG has determined, with reference to 36 CFR Part 800, *Protection of Historic Properties*, Section 106 of the National Historic Preservation Act of 1966, as amended, that this action constitutes an undertaking, and is writing to invite your comments according to 36 CFR Part 800.2(c)(2)(ii).

The VAARNG is conducting consultation with the Virginia Department of Historic Resources (DHR), the Virginia State Historic Preservation Office, according to 36 CFR Part 800. The project's area of potential effect for archaeology has experienced extensive ground disturbance in the past, due to construction and demolition of warehouse buildings, and DSCR and DHR have determined that no further archaeological investigations are required in this area. The parcel is located within the Bellwood-Richmond Quartermaster Depot Historic District, considered eligible for listing in the National Register of Historic Places. The DHR has concurred with the VAARNG's conditional no adverse effect finding for the proposed action, and the VAARNG is continuing to consult with DHR according to the agreed-upon conditions.

We look forward to hearing from you about your interest in this initiative. We have attached a location map of the proposed site for your review. Please respond within thirty days of receipt of this letter with comments, questions, or a request for further information.

Sincerely,

Charlton T. Dunn
Lieutenant Colonel, VAARNG
Assistant Chief of Staff
Facilities Engineering and
Management

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
OFFICE OF THE ADJUTANT GENERAL OF VIRGINIA
VIRGINIA NATIONAL GUARD
BUILDING 316, FORT PICKETT
BLACKSTONE, VIRGINIA 23824-6316

REPLY TO
ATTENTION OF

May 29, 2015

Facilities Engineering and
Management

RE: The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Tuscarora Nation
Attention: Mr. Leo Henry, Chief
2006 Mount Hope Road
Lewiston, New York 14092

Dear Mr. Henry:

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Management

RE: The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

United Keetoowah Band of Cherokee Indians
Attention: Mr. George Wickliffe, Chief
P.O. Box 746
Tahlequah, OK 74465

Dear Mr. Wickliffe:

The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the Virginia National Guard (VANG) for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre parcel located in the northwest corner of DSCR. The 13.6 acre property was leased from the United States Government to the Commonwealth of Virginia.

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Management

RE: The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Cheroenhaka (Nottoway) Indian Tribe
Mr. Walt Brown, Chief
P.O. Box 397
Courtland, Virginia 23837

Dear Mr. Brown:

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RE: The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Chickahominy Indian Tribe
Mr. Stephen R. Adkins, Chief
8200 Lott Cary Road
Providence Forge, Virginia 23140

Dear Mr. Adkins:

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The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the Virginia National Guard (VANG) for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre parcel located in the northwest corner of DSCR. The 13.6 acre property was leased from the United States Government to the Commonwealth of Virginia.

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Chickahominy Indians – Eastern Division
Mr. Gene W. Adkins, Chief
3120 Mount Pleasant Road
Providence Forge, VA 23140

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RE: The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Mattaponi Indian Tribe
Mr. Mark Custalow, Chief
1467 Mattaponi Reservation Circle
West Point, Virginia 23181

Dear Mr. Custalow:

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RE: The Virginia Army National Guard (VAARNG) is preparing environmental documentation for the proposed Virginia National Guard State Headquarters facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia.

Monacan Indian Tribe
Ms. Sharon Bryant, Chief
P.O. Box 1136
Madison Heights, Virginia 24572

Dear Ms. Bryant:

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The proposed facility will address a lack of administrative space, overcrowding and outdated facilities currently encountered by various elements of the VAARNG. The proposed Virginia National Guard State Headquarters would provide approximately 105,000 square feet of office and administrative space needed to operate and coordinate the missions of the Virginia National Guard (VANG) for approximately 190 personnel. The proposed facility will be constructed on a 13.6 acre parcel located in the northwest corner of DSCR. The 13.6 acre property was leased from the United States Government to the Commonwealth of Virginia.

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Nansemond Indian Tribe
Mr. Barry W. Bass, Chief
3427 Galberry Road
Chesapeake, Virginia 23323

Dear Mr. Bass:

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Nottoway Indian Tribe of Virginia, Inc.
Ms. Lynette Allston, Council Chair and Chief
25274 Barhams Hill Road
P.O. Box 24
Drewryville, Virginia 23844

Dear Ms. Allston:

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Pamunkey Tribe
Mr. Kevin Brown, Chief
331 Pocket Road
King William, Virginia 23086

Dear Mr. Brown:

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APPENDIX B: PUBLIC NOTICES

(To be completed following public review)

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APPENDIX C: PUBLIC COMMENTS AND RESPONSES

(To be completed following public review)

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APPENDIX D: COASTAL RESOURCES CONSISTENCY DETERMINATION

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Determination of Consistency with Virginia's Coastal Resources Management Program

Pursuant to Section 307 of the Coastal Zone Management Act of 1972, as amended, this is a Federal Consistency Determination for the VANG's proposed construction and operation of a new VANG State HQ. VANG is required to determine the consistency of its activities affecting Virginia's coastal resources or coastal uses with the 1986 Virginia Coastal Zone Management Program.

This document represents an analysis of project activities in light of established VCZMP Enforceable Programs. Furthermore, submission of this consistency determination reflects the commitment of the Army to comply with those Enforceable Programs. The proposed project would be conducted in a manner which is consistent with the VCZMP. VANG has determined that construction and operation of a new VANG State HQ would not affect land and water uses or natural resources of Virginia's coastal zone.

1. Description of Proposed Action

Under the Proposed Action, NGB and VANG would construct and operate a new VANG State HQ at DSCR. The Proposed Action would provide adequate office and administrative space to operate and coordinate the missions of VANG. The Proposed Action is necessary to support the readiness of the entire VANG.

2. Assessment of Probable Effects

The planning and design phase of the Proposed Action would have no coastal zone effects to relevant VCZMP elements. Any applicable permits required for the Proposed Action would be obtained and complied with throughout project duration. A review of the permits and/or approvals required under the enforceable Regulatory Program has been conducted. VANG staff evaluated the proposed construction and operation of a new VANG State HQ based on foreseeable effects on the following enforceable policies:

Fisheries - The construction and operation of a new VANG State HQ would have no foreseeable impacts on finfish or shellfish resources and would not affect the promotion of commercial or recreational fisheries in Virginia.

Subaqueous Lands Management – The construction and operation of a new VANG State HQ has no foreseeable impact on subaqueous resources. Although the construction activities that are part of the Proposed Action would result in soil disturbances which have the potential to affect subaqueous lands, the project includes appropriate erosion and sediment controls to protect these resources.

Wetlands Management – Although the construction activities that are part of the Proposed Action would result in soil disturbances, which have the potential to affect wetlands, there are no wetlands in the project area. In addition, the project includes appropriate erosion and sediment controls to protect water resources. However, some small increases in sediment loads in stormwater runoff could occur, even with approved stormwater management and erosion and sediment control plans in place. These minor increases would only be expected to last while construction is ongoing. Any adverse impacts to wetlands would be less-than-significant.

Dunes Management – The construction and operation of a new VANG State HQ would have no foreseeable impact on coastal primary sand dunes. Dunes are not present in the project area. The project would not destroy or alter coastal primary sand dunes.

Non-Point Source Pollution Control – The construction activities that are part of the Proposed Action would result in soil disturbances that have the potential to create non-point source pollution. However, the project includes stormwater management techniques and appropriate erosion and sediment controls to minimize any non-point source pollution. All erosion controls would be designed in accordance with the Virginia Erosion and Sediment Control Regulations handbook and would be implemented in accordance with the Virginia Stormwater Management Program (VSMP); the Chesapeake Bay Preservation Area Designation and Management guidelines; and the DCR VSMP General Permit for Storm Water discharges associated with land disturbing activities. The construction and operation of a new VANG State HQ would not cause significant non-point source pollution.

Point Source Pollution Control – The construction and operation of a new VANG State HQ would not generate any water or sewer connections. The proposed project would not generate any new point source discharges.

Shoreline Sanitation – The construction and operation of a new VANG State HQ would have no impact on shoreline sanitation.

Air Pollution Control – The construction and operation of a new VANG State HQ would have negligible impacts on air quality. There would be minor air emissions associated with construction activities, including airborne fugitive dust from ground disturbance, combustion byproducts from construction equipment, and dust/emissions generated worker travel during construction. Compliance with all applicable local, state, and federal regulations would ensure that impacts are less-than-significant.

Coastal Lands Management – The Proposed Action would create land disturbances associated with construction activities. Such activities would result in excavation of soils and geologic material. To the greatest extent practicable, excavated materials would be stockpiled on site and

protected from wind and rain erosion until construction of the proposed VANG State HQ was completed. At that time, as much material as possible would be returned to the excavated areas. Remaining material would be disposed of at an approved offsite location. There would be less-than-significant adverse impacts to coastal lands management.

Chesapeake Bay Preservation Areas – Construction of the proposed VANG State HQ would not involve either development or redevelopment activities on any properly designated as a Chesapeake Preservation Area as defined by the Chesapeake Bay Preservation Act, Virginia Code 10.1-2100 et seq. and its implementing Chesapeake Bay Preservation Area Designation and Management Regulations, 9 VAC 10-20-10 et seq.

3. Summary of Findings

Based on the above analysis, and as elaborated in the Draft EA, VANG finds the proposed construction and operation of a new VANG State HQ to be fully consistent with the federally approved enforceable provisions of VCZMP, pursuant to the Coastal Zone Management Act of 1972, as amended and in accordance with 15 CFR Part 930.30(c).

By certification that the Proposed Action is consistent with enforceable VCZMP programs, Virginia would be notified that it has 60 days from receipt of this determination in which to concur with or object to this Consistency Determination. However, pursuant to 15 CFR Part 903.63(b), if Virginia has not issued a decision by the 60th day from receipt of this determination, it shall notify VANG of the status of the matter and the basis for further delay. The State's concurrence, objection, or notification of review status shall be sent to:

James C. Shaver Jr.
MAJ, FA, VANG
Bldg. 316 Fort Pickett
Blackstone, VA 23824

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APPENDIX E: PROTECTED SPECIES

NGVA-FMO-ENV 19 August 2015

MEMORANDUM FOR RECORD

SUBJECT: Online Project Review Certification, Defense Supply Center – Richmond Joint Forces Headquarters Building Construction Project

1. The Virginia National Guard Environmental Office has reviewed the referenced project using the Virginia Field Office's online project review process and have followed all guidance and instructions in completing the review. The review was completed on 13 August 2015 and submitted in a project review certification package in accordance with the USFWA Virginia Field Office instructions for further review.

2. The VA National Guard will construct a 2-story, 105,434 sq ft administrative building to house its Joint Forces Headquarters (JFHQ) at Defense Supply Center Richmond (DSCR) on the north end of the installation on or about June 2016. Current utilities in place will be relocated. Once constructed, activities will be limited to administration, classroom training, and limited vehicle/equipment storage.

3. The Property is located on DSCR in Chesterfield County, Richmond, Virginia. The Property is bounded by A, C, 4th, and 5th Streets. The Property and surrounding land is nearly flat and situated at an elevation of 120 feet above sea level. No surface-water bodies are located on the Property. Surface water is collected by 15 catch basins (located adjacent to the Property) prior to flowing through storm sewers that discharge to a tributary of Falling Creek, located approximately 0.15 mile northwest of the Property. Up gradient drainage areas are toward the south and southwest and include residential properties and former warehouses. The current condition of the property is cleared, open fields with no trees or structures.

4. The project is expected to be initiated in June 2016 and continue until complete on or about September 2017. Once construction is completed, the units and state civilians currently occupying Sandston Readiness Center will move to the new facility at DSCR to resume normal activities.

5. This project requires an internal Endangered Species Act (ESA) Section 7 review and effects determination for the presence or potential habitat of federally listed species as required by the ESA of 1973, as amended. This project review is needed for the Federal NEPA review through the National Guard Bureau due to the project receiving Federal funding for construction, location on Federal property, and Federal employees projected to work at the facility.

6. The enclosed project review certification package provides the information about the species, critical habitat, and bald eagles considered in our review, and the species conclusions table included in the package identifies our determinations for the resources that may be affected by the project. A “No Effect” determination was made for the Northern Long-eared Bat (*Miotis Septentrionalis*).

a. Due to no suitable habitat existing on the action area of the project for NLEB, no bat surveys were conducted during the Environmental Assessment. Due to the presence of the NLEB being unknown at the project site, the Programmatic Agreement found in the *Informal Consultation and Management Guidelines for the Northern Long-eared Bat involving on-going operations on Army National Guard property*, dated 27 April 2015, was used as the basis in this review for determining whether or not the proposed actions of the VAARNG, as a federal Agency, will affect the NLEB and its habitat. As stated in the U.S. Fish and Wildlife Service review of construction projects, a No Effect determination can be made if certain conditions are met. Based on the lack of trees or other suitable habitat for the NLEB within the action area of the project, no direct effect to habitat will be made during the execution of the project. However, a 120 foot buffer between the project site and the nearest potential habitat located off the installation to the west of the site will be maintained to ensure noise and vibrations generated by heavy equipment does not temporarily disturb roosting bats during the active season. Additionally, the buffer contains a road and an active rail-road track that creates an ambient noise level that is expected to exceed that produced by the construction project. The existing fences along the edge of the train track will also serve to ensure that no construction equipment encroaches on the 120 foot buffer. To ensure the effects of the construction project are insignificant or discountable, the VAARNG will follow all other conservation measures recommended in the Informal Consultation, Paragraph 5.D. At this time, in accordance with the specified effects per the Informal Consultation, the VAARNG determination for this project is that the effects will be insignificant and discountable for the NLEB, thus warranting a “No Effect” determination.

7. The POC for information regarding natural resources for this project is Mr. Brian Webb at 804-436-3784 or brian.j.webb14.mil@mail.mil.

WEBB.BRIAN.JENNI

Digitally signed by WEBB.BRIAN.JE NNINGS.1267795

BRIAN J. WEBB
CPT, CM, VAARNG
NEPA Specialist

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
PHONE: (804)693-6694 FAX: (804)693-9032
URL: www.fws.gov/northeast/virginiafield/

Consultation Code: 05E2VA00-2015-SLI-2881 July 27, 2015
Event Code: 05E2VA00-2015-E-02987
Project Name: VANG State Headquarters, DSCR

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.*).

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 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/TOC-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). 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/comtow.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

United States Department of Interior
Fish and Wildlife Service

Project name: VANG State Headquarters, DSCR

Official Species List

Provided by:

Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
(804) 693-6694
http://www.fws.gov/northeast/virginiafield/

Consultation Code: 05E2VA00-2015-SLI-2881
Event Code: 05E2VA00-2015-E-02987

Project Type: MILITARY OPERATIONS / MANEUVERS

Project Name: VANG State Headquarters, DSCR
Project Description: The Virginia National Guard proposes to construct a new Joint Forces Headquarters on a 13.6 acre parcel at Defense Supply Center, Richmond. The project site is in Chesterfield County, Virginia.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

United States Department of Interior
Fish and Wildlife Service

Project name: VANG State Headquarters, DSCR

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-77.45243310928345 37.433789296182674, -77.45483636856079 37.4338063347803, -77.45494365692139 37.42941024800626, -77.44998693466187 37.429427287600674, -77.4500298500061 37.43372114175342, -77.45243310928345 37.433789296182674)))

Project Counties: Chesterfield, VA

United States Department of Interior
Fish and Wildlife Service

Project name: VANG State Headquarters, DSCR

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Mammals	Status	Has Critical Habitat	Condition(s)
Northern long-eared Bat *(Myotis septentrionalis)*	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

July 22, 2015

Shirl Dressler
Secretary Senior
Virginia Department of Game and Inland Fisheries
4010 W. Broad Street
Richmond, Virginia 23230

Re: Proposed Virginia Army National Guard State Headquarters
Defense Supply Center Richmond
Chesterfield County, Virginia
Request for Information
EEE Consulting, Inc. Project No. 15-115

Dear Ms. Dressler:

On behalf of the Department of Military Affairs (DMA), EEE Consulting, Inc. is performing an Environmental Assessment (EA) for the above-referenced project to determine its suitability as the location for the proposed construction of a new State Headquarters Building at Defense Supply Center Richmond. The new headquarters will replace the existing headquarters at the Sandston Armory Readiness Center in Sandston, Virginia. An Initial Project Assessment was performed using the DGIF Virginia Fish and Wildlife Information Service (VaFWIS) online database. A search was conducted for all species within 2 miles of the proposed study area. We have attached the query results with this letter, and request that you verify the accuracy of the query results and provide your comments as to whether or not the proposed project may impact natural heritage resources.

The project area is located in Chesterfield County, Virginia. A topographic map showing the project boundary is attached. Six warehouses were recently demolished and the area has been cleared and graded by DSCR contractors under a separate project. The area is currently bare ground. No wetland or stream impacts are anticipated and no clearing of vegetation would be required for the construction of the new buildings. An aerial photograph, a USGS topographic map, a wetlands map and site photos depicting the site location and land cover are attached to assist in your review.

Per recent guidance from DGIF, we understand that due to staffing limitations, the Fish and Wildlife Information Services Section is unable to review or provide an assessment of any projects submitted to them for review. We also understand that "No response from VDGIF does not constitute "no comment" nor does it imply support of the project or associated activities. It simply means VDGIF has not been able to respond." If we do not receive any comments from your office regarding the proposed project within 30 days of this email, we will proceed, including this correspondence in our species evaluation documentation. Please call me at (804) 442-3330 ext. 214 if you have any questions or need any additional information to assist with your review.

Sincerely,

Jennifer Jones
Environmental Scientist

8525 Bell Creek Road, Mechanicsville, Virginia 23116 • (804) 442-3330 • (804) 442-3334 (fax)
201 Church Street, Suite C, Blacksburg, Virginia 24060 • (540) 953-0170 • (540) 953-0171 (fax)
272 Bendix Road Road, Suite 260, Virginia Beach, Virginia 23452 • (757) 552-1054 • (757) 301-8747 (fax)

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3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

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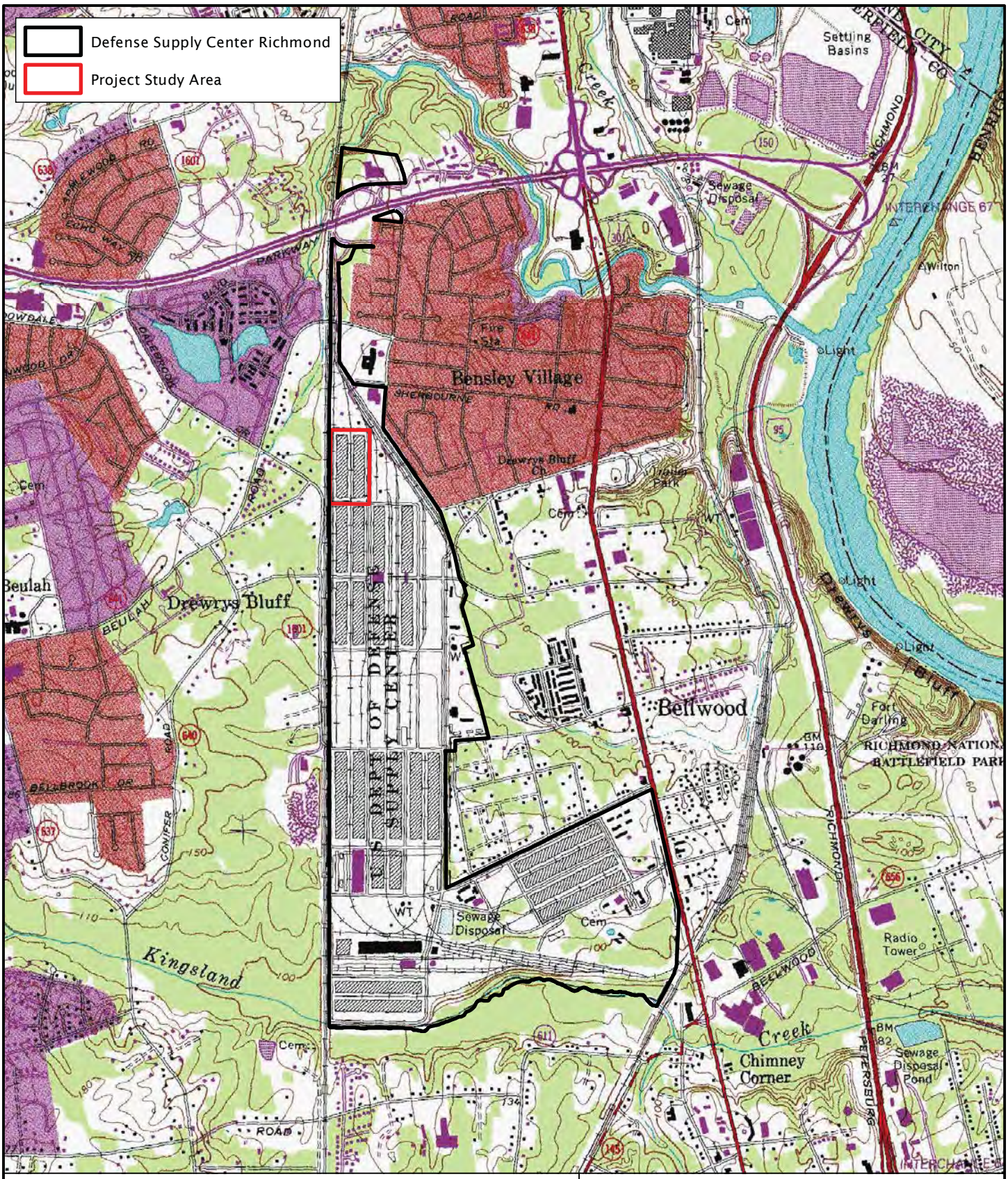
FIGURE 2
AERIAL PHOTOGRAPH OF SITE AND ADJACENT PROPERTIES
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 300 600
Feet

Chesterfield, VA
Sources: 2014 NAIP Aerial Imagery
Prepared by Brian Brown. June 22, 2015

Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet



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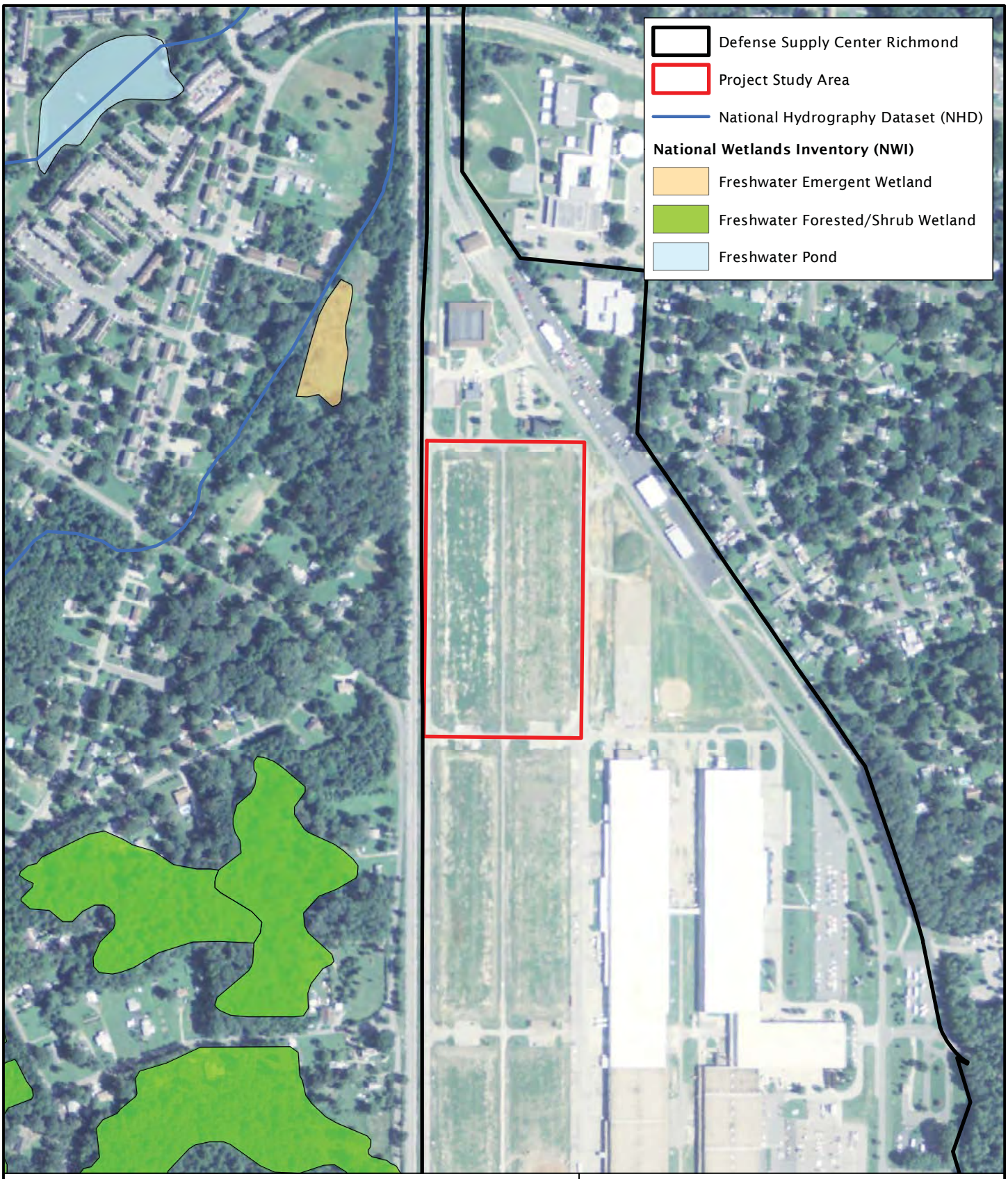
3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

FIGURE 3
SITE LOCATION AND TOPOGRAPHY
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 2,000 4,000
Feet

Chesterfield, VA
Sources: USGS Topo Quad Drewrys Bluff (o37077d4)
Prepared by Brian Brown. June 22, 2015

Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet



3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

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FIGURE 5
MAPPED WETLANDS AND SURFACE WATERS
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 500 1,000
Feet

Chesterfield, VA
Sources: 2014 NAIP Aerial Imagery; FWS NWI Database
Prepared by Brian Brown. June 22, 2015

Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

VaFWIS - Department of Game and Inland Fisheries

37,25,54.5 -77,27,08.4
is the Search Point

Submit Cancel

Search Point

- **Change** to "clicked" map point
- **Fixed** at 37,25,54.5 -77,27,08.4

Show Position Rings

Yes No

1/2 mile and 1/8 mile at the **Search Point**

Show Search Area

Yes No

2 Search distance miles radius

Search Point is at map center

Base Map Choices

Topography

Map Overlay Choices

Current List: Position, Search

Map Overlay Legend

Position Rings 1/2 mile and 1/8 mile at the Search Point

2 mile radius Search Area

back

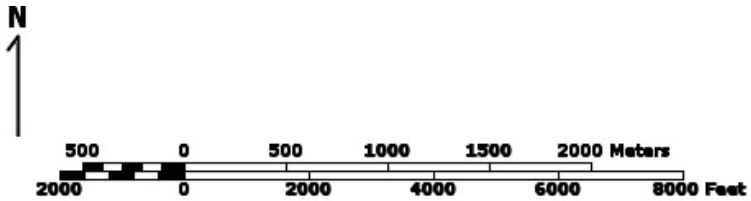
Refresh Browser Page

Map Click Pan Id M

Map Scale In Zoom Out

Screen Size Small Size Big

Help



Point of Search 37,25,54.5 -77,27,08.4

Map Location 37,25,54.5 -77,27,08.4

Select **Coordinate System:**

- Degrees,Minutes,Seconds Latitude - Longitude
- Decimal Degrees Latitude - Longitude
- Meters UTM NAD83 East North Zone
- Meters UTM NAD27 East North Zone

Base Map source: Topographic maps from TOPO! copyright 2006 (see National Geographic Maps for details)

Map projection is UTM Zone 18 NAD 1983 with left 280626 and top 4147999. Pixel size is 8 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents

4800 meters east to west by 4800 meters north to south for a total of 23.0 square kilometers. The map display represents 15750 feet east to west by 15750 feet north to south for a total of 8.9 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2015-07-14 16:21:07 (qa/qc December 5, 2012 8:04 - tn=670463 dist=3218 I)
$poi=37.4318055 -77.4523333

| DGIF | Credits | Disclaimer | Contact shirl.dressler@dgif.virginia.gov |Please view our privacy policy |
© 1998-2015 Commonwealth of Virginia Department of Game and Inland Fisheries

VaFWIS Search Report Compiled on 7/14/2015, 4:23:19 PM

Help

Known or likely to occur within a **2 mile radius around point 37,25,54.5 -77,27,08.4** in **041 Chesterfield County, 087 Henrico County, 760 Richmond City, VA**

View Map of Site Location

531 Known or Likely Species ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
060017	FESE	I	Spinymussel, James	Pleurobema collina		BOVA
010032	FESE	II	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
060003	FESE	II	Wedgemussel, dwarf	Alasmidonta heterodon		BOVA
050022	FT		Bat, northern long-eared	Myotis septentrionalis		BOVA
040096	ST	I	Falcon, peregrine	Falco peregrinus	Yes	BOVA,SppObs
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
020002	ST	II	Treefrog, barking	Hyla gratiosa		BOVA
060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus		BOVA
060029	FS	III	Lance, yellow	Elliptio lanceolata		BOVA
010038	FS	IV	Alewife	Alosa pseudoharengus	Yes	BOVA,SppObs
100001	FS	IV	fritillary, Diana	Speyeria diana		BOVA
010045	FS		Herring, blueback	Alosa aestivalis	Yes	BOVA,SppObs
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA
010077		I	Shiner, bridle	Notropis bifrenatus		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
040319		I	Warbler, black-throated green	Dendroica virens		BOVA
060084		I	Pigtoe, Virginia	Lexingtonia subplana		BOVA
040052		II	Duck, American black	Anas rubripes		BOVA
040029		II	Heron, little blue	Egretta caerulea caerulea		BOVA
040036		II	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040213		II	Owl, northern saw-whet	Aegolius acadicus		BOVA
040105		II	Rail, king	Rallus elegans	Potential	BOVA,Habitat
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA
040266		II	Wren, winter	Troglodytes troglodytes		BOVA
030068		III	Turtle, woodland box	Terrapene carolina carolina		BOVA
040094		III	Harrier, northern	Circus cyaneus		BOVA
040204		III	Owl, barn	Tyto alba pratincola		BOVA
040062		III	Redhead	Aythya americana		BOVA
060145		III	Rainbow, Notched	Villosa constricta		BOVA

100150		III	Butterfly, mottled duskywing	Erynnis martialis		BOVA
010363		IV	Darter, Appalachia	Percina gymnocephala		BOVA
010131		IV	Eel, American	Anguilla rostrata	Yes	BOVA,SppObs
010359		IV	Lamprey, American brook	Lampetra appendix	Yes	BOVA,SppObs
010001		IV	Lamprey, least brook	Lampetra aepyptera		BOVA
010040		IV	Shad, American	Alosa sapidissima	Yes	BOVA,SppObs
010375		IV	Shiner, ironcolor	Notropis chalybaeus		BOVA
010179		IV	Sunfish, banded	Enneacanthus obesus		BOVA
010173		IV	Sunfish, mud	Acantharchus pomotis		BOVA
010149		IV	Swampfish	Chologaster cornuta		BOVA
020018		IV	Frog, upland chorus	Pseudacris feriarum		BOVA
020069		IV	Salamander, eastern mud	Pseudotriton montanus montanus		BOVA
020058		IV	Siren, greater	Siren lacertina		BOVA
020061		IV	Spadefoot, eastern	Scaphiopus holbrookii		BOVA
030009		IV	Lizard, eastern slender glass	Ophisaurus attenuatus longicaudus		BOVA
030045		IV	Ribbonsnake, common	Thamnophis sauritus sauritus		BOVA
030017		IV	Scarletsnake, northern	Cemophora coccinea copei		BOVA
030046		IV	Snake, common rainbow	Farancia erytrogramma erytrogramma		BOVA
030024		IV	Snake, eastern hog-nosed	Heterodon platirhinos	Yes	BOVA,SppObs
030033		IV	Snake, queen	Regina septemvittata		BOVA
040349		IV	Blackbird, rusty	Euphagus carolinus		BOVA
040100		IV	Bobwhite, northern	Colinus virginianus		BOVA
040272		IV	Catbird, gray	Dumetella carolinensis		BOVA
040337		IV	Chat, yellow-breasted	Icteria virens virens		BOVA
040214		IV	Chuck-will's-widow	Caprimulgus carolinensis		BOVA
040264		IV	Creeper, brown	Certhia americana		BOVA
040202		IV	Cuckoo, yellow-billed	Coccyzus americanus		BOVA
040142		IV	Dowitcher, short-billed	Limnodromus griseus		BOVA
040240		IV	Flycatcher, willow	Empidonax traillii		BOVA
040028		IV	Heron, green	Butorides virescens		BOVA
040229		IV	Kingbird, eastern	Tyrannus tyrannus		BOVA
040344		IV	Meadowlark, eastern	Sturnella magna		BOVA
040263		IV	Nuthatch, brown-headed	Sitta pusilla		BOVA
040330		IV	Ovenbird	Seiurus aurocapilla		BOVA
040312		IV	Parula, northern	Parula americana		BOVA
040243		IV	Pewee, eastern wood	Contopus virens		BOVA
040107		IV	Rail, Virginia	Rallus limicola		BOVA
040065		IV	Scaup, greater	Aythya marila		BOVA
040391		IV	Sparrow, field	Spizella pusilla		BOVA
040378		IV	Sparrow, grasshopper	Ammodramus savannarum pratensis		BOVA
040248		IV	Swallow, northern rough-winged	Stelgidopteryx serripennis		BOVA
040217		IV	Swift, chimney	Chaetura pelagica		BOVA
040355		IV	Tanager, scarlet	Piranga olivacea		BOVA
040273		IV	Thrasher, brown	Toxostoma rufum		BOVA
040277		IV	Thrush, wood	Hylocichla mustelina		BOVA
040375		IV	Towhee, eastern	Pipilo erythrophthalmus		BOVA
040297		IV	Vireo, yellow-throated	Vireo flavifrons		BOVA
040302		IV	Warbler, black-and-white	Mniotilta varia		BOVA
040307		IV	Warbler, blue-winged	Vermivora pinus		BOVA
040340		IV	Warbler, Canada	Wilsonia canadensis		BOVA
040333		IV	Warbler, Kentucky	Oporornis formosus		BOVA
040328		IV	Warbler, prairie	Dendroica discolor		BOVA
040303		IV	Warbler, prothonotary	Protonotaria citrea		BOVA
040305		IV	Warbler, worm-eating	Helmitheros vermivorus		BOVA
040313		IV	Warbler, yellow	Dendroica petechia		BOVA
040332		IV	Waterthrush, Louisiana	Seiurus motacilla		BOVA
040215		IV	Whip-poor-will	Caprimulgus vociferus		BOVA
040140		IV	Woodcock, American	Scolopax minor		BOVA
040269		IV	Wren, marsh	Cistothorus palustris		BOVA
050075		IV	Mouse, cotton	Peromyscus gossypinus gossypinus		BOVA

050131		IV	Myotis, southeastern	Myotis austroriparius		BOVA
060137		IV	Creeper	Strophitus undulatus		BOVA
060157		IV	Floater, Alewife	Anodonta implicata		BOVA
060159		IV	Lance, Carolina	Elliptio angustata		BOVA
060074		IV	Mucket, tidewater	Leptodea ochracea		BOVA
060184		IV	Mussel, northern lance	Elliptio fisheriana		BOVA
060005		IV	Mussel, triangle floater	Alasmidonta undulata		BOVA
060176		IV	Spike, Atlantic	Elliptio producta		BOVA
010049			Anchovy, bay	Anchoa mitchilli		BOVA
010188			Bass, largemouth	Micropterus salmoides	Yes	BOVA,SppObs
010186			Bass, smallmouth	Micropterus dolomieu	Yes	BOVA,SppObs
010187			Bass, spotted	Micropterus punctulatus		BOVA
010168			Bass, striped	Morone saxatilis	Yes	BOVA,SppObs
010183			Bluegill	Lepomis macrochirus	Yes	BOVA,SppObs
010034			Bowfin	Amia calva		BOVA
010123			Bullhead, brown	Ameiurus nebulosus		BOVA
010122			Bullhead, yellow	Ameiurus natalis	Yes	BOVA,SppObs
010062			Carp, common	Cyprinus carpio		BOVA
010390			Catfish, blue	Ictalurus furcatus		BOVA
010125			Catfish, channel	Ictalurus punctatus	Yes	BOVA,SppObs
010130			Catfish, flathead	Pylodictis olivaris		BOVA
010120			Catfish, white	Ameiurus catus		BOVA
010066			Chub, bluehead	Nocomis leptocephalus	Yes	BOVA,SppObs
010373			Chub, bull	Nocomis raneyi	Yes	BOVA,SppObs
010103			Chub, creek	Semotilus atromaculatus	Yes	BOVA,SppObs
010067			Chub, river	Nocomis micropogon		BOVA
010106			Chubsucker, creek	Erimyzon oblongus	Yes	BOVA,SppObs
010190			Crappie, black	Pomoxis nigromaculatus	Yes	BOVA,SppObs
010189			Crappie, white	Pomoxis annularis		BOVA
010101			Dace, blacknose	Rhinichthys atratulus	Yes	BOVA,SppObs
010102			Dace, longnose	Rhinichthys cataractae	Yes	BOVA,SppObs
010060			Dace, mountain redbelly	Chrosomus oreas	Yes	BOVA,SppObs
010366			Dace, rosyside	Clinostomus funduloides	Yes	BOVA,SppObs
010193			Darter, fantail	Etheostoma flabellare	Yes	BOVA,SppObs
010204			Darter, glassy	Etheostoma vitreum		BOVA
010198			Darter, johnny	Etheostoma nigrum		BOVA
010061			Darter, Roanoke	Percina roanoka		BOVA
010213			Darter, shield	Percina peltata		BOVA
010211			Darter, stripeback	Percina notogramma		BOVA
010194			Darter, swamp	Etheostoma fusiforme		BOVA
010397			Darter, tessellated	Etheostoma olmstedi	Yes	BOVA,SppObs
010104			Fallfish	Semotilus corporalis	Yes	BOVA,SppObs
010176			Flier	Centrarchus macropterus		BOVA
010033			Gar, longnose	Lepisosteus osseus		BOVA
010059			Goldfish	Carassius auratus		BOVA
010312			Hogchoker	Trinectes maculatus		BOVA
010112			Jumprock, black	Moxostoma cervinum		BOVA
010143			Killifish, banded	Fundulus diaphanus		BOVA
010424			Madtom, Genus = Noturus	Noturus spp.		BOVA
010129			Madtom, margined	Noturus insignis	Yes	BOVA,SppObs
010128			Madtom, tadpole	Noturus gyrinus		BOVA
010043			Menhaden, Atlantic	Brevoortia tyrannus		BOVA
010099			Minnow, bluntnose	Pimephales notatus		BOVA
010408			Minnow, eastern silvery	Hybognathus regius		BOVA
010148			Mosquitofish, eastern	Gambusia holbrooki		BOVA
010054			Mudminnow, eastern	Umbra pygmaea		BOVA
010299			Mullet, striped	Mugil cephalus		BOVA
010144			Mummichog	Fundulus heteroclitus		BOVA
010163			Perch, pirate	Aphredoderus sayanus sayanus	Yes	BOVA,SppObs
010166			Perch, white	Morone americana	Yes	BOVA,SppObs

010206			Perch, yellow	Perca flavescens		BOVA
010056			Pickerel, chain	Esox niger	Yes	BOVA,SppObs
010055			Pickerel, redfin	Esox americanus americanus		BOVA
010182			Pumpkinseed	Lepomis gibbosus	Yes	BOVA,SppObs
010374			Quillback	Carpiodes cyprinus		BOVA
010114			Redhorse, golden	Moxostoma erythrurum		BOVA
010116			Redhorse, shorthead	Moxostoma macrolepidotum		BOVA
010041			Shad, gizzard	Dorosoma cepedianum	Yes	BOVA,SppObs
010039			Shad, hickory	Alosa mediocris		BOVA
010042			Shad, threadfin	Dorosoma petenense	Yes	BOVA,SppObs
010072			Shiner, comely	Notropis amoenus		BOVA
010080			Shiner, common	Luxilus cornutus	Yes	BOVA,SppObs
010453			Shiner, Genus = Cyprinella	Cyprinella sp.		BOVA
010068			Shiner, golden	Notemigonus crysoleucas	Yes	BOVA,SppObs
010087			Shiner, highland	Notropis micropteryx		BOVA
010074			Shiner, rosefin	Lythrurus ardens		BOVA
010466			shiner, rosyface	Notropis rubellus	Yes	SppObs
010073			Shiner, satinfin	Cyprinella analostana	Yes	BOVA,SppObs
010091			Shiner, spotfin	Cyprinella spiloptera	Yes	BOVA,SppObs
010082			Shiner, spottail	Notropis hudsonius	Yes	BOVA,SppObs
010086			Shiner, swallowtail	Notropis procne	Yes	BOVA,SppObs
010383			Shiner, telescope	Notropis telescopus		BOVA
010303			Silverside, Atlantic	Menidia menidia		BOVA
010302			Silverside, inland	Menidia beryllina		BOVA
010246			Spot	Leiostomus xanthurus		BOVA
010058			Stoneroller, central	Campostoma anomalum		BOVA
010108			Sucker, northern hog	Hypentelium nigricans	Yes	BOVA,SppObs
010118			Sucker, torrent	Thoburnia rhothoeca		BOVA
010105			Sucker, white	Catostomus commersoni	Yes	BOVA,SppObs
010178			Sunfish, bluespotted	Enneacanthus gloriosus	Yes	BOVA,SppObs
010454			Sunfish, Genus = Lepomis	Lepomis sp.		BOVA
010181			Sunfish, green	Lepomis cyanellus	Yes	BOVA,SppObs
010180			Sunfish, redbreast	Lepomis auritus	Yes	BOVA,SppObs
010185			Sunfish, redear	Lepomis microlophus		BOVA
010216			Walleye	Sander vitreus vitreus		BOVA
010177			Warmouth	Lepomis gulosus		BOVA
020001			Amphiuma, two-toed	Amphiuma means		BOVA
020004			Bullfrog, American	Lithobates catesbeianus		BOVA
020003			Frog, Brimley's chorus	Pseudacris brimleyi		BOVA
020015			Frog, coastal plain cricket	Acris gryllus gryllus		BOVA
020012			Frog, eastern cricket	Acris crepitans		BOVA
020008			Frog, green	Lithobates clamitans		BOVA
020013			Frog, pickerel	Lithobates palustris		BOVA
020016			Frog, southern leopard	Lithobates sphenocephalus utricularius		BOVA
020065			Newt, red-spotted	Notophthalmus viridescens viridescens		BOVA
020071			Peeper, spring	Pseudacris crucifer		BOVA
020084			Salamander, Atlantic Coast Slimy	Plethodon chlorobryonis		BOVA
020043			Salamander, eastern red-backed	Plethodon cinereus		BOVA
020029			Salamander, four-toed	Hemidactylium scutatum		BOVA
020035			Salamander, marbled	Ambystoma opacum		BOVA
020038			Salamander, northern dusky	Desmognathus fuscus		BOVA
020070			Salamander, northern red	Pseudotriton ruber ruber		BOVA
020050			Salamander, southern two-lined	Eurycea cirrigera		BOVA
020049			Salamander, spotted	Ambystoma maculatum		BOVA
020051			Salamander, three-lined	Eurycea guttolineata		BOVA
020080			Salamander, white-spotted slimy	Plethodon cylindraceus		BOVA
020059			Toad, eastern American	Anaxyrus americanus americanus		BOVA
020060			Toad, eastern narrow-mouthed	Gastrophryne carolinensis		BOVA
020062			Toad, Fowler's	Anaxyrus fowleri		BOVA
020064			Toad, southern	Anaxyrus terrestris		BOVA

020006			Treefrog, Cope's gray	Hyla chrysoscelis		BOVA
020007			Treefrog, gray	Hyla versicolor		BOVA
020009			Treefrog, green	Hyla cinerea		BOVA
020014			Treefrog, pine woods	Hyla femoralis		BOVA
030041			Brownsnake, northern	Storeria dekayi dekayi	Yes	BOVA,SppObs
030059			Cooter, eastern river	Pseudemys concinna concinna		BOVA
030057			Cooter, northern red-bellied	Pseudemys rubriventris		BOVA
030016			Copperhead, northern	Agkistrodon contortrix mokasen		BOVA
030022			Cornsnake, red	Pantherophis guttatus	Yes	BOVA,SppObs
030015			Cottonmouth, eastern	Agkistrodon piscivorus piscivorus		BOVA
030049			Earthsnake, eastern smooth	Virginia valeriae valeriae		BOVA
030047			Earthsnake, rough	Virginia striatula	Yes	BOVA,SppObs
030044			Gartersnake, eastern	Thamnophis sirtalis sirtalis		BOVA
030078			Gecko, Mediterranean	Hemidactylus turcicus		BOVA
030038			Greensnake, northern rough	Opheodrys aestivus aestivus		BOVA
030026			Kingsnake, eastern	Lampropeltis getula		BOVA
030027			Kingsnake, mole	Lampropeltis calligaster rhombomaculata		BOVA
030002			Lizard, eastern fence	Sceloporus undulatus		BOVA
030029			Milksnake, eastern	Lampropeltis triangulum		BOVA
030018			Racer, northern black	Coluber constrictor constrictor		BOVA
030008			Racerunner, eastern six-lined	Aspidoscelis sexlineata sexlineata	Yes	BOVA,SppObs
030023			Ratsnake, eastern	Pantherophis alleghaniensis		BOVA
030006			Skink, broad-headed	Plestiodon laticeps		BOVA
030004			Skink, common five-lined	Plestiodon fasciatus		BOVA
030007			Skink, little brown	Scincella lateralis		BOVA
030005			Skink, southeastern five-lined	Plestiodon inexpectatus		BOVA
030077			Slider, red-eared	Trachemys scripta elegans		BOVA
030042			Snake, northern red-bellied	Storeria occipitomaculata occipitomaculata		BOVA
030020			Snake, northern ring-necked	Diadophis punctatus edwardsii		BOVA
030021			Snake, southern ring-necked	Diadophis punctatus punctatus		BOVA
030052			Turtle, eastern musk	Sternotherus odoratus		BOVA
030060			Turtle, eastern painted	Chrysemys picta picta		BOVA
030050			Turtle, snapping	Chelydra serpentina	Yes	BOVA,SppObs
030051			Turtle, southeastern mud	Kinosternon subrubrum subrubrum		BOVA
030076			Turtle, striped mud	Kinosternon baurii		BOVA
030037			Watersnake, brown	Nerodia taxispilota		BOVA
030034			Watersnake, northern	Nerodia sipedon sipedon		BOVA
030019			Wormsnake, eastern	Carphophis amoenus amoenus	Yes	BOVA,SppObs
040346			Blackbird, red-winged	Agelaius phoeniceus		BOVA
040282			Bluebird, eastern	Sialia sialis		BOVA
040068			Bufflehead	Bucephala albeola		BOVA
040361			Bunting, indigo	Passerina cyanea		BOVA
040363			Bunting, painted	Passerina ciris ciris		BOVA
040401			Bunting, snow	Plectrophenax nivalis nivalis		BOVA
040064			Canvasback	Aythya valisineria		BOVA
040357			Cardinal, northern	Cardinalis cardinalis		BOVA
040258			Chickadee, Carolina	Poecile carolinensis		BOVA
040113			Coot, American	Fulica americana		BOVA
040024			Cormorant, double-crested	Phalacrocorax auritus		BOVA
040353			Cowbird, brown-headed	Molothrus ater		BOVA
040414			Crake, paint-billed	Neocrex erythrops		BOVA
040373			Crossbill, white-winged	Loxia leucoptera		BOVA
040255			Crow, American	Corvus brachyrhynchos		BOVA
040256			Crow, fish	Corvus ossifragus		BOVA
040364			Dickcissel	Spiza americana		BOVA
040198			Dove, mourning	Zenaida macroura carolinensis		BOVA
040069			Duck, long-tailed	Clangula hyemalis		BOVA
040063			Duck, ring-necked	Aythya collaris		BOVA
040076			Duck, ruddy	Oxyura jamaicensis		BOVA
040061			Duck, wood	Aix sponsa		BOVA

040092			Eagle, golden	Aquila chrysaetos		BOVA
040030			Egret, cattle	Bubulcus ibis		BOVA
040032			Egret, great	Ardea alba egretta		BOVA
040367			Finch, house	Carpodacus mexicanus		BOVA
040366			Finch, purple	Carpodacus purpureus		BOVA
040221			Flicker, northern	Colaptes auratus		BOVA
040239			Flycatcher, Acadian	Empidonax virescens		BOVA
040234			Flycatcher, great crested	Myiarchus crinitus		BOVA
040053			Gadwall	Anas strepera		BOVA
040284			Gnatcatcher, blue-gray	Polioptila caerulea		BOVA
040067			Goldeneye, common	Bucephala clangula americana		BOVA
040371			Goldfinch, American	Carduelis tristis		BOVA
040045			Goose, Canada	Branta canadensis		BOVA
040352			Grackle, common	Quiscalus quiscula		BOVA
040008			Grebe, pied-billed	Podilymbus podiceps		BOVA
040359			Grosbeak, black-headed	Pheucticus melanocephalus		BOVA
040360			Grosbeak, blue	Guiraca caerulea caerulea		BOVA
040365			Grosbeak, evening	Coccothraustes vespertinus		BOVA
040165			Gull, great black-backed	Larus marinus		BOVA
040167			Gull, herring	Larus argentatus		BOVA
040164			Gull, Iceland	Larus glaucoides		BOVA
040173			Gull, laughing	Larus atricilla		BOVA
040170			Gull, ring-billed	Larus delawarensis		BOVA
040089			Hawk, broad-winged	Buteo platypterus		BOVA
040086			Hawk, Cooper's	Accipiter cooperii		BOVA
040088			Hawk, red-shouldered	Buteo lineatus lineatus		BOVA
040087			Hawk, red-tailed	Buteo jamaicensis		BOVA
040090			Hawk, rough-legged	Buteo lagopus johannis		BOVA
040085			Hawk, sharp-shinned	Accipiter striatus velox		BOVA
040027			Heron, great blue	Ardea herodias herodias		BOVA
040218			Hummingbird, ruby-throated	Archilochus colubris		BOVA
040219			Hummingbird, rufous	Selasphorus rufus		BOVA
040252			Jay, blue	Cyanocitta cristata		BOVA
040387			Junco, dark-eyed	Junco hyemalis		BOVA
040098			Kestrel, American	Falco sparverius sparverius		BOVA
040119			Killdeer	Charadrius vociferus		BOVA
040220			Kingfisher, belted	Ceryle alcyon		BOVA
040285			Kinglet, golden-crowned	Regulus satrapa		BOVA
040286			Kinglet, ruby-crowned	Regulus calendula		BOVA
040245			Lark, horned	Eremophila alpestris		BOVA
040051			Mallard	Anas platyrhynchos		BOVA
040251			Martin, purple	Progne subis		BOVA
040078			Merganser, common	Mergus merganser americanus		BOVA
040077			Merganser, hooded	Lophodytes cucullatus		BOVA
040079			Merganser, red-breasted	Mergus serrator serrator		BOVA
040097			Merlin	Falco columbarius		BOVA
040271			Mockingbird, northern	Mimus polyglottos		BOVA
040112			Moorhen, common	Gallinula chloropus cachinnans		BOVA
040216			Nighthawk, common	Chordeiles minor		BOVA
040262			Nuthatch, red-breasted	Sitta canadensis		BOVA
040261			Nuthatch, white-breasted	Sitta carolinensis		BOVA
040348			Oriole, Baltimore	Icterus galbula		BOVA
040347			Oriole, orchard	Icterus spurius		BOVA
040095			Osprey	Pandion haliaetus carolinensis		BOVA
040209			Owl, barred	Strix varia		BOVA
040206			Owl, great horned	Bubo virginianus		BOVA
040211			Owl, short-eared	Asio flammeus		BOVA
040101			Pheasant, ring-necked	Phasianus colchicus		BOVA
040236			Phoebe, eastern	Sayornis phoebe		BOVA
040197			Pigeon, rock	Columba livia		BOVA

040054			Pintail, northern	Anas acuta acuta		BOVA
040287			Pipit, American	Anthus rubescens		BOVA
040254			Raven, common	Corvus corax		BOVA
040341			Redstart, American	Setophaga ruticilla		BOVA
040275			Robin, American	Turdus migratorius		BOVA
040157			Sandpiper, buff-breasted	Tryngites subruficollis		BOVA
040149			Sandpiper, least	Calidris minutilla		BOVA
040152			Sandpiper, pectoral	Calidris melanotos		BOVA
040132			Sandpiper, solitary	Tringa solitaria		BOVA
040134			Sandpiper, spotted	Actitis macularia		BOVA
040066			Scaup, lesser	Aythya affinis		BOVA
040075			Scoter, black	Melanitta nigra americana		BOVA
040205			Screech-owl, eastern	Megascops asio		BOVA
040060			Shoveler, northern	Anas clypeata		BOVA
040370			Siskin, pine	Carduelis pinus		BOVA
040141			Snipe, Wilson's	Gallinago delicata		BOVA
040108			Sora	Porzana carolina		BOVA
040389			Sparrow, chipping	Spizella passerina		BOVA
040390			Sparrow, clay-colored	Spizella pallida		BOVA
040395			Sparrow, fox	Passerella iliaca		BOVA
040342			Sparrow, house	Passer domesticus		BOVA
040377			Sparrow, savannah	Passerculus sandwichensis		BOVA
040398			Sparrow, song	Melospiza melodia		BOVA
040397			Sparrow, swamp	Melospiza georgiana		BOVA
040383			Sparrow, vesper	Pooecetes gramineus		BOVA
040393			Sparrow, white-crowned	Zonotrichia leucophrys		BOVA
040394			Sparrow, white-throated	Zonotrichia albicollis		BOVA
040294			Starling, European	Sturnus vulgaris		BOVA
040247			Swallow, bank	Riparia riparia		BOVA
040249			Swallow, barn	Hirundo rustica		BOVA
040250			Swallow, cliff	Petrochelidon pyrrhonota pyrrhonota		BOVA
040246			Swallow, tree	Tachycineta bicolor		BOVA
040044			Swan, tundra	Cygnus columbianus columbianus		BOVA
040356			Tanager, summer	Piranga rubra		BOVA
040354			Tanager, western	Piranga ludoviciana		BOVA
040057			Teal, blue-winged	Anas discors orphna		BOVA
040056			Teal, green-winged	Anas crecca carolinensis		BOVA
040189			Tern, Caspian	Sterna caspia		BOVA
040280			Thrush, gray-cheeked	Catharus minimus		BOVA
040278			Thrush, hermit	Catharus guttatus		BOVA
040279			Thrush, Swainson's	Catharus ustulatus		BOVA
040260			Titmouse, tufted	Baeolophus bicolor		BOVA
040102			Turkey, wild	Meleagris gallopavo silvestris		BOVA
040281			Veery	Catharus fuscescens		BOVA
040296			Vireo, Bell's	Vireo bellii		BOVA
040299			Vireo, red-eyed	Vireo olivaceus		BOVA
040295			Vireo, white-eyed	Vireo griseus		BOVA
040081			Vulture, black	Coragyps atratus		BOVA
040080			Vulture, turkey	Cathartes aura		BOVA
040316			Warbler, black-throated blue	Dendroica caerulescens		BOVA
040325			Warbler, blackpoll	Dendroica striata		BOVA
040323			Warbler, chestnut-sided	Dendroica pensylvanica		BOVA
040334			Warbler, Connecticut	Oporornis agilis		BOVA
040338			Warbler, hooded	Wilsonia citrina		BOVA
040314			Warbler, magnolia	Dendroica magnolia		BOVA
040335			Warbler, mourning	Oporornis philadelphia		BOVA
040311			Warbler, Nashville	Vermivora ruficapilla		BOVA
040329			Warbler, palm	Dendroica palmarum		BOVA
040326			Warbler, pine	Dendroica pinus		BOVA
040309			Warbler, Tennessee	Vermivora peregrina		BOVA

040339			Warbler, Wilson's	Wilsonia pusilla		BOVA
040317			Warbler, yellow-rumped	Dendroica coronata cornata		BOVA
040322			Warbler, yellow-throated	Dendroica dominica		BOVA
040331			Waterthrush, northern	Seiurus noveboracensis		BOVA
040290			Waxwing, cedar	Bombycilla cedrorum		BOVA
040059			Wigeon, American	Anas americana		BOVA
040058			Wigeon, Eurasian	Anas penelope		BOVA
040227			Woodpecker, downy	Picoides pubescens medianus		BOVA
040226			Woodpecker, hairy	Picoides villosus		BOVA
040222			Woodpecker, pileated	Dryocopus pileatus		BOVA
040223			Woodpecker, red-bellied	Melanerpes carolinus		BOVA
040224			Woodpecker, red-headed	Melanerpes erythrocephalus		BOVA
040268			Wren, Carolina	Thryothorus ludovicianus		BOVA
040265			Wren, house	Troglodytes aedon		BOVA
040336			Yellowthroat, common	Geothlypis trichas		BOVA
050028			Bat, big brown	Eptesicus fuscus fuscus		BOVA
050029			Bat, eastern red	Lasiurus borealis borealis		BOVA
050033			Bat, evening	Nycticeius humeralis humeralis		BOVA
050030			Bat, hoary	Lasiurus cinereus cinereus		BOVA
050020			Bat, little brown	Myotis lucifugus lucifugus		BOVA
050025			Bat, silver-haired	Lasionycteris noctivagans		BOVA
050027			Bat, tri-colored	Perimyotis subflavus		BOVA
050069			Beaver, American	Castor canadensis		BOVA
050051			Bobcat	Lynx rufus rufus		BOVA
050056			Chipmunk, common eastern	Tamias striatus striatus		BOVA
050055			Chipmunk, Fisher's eastern	Tamias striatus fisheri		BOVA
050103			Cottontail, eastern	Sylvilagus floridanus mallurus		BOVA
050125			Coyote	Canis latrans		BOVA
050108			Deer, white-tailed	Odocoileus virginianus		BOVA
050050			Fox, common gray	Urocyon cinereoargenteus cinereoargenteus		BOVA
050049			Fox, red	Vulpes vulpes fulva		BOVA
050042			Mink, common	Mustela vison mink		BOVA
050017			Mole, eastern	Scalopus aquaticus aquaticus		BOVA
050110			Mole, star-nosed	Condylura cristata parva		BOVA
050070			Mouse, eastern harvest	Reithrodontomys humulis humulis		BOVA
050071			Mouse, eastern harvest	Reithrodontomys humulis virginianus		BOVA
050098			Mouse, house	Mus musculus musculus		BOVA
050076			Mouse, Lewis' golden	Ochrotomys nuttalli nuttalli		BOVA
050099			Mouse, meadow jumping	Zapus hudsonius americanus		BOVA
050073			Mouse, northern white-footed	Peromyscus leucopus noveboracensis	Yes	BOVA,SppObs
050092			Muskrat, common	Ondatra zibethicus zibethicus		BOVA
050093			Muskrat, large-toothed	Ondatra zibethicus macrodon		BOVA
050001			Opossum, Virginia	Didelphis virginiana virginiana		BOVA
050045			Otter, northern river	Lontra canadensis lataxina		BOVA
050038			Raccoon	Procyon lotor lotor		BOVA
050039			Raccoon	Procyon lotor maritimus		BOVA
050079			Rat, hispid cotton	Sigmodon hispidus virginianus		BOVA
050078			Rat, marsh rice	Oryzomys palustris palustris		BOVA
050095			Rat, Norway	Rattus norvegicus norvegicus		BOVA
050013			Shrew, Kirtland's short-tailed	Blarina brevicauda kirtlandi	Yes	BOVA,SppObs
050015			Shrew, least	Cryptotis parva parva		BOVA
050012			Shrew, northern short-tailed	Blarina brevicauda churchi		BOVA
050010			Shrew, pygmy	Sorex hoyi winnemana		BOVA
050007			Shrew, southeastern	Sorex longirostris longirostris		BOVA
050011			Shrew, southern short-tailed	Blarina carolinensis carolinensis		BOVA
050047			Skunk, striped	Mephitis mephitis nigra		BOVA
050048			Skunk, striped	Mephitis mephitis mephitis		BOVA
050057			Squirrel, eastern gray	Sciurus carolinensis carolinensis		BOVA
050058			Squirrel, northern gray	Sciurus carolinensis pennsylvanicus		BOVA
050065			Squirrel, southern flying	Glaucomys volans volans		BOVA

050059			Squirrel, talkative red	Tamiasciurus hudsonicus loquax		BOVA
050082			Vole, meadow	Microtus pennsylvanicus pennsylvanicus		BOVA
050091			Vole, pine	Microtus pinetorum scalopsoides	Yes	BOVA,SppObs
050041			Weasel, long-tailed	Mustela frenata noveboracensis		BOVA
050054			Woodchuck	Marmota monax monax		BOVA
060016			Campeloma, pointed	Campeloma decisum		BOVA
060177			Clam, Asian	Corbicula fluminea	Yes	BOVA,SppObs
060012			Floater, eastern	Pyganodon cataracta		BOVA
060156			Floater, Giant	Pyganodon grandis		BOVA
060025			Mussel, eastern elliptio	Elliptio complanata		BOVA
060013			Mussel, paper pondshell	Utterbackia imbecillis		BOVA
060134			Snail, crested mudalia	Leptoxis carinata		BOVA
060095			Snail, European physa	Physella acuta		BOVA
060065			Snail, marsh rams-horn	Planorbella trivolvis		BOVA
060119			Snail, mimic lymnaea	Pseudosuccinea columella		BOVA
060061			Snail, Piedmont elimia	Elimia virginica		BOVA
060064			Snail, two-ridge rams-horn	Helisoma anceps		BOVA
070099			Crayfish	Fallicambarus uhleri		BOVA
070102			Crayfish, Appalachian brook	Cambarus bartonii bartonii		BOVA
070095			Crayfish, devil	Cambarus diogenes diogenes		BOVA
070126			Crayfish, Digger	Fallicambarus fodiens		BOVA
070093			Crayfish, no common name	Cambarus longulus		BOVA
070094			Crayfish, no common name	Cambarus acuminatus		BOVA
070098			Crayfish, spiny cheek	Orconectes limosus		BOVA
070120			Crayfish, White River	Procambarus acutus		BOVA
070070			SHRIMP, EELGRASS	HIPPOLYTE PLEURACENTHA		BOVA
080070			Bug, water scorpion	Ranatra fusca		BOVA
080035			Bug, water strider	Gerris remigis		BOVA
080093			Great Blue Skimmer	Libellula vibrans		BOVA
080056			Mayfly, common burrower	Ephemera varia		BOVA
100043			Armyworm	Pseudaletia unipuncta		BOVA
100041			Borer, European corn	Ostrinia nubilatis		BOVA
100181			Butterfly, Aaron's skipper	Poanes aaroni		BOVA
100245			Butterfly, American snout	Libytheana carinenta		BOVA
100274			Butterfly, Appalachian brown	Satyrodes appalachia		BOVA
100196			Butterfly, Brazilian skipper	Calpodes ethlius		BOVA
100205			Butterfly, cabbage white	Pieris rapae		BOVA
100278			Butterfly, Carolina satyr	Hermeuptychia sosybius		BOVA
100165			Butterfly, cobweb skipper	Hesperia metea		BOVA
100230			Butterfly, coral hairstreak	Satyrium titus		BOVA
100147			Butterfly, dreamy duskywing	Erynnis icelus		BOVA
100188			Butterfly, dusted skipper	Atrytonopsis hianna		BOVA
100258			Butterfly, eastern comma	Polygonia comma		BOVA
100225			Butterfly, eastern pine elfin	Callophrys niphon		BOVA
100238			Butterfly, eastern tailed-blue	Everes comyntas		BOVA
100209			Butterfly, falcate orangetip	Anthocharis midea		BOVA
100162			Butterfly, fiery skipper	Hylephila phyleus		BOVA
100276			Butterfly, gemmed satyr	Cyllopsis gemma		BOVA
100228			Butterfly, gray hairstreak	Strymon melinus		BOVA
100270			Butterfly, hackberry emperor	Asterocampa celtis		BOVA
100224			Butterfly, Henry's elfin	Callophrys henrici		BOVA
100141			Butterfly, hoary edge	Achalarus lyciades		BOVA
100149			Butterfly, Horace's duskywing	Erynnis horatius		BOVA
100175			Butterfly, little glassywing	Pompeius verna		BOVA
100140			Butterfly, long-tailed skipper	Urbanus proteus		BOVA
100090			Butterfly, mourning cloak	Nymphalis antiopa		BOVA
100173			Butterfly, northern broken dash	Wallengrenia egeremet		BOVA
100197			Butterfly, Ocola skipper	Panoquina ocola		BOVA
100236			Butterfly, olive juniper hairstreak	Callophrys gryneus gryneus		BOVA
100211			Butterfly, orange sulphur	Colias eurytheme		BOVA

100194			Butterfly, pepper and salt road-skipper	Amblyscirtes hegon		BOVA
100264			Butterfly, red admiral	Vanessa atalanta		BOVA
100235			Butterfly, red-banded hairstreak	Calycopis cecrops		BOVA
100198			Butterfly, salt marsh skipper	Panoquina panoquin		BOVA
100146			Butterfly, sleepy duskywing	Erynnis brizo		BOVA
100142			Butterfly, southern cloudywing	Thorybes bathyllus		BOVA
100269			Butterfly, tawny emperor	Asterocampa clyton		BOVA
100247			Butterfly, variegated fritillary	Euptoieta claudia		BOVA
100204			Butterfly, zebra swallowtail	Eurytides marcellus		BOVA
100026			Deerfly	Chrysops vittatus vittatus		BOVA
100042			Earworm, corn	Heliathis zea		BOVA
100040			Moth, codling	Cydia pomonella		BOVA
100047			Moth, gypsy	Lymantria dispar		BOVA
100095			Moth, Luna	Actias luna		BOVA
110230			Tick, American dog	Dermacentor variabilis		BOVA
110232			Tick, brown dog	Rhipicephalus sanguineus		BOVA
110228			Tick, lone star	Amblyomma americanum		BOVA
110231			Tick, rabbit	Haemaphysalis leporispalustris		BOVA
110229			Tick, winter	Dermacentor albipictus		BOVA

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

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If you have difficulty reading or accessing documents, please Contact Us for assistance.

From site location, looking NW towards tracks. Visitor center visible in background.

From site, looking North towards visitor center. Old visitor center (smoke stack) visible.

Looking WNW from site. Pre-fabricated building is visible in background (just north of a baseball field)

Looking SE towards warehouse

Looking South towards abandoned lots

Susan Liszeski

From: Jennifer Jones
Sent: Friday, July 24, 2015 9:34 AM
To: Susan Liszeski
Subject: Fw: VA Army National Guard Headquarters Project Review for EA

Well that was fast. Forwarding DGIF response on DSCR EA consultation so you can save as needed or steal the language.

From: dgif-ESS Projects (DGIF) <rr.dgif-ESSProjects@dgif.virginia.gov>
Sent: Friday, July 24, 2015 9:23 AM
To: Jennifer Jones
Subject: RE: VA Army National Guard Headquarters Project Review for EA

Due to staffing limitations, we are unable to review and provide comments on projects that are not currently involved in one of the regulatory review processes for which we are a formal consulting agency (see http://www.dgif.virginia.gov/environmental-programs/environmental-services-section.asp). If your project subsequently requires a permit or environmental review which involves our Department, we will provide comments through that process to the appropriate agencies. Thank you for soliciting our review of your project, and we invite you to conduct your own review of your project through the Virginia Fish and Wildlife Information Service (VAFWIS) at: http://vafwis.org/fwis/ .

Amy Ewing
Environmental Services Biologist/FWIS Manager
VA Dept. of Game and Inland Fisheries
7870 Villa Park Dr., Henrico, VA 23228
804-367-2211 ☯ DGIF.virginia.gov

From: Jennifer Jones [mailto:jjones@eee-consulting.com]
Sent: Wednesday, July 22, 2015 3:41 PM
To: dgif-ESS Projects (DGIF)
Subject: VA Army National Guard Headquarters Project Review for EA

Attached is a Request for Information for an EA being conducted on behalf of the VA Department of Military Affairs, for the proposed construction of a new state headquarters at Defense Supply Center Richmond. Please contact me if you have any questions. Thank you.

3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

Jennifer L. Jones
Environmental Scientist
(804) 442-3330 ext. 214
(804) 350-3590 cell
jjones@eee-consulting.com
www.eee-consulting.com

"Per Title VI of the Civil Rights Act of 1964 and other non-discrimination statutes, EEE Consulting, Inc. will not discriminate on the grounds of race, color, national origin, sex, age, disability, or low income in the selection and retention of subconsultants, including procurement of materials and leases of equipment. EEE Consulting, Inc. will ensure that minorities will be afforded full opportunity to submit proposals and will not be discriminated against in consideration for an award."

Web Project ID: WEB0000003963

Client Project Number: 15-115

PROJECT INFORMATION

TITLE: Virginia National Guard State Headquarters Environmental Assessment

DESCRIPTION: The Proposed Action is the construction and operation of the Virginia National Guard State Headquarters at the Defense Supply Center Richmond in Chesterfield County, Virginia. The Proposed Action would provide adequate space for administrative, logistical, and training activities for the VANG. It is anticipated that construction of the facility would begin in June 2016. The proposed Headquarters facility would be a two-story building, encompassing approximately 98,124 square feet on a 13.6 acre parcel. The facility would house 186 personnel, and would provide parking for 175 privately owned vehicles and storage for 66 pieces of major equipment. The DCR response will serve as supporting documentation for an Environmental Assessment.

EXISTING SITE CONDITIONS: Site is currently vacant. Warehouses were present on site until 2011. Surrounding land use is a military storage facility.

QUADRANGLES: Drewrys Bluff

COUNTIES: Chesterfield

Latitude/Longitude (DMS): 37°25'54.2460"N / 77°27'8.3601"W

Acreage: 15 acres

Comments:

REQUESTOR INFORMATION

Priority: N

Tier Level: Tier II

Tax ID: 54-1904064

Contact Name: Susan Liszeski

Company Name: EEE Consulting, Inc.

Address: 8525 Bell Creek Road

City: Mechanicsville State: VA Zip: 23116

Phone: 804-442-3330 x218 Fax: 804-442-3334 Email: sliszeski@eee-consulting.com

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Conservation Site	Site Type	Brank	Acreage	Listed Species Presence
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL

Natural Heritage Screening Features within Search Radius

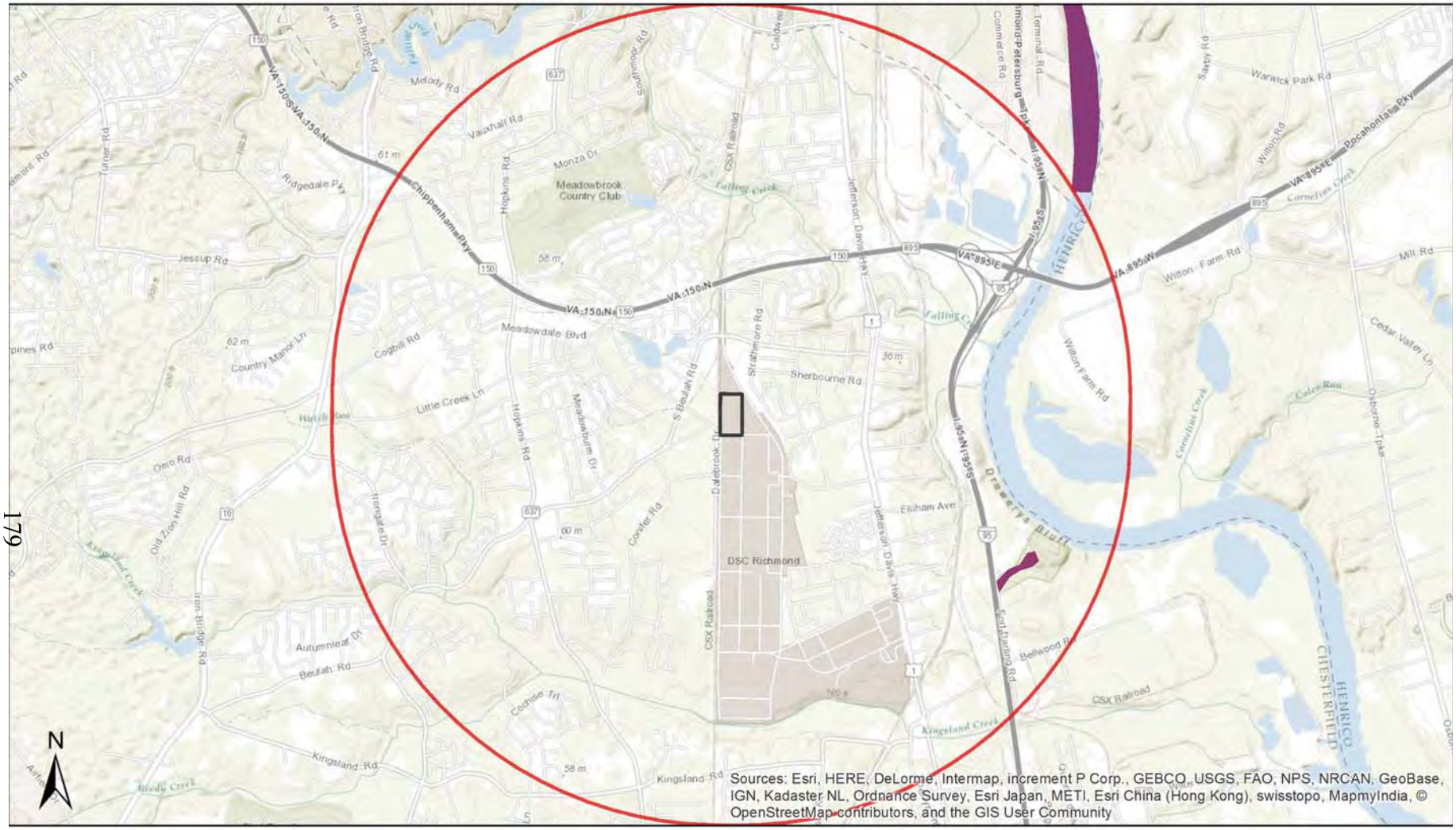
Site Name	Group Name	Common Name	Scientific Name	GRANK	SRANK	Fed Status	State Status	EO Rank	Last Obs Date	Precision
	Invertebrate Animal	Laura's Clubtail	Stylurus laurae	G4	S2			H	1931-08-02	G
	Vascular Plant	Slim-leaf Tick-trefoil	Desmodium tenuifolium	G4	S1			H	1985-09-13	M

Natural Heritage Resources within Search Radius

Intersecting Predictive Models

Predictive Model Results

Virginia National Guard State Headquarters Environmental Assessment



Project Area
Buffered
NH Screening Features
Conservation Site
GLNHR
SCU

1:53,939

0 0.45 0.9 1.8 mi

0 0.75 1.5 3 km

Quads: Drewrys Bluff

Counties: Chesterfield

Company: EEE Consulting, Inc.

Lat/Long: 372554 / -772708

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources from the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics files, NATURAL HERITAGE RESOURCES HAVE BEEN DOCUMENTED within two miles of the indicated project boundaries and/or POTENTIAL HABITAT FOR NATURAL HERITAGE RESOURCES intersect the project area.

You have submitted this project to DCR for a more detailed review for potential impacts to natural heritage resources. DCR will review the submitted project to identify the specific natural heritage resources in the vicinity of the proposed project. Using the expertise of our biologists, DCR will evaluate whether your specific project is likely to impact these resources, and if so how. DCR's response will indicate whether any negative impacts are likely and, if so, make recommendations to avoid, minimize and/or mitigate these impacts. If the potential negative impacts are to species that are state- or federally-listed as threatened or endangered, DCR will also recommend coordination with the appropriate regulatory agencies: the Virginia Department of Game and Inland Fisheries for state-listed animals, the Virginia Department of Agriculture and Consumer Services for state-listed plants and insects, and the United States Fish and Wildlife Service for federally listed plants and animals. If your project is expected to have positive impacts we will report those to you with recommendations for enhancing these benefits.

There will be a charge for this service for "for profit companies": $60, plus an additional charge of $35 for 1-5 occurrences and $60 for 6 or more occurrences.

Please allow up to 30 days for a response, unless you requested a priority response (in 5 business days) at an additional surcharge of $500. An invoice will be provided with your response.

We will review the project based on the information you included in the Project Info submittal form, which is included in this report. Also any additional information including photographs, survey documents, etc. attached during the project submittal process and/or sent via email referencing the project title (from the first page of this report).

Thank you for submitting your project for review to the Virginia Natural Heritage Program through the NH Data Explorer. Should you have any questions or concerns about DCR, the Data Explorer, or this report, please contact the Natural Heritage Project Review Unit at 804-371-2708.

APPENDIX F: CULTURAL RESOURCES DOCUMENTATION

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COMMONWEALTH of VIRGINIA

DANIEL E. LONG, JR.
THE ADJUTANT GENERAL

DEPARTMENT OF MILITARY AFFAIRS
Adjutant General's Office
Virginia National Guard
1100 Bank Street

RICHMOND, VIRGINIA 23219

June 17, 2013

Facilities Engineering
and Management

Department of Historic Resources (DHR)
Attention: Mr. Marc Holma
2801 Kensington Avenue
Richmond, Virginia 23221

Re: Proposed Joint Force Headquarters/Virginia National Guard State Headquarters, Defense Supply Center Richmond
Chesterfield County, Virginia

Dear Mr. Holma,

The Virginia Department of Military Affairs-Virginia Army National Guard (VDMA-VAARNG) is proposing a project to construct a Joint Force Headquarters/Virginia National Guard State Headquarters (JFHQ) facility at the Defense Supply Center Richmond (DSCR), located in Chesterfield County, Virginia. This project is being carried out to provide a strategic location for the JFHQ, and a 24-hour Joint Operations Center, with ready access to major transportation networks and to the City of Richmond. VDMA-VAARNG has consulted with DSCR personnel, and mutually agreed that VDMA-VAARNG will conduct consultation with your office according to 36 CFR Part 800, *Protection of Historic Properties*, Section 106 of the National Historic Preservation Act of 1966, as amended. VDMA-VAARNG has determined that this project constitutes an undertaking according to 36 CFR Part 800.3(a), *Establish undertaking*, and is writing to request comment from the Virginia Department of Historic Resources (DHR) as the Virginia State Historic Preservation Office.

This undertaking will involve acquiring use of a parcel of land at DSCR, comprising approximately 13.6 acres, which is proposed through implementation of a licensing agreement to allow long-term use of the property. The parcel is located in the northwestern section of DSCR (see enclosed aerial). Through prior consultation with your office on the historical significance of DSCR, VDMA-VAARNG understands that the Bellwood-Richmond Quartermaster Depot Historic District (Historic District), considered eligible for listing in the National Register of Historic Places (NRHP), includes the proposed JFHQ location.

VDMA-VAARNG is seeking comment from your office with information currently available about the proposed undertaking. The proposed JFHQ building is expected to provide 110 square feet of space, and

to house approximately 130 personnel. Designs have not been developed, but plans are for the building to be compatible with the current design aesthetic used in the Historic District. Also, the location of the building is distant from the core of the Historic District and the NRHP-listed Bellwood Mansion, with little to no visibility from these areas of the Historic District to the proposed site (see enclosed photos).

With application of 36 CFR Part 800.4(a)(1), VDMA-VAARNG has determined that the Area of Potential Effects for architectural resources is the Historic District, and for archaeological resources, it consists of the parcel to be licensed for use by VDMA-VAARNG. In consultation with your office, VDMA-VAARNG was advised that no further archaeological investigations are required in the area of the DSCR installation that includes the subject parcel, as set forth in the *Programmatic Agreement Regarding the Modernization of the Defense Supply Center Richmond Among the Defense Logistics Agency Enterprise Support Richmond; the Advisory Council on Historic Preservation; and the Virginia State Historic Preservation Officer*, executed in November 2009 (Programmatic Agreement).

According to 36 CFR Part 800.5, *Assessment of adverse effects*, the VDMA-VAARNG has applied the criteria of adverse effect, and finds that the proposed undertaking will not have an adverse effect on historic properties, provided that the following conditions are met:

1. The design of the proposed JFHQ building will be compatible with the design aesthetic employed in the Historic District, and shall be subject to review and comment by DHR at preliminary, intermediate, and final design phases.
2. All ground disturbing actions associated with the proposed undertaking will be confined to areas determined to not need further archaeological investigation as set forth in the Programmatic Agreement.

The VDMA-VAARNG invites DHR to concur with this finding of conditional no adverse effect by completing the signature block at the bottom of this letter, and returning a copy of the letter with original signature. Please respond at your earliest convenience and within 30 days of receipt. If you have any questions or require further information, the point of contact is Susan Smead, Cultural Resources Program Manager, at 434-298-6411 and susan.e.smead@us.army.mil.

James Zollar

James A. Zollar
Lieutenant Colonel, VAARNG
Assistant Chief of Staff
Facilities Engineering
and Management

Enclosures

Concurrence Signature

The VDMA-VAARNG proposes a project to construct a Joint Force Headquarters/Virginia National Guard State Headquarters (JFHQ) facility at the Defense Supply Center Richmond (DSCR), in Chesterfield County, Virginia, involving acquiring use of a parcel of land at DSCR, comprising approximately 13.6 acres in the northwestern section of DSCR, and constructing the JFHQ building upon the subject parcel. The VDMA-VAARNG finds that this action constitutes an undertaking according to 36 CFR Part 800.3(a), *Establish undertaking*, and finds that according to 36 CFR Part 800.4(a)(1) the Area of Potential Effect comprises the DSCR installation. VDMA-VAARNG has determined in consultation with DHR that the site is within the boundaries of the National Register of Historic Places-eligible Bellwood-Richmond Quartermaster Depot Historic District (Historic District). The location has little to no visibility from the core of the Historic District and the NRHP-listed Bellwood Mansion; and, according to the *Programmatic Agreement Regarding the Modernization of the Defense Supply Center Richmond Among the Defense Logistics Agency Enterprise Support Richmond; the Advisory Council on Historic Preservation; and the Virginia State Historic Preservation Officer* (Programmatic Agreement), executed in November 2009, no further archaeological investigation is needed on the parcel proposed for construction of the JFHQ building. Therefore, the VDMA-VAARNG finds that according to 36 CFR Part 800.5, *Assessment of adverse effects*, with application of the criteria of adverse effect, the proposed undertaking will have no adverse effect on historic properties, provided that the following conditions are met:

1. The design of the proposed JFHQ building will be compatible with the design aesthetic employed in the Historic District, and shall be subject to review and comment by DHR at preliminary, intermediate, and final design phases.
2. All ground disturbing actions associated with the proposed undertaking will be confined to areas determined to not need further archaeological investigation as set forth in the Programmatic Agreement.

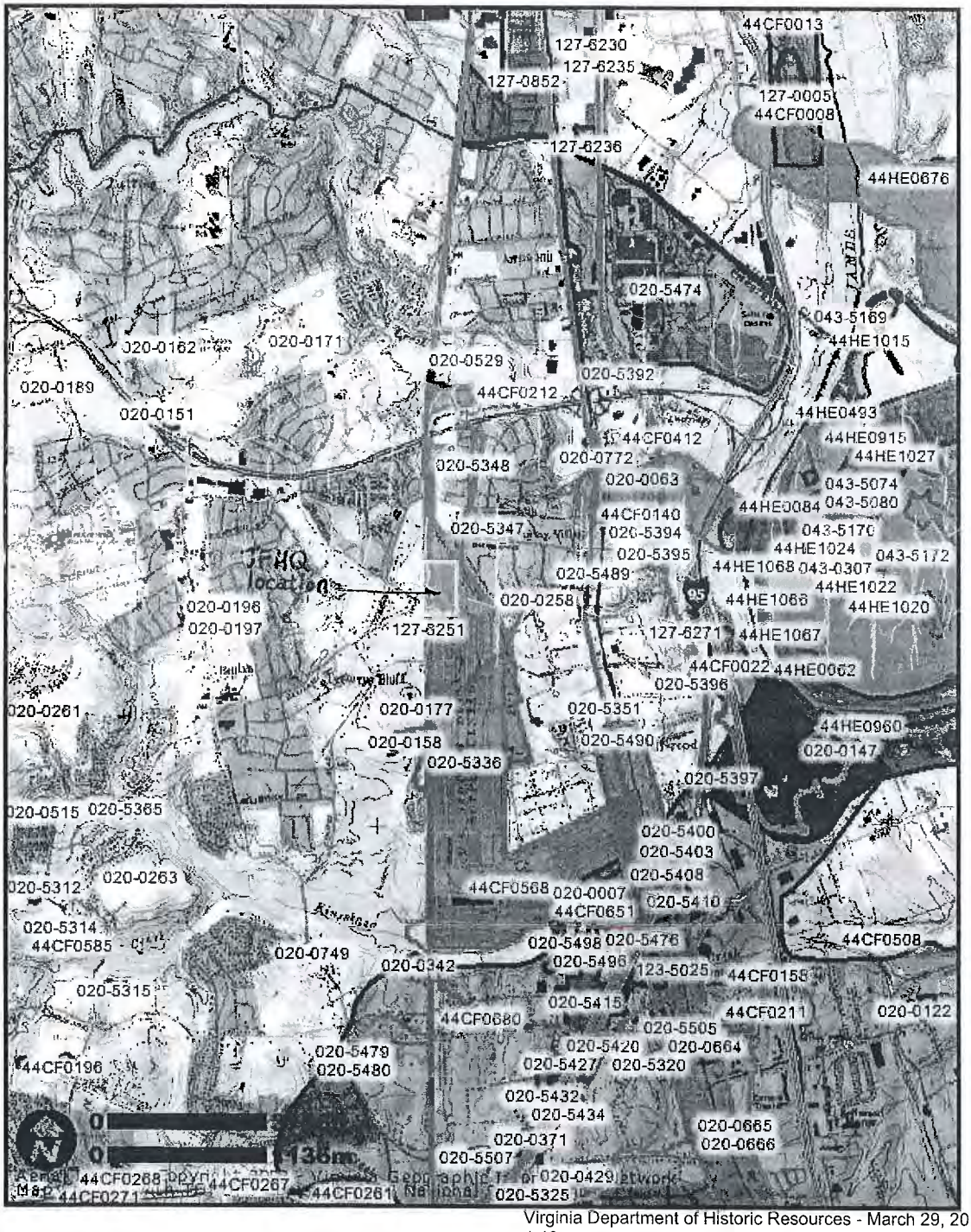
DHR concurs with the finding of conditional no adverse effect for this undertaking.

27 June 13

Virginia Department of Historic Resources — Date

DHR Project Review No.: 2013-0849

Virginia Department of Historic Resources Data Sharing System, 04/03/2013



Virginia Department of Historic Resources - March 29, 2013
4:40 pm

CR W/IN 1 MI OF PROPOSED JFHQ

Map prepared: 4/3/2013 with DSS (by CJP)

PROGRAMMATIC AGREEMENT

REGARDING THE MODERNIZATION OF THE DEFENSE SUPPLY CENTER RICHMOND

AMONG THE DEFENSE LOGISTICS AGENCY ENTERPRISE SUPPORT

RICHMOND; THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;

AND THE VIRGINIA STATE HISTORIC PRESERVATION OFFICER

WHEREAS, the Defense Logistics Agency Enterprise Support Richmond (DES Richmond) at the Defense Supply Center Richmond (DSCR) is responsible for compliance with sections 106 and 110 of the National Historic Preservation Act (NHPA) as amended (16 USC § 470 et seq.) and the implementing regulations, 36 CFR Part 800; and

WHEREAS, DES Richmond, in consultation with the Virginia State Historic Preservation Officer (SHPO) and other interested parties has conducted record searches, historic resource surveys, and archaeological surveys to identify historic properties listed or eligible for listing in the National Register of Historic Places (NRHP); and

WHEREAS, the Bellwood-Richmond Quartermaster Depot Historic District is eligible for listing in the NRHP and includes the Bellwood mansion which is individually listed in the NRHP and in the Virginia Landmarks Register as well as 73 large warehouses and other buildings, structures, and landscape elements from the pre-World War II, World War II, and Korean War era; and

WHEREAS, DES Richmond has developed a modernization plan to address the changing mission of DSCR, including changes in the general nature of the mission and privatization of parts of that mission to other locations, elimination of installation housing pursuant to the Defense Base Closure and Realignment Commission (BRAC) and the Military Housing Privatization Initiative (PL 104-106, 110 Stat, 544, Title XXVIII, Subtitle A, Section 2801), upgrading of DSCR facilities to meet the Department of Defense Antiterrorism and Force Protection (ATFP) security requirements, and removal of buildings from the 100-year flood plain along Kingsland Creek due to repeated flooding episodes; and

WHEREAS, DES Richmond's modernization plan is a federal undertaking as defined in 36 CFR Part 800.16(y); and

WHEREAS, the modernization of DSCR consists of the following actions: demolition of the 23 buildings listed in the table in Attachment 1, phased construction of a new 693,000-square foot operations center that meets ATFP building construction and setback requirements, elimination of excess square footage of facilities, and the elimination of housing; and

WHEREAS, DES Richmond has determined that many existing facilities have no current or projected future mission function, that renovation or rehabilitation of the existing facilities is not economically feasible, and that maintenance of these vacant or underutilized facilities is costly and diverting resources from occupied facilities; and

WHEREAS, the changes to the infrastructure at DSCR will necessitate the demolition of historic structures contributing to the Bellwood-Richmond Quartermaster Depot Historic District and

construction of facilities at DSCR within the boundary of the Bellwood-Richmond Quartermaster Depot Historic District; and

WHEREAS, DES Richmond has determined, in consultation with the SHPO, that the proposed demolition of the 23 NRHP-eligible buildings in the Bellwood-Richmond Quartermaster Depot Historic District listed in the table in Attachment 1 and the proposed construction of new facilities to replace them will have an adverse effect on the Bellwood-Richmond Quartermaster Depot Historic District and may have an adverse visual effect on the Bellwood mansion; and

WHEREAS, the Capehart-Wherry Housing (Buildings 170, 171, 172, 173, and 185) has been demolished pursuant to the "Program Comment for Capehart and Wherry Era Army Family Housing and Associated Structures and Landscape Features (1949-1962)" (Federal Register/Vol.67, No. 110/Friday, June 7, 2002) that was approved by the Advisory Council on Historic Preservation (ACHP) on May 31, 2002; and

WHEREAS, DSCR demolished Building 21 (Quarters 2), a building contributing to the Bellwood-Richmond Quartermaster Depot Historic District, prior to completing the Section 106 consultation process as outlined in 36 CFR Part 800.1(a); and

WHEREAS, DES Richmond has invited the ACHP to participate in consultation pursuant to 36 CFR Part 800.6(a)(1)(i), and the ACHP has agreed to participate in this Programmatic Agreement (PA);

WHEREAS, DES Richmond has invited the Eastern Band of the Cherokee Indians (Band) and the Catawba Indian Nation (Catawba) to participate in consultation as Concurring Parties to this PA pursuant to 36 CFR Part 800.6(c)(3), and the Band and the Catawba have not responded to the invitation; and

WHEREAS, DES Richmond has invited the Virginia Council on Indians (VCI) to participate in consultation as a Concurring Party to this PA pursuant to 36 CFR Part 800.6(c)(3), and the VCI has demonstrated an interest in participating but has not responded to the invitation; and

WHEREAS, DES Richmond has invited the Chesterfield Historical Society (Society) to participate in consultation as a Concurring Party to this PA pursuant to 36 CFR Part 800.6(c)(3), and the Society has demonstrated an interest in participating and has provided comments but has not responded to the invitation to comment on the PA; and

WHEREAS, DES Richmond hosted the Chesterfield Historical Society and the general public to a special tour of DSCR including a tour of Building 25 on July 7, 2009;

WHEREAS, DES Richmond has invited the Chesterfield County Preservation Committee (Committee) to participate in consultation as a Concurring Party to this PA pursuant to 36 CFR Part 800.6(c)(3), and the Committee has not responded to the invitation; and

WHEREAS, DES Richmond has invited the Jefferson Davis Association (Association) to participate in consultation as a Concurring Party to this PA pursuant to 36 CFR Part 800.6(c)(3), and the Association has demonstrated an interest in participating but has not responded to the invitation to comment on the PA; and

NOW, THEREFORE, DES Richmond, the SHPO, and the ACHP agree that the implementation of the DSCR modernization plan as described above shall be implemented in accordance with the following stipulations to take into account the effects of the Undertaking on historic properties.

STIPULATIONS

DES Richmond shall ensure that the following measures are carried out:

1. DOCUMENTATION STANDARDS, PROFESSIONAL QUALIFICATIONS AND REVIEW OF MATERIALS

   A. Documentation Standards: All studies and technical reports prepared pursuant to this PA shall be consistent with the federal standards entitled *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-44742, September 29, 1983) and the SHPO's *Guidelines for Conducting Cultural Resource Survey in Virginia* (rev. 2003) or subsequent revisions or replacements to these documents.

   B. Professional Qualifications: All archaeological and/or architectural work carried out pursuant to this PA shall be conducted by or under the direct supervision of an individual or individuals who meets, at a minimum, the *Secretary of the Interior's Professional Qualifications Standards* (48 FR 44738-9, September 29, 1983) in the appropriate discipline.

   C. Submission of Review Materials: DES Richmond shall submit a draft paper and/or electronic version of all final technical reports and NRHP nominations to the SHPO, the ACHP, and concurring parties to this PA for review and comment. DES Richmond shall ensure that all comments received within thirty (30) days of report receipt shall be addressed in the final technical report. Two (2) copies of all final reports, bound and on acid-free paper, and one (1) electronic copy on CD, shall be provided to the SHPO, one (1) copy to the ACHP, and one (1) copy to the concurring parties of this PA..

   D. The SHPO, the ACHP, and concurring parties to this PA, agree to provide comments on all technical reports, treatment plans, and other documentation arising from this PA within thirty (30) days of receipt. If no comments are received from the SHPO, the ACHP, or the concurring parties to this PA, DES Richmond may assume that the non-responding party has no comment.

   E. Rehabilitation, preservation and maintenance work carried out pursuant to this PA shall be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and shall be monitored by an individual or individuals who meet, at a minimum, the Secretary of the Interior's Professional Qualification Standards (48 FR 44738-9, September 29, 1983) in the appropriate discipline.

2. DSCR CULTURAL RESOURCES MANAGER AND TRAINING

   A. For the purposes of this PA and future historic preservation matters, DES Richmond shall appoint an individual on its' environmental staff who will serve as the point of contact for the SHPO and the public regarding historic preservation

matters at DSCR. Within one (1) year of the execution of this PA, this individual shall attend training offered either by the ACHP or National Preservation Institute (NPI) on Federal historic preservation law and how to comply with Section 106 of the NHPA. Such training shall be revisited and/or augmented on a regular basis as opportunities and budget allow.

B. The DES Richmond CRM shall arrange annual training, with the assistance of the SHPO, for DES Richmond's staff and DSCR personnel with responsibilities over historic properties at DSCR. The first training session shall be held within one (1) year of the execution of this PA.

C. DSCR shall update and execute its Integrated Cultural Resources Management Plan (ICRMP) and provide the SHPO and the ACHP draft copies for their review and comment within fifteen (15) months of the execution of this PA. The DSCR CRM shall ensure that the final ICRMP is distributed internally to those installation personnel responsible for maintenance, operational, and management activities of properties at DSCR.

3. DOCUMENTATION OF BELLWOOD-RICHMOND QUARTERMASTER DEPOT HISTORIC DISTRICT

A. Within three (3) years of the execution of this PA, DES Richmond shall submit final documentation of the interiors, exteriors, and any significant architectural features of each NRHP-eligible building or structure listed in the table in Attachment 1.

Documentation for each building or structure shall include: Department of Historic Resources (DHR) Intensive Level survey forms; a brief architectural and historical report; a sketch plan of the Bellwood-Quartermaster Depot Historic District showing the boundaries of the district, contributing properties, and the structures to be demolished; 3" X 5" black and white photographs (35 mm), consistent with DHR photography standards, of the interior, exterior, any significant architectural features, and surroundings of each building or structure; an electronic copy of any original building plans; a paper copy of any original building plans; and a photo log. Information on each structure shall also be entered into the DHR Data Sharing System (DSS).

Draft Documentation Review: Within two (2) years of the execution of this PA, DES Richmond shall submit a draft version of the documentation to the SHPO, the ACHP, and concurring parties to this PA for their review and comment.

Final Documentation Submission: Within one hundred twenty (120) days of the receipt of comments from the SHPO, the ACHP, and concurring parties to this PA, DES Richmond shall submit the final documentation to the SHPO and copies of the final documentation to the ACHP upon their written request. DES Richmond shall retain copies of all documentation and transmittal for its files.

B. Re-evaluate the Bellwood-Richmond Quartermaster Depot Historic District: Within two (2) years of execution of this PA, DES Richmond shall re-evaluate the NRHP eligibility of the Bellwood-Richmond Quartermaster Depot Historic District. DES

Richmond shall submit the eligibility evaluation to the SHPO, the ACHP, and concurring parties to this PA for their review and comment pursuant to 36 CFR Part 800.4(c). If the Bellwood-Richmond Quartermaster Depot Historic District is determined to no longer be eligible for listing in the NRHP, if the historic district boundaries change, or if contributing resources are determined to be individually eligible for listing in the NRHP, DES Richmond shall update its internal mapping and documentation and records at the SHPO. DES Richmond shall update its ICRMP to account for these changes.

4. ADDITIONAL MITIGATION

A. As partial mitigation for the demolition of Building 21 (Quarters 2), without consultation under Section 106, within one hundred and eighty (180) days of the execution of this PA, DES Richmond shall, in consultation with the SHPO, the ACHP, the Society, and the Association, reconsider the preservation of Building 25 (Quarters 1), consistent with the Secretary of the Interior's Standards and in such a manner and for a use which will maintain the characteristics and integrity that qualify it for listing in the NRHP and provide an analysis of options to preserve the property to the SHPO, the ACHP, the Society, and the Association for their input.

B. Design Review for New Construction: Within sixty (60) days of the execution of this PA and continuing through the design phase for the proposed operations building and site, and for future new construction, DES Richmond, in consultation with the SHPO and the ACHP, shall evaluate the potential visual effects of new construction, particularly construction of the new operations building and its site and parking, on the Bellwood mansion and the NRHP historic district. Within one (1) year of the execution of this PA, DES Richmond shall provide a report to the SHPO, the ACHP, and concurring parties to this PA for their review and comment on DES Richmond's findings regarding visual effects to the Bellwood mansion and historic district. If the new construction is determined to have a visual effect on the Bellwood mansion, DES Richmond shall consult with the SHPO and the ACHP in order to revise the construction design and/or develop measures to avoid, minimize or mitigate adverse visual effects on the Bellwood mansion.

C. Update of Bellwood Mansion NRHP Nomination: Within one (1) year of execution of this PA, DES Richmond shall revise the NRHP nomination for Bellwood (DHR Survey No. 020-0007) to include an updated description and a more detailed discussion of the significance and historic context of the property, as well as any remaining Bellwood structures that may contribute to that property's significance. DES Richmond shall submit the final draft to the SHPO for review and concurrence, and the ACHP and concurring parties to this PA for review and comment. DES Richmond shall then submit the final draft nomination to the National Park Service for listing.

D. Multi-Media Presentation: Within two (2) years of the execution of this PA, DES Richmond shall prepare an internet-ready, multimedia presentation on the history of the DSCR installation, focusing on the built environment, landscape, cemeteries, and the Bellwood mansion. The presentation shall include information on the full range of history of the area that is now DSCR to include Native

American occupation, the Colonial period, the Civil War-era, ownership by James Bellwood, the World War II and Cold War eras, and post-Cold War era history. DES Richmond shall submit a draft of the presentation to the SHPO, the ACHP, and concurring parties to this PA for their review and comment. DES Richmond shall provide copies of this multimedia presentation on DVD to the SHPO, the Society, and the Committee. DES Richmond shall also produce 200 additional copies on DVD and provide copies to local libraries, local schools, and local archives such as the Library of Virginia.

5. CONSULTATION ON ARCHAEOLOGY

Archaeological Studies: Prior to demolition and new construction, DES Richmond shall conduct a Phase II Archaeological Survey of Areas 8 (near Buildings 30, 31, 32, and 33) and 9 (near Quarters 1) as identified in Table 3-3 and Figure 3-2 in the 2006 Integrated Cultural Resource Management Plan (Attachment 2) and shall submit the results of the assessment to the SHPO for review and approval. If any areas to be impacted by actions subject to this Agreement retain archaeological potential, as determined through the approved archaeological assessment, DES Richmond shall consult with the SHPO on the need for additional archaeological survey and evaluation. If DES Richmond, in consultation with the SHPO, determines that there are NRHP-eligible archaeological sites that could be adversely affected by the Undertaking, DES Richmond shall continue consultation with the SHPO in accordance with 36 CFR Part 800.6 to determine how to avoid, minimize or mitigate the adverse effects on the archaeological sites.

6. POST REVIEW DISCOVERIES

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

B. An archaeologist meeting the qualifications in Stipulation 1.B. above and/or the SHPO shall immediately inspect the work site and determine the area and nature of the affected archaeological resource. Construction work may then continue in the area outside the archaeological resource as defined by the archaeologist and the SHPO, or their designated representative.

C. Within five (5) working days of the original notification of discovery, DES Richmond, in consultation with the SHPO, shall determine the NRHP eligibility of the resource.

D. If the resource is determined eligible for the NRHP, DES Richmond shall prepare a plan for its avoidance, protection, or recovery of information. Such plan shall be approved by the SHPO prior to implementation.

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

1. The development and implementation of appropriate data recovery or other recommended mitigation procedures is accomplished, or

2. The determination is made that the located resources are not eligible for inclusion in the NRHP.

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

7. HUMAN REMAINS

A. In the unlikely event that human remains and/or associated funerary objects are encountered during the implementation of this PA, DES Richmond shall immediately halt all work in the area and contact the appropriate authorities. If the remains appear to be Native American in origin any such remains and/or funerary objects shall be treated in accordance with the Native American Graves Protection and Repatriation Act (25 USC 3001; "NAGPRA") and its implementing regulations, 43 CFR Part 10.

B. If the remains are determined not to be of Native American origin, DES Richmond shall consult with the SHPO. Prior to the archaeological excavation of any remains, the following information shall be submitted to the SHPO for consultation:

1. The name of the property or archaeological site and the specific location from which the recovery is proposed. If the recovery is from a known archaeological site, a state-issued site number must be included.

2. Indication of whether a waiver of public notice is requested and why. If a waiver is not requested, a copy of the public notice (to be published in a newspaper having general circulation in the area for a minimum of four weeks prior to recovery) must be submitted.

3. A copy of the curriculum vita of the skeletal biologist who will perform the analysis of the remains.

4. A statement that the treatment of human skeletal remains and associated artifacts will be respectful.

5. An expected timetable for excavation, osteological analysis, preparation of final report, and final disposition of remains.

6. A statement of the goals and objectives of the removal (to include both excavation and osteological analysis).

7. If a disposition other than reburial is proposed, a statement of justification.

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

8. DISPUTE RESOLUTION

A. Should any party to this PA object in writing to DES Richmond regarding any action carried out or proposed with respect to any undertakings covered by this PA or to implementation of this PA, DES Richmond shall consult with the objecting party to resolve the objection.

B. If after initiating such consultation, DES Richmond determines that the objection cannot be resolved through consultation, DES Richmond shall forward all documentation relevant to the objection to the ACHP, including the proposed response to the objection.

C. Within thirty (30) days after receipt of all pertinent documentation, the ACHP shall exercise one of the following options:

1. Advise DES Richmond that the ACHP concurs with DES Richmond's proposed response to the objection, whereupon DES Richmond shall respond to the objection accordingly; or

2. Provide DES Richmond with recommendations, which DES Richmond shall take into account in reaching a final decision regarding its response to the objection; or

3. Notify DES Richmond that the objection will be referred for comment pursuant to 36 CFR 800.7(a)(4), and proceed to refer the objection and comment. DES Richmond shall take the resulting comment into account in accordance with 36 CFR Part 800.7(c)(4) and Section 110(l) of the National Historic Preservation Act.

D. Should the ACHP not exercise one of the above options within thirty (30) days after receipt of all pertinent documentation, DES Richmond may assume the ACHP's concurrence in its proposed response to the objection.

E. DES Richmond shall take into account any ACHP recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection; DES Richmond's responsibility to carry out all the actions under this agreement that are not the subjects of the objections shall remain unchanged.

F. At any time during implementation of the measures stipulated in this Agreement, should an objection pertaining to this Agreement be raised by a member of the public, DES Richmond shall notify the parties to this Agreement and take the objection into account, consulting with the objector and, should the objector so request, with any of the parties to this Agreement to resolve the objection.

9. FISCAL REQUIREMENTS

DES Richmond's obligations under this PA are subject to the availability of appropriated funds, and the stipulations of this PA are subject to the provisions of the Anti-Deficiency Act. DES Richmond shall make reasonable and good faith efforts to secure the necessary funds to implement its obligations under this PA. If compliance with the Anti-Deficiency Act alters or impairs DES Richmond's ability to implement its obligations under this PA, DES Richmond shall consult in accordance with the amendment and termination procedures found at Stipulation 10 below.

10. AMENDMENT AND TERMINATION

A. Any signatory to this PA may propose to DES Richmond that the PA be amended, whereupon DES Richmond shall consult with the other parties to this PA to consider such an amendment. All signatories to the PA must agree to the proposed amendment in accordance with 36 CFR Part 800.6(c)(7).

B. Any signatory to this PA may terminate its participation by providing thirty (30) days written notice to the other parties, provided that the parties will consult during the period prior to the termination to seek amendments or other actions that would avoid termination. The ACHP shall be afforded an opportunity to comment during this period as well. In the event of termination, DES Richmond shall submit to the SHPO a technical report on all work done in accordance with Stipulations 2, 3, and 4, above, up to and including the date of termination and will comply with 36 CFR Part 800.

C. If DES Richmond determines that it cannot implement the terms of this PA, or if the SHPO determines that the PA is not being properly implemented, such party may propose to the other parties to this PA that it be terminated.

D. Should this PA be terminated, DES Richmond shall either:

1. Consult in accordance with 36 CFR Part 800.6 to develop a new Agreement; or

2. Request the comments of the ACHP pursuant to 36 CFR Part 800.7.

11. DURATION

This PA shall remain in effect for ten (10) years following the execution of this PA unless extended by written agreement of the signatories hereto or terminated as above in Stipulation 10. At any time in the six (6)-month period prior to the expiration date, DES Richmond may request in writing the SHPO consider an extension or amendment to this PA. No extension or amendment shall be effective unless all signatories have agreed to it in writing

EXECUTION AND IMPLEMENTATION of this PA is evidence that DES Richmond has taken into account the effects of the Undertaking on historic properties. Execution and implementation of this PA fulfills Section 106 responsibilities for the Undertaking subject to this PA.

DEFENSE LOGISTICS AGENCY ENTERPRISE SUPPORT OFFICE RICHMOND

By: _____ Date: Nov 16, 2009
Terry D. Rodwell, Site Director, DES- Richmond

STATE HISTORIC PRESERVATION OFFICE

By: _____ Date: 11/18/09
Kathleen S. Kilpatrick, State Historic Preservation Officer

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date: 11/25/09
John M. Fowler, Executive Director

END

CONCURRING PARTIES

EASTERN BAND OF THE CHEROKEE INDIANS

By: _____ Date: _____
Michell Hicks, Principal Chief

CATAWBA INDIAN NATION

By: _____ Date: _____
Donald Rodgers, Chief

VIRGINIA COUNCIL ON INDIANS

By: _____ Date: _____
Assistant Chief Earl L. Bass, Chair

CHESTERFIELD HISTORICAL SOCIETY

By: _____ Date: _____
Pet Liess van der Linden-Brusse, President

CHESTERFIELD COUNTY PRESERVATION COMMITTEE

By: _____ Date: _____
Mary Ellen Howe, Chairperson

JEFFERSON DAVIS ASSOCIATION

By: _____ Date: _____
Scott Rogers, President

ATTACHMENT 1

Buildings in Bellwood-Richmond Quartermaster Depot Historic District
Defense Supply Center Richmond
Scheduled for Demolition

DSCR Building Number	Year Built	Historic Use	Tentative Demolition Date	Notes
69	1942	Elevated Water Tower	2010	Single interconnected water system for DSCR and DDDRV, source was Falling Creek eventually pumped to elevated tanks (Tanks 69, 89) and then conveyed for use in both installations. Because DSCR is connected to the urban water supply, the water tower is no longer needed.
89	1943	Elevated Water Tower	2010	Single interconnected water system for DSCR and DDDRV, source was Falling Creek eventually pumped to elevated tanks (Tanks 69, 89) and then conveyed for use in both installations. Because DSCR is connected to the urban water supply, the water tower is no longer needed.
17	1942	Maintenance Garage	2016	Part of complex of four maintenance buildings included Building 18 (motor pool), Buildings 17, 19, 20 built as complex with each building facing into a quadrangle. Building is currently used to offices.
19	1942	Maintenance Garage	2016	Part of complex of four maintenance buildings included Building 18 (motor pool), Buildings 17, 19, 20 built as complex with each building facing into a quadrangle. Building is not in use.
20	1942	Maintenance Garage	2010	Part of complex of four maintenance buildings included Building 18 (motor pool), Buildings 17, 19, 20 built as complex with each building facing into a quadrangle. Building is not in use.
174	1947	Housing, Duplexes	2010	Because there is no more housing on the installation, this duplex is vacant.
175	1947	Housing, Duplexes	2010	Because there is no more housing on the installation, this duplex is vacant.
25	1901	Officers' Quarters	2010	Because there is no more housing on the installation, this house is vacant.

OS-1	1942	Open Shed/OS-1	2010	Flat-roofed open storage in extreme southwestern portion of installation, wood columns and wood trusses. Warehouse is empty.
OS-2	1942	Open Shed/OS-2	2010	Flat-roofed open storage in extreme southwestern portion of installation, wood columns and wood trusses. Warehouse is empty.
30	1942	Warehouse	2010	Brick warehouse with monitor roof; same style as 31, 32, and 33, currently empty.
31	1942	Warehouse	2016	Brick warehouse, mostly converted to administrative use. Bay 31G houses a conference center.
32	1942	Warehouse	2016	Brick warehouse, mostly converted to administrative use.
33	1942	Warehouse	2016	Brick warehouse, mostly converted to administrative use.
61	1942	Warehouse	2010	Brick warehouse, currently empty.
62	1942	Warehouse	2010	Brick warehouse, currently empty.
63	1942	Warehouse	2010	Brick warehouse, currently empty.
64	1942	Warehouse	2010	Brick warehouse, currently empty.
77	1942	Warehouse	2010	Brick warehouse, currently empty.
78	1942	Warehouse	2010	Brick warehouse, currently empty.
94	1942	Warehouse	2010	Brick warehouse, currently empty
95	1942	Warehouse	2010	Brick warehouse, currently empty
6	1942	Warehouse	2012	Brick warehouse, currently empty.
7	1942	Warehouse	2012	Brick warehouse, currently empty.
10	1942	Warehouse	2012	Brick warehouse, currently empty.

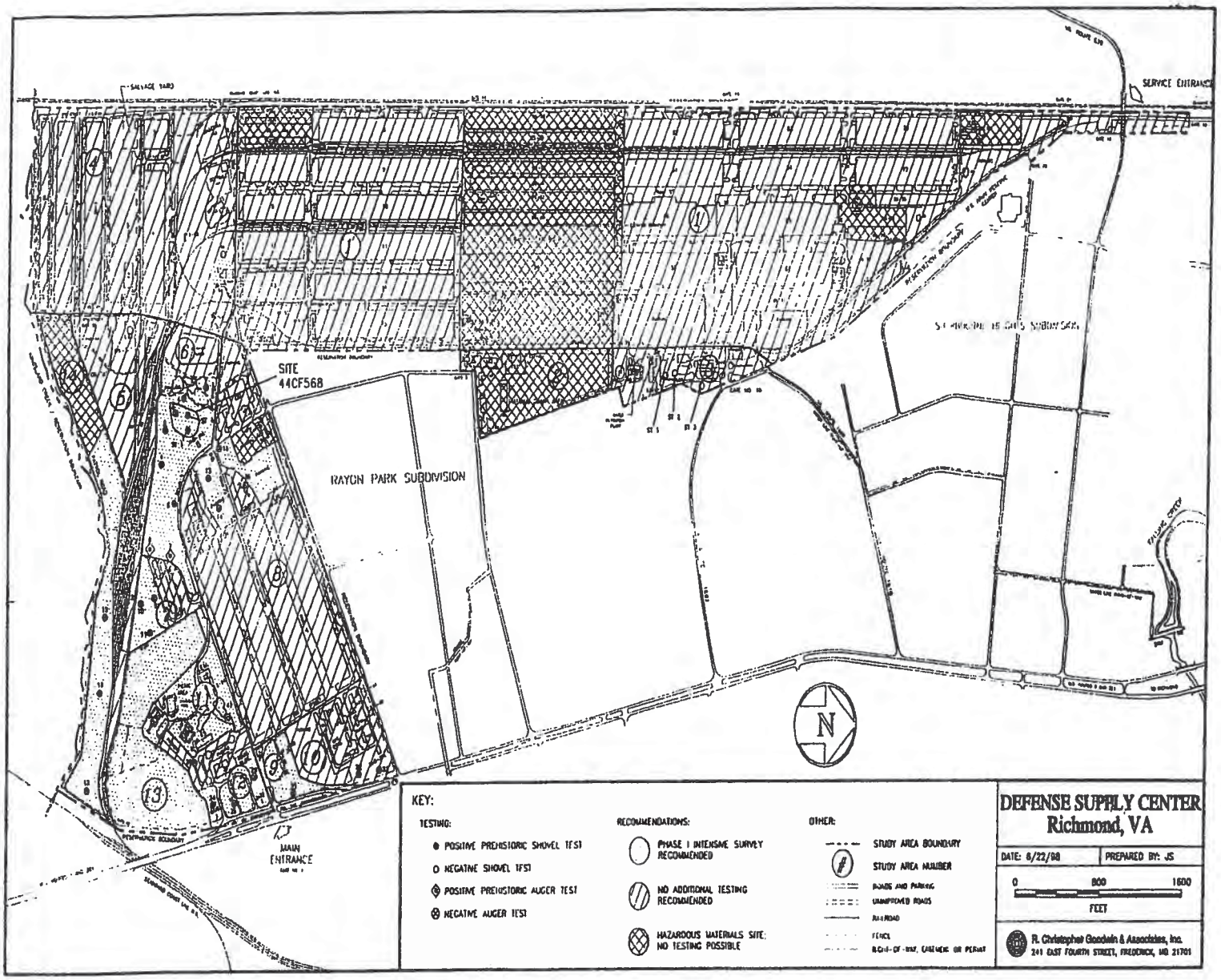


Figure 3-2. Plan of DSCR showing locations of study areas, testing recommendations, and DERA Hazardous materials sites (taken from Best et al. 1993; Figure III-1)

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APPENDIX G: 2016 ENVIRONMENTAL BASELINE SURVEY

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FINAL

Environmental Baseline Survey Update Memo
Virginia Army National Guard
Proposed Joint Force Headquarters
Defense Supply Center Richmond

Anticipated/Programmed Fiscal Year of Execution: 2016

Summary of VAARNG Proposed Action Triggering the ECOP Requirement: Proposed Construction of Joint Force Headquarters Building

4 APRIL 2016

SIGNATURE PAGE

ANTICIPATED NEPA REQUIREMENTS OF THE PROPOSED ACTION:

REC/Check EA EIS

CURRENT STATUS OF NEPA DOCUMENTATION:
Pending NGB Approval

POINT OF CONTACT FOR MORE INFORMATION:
Pam Coleman, Virginia Army National Guard, NGVA-FMO-ENV, Building 316, Blackstone, VA 23824, Telephone: (434) 298-6445

I declare that, to the best of my professional knowledge and belief, I meet the definition of "Environmental Professional" as defined in Section 312.10 of 40 Code of Federal Regulations (CFR) Part 312. I have the specific qualifications, based on education, training, and experience, to assess a property of the nature, history, and setting of the subject property. I have developed and performed all of the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

SIGNATURE OF RESPONSIBLE ENVIRONMENTAL PROFESSIONAL (EBS or ESA only):

Printed Name: Carroll H. Ellis, III

Signature:

Title/Position/Organization: Environmental Scientist/EEE Consulting, Inc.

SUMMARY OF RELEVANT FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS:

In accordance with ASTM Designation D5746-98 (2010), the subject property has been classified as ECOP Area Type 7- "An area or parcel of real property that is unevaluated or requires additional evaluation". In accordance with AR 200-1, Chapter 15-6, MILCON Property Site Classifications, the subject property has been classified as a Category II – "There is no known contamination, there remains some potential that contamination may be encountered during construction."

The original Environmental Baseline Survey (EBS) dated May 2013 reported the subject property is adjacent to Environmental Restoration Program (ERP) site Operable Unit (OU) 8 which is currently being remediated for volatile organic constituent (VOC) groundwater contamination.

An EBS update was requested to review the additional environmental studies and reports which have been generated for the groundwater contamination at OU 8 since 2013. Based on a

comprehensive review of the new data, observations made during the site inspection conducted on March 30, 2016, and information obtained during the on-site interview with Mr. F. David Hufford, (Environmental Engineer with DLA Installation Support), no changes were identified regarding the following:

- Uses of the subject property – No change
- Enforcement actions on or adjacent to the subject property – None
- ECOP Area Type(s) of the subject property – No change (remains Type 7)
- Changes to adjacent property use(s) that are significant enough to cause potential concern for the subject property – None
- Any other changes in significant environmental resources on the subject property – None

History of Operational Units near the Subject Property

Defense Supply Center Richmond (DSCR) entered into a Federal Facility Agreement in 1990 with the U.S. Environmental Protection Agency and the Virginia Department of Environmental Quality to address environmental contamination at the site from past activities. DSCR has an ERP, conducted under CERCLA, which is addressing contamination at 13 operable units. Based on the 2013 EBS, there are no operable units located on the subject property; however, two of the operable units (OU 5 and OU 8) are adjacent to the subject property and have impacted soil and groundwater. Both OU 5 and OU 8 and are being remediated under the ERP. OU 8 is defined as impacted groundwater in the Upper Water Bearing Unit (WBU) underlying and downgradient of OU 5, which is the primary source area of the OU 8 chlorinated VOC plume. OU 5 is located approximately 25 feet northwest of Building 65 and included acid neutralization ponds (ANPs) and surrounding impacted soil. The ANPs consisted of two former concrete settling pits that received wastewater from metal cleaning operations at Building 65. Operations in Building 65 included cleaning (paint and rust removal) and repainting steel combat helmets, compressed gas cylinders, and other metal items. These operations were conducted from 1958 to the early 1980s. From 1958 to the late 1970s, wastewater from the primary tank was discharged to the storm sewer. After the addition of the secondary tank during the late 1970s, wastewater was discharged to the sanitary sewer. The solvents used during metal cleaning operations were not documented and solvents may have been transported from other installation locations and disposed in the ANPs. The ANPs were closed in 1985, the sludge was removed, residual sludge was washed from the tank bottoms, and the tanks were backfilled with clean soil. At the time of closure, the concrete sides and bottoms of the tanks were found to be broken and cracked. Remediation of impacted soils surrounding the ANPs was completed under OU 5.

Operable Unit 8- Groundwater

According to the Draft Vapor Assessment Technical Memorandum for OU 8 dated March 2015, the depth to groundwater in the Upper WBU ranges between 10.83 and 20.04 feet below the ground surface. Historical water level measurements indicate that the groundwater flow direction in the Upper WBU at OU 8 is complex. Regional groundwater flow at OU 8 is generally towards the north-northeast. Localized groundwater flow at OU 8 appears to be highly influenced by storm drains. Apparent groundwater highs in the southern portion of the site under the northern ends of Warehouses 65 and 66 are most likely caused by artificial groundwater lows caused by storm water drains that surround the warehouses. Along the eastern edge of the site, reversals in groundwater flow directions (towards the west, southwest and northwest) are related to topographic elevation changes (AECOM 2014b). The site history suggests that contaminants have impacted groundwater for over 20 years.

Five (5) primary VOCs (1,2-dichloroethane [DCE], tetrachloroethene [PCE], trichloroethene [TCE], cis-1,2-dichloroethene [cis-DCE], and vinyl chloride [VC]) have been detected above maximum contaminant levels (MCLs) in the OU 8 groundwater plume (Upper WBU). Figure 1 shows the subject property, the groundwater monitoring wells in OU 8, and the isoconcentrations of VOC constituents in OU 8. Data for Figure 1 is from the October 2015 groundwater monitoring event.

Various remedial activities have taken place to reduce the mass of VOCs in the OU 8 groundwater plume, including a dual-phase extraction system that operated from 1997 to 2004 (DSCR, 2007). The OU 8 Record of Decision indicates Institutional Controls/Land Use Controls (LUCs) and monitored natural attenuation, with in situ bioremediation as a possible contingency, as the remedy to address impacted groundwater in the Upper WBU at OU 8 (DSCR, 2007). In 2011, an Explanation of Significant Differences (ESD) to the ROD was signed to implement the in situ bioremediation contingency for OU 8 and enhanced in-situ bioremediation with monitoring, including monitoring for potential subsurface vapor intrusion, was initiated in 2014. The enhanced in-situ bioremediation included the injection of emulsified vegetable oil (EVO) in 2014. The low solubility of EVO provides for a long lasting carbon source due to its slow rate of dissolution into groundwater. In addition to providing a long lasting carbon source to drive reductive dechlorination reactions, EVO can also help sequester chlorinated ethene compounds, which will further reduce their mobility in the aquifer.

Based on the latest groundwater monitoring data from October 2015, there have been decreases in VOC concentrations within the plume since 2014. Monitoring wells MW162, MWANP13, MW156, and MW157 are located closest to the western boundary of the subject property. During the October 2015 groundwater sampling event monitoring wells MW162, MWANP13, and MW157 were below detection limits (BDL) for all applicable VOC constituents within the WBU. In addition, monitoring well MW156 was BDL for cis-1,2-dichloroethene and vinyl chloride, and contained 1 µg/L TCE, which is below the MCL of 5 µg/L. Monitoring well MW156 also contained 7.7 µg/L PCE, which is 2.7 µg/L higher than the MCL of 5 µg/L.

In July 2015, a vapor intrusion investigation was completed to determine if groundwater contamination in OU 8 was causing vapor intrusion issues in two of the buildings within OU 8. The Final Technical Memorandum Subsurface Vapor Intrusion Investigation for Motor Pool and Butler Buildings, located at the United States Dervishian Army Reserve Center on the northeastern portion of the DSCR, was completed on July 2015. Indoor air, outdoor air, and near-slab vapor samples were analyzed for five (5) VOCs (DCE, PCE, TCE, cis-DCE, and VC) that have been detected above MCLs in the OU 8 groundwater plume. No VOCs were detected in the indoor or outdoor air samples. Only one VOC (PCE) was detected at low concentrations of 1.4 µg/L and 1.3 µg/L in the near-slab vapor samples collected at the Motor Pool and Butler buildings, respectively. These concentrations are below the carcinogenic Risk Screening Level (RSL) of 47 µg/L and the noncarcinogenic RSL of 180 µg/L. This indicates that the levels of contaminants within the extended migrating plume area are not high enough to create vapor intrusion conditions.

Information provided to EEE from the VAARNG indicates the proposed subject property structure will utilize a vapor barrier in light of the nearby contaminant plume and to also mitigate any potential radon gas issues. Vapor barriers have proven to be effective at Warehouses 65 and 66, which are located within the boundaries of OU 8 and OU 5. Normal operations have proceeded with no incidence of elevated contaminated vapors within the structures.

According to the DSCR Annual Site Inspection Form, in accordance with the Environmental Land Use Control Remedial Design dated November 2013 for DSCR, an inspection of OU 8 was conducted by Robert J. Onderko on November 13, 2014. Land use restrictions within the boundaries of OU 8 include the following:

- Access restrictions and preconstruction assessments at the OU.
- No residential land use or child-occupied facilities including daycare at the OU.
- No potable use of groundwater on the installation.
- No installation of groundwater wells for consumptive use at the OU if concentrations exceed drinking water standards or risk-based levels if standards do not exist.
- Implementation of subsurface vapor monitoring/indoor air monitoring as applicable.

According to the Report of Subsurface Investigation and Geotechnical Engineering Services prepared by GET Solutions, Inc. dated June 21, 2015, proposed construction on the subject site is expected to consist of building a two-story headquarters structure approximately 100,000 square feet in plan area. The structure will be of CMU/steel frame design bearing upon shallow foundations with a first floor supported on grade. The development at this site will also consist of constructing paved parking and drive aisle areas, storm water management facilities and associated infrastructure components. The proposed finish floor elevation of the structure is expected to be 125 feet MSL. As such, the finish floor elevation of the structure is expected to roughly coincide with the existing site grades in most areas, thus cuts and fills are expected to be on the order of up to 1 to 4 feet. The existing site elevations range from roughly 121 to 126 feet MSL across the site. The majority of the site is relatively level and generally only slopes downward when approaching the existing roadways that surround and bisect the site. In order to explore the general subsurface soil types and to aid in developing associated foundation design parameters, nine (9) 30-foot deep Standard Penetration Test (SPT) borings were drilled within the proposed structure's footprint. In order to explore the general subsurface soil types and to aid in developing associated pavement design parameters, six (6) 10-foot deep SPT borings were drilled within the proposed paved parking and drive aisle areas. To aid in developing associated storm water management parameters, five (5) 10-foot deep SPT borings were drilled within the proposed storm water management areas. Groundwater was not encountered at the boring locations to the depths explored on the subject property. Therefore, the construction activities at the subject property are not anticipated to impact the confined aquifer or intercept groundwater.

According to the 60 Percent Design Plans prepared by POND, dated March 22, 2016, stormwater from the proposed VANG State HQ facility would be managed in six (6) small stormwater bioretention-type 1 and 2 BMPs. The stormwater BMPs will have an impermeable clay liner component to contain stormwater from permeating into the aquifer. In addition, the post-development hydrology runoff will be less than or equal to the pre-development conditions at the subject property with regard to temperature, rate, volume and duration of flow, as the goal of the system design is to mimic current characteristics. The current infiltration rate at the subject property is approximately 0.067 in/hour. Due to the infiltration rate being less than the required 0.5 feet/day for infiltration facilities, the bioretention facilities will require underdrains. The stormwater management facilities will discharge into the existing storm sewer pipes. Therefore, the potential adverse effects to groundwater and the plume are considered less-than-significant.

Based on the potential that the contaminant plume could migrate to the subject property, EEE recommends that design specifications for the subject property require the contractor to develop and submit for review, a site specific Health and Safety Plan (HASP) to address any potential contamination/risks involved and a site specific environmental protection plan that addresses containment of potential groundwater contamination. Though unlikely, in the event that

construction workers encounter groundwater during construction, EEE recommends that an action plan be developed (if one does not currently exist) to immediately analyze any potentially contaminated groundwater and protect workers from potential exposure, and identify disposal requirements for any contaminated water collected as part of de-watering construction activities.

Attached to this memo are the following documents:

Consult Letters

USAPHC, Environmental Baseline Survey No S.0011366i-13, Proposed VAARNG Joint Force Headquarters Defense Supply Center Richmond VA, May 2013

AECOM, Final 2014 Groundwater Monitoring Report for Operable Unit 8, Defense Supply Center Richmond, November 2015.

EDR Summary Radius Map Report, Joint Force Headquarters at DSCR, March 2016

References:

- DLA Environment and Safety, Final Record of Decision OU 8 – Acid Neutralization Pits Groundwater, DSCR, Richmond, Virginia, February 23, 2007

- AECOM, Defense Supply Center Richmond Annual Site Inspection Form, in accordance with the Environmental Land Use Control Remedial Design, DSCR, Richmond, Virginia, November, 2014

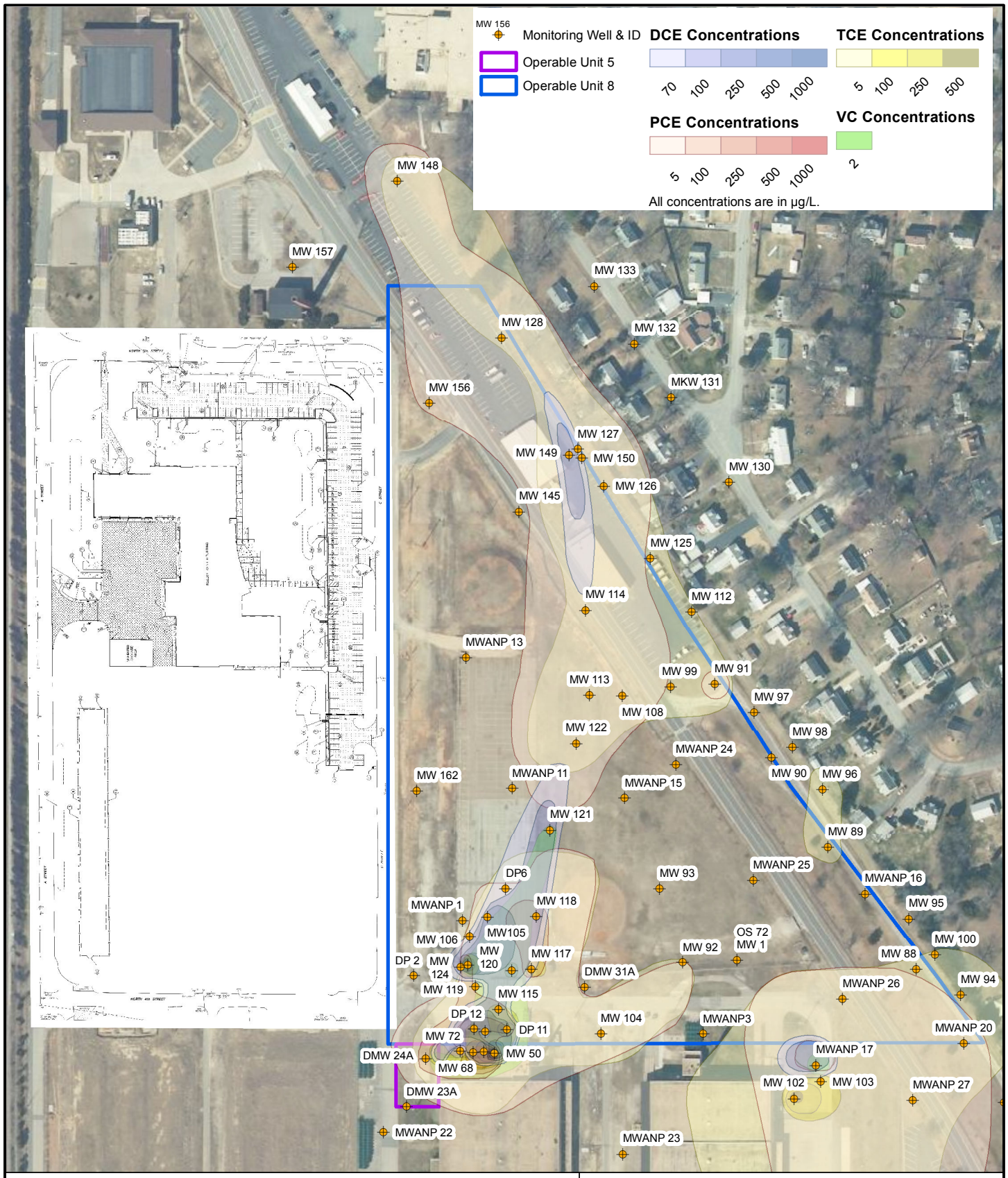
- AECOM, Draft Vapor Assessment Technical Memorandum for OU 8, DSCR, Richmond, Virginia, March 2015

- AECOM, Draft Annual Groundwater Monitoring Report Data, DSCR, Richmond, Virginia October 2015

- GET Solutions, Inc., Report of Subsurface Investigation and Geotechnical Engineering Services, VARNG Headquarters, DSCR, Richmond, Virginia, June 21, 2015

- AECOM, Final Technical Memorandum Subsurface Vapor Intrusion Investigation for Motor Pool and Butler Buildings at The Dervishian Army Reserve Center, DSCR, Richmond, Virginia, July 2015

- POND, 60% Preliminary Design Submittal – National Guard/Reserve Center Building, DSCR, Richmond, Virginia, March 22, 2016



3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

N

Prepared by JJL, 03-30-2016
Data Source: AECOM, Draft Annual Groundwater Monitoring Report Data, DSCR, Richmond, Virginia, October 2015
Other Sources: Pond & Company, 2015, VBMP AERIAL IMAGERY
Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

FIGURE 1
CONCEPTUAL SITE PLAN
& CONSTITUENT ISOCONCENTRATIONS
VIRGINIA NATIONAL GUARD STATE HEADQUARTERS

0 200 400
Feet
Richmond, VA

Consult Letters

USAPHC, Environmental Baseline Survey No S.0011366i-13, Proposed VAARNG Joint Force Headquarters Defense Supply Center Richmond VA, May 2013

DEPARTMENT OF THE ARMY
US ARMY INSTITUTE OF PUBLIC HEALTH
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND MARYLAND 21010-5403

MCHB-IP-ESW

17 JUN 2013

MEMORANDUM FOR Environmental Programs Division (ARNG-ILE/Ms. Anna Hudson), Army National Guard Readiness Center, 111 S. George Mason Drive, Arlington, VA 22204-1382

SUBJECT: Environmental Baseline Survey No. S.0011366i-13, Proposed Virginia Army National Guard Joint Force Headquarters, Defense Supply Center Richmond, Richmond, Virginia, 7-9 May 2013

1. One paper copy of the draft report and a pdf file on a CD-ROM are enclosed.

2. Please provide consolidated comments to this office within 30 days. The point of contact is Ms. Kathleen Butoryak, Project Manager, Water Resources Program, Army Institute of Public Health. She may be contacted at DSN 584-5195, commercial 410-436-5195, or e-mail kathleen.r.butoryak.civ@mail.mil.

FOR THE DIRECTOR:

Encl

WILLIAM F. FIFTY
Program Manager
Water Resources

ENVIRONMENTAL BASELINE SURVEY NO. S.0011366i-13
PROPOSED VAARNG JOINT FORCE HEADQUARTERS
DEFENSE SUPPLY CENTER RICHMOND
RICHMOND, VIRGINIA
7-9 MAY 2013

Distribution authorized to U.S. Government Agencies only; protection of privileged information evaluation another command; Mar 13. Requests for this document must be referred to Army National Guard Readiness Center (ARNG-ILE), 111 S. George Mason Drive, Arlington, VA 22204-1382.

General Medical: 500A, Public Health Survey

MCHB-IP-ESW

EXECUTIVE SUMMARY
ENVIRONMENTAL BASELINE SURVEY NO. S.0011366i-13
PROPOSED VAARNG JOINT FORCE HEADQUARTERS
DEFENSE SUPPLY CENTER RICHMOND
RICHMOND, VIRGINIA
7-9 MAY 2013

1.0 PURPOSE.

This Environmental Baseline Survey (EBS) was prepared by the Army Institute of Public Health (AIPH) for the Virginia Army National Guard (VAARNG). The VAARNG seeks to acquire a 13.6-acre site (henceforth referred to as "the Property") on Defense Supply Center Richmond (DSCR) for future construction of the VAARNG Joint Force Headquarters. The purpose of this EBS was to document the environmental condition of the Property and to identify environmental conditions that may impact the suitability of the Property for acquisition.

2.0 METHODOLOGY.

This EBS was prepared in conformance with Army Regulation 200-1, Environmental Protection and Enhancement, and in general conformance with ASTM International (ASTM) Standard Practice D6008-96 (2005), Standard Practice for Conducting Environmental Baseline Surveys.

3.0 SITE DESCRIPTION.

The Property is located on DSCR and is bounded by A, C, 4th, and 5th Streets. The Property is currently undeveloped and was occupied by Warehouses 77 and 78 from 1942 until 2011.

4.0 ASSIGNMENT OF ENVIRONMENTAL CONDITION OF PROPERTY (ECP) TYPE.

In accordance with ASTM D5746-98 (2002), Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities, and based on the potential for vapor intrusion to the proposed VAARNG Joint Force Headquarters buildings, AIPH recommends the Property be classified as:

ECP Area Type 7. An area or parcel of real property that is unevaluated or requires additional evaluation.

There are no formal land use controls on the Property and available data indicate the adjacent Environmental Restoration Program (ERP) site Operational Unit (OU) 8 has not affected groundwater beneath the Property. However, DSCR ERP personnel noted there is a potential for vapor intrusion to occur in buildings constructed on the Property from the OU 8 groundwater contaminant plume immediately adjacent to the Property, and groundwater flow patterns in the confined aquifer may be altered by disrupting the confining layer during construction activities on the Property.

The recommended categorization does not include *de minimis* conditions that generally do not present material risk of harm to public health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies.

ECP Area Type classifications are recommendations. In accordance with Army Regulation 200-1§15.5.e, the Garrison Commander (or equivalent) is responsible for determining appropriate ECP Area Types for property being transferred based on the results of the ECP report and actions taken to address contamination.

In accordance with Department of Defense policy, property containing or suspected of containing non-Comprehensive Environmental Response, Compensation, and Liability Act contamination (including asbestos-containing materials (ACM), lead-based paint (LBP), munitions and explosives of concern, and radon) that might limit or preclude the transfer or lease of the property for unrestricted use are designated as qualified parcels. There are no qualified parcels on the Property.

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ENVIRONMENTAL BASELINE SURVEY NO. S.0011366i-13
PROPOSED VAARNG JOINT FORCE HEADQUARTERS
DEFENSE SUPPLY CENTER RICHMOND
RICHMOND, VIRGINIA
7-9 MAY 2013

1.0 INTRODUCTION.

This Environmental Baseline Survey (EBS) was prepared by the Army Institute of Public Health (AIPH) for the Virginia Army National Guard (VAARNG). The VAARNG seeks to acquire a 13.6-acre site (henceforth referred to as "the Property") on Defense Supply Center Richmond (DSCR) for future construction of the VAARNG Joint Force Headquarters. The purpose of this EBS was to document the environmental condition of the Property and to identify environmental conditions that may impact the suitability of the Property for acquisition.

1.1 References.

AIPH personnel reviewed all reasonably obtainable documents and photographs pertaining to past and present use of the Property as referenced in Appendix A, provided in Appendices B and C, and listed in Table 1.

Table 1. Documents Reviewed During the EBS

Document	Source
Draft Real Estate Action Plan (Appendix B)	VAARNG
United States Geological Survey (USGS) Historical Topographic Maps (Appendix C)	Environmental Data Resources, Inc. (EDR) (EDR, 2013)
Flood Zone and Wetland Information for the Property and Surrounding Area	Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FEMA, 2012)
Geology, Hydrogeology, and Soils Data for the Property and Surrounding Area (Appendix C)	EDR (EDR, 2013), References (Appendix A)
Electronic Regulatory Agency File Database (Appendix C)	EDR (EDR, 2013)
Historical Aerial Photographs of the Property and Surrounding Area (Appendix C)	EDR (EDR, 2013)
Other Documentation	References (Appendix A)

1.2 Purpose.

This EBS was performed to collect reliable information regarding the environmental condition of the Property and to meet the requirements under U.S. Army Regulation (AR) 200-1 (AR 200-1, 2007). Information gathered during this assessment will assist

the U.S. Army and/or exchange partner in making informed business decisions about the Property by reducing uncertainty regarding its environmental condition.

This EBS was prepared for the following purposes:

- Identify, characterize, and document the presence or likely presence of a release or a material threat of a release of any hazardous substances or petroleum products into the environment associated with the historical and recent use of the Property.

- Identify, characterize, and document the release or possible release of any hazardous substances or petroleum products from an adjacent property that would likely cause or contribute to contamination on the Property.

The purposes as stated above do not include *de minimis* conditions that generally do not represent a material risk of harm to public health or the environment. These conditions would generally not be the subject of a regulatory enforcement action if brought to the attention of appropriate governmental agencies.

1.3 Scope of Services.

This EBS was performed in a manner that facilitated identification of recognized environmental conditions (RECs) at the Property through visual and physical observations and information-gathering procedures. The following tasks were performed during the course of this EBS:

- Site reconnaissance for evidence of hazardous materials handling, storage, or disposal, and other potential contaminants or practices that may have affected the Property.

- Evaluation of the surrounding properties within the designated ASTM International (ASTM) radii with respect to their potential to impact the environmental integrity of the Property. This evaluation was limited to evidence readily observable without accessing private properties and data that may be obtained from Federal, State, and local regulatory agency files through an electronic database search supplied by Environmental Data Resources, Incorporated.

- Review of reasonably available historical data (such as historical aerial photographs and topographic maps), topographical and hydrogeological information, and other information as appropriate.

- Interviews with personnel knowledgeable of the Property and surrounding area.

1.4 Environmental Condition of Property (ECP) Area Types.

In the EBS report, one of seven ECP Area Types, as defined in ASTM D5746-98 (2002) (ASTM, 2002), is assigned to the Property or areas of concern within the Property. The property classification area types are:

- *ECP Area Type 1*. An area or parcel of real property where no release or disposal of hazardous substances or petroleum products or their derivatives has occurred (including no migration of these substances from adjacent properties).
- *ECP Area Type 2*. An area or parcel of real property where only the release or disposal of petroleum products or their derivatives has occurred.
- *ECP Area Type 3*. An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action.
- *ECP Area Type 4*. An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, and all remedial actions necessary to protect human health and the environment have been taken.
- *ECP Area Type 5.* An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred and removal or remedial actions, or both, are under way, but all required actions have not yet been taken.
- *ECP Area Type 6.* An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but required response actions have not yet been initiated.
- *ECP Area Type 7.* An area or parcel of real property that is unevaluated or requires additional evaluation.

ECP Area Types 1 through 4 are suitable for lease or transfer by deed. ECP Area Types 5 and 6 are typically unsuitable for lease or transfer by deed because of ongoing or future remedial actions. An ECP Type 7 Area is unevaluated or requires additional evaluation.

In accordance with Department of Defense (DOD) and Army policy, property containing or suspected of containing non-Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) contamination (including asbestos, lead-based paint (LBP), radon, or unexploded ordnance) that might limit or preclude the transfer or lease of the property for unrestricted use is designated as a qualified parcel (Deputy Secretary of Defense, 1996; Department of the Army (DA), 2006).

1.5 Assumptions and Limitations.

Information obtained from individuals interviewed and prior environmental reports were considered to be accurate unless reasonable inquiries indicated otherwise. Conditions observed were considered representative of inaccessible areas unless otherwise indicated. This EBS report presents a summary of reasonably obtainable information on the environmental conditions of, and concerns relative to, the land, facilities, and real property assets at the Property. Findings are based on a records search of reasonably obtainable documents, a thorough review of the applicable and relevant documents, site reconnaissance, and interviews with personnel knowledgeable about the Property and its history. Environmental investigation reports, other reports and plans, and historical documents were reviewed in support of this EBS. Information obtained from these other studies is reflected within this report by reference.

This EBS was performed following ASTM D6008-96 (2005) (ASTM, 2005). Although this report was designed to eliminate uncertainty regarding the potential for RECs to the minimum practicable level, it does not eliminate all uncertainty.

No sampling or analysis of any medium was conducted during this survey; such work is outside the scope of this EBS.

2.0 PROPERTY DESCRIPTION.

2.1 Property Location.

The Property is located on DSCR at geographic coordinates 37°25' 55" latitude and 77°27' 08" longitude in Chesterfield County, Richmond, Virginia. The Property is bounded by A, C, 4th, and 5th Streets (Figure 1 and Figure 2).

2.2 Real Estate Records.

Acquisition of the Property is through a DA license, which requires National Guard Bureau, Army Installations Division concurrence and action to forward request to DSCR and U.S. Army Corps of Engineers (USACE), Norfolk District. A copy of the Draft Real Estate Plan is provided in Appendix B.

2.3 Buildings and Other Improvements on the Property.

There are no roads, buildings, or other improvements on the Property (Figure 2).

2.4 Utilities and Waste Disposal.

Utility providers are listed in Table 2.

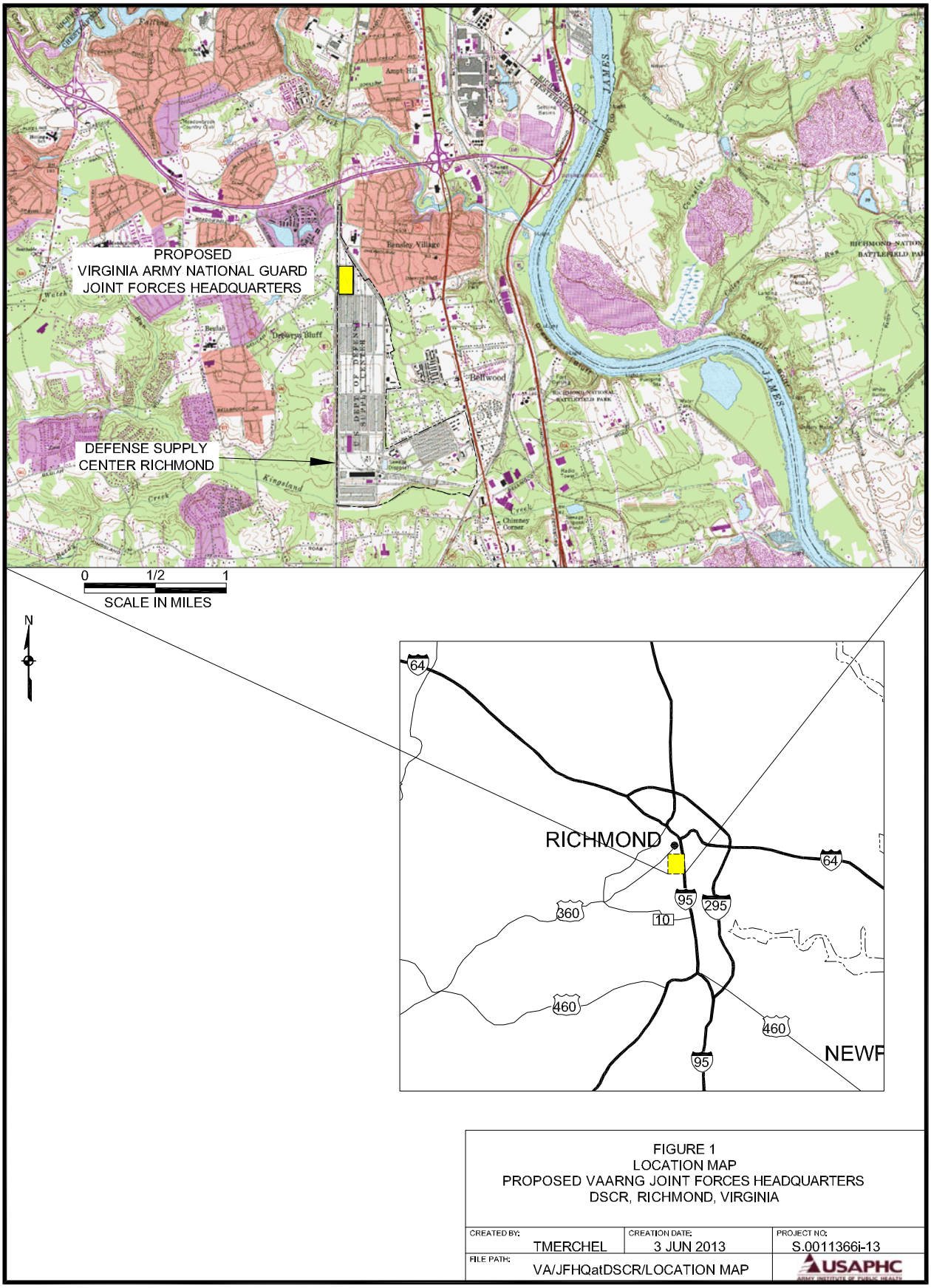
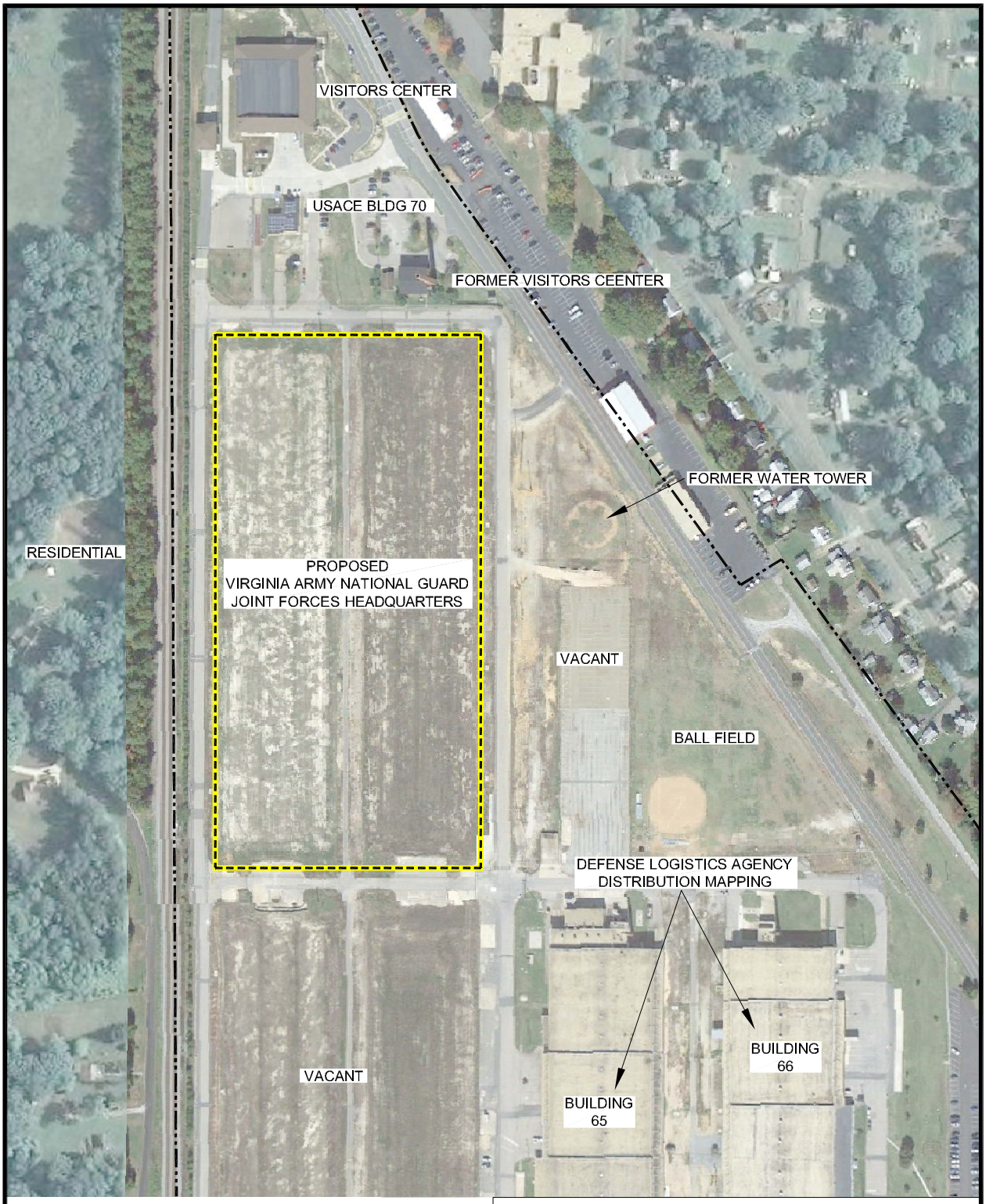


FIGURE 1
LOCATION MAP
PROPOSED VAARNG JOINT FORCES HEADQUARTERS
DSCR, RICHMOND, VIRGINIA

CREATED BY:	CREATION DATE:	PROJECT NO:
TMERCHEL	3 JUN 2013	S.0011366i-13
FILE PATH: VA/JFHQatDSCR/LOCATION MAP		USAPHC ARMY INSTITUTE OF PUBLIC HEALTH



N

0 200 400

SCALE IN FEET

LEGEND

PROPERTY BOUNDARY

DEFENSE SUPPLY CENTER RICHMOND BOUNDARY

FIGURE 2
SITE MAP
PROPOSED VAARNG JOINT FORCE HEADQUARTERS
DSCR, RICHMOND, VIRGINIA

CREATED BY:	EDITED BY:	CREATION DATE:	PROJECT NO:
GCL	TLM	22 MAY 2013	S.0011366i-13

FILE PATH: VA/JFHQatDSCR/SITE MAP

USAPHC ARMY INSTITUTE OF PUBLIC HEALTH

Table 2. Utility Providers

Utility	Provider
Water	Purchased from Chesterfield County and treated offsite prior to delivery via Chesterfield County water mains.
Electric	Dominion Energy
Sanitary Sewer	DSCR sanitary sewer to Chesterfield County sanitary sewer
Natural Gas	Columbia Gas

2.5 Adjacent Land Use.

Adjacent land uses are summarized in Table 3.

Table 3. Adjacent Land Use

Direction	Land Use
North	Visitors center, former visitors center, USACE
East	Vacant lot, former water tower
Southeast	DLA Distribution Mapping Warehouses
South	Vacant lot, former warehouses
West	Residential properties

Legend:
DLA = Defense Logistics Agency

3.0 ENVIRONMENTAL SETTING.

3.1 Topography and Surface Water.

The Property and surrounding land is nearly flat and situated at an elevation of 120 feet above sea level (USGS, 1969). No surface-water bodies are located on the Property. Surface water is collected by 15 catch basins (located adjacent to the Property) prior to flowing through storm sewers that discharge to a tributary of Falling Creek, located approximately 0.15 mile northwest of the Property (AIPH, 2013a). Upgradient drainage areas are toward the south and southwest and include residential properties and former warehouses. Based on interviews with former facility personnel, regional topographic analysis, and site reconnaissance, it does not appear that storm water from upgradient areas has negatively impacted the environmental condition of the Property.

3.2 Wetlands.

The USACE and U.S. Environmental Protection Agency (EPA) jointly define wetlands as “Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (40 CFR 230.3).”

No areas that exhibited wetland characteristics (surface water, low-lying areas, or hydrophytic vegetation) were observed during site reconnaissance. Based on a review of the National Wetlands Inventory data, there are no Federal wetlands located on the Property (U.S. Fish and Wildlife Service (USFWS), 2013).

3.3 Coastal Zone.

The Property is located within the Virginia Coastal Management Zone (CMZ). The Virginia CMZ Program is a network of State agencies and local governments that administer enforceable laws, regulations, and advisory policies that protect wetlands, dunes, subaqueous lands, fisheries, and air and water quality within the CMZ (Virginia Department of Environmental Quality (DEQ), undated).

3.4 Flood Zones.

The Property is not located within a designated flood zone (FEMA, 2013).

3.5 Soils.

All soils on the Property are classified as urban soil. These soils have been disturbed or transported by man's activities and are generally less favorable as a rooting medium than soil found in the natural landscape (U.S. Department of Agriculture (USDA), 2010).

3.6 Geology and Groundwater.

The Property is located in the Fall Zone, between the Coastal Plain Physiographic Province to the east, and the Piedmont Physiographic Province to the west. The Piedmont is characterized by rolling terrain underlain by igneous and metamorphic rocks of early Paleozoic age. The Coastal Plain has rolling terrain underlain by eastward dipping strata of unconsolidated to partly consolidated sediments of Cretaceous, Tertiary, and Quaternary age that unconformably overlie Piedmont bedrock. The Fall Zone consists of a belt several miles in width that encompasses the complex margin between the Piedmont and the Coastal Plain. Near the Property, tributaries of the James River have eroded through Coastal Plain sediments to the underlying Petersburg granite.

The regional groundwater flow system in the Coastal Plain consists of a thick wedge of sediments that form a sequence of aquifers and confining units. The local flow system consists of the unconfined Eastover aquifer (known as the upper water-bearing unit (WBU) in DSCR groundwater investigations) and the underlying confined middle Potomac aquifer (known as the lower WBU in DSCR groundwater investigations). Separating the upper WBU from the lower WBU is a silty clay confining unit known as the Aquia formation. Ground water in the underlying Petersburg granite is present in fractures. Direction of groundwater flow in both WBUs is east, towards the James

River, although the upper WBU may exhibit a northern direction of flow in some areas under some conditions. Depth to groundwater on the Property is approximately 12 feet below ground surface.

4.0 RECORDS REVIEW.

4.1 Purpose and Sources of Information.

The purpose of the records review is to identify RECs on or adjacent to the Property. Sources of information reviewed included historical aerial photographs, historical topographic maps, and previous investigations. Because the Property is located on a military base, a city directory search was not performed. Sanborn® fire insurance maps were also researched; however, no coverage was available for the area. (Sanborn® is a registered trademark of The Sanborn Company, Colorado Springs, Colorado.)

4.2 DSCR Background Information and Former Site Use.

DSCR was activated as the Richmond Quartermaster Depot on 1 January 1942, after the U.S. government purchased the land from private landowners in 1941. In 1943, the installation became the Richmond Armed Service Forces Depot. The Quartermaster Branch Depot was established onsite in 1949, followed by the U.S. Army General Supply Center in 1958. DLA began overseeing operations in 1962, when the installation became known as the Defense General Supply Center. The installation was renamed DSCR in 1996.

Past operations at the installation have encompassed a variety of industrial operations including tent, refrigerator, and parachute repair; military vehicle and equipment overhauling; automotive engine repair and rebuilding; sanitary and industrial waste treatment and disposal; gas cylinder refurbishing and replenishing; firefighter training; and hazardous chemical storage, recoupment, and shipping (DSCR, 2012).

Current missions at the installation include:

- Disposing of excess inventory
- Recovering industrial chemicals
- Managing, controlling, storing, and distributing general military, administrative, and other supplies worldwide for DLA
- Refurbishing and refilling chemical gas cylinders
- Storing and supplying operational and maintenance parts for military aircraft

- Maintaining and storing military and government vehicles
- Storing and distributing maps to DoD installations and other government agencies worldwide
- Providing professional development and training opportunities for Government supply and inventory specialists
- Maintaining the U.S. Army's National Technical Information System for hazardous substances

The Property was occupied by Warehouses 77 and 78 from 1942 until 2011, when the warehouses were demolished (HDR Inc., 2011; PersCom, 2013a). Items stored in the warehouses included cloth and leather goods, cardboard energy dissipation pads, and miscellaneous dry goods. No hazardous materials or petroleum products were stored or used at the warehouses (PersCom, 2013b).

4.3 Historical Topographic Maps.

The Property is illustrated on Bermuda Hundred and Camp Lee 15-minute and Drewry's Bluff 7.5-minute USGS topographic quadrangles. Available historical topographic maps dated 1894, 1918, 1938, 1943, 1944, 1952, 1969, 1974, 1980, 1987, and 1994 are provided in Appendix C. No significant changes in topography, mounds, or depressions (suggesting burial of solid waste) were observed during the historical topographic review for the Property or adjacent properties.

- 1894/1918/1938/1943/1944 – The Property and adjacent land are undeveloped. A railroad track is visible west of the Property. Roads are visible in all directions on surrounding land.
- 1952 – Warehouse 77 and 78 are visible on the Property. DSCR is visible; several warehouses are visible on DSCR south of the Property. Residential development is visible northeast of the Property.
- 1969/1974/1980/1987/1994 – Residential development is visible in all directions surrounding DSCR.

4.4 Historical Aerial Photographs.

An historical aerial photograph review was conducted to document changes in use of the Property and adjacent land. Available aerial photographic coverage of the Property included photographs dated 1959, 1964, 1972, 1981, 1989, 1990, 1994, 2000, 2005,

2006, 2008, 2009, 2011, and 2012 (Appendix C). No visible evidence of environmental concerns that are not under investigation in the DSCR restoration program was identified. A summary of information obtained from analysis of the photographs follows:

- 1959/1964 – Warehouses 77 and 78 are visible on the Property and several warehouses are visible on DSCR south of the Property. A water tower is visible east of the Property. Outdoor storage of materials is visible on a paved surface east of the Property and unpaved surfaces north of the Property. Residential development is visible in all directions surrounding DSCR.

- 1972 – Outdoor storage of a large quantity of materials on paved and unpaved surfaces is visible on the triangular-shaped lot east of the Property. A small building (Building 75) is visible in the southwestern corner of the lot. The building and lot are a source area for a groundwater contaminant plume discussed in Section 5.2.1.2. A small building (Building 68) is visible in the southwest corner of the triangular lot located north of the Property. This building is a source area for an environmental restoration site discussed in Section 5.2.1.1. The Property and other surrounding land are in generally the same condition as in the 1964 aerial photograph.

- 1981/1989 – Outdoor storage of materials is visible on the lot east of the Property; however, the volume of materials has decreased significantly from the 1972 aerial photograph. Storage of materials is also visible north of the Property. The Property and other surrounding land are in generally the same condition as in the 1972 aerial photograph.

- 1990/1994 – Several small buildings and conex storage containers are visible north and east of the Property. The Property and other surrounding land are in generally the same condition as in the 1989 aerial photograph.

- 2000 – All but one building (the visitor center) and the water tank have been demolished, and all materials have been removed from the lots north and east of the Property. The Property and other surrounding land are in generally the same condition as in the 1994 aerial photograph.

- 2005/2006/2008/2009 – Buildings are visible on the lot located north of the Property (the former visitors center, the new visitors center, and the USACE building). The Property and other surrounding land are in generally the same condition as in the 2000 aerial photograph.

- 2011 – The water tower, formerly visible east of the Property, and two warehouses, formerly visible south of the Property, have been demolished.

The Property and other surrounding land are in generally the same condition as in the 2009 aerial photograph.

- 2012 – Warehouses 77 and 78 are no longer visible on the Property. All warehouses south of the Property have also been demolished. Other surrounding land is in generally the same condition as in the 2011 aerial photograph.

4.5 Previous Investigations.

4.5.1 Radon.

The EPA has designated the City of Richmond, Virginia, as a Radon Zone 3. Zone 3 areas have a predicted average indoor radon screening level of less than 2 picoCuries per liter (pCi/L). The EPA action level for radon is 4 pCi/L (EPA, undated). Radon testing has not been conducted near the Property (PersCom 2013a).

4.5.2 Environmental Restoration Program (ERP).

There are 8 ERP sites located within 1 mile of the Property; 3 are adjacent to the Property. Numerous investigations have been conducted on these sites. A summary and current status of these sites is provided in Section 5.2.1.

5.0 ELECTRONIC DATABASE SEARCH AND REGULATORY REVIEW.

EDR focuses on state and Federal environmental databases and historical and current land uses to identify sites of potential environmental concern near the Property. Most information for DSCR provided in the EDR report was not practically reviewable. All environmental records contained in Federal and State environmental databases for DSCR are associated with a single address (8000 Jefferson Davis Highway). Because individual site locations are not contained in the databases, site records could not be generated or reviewed for just the Property and the required ASTM radii; therefore, site-specific records for DSCR within each required radius were obtained from DSCR Environmental Branch. Environmental records for sites located in the surrounding area not located on DSCR were obtained from EDR. Complete EDR reports are provided in Appendix C.

5.1 Summary of EDR Database Search Results.

A summary of relevant information found in the DSCR records and EDR database search is provided in Table 4.

Table 4. Summary of DSCR Records and EDR Database Search Results

STANDARD ENVIRONMENTAL RECORD SOURCE	APPROXIMATE MINIMUM SEARCH DISTANCE (Miles)	DSCR RECORDS SEARCH	EDR DATABASE SEARCH[1]
Federal NPL site list	1.0	1	None
Federal Delisted NPL site list	0.5	None	None
Federal CERCLIS[2] list	1.0	None	None
Federal CERCLIS NFRAP[3] site list	0.5	None	None
Federal RCRA CORRACTS[4] facilities list	1.0	None	None
Federal RCRA non-CORRACTS TSDF list[5]	0.5	None	None
Federal RCRA generators list[6]	Property and adjoining properties	1	1
Federal institutional IC/EC registries	Property only	None	None
Federal ERNS[7] list	Property only	None	None
State- and tribal-equivalent NPL	1.0	None	None
State- and tribal-equivalent CERCLIS	0.5	None	None
State and tribal landfill and/or solid waste disposal site lists	0.5	None	None
State and tribal leaking storage tank lists	0.5	None	8
State and tribal registered storage tank lists	Property and adjoining properties	1	1
State and tribal institutional control/engineering control registries	Property and adjoining properties	None	None
State and tribal voluntary cleanup sites	0.5	None	None
State and tribal Brownfield sites	0.5	None	None

Legend:
NPL = National Priority List
IC/EC = Institutional Control / Engineering Control
Notes:
[1] Site-specific records for DSCR within each required radius were obtained from DSCR Environmental Branch. EDR database search results listed in this column do not include DSCR.
[2] The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list is maintained by the EPA and contains sites that have been investigated or are currently being investigated for possible inclusion on the NPL.
[3] As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. Assessment at these sites has been completed and EPA has determined no further steps will be taken to list these sites on the NPL unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time.
[4] Corrective Action Reports (CORRACTS) identify hazardous waste handlers with Resource Conservation and Recovery Act (RCRA) corrective action activity. This report shows which nationally defined corrective action core events have occurred for every handler that has had corrective action.
[5] The non-CORRACTS database is the EPA's list of treatment, storage, and disposal facilities (TSDFs) that are not currently subject to corrective action.
[6] Large-quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Small-quantity generators generate between 100 kg and 1,000 kg of hazardous waste per month.
[7] The Emergency Response Notification System (ERNS) is a national database used to collect information on reported release of oil or hazardous substances.

5.2 Discussion of Database Search Results.

5.2.1 Federal NPL Sites Within 1 Mile of the Property.

DSCR is the sole NPL Site located within 1 mile of the Property. Historical activities at DSCR involved the use, storage, and disposal of hazardous substances and petroleum products that resulted in releases of these substances into the environment. An Initial Assessment Study was conducted in 1981 to identify and assess sites posing a threat to human health or the environment due to contamination from past activities conducted at the installation. In 1986, EPA issued a Corrective Action Permit to DSCR. The installation was placed on the NPL in 1987 and entered into a Federal Facility Agreement in 1990 with EPA and the Virginia DEQ.

The ERP at DSCR is conducted under CERCLA and is divided into 13 operable units (OUs) consisting of 9 source (soil) OUs, 3 groundwater OUs, and 1 groundwater interim action OU. OUs 10, 5, 8, 1, 2, 3, 9, and 6 are located within 1 mile of the Property (Figure 3) (DSCR, 2012; EPA, 2013a).

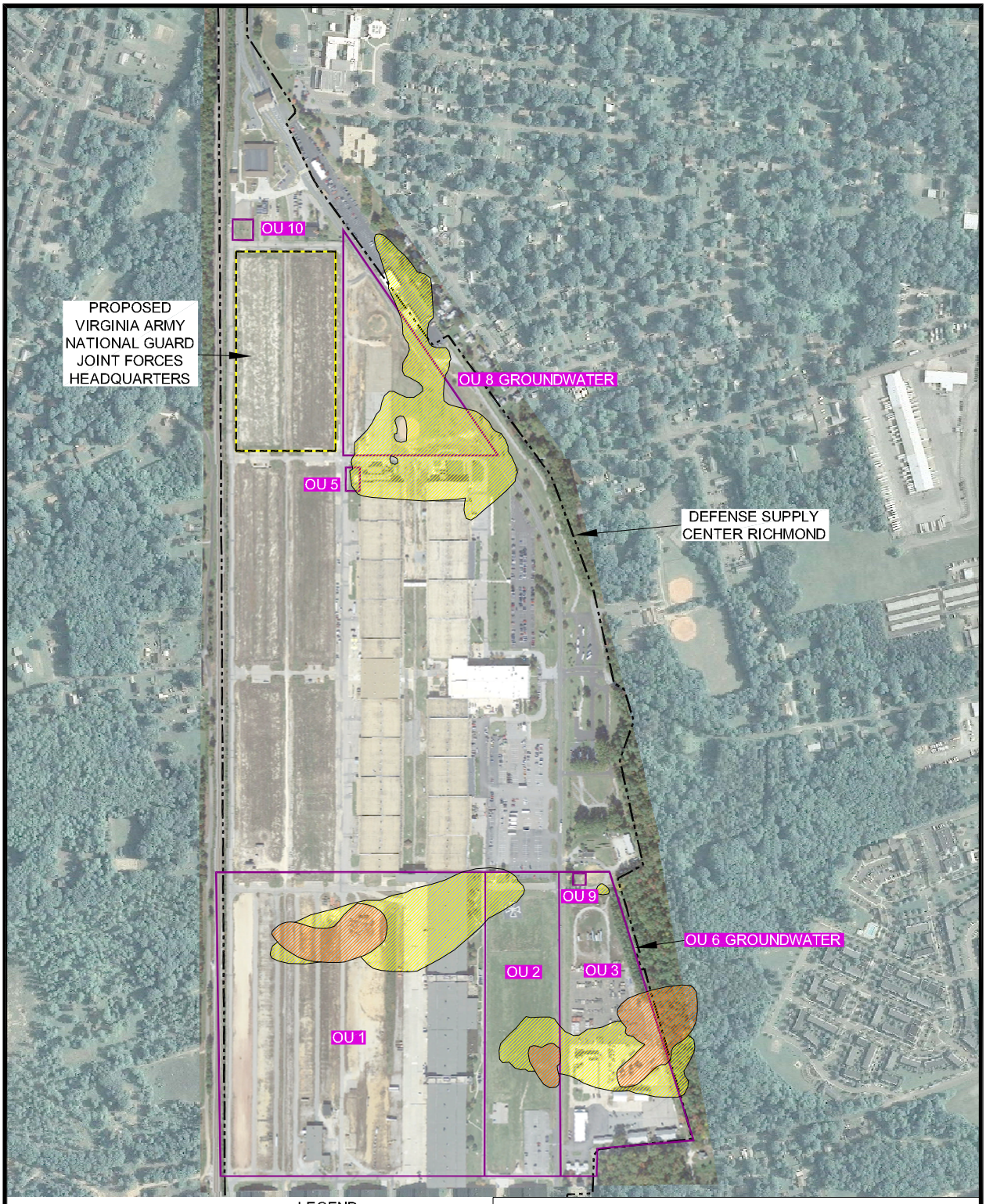
5.2.1.1 OU 10 – Building 68.

5.2.1.1.1 OU 10 Description.

OU10 is the former site of Building 68, a small brick building surrounded by an asphalt and gravel lot. The lot surrounding the former building is currently used for vehicle parking. From 1954 to 1972, the area served as a pesticide storage and operations facility. Beginning in 1972 the surrounding gravel lot was used to store electrical transformers. A spill of transformer oil containing polychlorinated biphenyls (PCBs) occurred in 1980. Affected soil was subsequently excavated and removed from the site.

Soil and storm drain sediment samples were collected during a pesticide monitoring study in 1986. A human health-based risk assessment (HHBRA) was performed using a residential exposure scenario. Dieldrin was detected in surface soils above EPA Region 3 risk based concentrations for residential exposure. No evidence of pesticide migration to groundwater was found.

An expanded site investigation was performed in 1992 that included collecting surface and subsurface soil samples. Toluene, 16 semivolatile organic compounds (SVOCs), 6 pesticides, and 20 metals were detected. Concentrations of arsenic, benzo(a)pyrene, and manganese in soil were determined to be an unacceptable human health risk under residential exposures. Contaminated soil was designated as OU 10.



LEGEND

- PROPERTY BOUNDARY
- DSCR BOUNDARY
- LOWER WATER-BEARING UNIT GROUNDWATER CONTAMINATION
- UPPER WATER-BEARING UNIT GROUNDWATER CONTAMINATION
- OU 1 OPERABLE UNITS

N

0 300 600
SCALE IN FEET

FIGURE 3
DSCR ENVIRONMENTAL RESTORATION PROGRAM
SITES WITH 1 MILE OF THE PROPERTY
DSCR, RICHMOND, VIRGINIA

CREATED BY:	EDITED BY:	CREATION DATE:	PROJECT NO:
GCL	TLM	3 JUN 2013	S.0011366i-13

FILE PATH: VA/JFHQatDSCR/1-MILE OF PROPERTY

USAPHC ARMY INSTITUTE OF PUBLIC HEALTH

polyaromatic hydrocarbons (PAHs), and three pesticides were detected; however, the risk associated with on-site occupational exposures (non-intrusive and construction workers) was within an acceptable range.

A feasibility study (FS) evaluating a no-action alternative with institutional controls was conducted in 1999, and a draft record of decision was prepared in 2001. Upon conclusion of a three-year study on the creeks near the site, an FS addendum was submitted in 2006.

The revised HHBRA included a finding of no unacceptable risk for current or future onsite industrial workers and a recommendation for additional requirements for ensuring the effectiveness of the institutional controls described in the record of decision (ROD). A vegetative cover was also recommended. A ROD was signed in 2007. Based on OU-specific data, the selected remedial actions are land use controls (LUCs), maintenance of the existing cover system, and proper soil disposal and erosion control in the event of future excavation. The remedial design (RD) and remedial action – construction were completed in 2008, and the site achieved response complete status in 2009 (DSCR, 2012; Earth Tech, 2008; EPA, 2013a).

5.2.1.1.2 Potential for Adverse Impact to the Property from OU 10.

There is no evidence that OU 10 presents a threat to human health or the environment on the Property.

5.2.1.2 OU 5 and 8 – Acid Neutralization Pits (ANPs).

5.2.1.2.1 OU 5/8 Description.

The ANPs are two former concrete settling tanks located near the northern end of former Warehouse 65. The pits were used as settling basins and for neutralization of acidic wastewater from metal cleaning and painting operations. The larger primary pit was built in 1958. Treated water flowed directly to the storm sewer until the secondary tank was constructed in the 1970s. The smaller secondary tank received treated water from the primary tank and discharged to the sanitary sewer. Sludge collected from the tanks was periodically disposed of offsite. The tanks were decommissioned in 1985. Sides and bottoms of the tanks were observed to be cracked and broken, indicating a possible migration pathway for constituents to affect soils.

An RI was completed in 1990. Unauthorized dumping of solvents was suspected due to low concentrations of Trichloroethene (TCE), Tetrachloroethene (PCE), 1,2-dichloroethene, and SVOCs in soils. The soil near the ANPs was assumed to be the source area and was designated as OU 5 and the groundwater was considered separately as OU 8.

An FS was completed in 1991. The ROD was signed in 1992, the selected remedy was a soil vapor extraction (SVE) system to reduce remaining chlorinated volatile organic compound (CVOC) concentrations to below the soil remediation objective. A pilot test was performed in December 1992, and subsequent soil confirmation sampling indicated that CVOCs were below soil remediation objectives. An explanation of significant differences (ESD) signed in 1995 indicated a full-scale SVE system at OU 5 was not necessary, and no further action was required. LUCs were implemented to limit future land use in the ANP area. The former pits were subsequently covered with concrete to prevent reuse. No further action is required for the ANP soils (OU 5). LUCs for this site are included in the OU 8 ROD.

A treatability study to determine the effectiveness of a dual phase extraction (DPE) system to remove CVOCs from groundwater began in 1997. Results of the study were favorable and operation of the system and performance monitoring continued. Monitored natural attenuation (MNA) was also confirmed as a possible component of the final remedy.

A rebound test was performed in 2004. The results indicated CVOC concentrations would not exceed maximum contaminant levels when the plume reached the installation boundary. Cessation of the DPE system was recommended. The updated HHBRA, also submitted in 2004, determined the risk was acceptable for both offsite residential and onsite current and future industrial worker scenarios. The revised FS and proposed plan were submitted in 2006 and the ROD was signed in 2007. The final remedy included LUCs and MNA, with in situ bioremediation a possible contingency. The RD was finalized and the DPE system was decommissioned in 2008 (Earth Tech, 2008; DLA, Environment and Safety, 2007; DSCR, 2012).

Results of monitoring activities conducted in 2011 indicated that offpost migration of contamination may be occurring. Two additional source areas (Buildings 75 and 66) were identified in 2011 in an investigation conducted to further characterize the contaminant plume. Building 75 is a former paint storage shed located north of the Property and Building 66 is currently a DLA distribution mapping warehouse located southeast of the Property. Although the former use of Building 66 is unknown, it is thought that unauthorized dumping of solvents occurred off the loading dock on the north side of the building. An ESD finalizing the contingency remedy of in-situ bioremediation was finalized in June 2011. In-situ bioremediation activities will begin in the summer of 2013 (PersCom, 2013a).

5.2.1.2.2 Potential for Adverse Impact to the Property from OU 5/8.

There is no evidence that OU 5 presents a threat to human health or the environment on the Property.

Available data indicate OU 8 has not affected groundwater beneath the Property; however, there are potential uncertainties associated with the data. DSCR ERP personnel noted that groundwater flow patterns may be altered by disruption of the confining layer during construction on the Property. Although there are no formal LUCs on the Property, DSCR ERP personnel noted there is a potential for vapor intrusion to occur in buildings on the Property resulting from the OU 8 groundwater contaminant plume immediately adjacent to the Property (PersCom, 2013a).

5.2.1.3 OU 1 – Open Storage Area (OSA).

5.2.1.3.1 OU 1 Description.

The OSA is a 45-acre site formerly used to store bulk, drummed chemicals; recover liquids from leaking drums (recoupment); repair and replace damaged containers; and to store empty compressed gas cylinders and vessels, electrical transformers, fire extinguishers, and other miscellaneous items. The area is currently used to store large shipping containers. Soils near the recoupment area are stained from past spills, as are soils in other locations around OU 1. Three known spills of the pesticide Malathion occurred between 1977 and 1980. Groundwater beneath and downgradient from OU 1 is treated separately as OU 6.

The RI was submitted in 1990 and the FS in 1991. The constituents of concern were determined to be PAHs, volatile organic compounds (VOCs), pesticides, and metals in soil. The human health risk assessment determined acceptable risk to onsite industrial workers, contingent upon continued industrial land use.

An interim ROD addressing OSA soils was signed in 1992. The recommended final response action was LUCs, including access restrictions to mitigate risk and assessments prior to activities disturbing soil deeper than 6 inches. Five-year reviews in 1997 and 2003 recommended continued enforcement of LUCs and determined the interim remedy to be protective of direct exposure to OU 1 soils. In 2004, soil vapor samples were collected as part of the supplemental FS at OU 6 to evaluate the protectiveness of the interim remedy at OU 1 via the vapor intrusion pathway. No CVOCs were detected in the analyses. The HHBRA was revised for industrial worker exposure scenarios, updated risk assessment guidance, and vapor intrusion.

Based in the results of the revised HHBRA, an ESD was signed for OU 1 in 2007. The ESD finalized the interim ROD remedy of LUCs. Annual LUCs and LTM are ongoing at OU 1 (DSCR, 2012; Earth Tech, 2008; EPA, 2013a).

5.2.1.3.2 Potential for Adverse Impact to the Property from OU 1.

There is no evidence that OU 1 presents a threat to human health or the environment on the Property.

5.2.1.4 OU 2 – Area 50 Landfill.

5.2.1.4.1 OU 2 Description.

The Area 50 Landfill is a 13-acre former ravine that was used as a disposal area for a variety of bulk liquid chemicals, construction debris, and scrap metal from the mid-1960s until the early 1970s. By 1975, the area had been filled, graded to street level, and seeded with grass.

Area 50 was identified as a potential contaminant source in the initial Installation Assessment in 1981. Soil samples collected in 1984 contained SVOCs, CVOCs, pesticides, total petroleum hydrocarbons, phenols, PCBs, and various metals at concentrations that exceeded background levels. The area was designated as OU 2. The associated groundwater is considered separately as OU 6.

An initial RI was completed in 1989. Three “hot spots” containing PAHs, VOCs, SVOCs, and metals were confirmed by soil sampling. Wastes disposed of in the landfill extend into the saturated zone, and VOCs were found to an approximate depth of 30 feet.

Geophysical anomalies discovered during the RI were investigated in 1995 by exploratory trenching. Three crushed 55-gallon drums, numerous small plastic bottles, pails, and a large amount of construction debris were found. Steel reinforcing bar (rebar), scrap metal, and artillery shell casings were determined to be the cause of the anomalies. Petroleum hydrocarbon stained soils and free-phase fuel oil were also encountered in the shallow trenches.

An FS was completed in 1999, and the HHBRA was revised in 2006. Unacceptable risk driven primarily by benzo(a)pyrene in surface soils was determined for current and future industrial workers. A revised remedy selection was finalized in July 2006. A remedial alternative of a soil cover system designed and constructed to promote surface runoff and serve as a physical barrier were proposed. The ROD was signed in 2008. The RD was completed in 2009. Remedial action field activities were completed in 2009 and the completion report was finalized in 2010.

Annual LUCs and LTM of soil cover are ongoing and will continue for OU 2. Groundwater monitoring was completed in 2011; no further groundwater monitoring is required (DLA, Environment and Safety, 2008; DSCR, 2012; EPA, 2013a).

5.2.1.4.2 Potential for Adverse Impact to the Property from OU 2.

There is no evidence that OU 2 presents a threat to human health or the environment on the Property.

5.2.1.5 OU 3 – National Guard Area (NGA).

5.2.1.5.1 OU 3 Description.

The NGA is a 15-acre site the VAARNG has leased from the installation since the 1950s. The area is mostly covered with concrete, asphalt, and gravel. Past activities included a former solvent degreasing area, several underground storage tanks (USTs) and aboveground storage tanks (ASTs), and a wastewater treatment sludge disposal area. The NGA is currently used for vehicle maintenance and storage.

Low-level soil impacts (VOCs, SVOCs, petroleum hydrocarbons, and metals) were detected during the Installation Assessment performed in 1981. The area was subsequently designated as OU 3. An RI completed in 1994 confirmed the presence of VOCs, SVOCs, and metals in soil. An FS was completed in 1995. An ecological risk assessment indicated that there was negligible impact to No Name Creek biota from NGA soils.

The ROD for OU3 (signed in 1995) included LUCs, pre-construction environmental assessments, maintenance of the existing pavement, monitoring of No Name Creek, and excavation of soil in the former wastewater sludge disposal area. The impacted soil was removed in 1997.

The first 5-year ROD review was completed in 2003 as part of the Consolidated 5-Year ROD Review, and the remedy was determined to be protective of human health via direct soil exposure routes. Soil vapor samples were collected in 2004 as part of the supplemental FS for OU 6. The ROD was confirmed to be protective of the indoor vapor intrusion pathway.

The HHBRA was updated using only industrial worker exposure scenarios and updated risk assessment guidance. There was no unacceptable risk for the exposure scenarios (DSCR, 2012; Earth Tech, 2008; EPA, 2013a).

5.2.1.5.2 Potential for Adverse Impact to the Property from OU 3.

There is no evidence that OU 3 presents a threat to human health or the environment on the Property.

5.2.1.6 OU 6 and 9 – OSA, Area 50 Landfill, and NGA Groundwater.

5.2.1.6.1 OU 6/9 Description.

Impacted groundwater in the upper and lower WBUs beneath and downgradient of the OSA (OU 1), the Area 50 landfill (OU 2), and the NGA (OU 3) has been designated as OU 6. Area 50 landfill is believed to be the primary source of impact at OU 6.

A risk assessment performed in 1989 and updated in 1994 indicated future offsite use of the upper WBU as a residential potable water source posed an unacceptable risk to human health. A ROD for an interim remedial action at OU 6 was signed in 1993 and consisted of a groundwater extraction and air-stripping system to reduce mass and limit further offsite transport of impacted groundwater. This interim remedial action was designated as OU 9.

In 1995, a FS was followed by a pilot test to evaluate DPE as a treatment technology. The results of the pilot test, submitted in 2000, were unfavorable for full-scale implementation. MNA was investigated between 2000 and 2003 as a possible component of the final remedy. Subsurface conditions are favorable for MNA in both the upper and lower WBUs, and there is evidence of biotic degradation of CVOCs. A Supplemental FS was initiated in 2003 to address remaining data needs. The HHBRA was updated in 2006; an unacceptable risk was determined for future construction workers and future residential users (as drinking water) due to TCE.

Treatability studies evaluating the effectiveness of in situ biodegradation were initiated in 2007. Tests of the OU 9 treatment system conducted in 2007 indicated the system was no longer effective. An amendment to the interim ROD authorizing the treatment system to be decommissioned was signed and the OU-9 system was decommissioned in 2008.

The FS for OU 6 was approved in Sept 2011. Based on site-specific data, the selected remedial actions are LUCs, MNA, LTM, and in-situ bioremediation. A ROD and RD are projected for end of FY 2013 (DSCR, 2012; Earth Tech, 2008; EPA, 2013a).

5.2.1.6.2 Potential for Adverse Impact to the Property from OU 6 and 9.

OU 9 is located approximately ½ mile south of the Property and the direction of groundwater flow is towards the east. The Property is cross gradient of OU 9; therefore, there is no evidence that OU 6 or 9 present a threat to human health or the environment on the Property.

5.2.2 Federal RCRA Generators Within ¼ Mile of the Property.

There are two Federal RCRA generators within ¼ mile of the Property. DSCR is a large quantity generator (EPA ID number VA397152075). There a <90 day hazardous waste storage area located at Building 80, approximately ¼ mile southeast of the Property (Figure 4). There are no violations associated with this site (PersCom, 2013c). No stained surfaces or other evidence of a release of hazardous materials or petroleum products was observed in or surrounding this site during site reconnaissance.

The Dervishian U.S. Army Reserve Center (USARC) is a conditionally exempt small quantity generator (EPA ID number VAR000005595) located approximately ⅛ mile east of the Property. No violations were reported for the USARC (EPA, 2013b).

Neither RCRA generator site is expected to pose a threat to human health or the environment on the Property.

5.2.3 State and Tribal Leaking Underground Storage Tank (LUST) Sites Within ½ Mile of the Property.

There are no current LUST sites at DSCR (PersCom, 2013d).

EDR database search results indicate there are eight LUST sites located within ½ mile of the Property. The regulatory status of all sites is listed as "closed." None are expected to pose a threat to human health or the environment at the Property. Information for these sites is listed in Table 5 (EDR, 2013).

Table 5. LUST Sites Within ½ Mile of the Property

LUST Site	Address	Distance and Direction from Property	Comments
Dervishian USAR Center	6700 Strathmore Road	0.24 mile north northeast	Tank closure reported on 8/21/1992
Watson Residence	6725 Wentworth Street	0.37 mile east northeast	Tank closure reported on 9/16/1998
Brammer Thomas Property	2950 Dundas Road	0.42 mile northeast	Tank closure reported on 8/18/2003
Brown Albert Residence	2919 Dundas Road	0.44 mile northeast	Tank closure reported on 3/22/2002
Brammer Residence	2950 Parkdale Road	0.46 mile north northeast	Tank closure reported on 9/25/2000
Wood Peggy Property	2816 Sherbourne Road	0.47 mile east northeast	Tank closure reported on 6/27/2011
Dodson Patricia Property	2811 Sherbourne Road	0.47 mile east northeast	Tank closure reported on 7/13/2011
Harvey Judy Residence	6701 Westwood Street	0.49 mile east northeast	Tank closure reported on 6/05/2009

LEGEND

PROPERTY BOUNDARY

DEFENSE SUPPLY CENTER RICHMOND BOUNDARY

UT UNDERGROUND TANK

AT ABOVEGROUND TANK

GT GENERATOR TANK

HT HYDRAULIC TANK

DR DRUM STORAGE

HW <90 DAY HAZARDOUS WASTE STORAGE AREA

N

0 200 400

SCALE IN FEET

FIGURE 4
CURRENT AND FORMER ABOVEGROUND AND UNDERGROUND STORAGE CONTAINERS WITHIN 1/4 MILE OF THE PROPERTY ON DSCR
DSCR, RICHMOND, VIRGINIA

CREATED BY:	EDITED BY:	CREATION DATE:	PROJECT NO:
GCL	TLM	3 JUN 2013	S.0011366i-13

FILE PATH: VA/JFHQatDSCR/AST UST

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5.2.4 State and Tribal Registered Storage Tank Sites Within ¼ Mile of the Property.

DSCR records indicate there are 22 current aboveground and underground storage containers located within ¼ mile of the Property on DSCR (AIPH, 2013b). Information for these containers is listed in Table 6. Container locations are illustrated in Figure 4. There are no violations and no releases associated with these containers (PersCom, 2013d). None are expected to pose a threat to human health or the environment at the Property.

Table 6. Aboveground and Underground Storage Containers Within ¼ Mile of the Property

Container Number	Aboveground (A) Underground (U)	Building	Contents	Capacity (gallons)	Comments
UT-36	U	65	Fuel Oil	15,000	Double-walled, interstitial monitoring
UT-37	U	66	Fuel Oil	15,000	Double-walled, interstitial monitoring
UT-30	U	59	Fuel Oil	15,000	Double-walled, interstitial monitoring
UT-40	U	80	Fuel Oil	15,000	Double-walled, interstitial monitoring
UT-41	U	80	Used Oil	2,500	Double-walled, interstitial monitoring
UT-42	U	80	Used Antifreeze	2,500	Double-walled, interstitial monitoring
AT-13	A	98	Fuel Oil	6,000	Double-walled
AT-21	A	80	Diesel	1,000	Double-walled
Truck-1	A	80	Diesel	750	Single-walled, truck mounted
Truck-2	A	80	Used Oil	125	Single-walled, truck mounted
Truck-3	A	80	Oil	125	Single-walled, truck mounted
Truck-4	A	80	Oil	75	Single-walled, truck mounted
Truck-5	A	80	Oil	75	Single-walled, truck mounted
Truck-6	A	80	Antifreeze	75	Single-walled, truck mounted
GT-11	A	80	Diesel	350	Double-walled, portable
GT-19	A	80	Diesel	300	Double-walled, portable
GT-20	A	80	Diesel	300	Double-walled, portable
HT-1	A	80	Hydraulic Oil	85	Single-walled, indoors
HT-2	A	80	Hydraulic Oil	110	Single-walled, indoors
DR-10	A	80 - South Lot	Hydraulic Oil, Lube/Motor oil, Grease, Fog Oil	1,760 (55-gallon drums)	Conex
DR-15	A	80	Hydraulic Oil, Lube/Motor oil, Grease, Fog Oil	1,210 (55-gallon drums)	Concrete berm, indoors
HW-4	A	80	Various Wastes	1,760 (55-gallon drums)	Conex
HW-7	A	80	Oily Wastes	55 (55-gallon drum)	Spill containment pallet, indoors

DSCR records indicate there is one former AST and no former USTs located within ¼ mile of the Property on DSCR (PersCom, 2013d). The tank location is illustrated in

Figure 4. Information for the former AST is provided in Table 7. The former AST is not expected to pose a threat to human health or the environment at the Property.

Table 7. Former AST on DSCR Within ¼ Mile of the Property.

Tank ID #	Removal Date	Contents	Capacity (gallons)	Notes
AT-27	6/21/2011	Heating Oil	2,000	The AST was staged on a concrete pad, no stains or odors on or near the tank was noted during tank removal.

EDR database search results indicate there is one registered storage tank owner within ¼ mile of the Property. Information for one UST and one AST at the Dervishian USARC is contained in Table 8 (EDR, 2013). Both tanks are listed as permanently out of service and no violations or releases were reported for the tanks; therefore, the tanks are not expected to pose a threat to human health or the environment at the Property.

Table 8. Registered Storage Tanks Within ¼ Mile of the Property.

Aboveground (A) Underground (U)	Install Date	Contents	Capacity (gallons)	Status
U	8/4/1988	Heating Oil	6,000	Permanently out of service
A	1/1/1988	Heating Oil	1,000	Permanently out of service

5.3 Orphan Sites.

Orphan sites are those listed in environmental databases for which exact addresses cannot be determined. The orphan site list for the DSCR database search contained six entries. The location of one site could not be identified. One site was DSCR spill sites, discussed in paragraph 6.3.10. The remaining four sites were determined to be located outside the ASTM designated search distances for the database(s) associated with that site.

6.0 PROPERTY RECONNAISSANCE AND INTERVIEWS.

6.1 Assessor and Site Visit Date.

Ms. Kathleen Butoryak, AIPH, conducted the site visit on 7-9 May 2013. Ms. Butoryak has approximately 20 years of experience working in environmental science, is a registered professional geologist in the Commonwealth of Pennsylvania, and meets the definition of Environmental Professional as defined in 40 CFR 312.10 (40 CFR 312.10, 2005).

6.2 Interviews.

A list of personnel interviewed for this EBS is provided in Table 9.

Table 9. Personnel Interviewed for this EBS

Personnel	Position/Title	Location	Topic of Interview
Mr. David Hufford	Environmental Engineer	DSCR	DSCR restoration program sites near the Property
Mr. Justin Johnson	Environmental Scientist	DSCR	Spills, hazardous materials storage, asbestos disposal
Mr. Joseph Krouse	Environmental Scientist	DSCR	Current and former USTs near the Property
Mr. Rubin Bryant	Transportation Officer	DSCR	Former activities on the Property 1977 - present
Mr. Charles Willard	Environmental Protection Specialist	DSCR	Former activities on the Property 2006 - present

6.3 Property Observations.

Photographs taken during site reconnaissance to document the existing condition of the Property are provided in Appendix D.

6.3.1 Site Access and Egress.

The Property is located on DSCR; access to the installation is restricted to personnel with appropriate identification.

6.3.2 Site Description.

There are no buildings or other structures on the Property. No debris from the demolished warehouses was observed. Building foundations have been removed and the land surface has been planted with turf grass to prevent erosion. No stained surfaces, unusual odors, or other evidence of a release of hazardous materials or petroleum products was observed during the site visit.

6.3.3 Drinking Water, Irrigation, Monitoring, or Dry Wells.

No documented, visual, or anecdotal evidence of drinking water, irrigation, monitoring, or dry wells was identified on the Property (PersCom, 2013a).

6.3.4 Pits, Ponds, and Lagoons.

No documented, visual, or anecdotal evidence of pits, ponds, or lagoons was identified on the Property.

6.3.5 Pools of Liquid.

No pools of liquid suspected of containing hazardous substances or petroleum products were observed on the Property.

6.3.6 Mounds or Depressions.

No visual or anecdotal evidence of areas filled or graded by other than natural means (or filled by unknown means), or mounds or depressions suggesting burial of trash or other wastes were noted during site reconnaissance on the Property.

6.3.7 Septic Systems.

No documented, visual, or anecdotal evidence of a septic system was identified on the Property during site reconnaissance (HDR Inc., 2012; PersCom, 2013c)

6.3.8 Air Quality.

No evidence of air emissions was observed on the Property during site reconnaissance.

6.3.9 Odors.

No strong, noxious, or suspicious odors were noted during site reconnaissance.

6.3.10 Spills.

Spills records are maintained in the DSCR environmental branch. Records from 2008 to the present were reviewed; there were no recorded spills on or adjacent to the Property.

6.3.11 Wastewater Discharge.

Surface water is collected by 15 storm-water inlets located adjacent to the Property and discharged to the municipal storm-water system. No wastewater discharge into a drain, ditch, stream, or underground injection system on or adjacent to the Property was observed during site reconnaissance.

6.3.12 Evidence of Environmental Remedial Activities.

No evidence of current or former environmental remedial activities was noted on the Property during site reconnaissance.

6.3.13 Evidence of Stained or Discolored Soil or Dead, Distressed, Discolored, or Stained Vegetation.

No evidence of stained or discolored soil or dead, distressed, discolored, or stained vegetation was observed during site reconnaissance.

6.3.14 Evidence of Leachate or Seeps.

No evidence of leachate or seeps was observed during site reconnaissance.

6.3.15 Evidence of Chemical or Petroleum Spills or Releases.

No physical evidence of chemical or petroleum spills or releases was observed on the Property during site reconnaissance.

6.3.16 PCB-Containing Equipment.

No PCB-containing equipment was used or stored at former Warehouses 77 and 78 (PersCom, 2013e). No visual, documented, or anecdotal evidence of any former or current PCB-containing equipment was identified during site reconnaissance.

6.3.17 Evidence of Farm Waste Concerns.

No evidence of farm waste was identified on the Property.

6.3.18 Evidence of Excessive Use of Pesticides, Herbicides, Soil Conditioners, or Fertilizers.

No anecdotal, documented, or observed evidence of use of pesticides, herbicides, soil conditioners, or fertilizers in quantities exceeding appropriate application rates was identified on the Property (PersCom, 2013c).

6.3.19 ACM.

ACM was removed and disposed in accordance with applicable Federal and State regulations prior to demolition of Warehouses 77 and 78 (PersCom, 2013c). No suspected or confirmed ACM was identified on the Property during the site visit.

6.3.20 LBP.

There are no buildings on the Property; no evidence of paint residue in soil resulting from demolition of the former warehouses was observed during the site visit.

6.3.21 Lead Dust.

There were no activities in former Warehouses 77 and 78 that could generate lead dust (PersCom, 2013b and e). No former or current activities that could generate lead dust were identified on the Property during site reconnaissance.

6.3.22 Munitions and Explosives of Concern (MEC).

MEC includes military munitions that may pose unique explosives safety risks including unexploded ordnance, discarded military munitions, and munitions constituents such as trinitrotoluene (TNT) or hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) present in sufficient concentrations to pose an explosive hazard (10 U.S. Code (USC) Section 101(e)(5) and 10 USC Section 2710(e)(2 and 3) (10 USC 101, 2004; 10 USC 2710, 2004). No visual, documented, or anecdotal evidence of a release of MEC was identified on the Property during site reconnaissance (PersCom, 2013b and e).

6.3.23 Radiological Commodities.

There is no known current or former use or storage of radiological equipment on the Property (PersCom, 2013b and e).

6.4 Hazardous Substances and Petroleum Products in Connection With Identified Uses.

DSCR is registered as a large quantity generator of hazardous wastes under RCRA with EPA identification number VA3971520751. No RCRA violations were reported for the facility (EPA, 2013). No visual, documented, or anecdotal evidence of storage, disposal, or releases of hazardous substances that would exceed *de minimus* conditions was identified on the Property.

6.4.1 Storage Tanks.

6.4.1.1 Onsite ASTs and USTs.

A visual inspection of the Property was performed to locate ASTs and USTs including inspection for vent pipes, fill pipes, concrete pads, and UST access ways. No visual, anecdotal, or documented evidence of current or former USTs or ASTs was identified on the Property.

6.4.1.2 Offsite ASTs and USTs.

USTs and ASTs on adjacent land are discussed in paragraph 5.2.4. No visual, anecdotal, or documented evidence of other ASTs or USTs on adjacent land were identified during site reconnaissance.

6.4.2 Non-UST/AST Petroleum Storage.

There are no current or former oil/water separators or other non-UST/AST petroleum storage on the Property (PersCom, 2013b and e).

6.4.3 Other Concerns.

No other concerns were identified on the Property.

6.4.4 Data Gaps.

A data gap is a lack of or inability to obtain information required by ASTM D6008 despite good faith efforts by the environmental professional to gather such information. No data gaps were identified in this EBS.

7.0 CONCLUSIONS.

7.1 Property Findings.

7.1.1 Hazardous Substances and Petroleum Products.

There is no visual, documented, or anecdotal evidence that hazardous substances or petroleum products were stored, released, or disposed at the Property in quantities that exceed CERCLA requirements.

7.1.2 ASTs/USTs.

No physical, documented, or anecdotal evidence of former or current ASTs or USTs on the Property was identified. There is no evidence that current or former ASTs or USTs on nearby land pose a threat to human health or the environment on the Property.

7.1.3 PCBs.

No physical, documented, or anecdotal evidence of a release of PCBs on the Property was identified.

7.1.4 ACMs.

ACM abatement was performed at Warehouses 77 and 78 prior to demolition; therefore, ACM is not expected to pose a threat to human health or the environment on the Property.

7.1.5 LBP.

There are no buildings on the Property; no evidence of paint residue in soil on the Property resulting from demolition of the former warehouses was observed. LBP is not expected to pose a threat to human health or the environment on the Property.

7.1.6 Radiological Materials.

There is no evidence radiological materials were stored or used on the Property.

7.1.7 Radon.

There is no evidence that radon poses a threat to human health on the Property.

7.1.8 MEC.

No visual, documented, or anecdotal evidence of use or storage of MEC was identified on the Property.

7.1.9 Surrounding Properties.

7.1.9.1 Regulated Sites on Nearby Property.

7.1.9.1.1 DSCR ERP Sites.

The available data indicate adjacent ERP site OU 8 has not affected groundwater beneath the Property; however, DSCR ERP personnel noted there is a potential for vapor intrusion to occur in buildings constructed on the Property from the OU 8 groundwater contaminant plume adjacent to the Property and construction on the Property may alter groundwater flow patterns.

There is no evidence that other ERP sites pose a threat to human health or the environment on the Property.

7.1.9.1.2 Offpost Regulated Sites.

There is no evidence that regulated sites on offpost nearby property pose a threat to human health or the environment at the Property.

7.1.9.2 Orphan Sites.

There is no evidence that any orphan site identified in the EDR search poses a threat to human health or the environment at the Property.

7.2 Assignment of Environmental Area Type.

In accordance with ASTM D5746-98 (2002), Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities, and based on the potential for vapor intrusion to occur in buildings constructed on the

Property from the OU 8 groundwater contaminant plume immediately adjacent to the Property, AIPH recommends the Property be classified as:

ECP Area Type 7. An area or parcel of real property that is unevaluated or requires additional evaluation.

The recommended categorization does not include *de minimis* conditions that generally do not present material risk of harm to public health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies.

ECP Area Type classifications are recommendations. In accordance with Army Regulation 200-1§15.5.e, the Garrison Commander (or equivalent) is responsible for determining appropriate ECP Area Types for property being transferred based on the results of the ECP report and actions taken to address contamination.

In accordance with DOD policy, property containing or suspected of containing non-CERCLA contamination (including ACM, LBP, radon, and MEC) that might limit or preclude the transfer or lease of the property for unrestricted use are designated as qualified parcels. There are no qualified parcels on the Property.

KATHLEEN R. BUTORYAK
Geologist

REVIEWED:

BARRETT E. BORRY, P.G.
Section Chief
Groundwater

APPROVED:

WILLIAM F. FIFTY
Program Manager
Water Resources

APPENDIX A
REFERENCES

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10 USC 2710, 2004. U.S. Code, Title 10, Subtitle A, Part IV, Chapter 160, Section 2710, Inventory of Unexploded Ordnance, Discarded Military Munitions and Munitions Constituents at Defense Sites (Other than Operational Ranges).

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APPENDIX B
DRAFT REAL ESTATE ACTION PLAN

DEFENSE LOGISTICS AGENCY
AVIATION
8000 JEFFERSON DAVIS HIGHWAY
RICHMOND, VIRGINIA 23297-5002

NOV 01 2011

MEMORANDUM FOR LTC JAMES A. ZOLLER, ACofS, FACILITIES ENGINEERING AND MANAGEMENT, VIRGINIA ARMY NATIONAL GUARD, BUILDING 316, FORT PICKETT, VIRGINIA 23297

SUBJECT: Use of Defense Supply Center Richmond (DSCR) Land for Construction of a Joint Force Headquarters

I have reviewed your request for use of approximately 41.3 acres of property at DSCR for the construction and operation of a new Joint Force Headquarters facility for the Virginia National Guard.

While I cannot commit at this time to the full amount of acreage you have requested, I can work with you to secure the original acreage discussed at the coordination meeting on September 8, 2011; 13.6 acres bounded by 4th Street, 5th Street, "A" Street and "C" Street. Additional acreage may be considered should a specific need arise in the future. Although I do not have final approval authority for your request, we will add your facility to our Installation Master Plan and work with you to secure the necessary licenses, permits, and/or approvals.

Please coordinate with my Installation Management staff as you move forward through the Military Construction approval process. My point of contact for this is Mr. Ray Hall, Chief, Installation Management Division, (804) 279-6749, DSN: 695-6749 or email: raymond.hall@dla.mil.

TERRY D. RODWELL
Site Director
DLA Installation Support at Richmond

cc:
DS-D
DS-I

RECEIVED
NOV - 3 2011
VAFM

NGVA-RMO-PP (405) 1 April 2013

MEMORANDUM THRU Installations Division, ATTN: ARNG-ILI-E (Mr. Ken Parks), ARNG Readiness Center, 111 South George Mason Drive, Arlington, Virginia 22204-1382

FOR Commander, Defense Supply Center Richmond, 8000 Jefferson Davis Highway, Richmond**,** VA 23297-5100

SUBJECT: Acquisition of a Site on Defense Supply Center Richmond (DSCR) for the Proposed VaARNG Joint Force Headquarters

1. Reference: Real Estate Action Plan (REAP), dated 1 April 2013 (encl 2).

2. Request you allow the Virginia Army National Guard to acquire a 13.6 acre site on DSCR for construiction of our Joint Force Headquarters.

3. Oral or written communication regarding the above should be directed to Sandra Ragan of this office at the above address, Attn: NGVA-FMO-PP, telephone (434) 292-8258, FAX (434) 298-6400, e-mail sandra.w.ragan.nfg@mail.mil.

FOR THE ADJUTANT GENERAL:

Encl

JAMES A. ZOLLAR
LTC, EN, VaARNG
ACofS, Facilities Engineering
and Management

CF: DLA Installation Support Richmond (Deputy Director)

1. TYPE OF PROPOSED ACTION: Acquisition of federal real estate on Defense Supply Center Richmond (DSCR) for future construction of the Joint Force Headquarters (PN 510065, FY 2016).

2. DESCRIPTION OF PROPERTY: 13.6 acres bounded by 4th Street, 5th Street, "A" Street and "C" Street.

3. DESCRIPTION OF THE CIRCUMSTANCES PROMPTING A REAL ESTATE ACTION: A new Joint Force Headquarters (PN 510065) is programmed for FY 2016 in the FYDP. A suitable site is required for the proposed project. Site is available at Defense Supply Center Richmond (DSCR).

4. LISTING OF POTENTIAL ALTERNATIVES TO THE REAL ESTATE ACTION: None. There are no ARNG facilities in the Richmond area that can satisfy this requirement.

5. BASIS FOR INVOLVEMENT OF NGB IN PROPOSED ACTION: Acquisition of federal real estate through a DA License/Permit requires ARNG-ILI concurrence and action to forward request to DSCR and USACE Norfolk District.

6. DATE BY WHICH THE PROPOSED REAL ESTATE ACTION MUST BE COMPLETED TO MEET BENEFICIAL OCCUPANCY, POSSESSION, GRANT OF USE, OR DISPOSAL OBJECTIVES: _____.

7. LISTING OF DOCUMENTS NEEDED TO ACHIEVE PROPOSED ACTION: ROA, DOA, and DA License/Permit.

8. KNOWN OR SUSPECTED ENVIRONMENTAL SENSITIVITIES: None.

9. NEPA DOCUMENTATION:

   DOCUMENTATION TYPE (REC/EA/EIS): _____.
   PROPONENT: VaARNG.
   PREPARER: VaARNG.
   DECISION MAKER: ARNG-ILI and DLA/DSCR.
   ANTICIPATED START AND COMPLETION DATE: _____.

10. POINTS OF CONTACT.

    DLA (Installation Support): Renae Crutches (Deputy Director) (804) 279-3536
    DSCR (real estate): Geraldine Raybould (804) 279-5961.
    VaARNG (real estate): Sandra Ragan (434) 292-8258.
    ARNG-ILI-E (real estate): Ken Parks, (703) 607-7685.
    Norfolk District, USACE (real estate): David Parson, (757) 201-7736.

11. ANTICIPATED CONSTRUCTION PROJECTS, IF ANY: A new Joint Force Headquarters (PN 510065) in FY 2016.

12. FUNDING SOURCES FOR PROPOSAL: OMNG funds for USACE admin fees. MCNG funds for design & construction of the JFHQ (PN 510065).

DRAFT

13. DISCUSSIONS OF ANY OTHER RELEVANT INFORMATION DEEMED APPROPRIATE: The missions of the Virginia National Guard have changed dramatically since the 9/11 attacks. These new joint missions require us to integrate our planning efforts with other state agencies, the vast majority of which are located in Richmond, and to exercise those plans regularly. The joint plans and exercises are complex, involve many different government operations, and are vital to the Virginia Guard's ability to respond quickly and effectively to a catastrophic disaster. Additionally, the ability to command and control these joint forces must reside with the governor and his command authority in Richmond. To that end, the Virginia Guard must be able to respond quickly and effectively with our state partners if we are to assist our fellow Virginians in a large scale disaster. The Army Guard headquarters location at Fort Pickett and Sandston do not allow us to accomplish the important goals of coordination with other state agencies and command and control of joint forces. Continuing to operate the Army Guard from Fort Pickett and Sandston increases the stress on our planning and coordination efforts, costs us time and money, and jeopardizes our ability to protect the Commonwealth.

_____

JAMES A. ZOLLAR
LTC, EN, VaARNG
ACofS, Facilities Engineering
and Management

Encl
1. Memorandum, HQ DLA, 1 Nov 2011, subject: Use of Defense Supply Center Richmond (DSCR) Land for Construction of a Joint Force Headquarters

2. DSCR Planning Map

APPENDIX C
DATABASE SEARCH RESULTS

APPENDIX D
PHOTO LOG

Photo D-1: The Property, looking south.

Photo D-2: The Property, looking southeast.

Photo D-3: The Property, looking northeast. Former visitor's center is visible beyond the Property.

Photo D-4: The Property, looking north. Current visitor's center is visible beyond the Property.

Photo D-5: <90 day hazardous waste storage area at Building 80.

AECOM, Final 2014 Groundwater Monitoring Report for Operable Unit 8, Defense Supply Center Richmond, November 2015

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APPENDIX H: RECORD ON NON-APPLICABILITY

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RECORD OF NON-APPLICABILITY CONCERNING THE GENERAL CONFORMITY RULE (RONA)

Proposed Action Name: Proposed Construction and Operation Virginia Army National Guard State Headquarters and Re-Stationing of Company B 429th Brigade Support Battalion at Defense Supply Center Richmond

Location: Chesterfield, Virginia

Project Begin Date: 2016

Proposed Action Summary: The Virginia Army National Guard (VANG) proposed action is to construct and operate a new State Headquarters at DSCR and re-station the 429th BSB. The new VANG State HQ would provide adequate office and administrative space to operate and coordinate the missions of VANG, thus supporting the readiness of the entire VANG. The new facility would house 193 personnel in a two-story building with 103,325 square feet, situated on a 13.6 acre parcel. It would provide parking for 175 privately owned vehicles and storage for 66 pieces of major equipment.

The Clean Air Act requires federal actions in air pollutant nonattainment or maintenance areas to conform to the applicable State Implementation Plan (SIP). The SIP is designed to achieve or maintain an attainment designation of air pollutants as defined by the National Ambient Air Quality Standards. The regulations governing this requirement are found in 40 Code of Federal Regulations (CFR) Part 93, also known as the General Conformity Rule, which applies to federal actions occurring in regions designated as nonattainment or areas subject to maintenance plans. The threshold (de minimis) emission rates have been established for actions with the potential to have significant air quality impacts that are not otherwise exempt. In addition, exemptions to the General Conformity Rule have been established for actions that are clearly below de minimis thresholds. As specified in 40 CFR 93.153(c)(2), Conformity determination regulations for federal actions shall not apply for "actions which would result in no emissions increase or an increase in emissions that is clearly de minimis."

Proposed Action Air Emissions

The project is located in Chesterfield County which is non-attainment for ozone (O_3). Therefore, since construction associated with the Proposed Action would result in the emission of the area criteria air pollutants, a review has been conducted for the Preferred Alternative to determine if the Proposed Action is subject to the General Conformity Rule.

A federal action is exempt from the General Conformity Rule requirements if the action's total net emissions are below the de minimis threshold or are otherwise exempt per 40 CFR 51.153. If net emissions exceed the relevant de minimis value, or if a project is regionally significant, a formal conformity determination process must be followed.

Air quality impacts would occur from combustive emissions due to the use of fossil fuel-fired construction equipment and on-road trucks and fugitive dust ($PM_{10}/PM_{2.5}$) emissions from earth-moving activities as well as driving vehicles on bare soils. Construction related emissions would be short-term and primarily occur within the boundaries of the site. The average annual emissions projected under Preferred Alternative are shown in Table 1.

Table 1: Projected Emissions

Source	Emissions (tons/yr)				
	NO_x	VOC	SO_2	$PM_{2.5}$	CO
Boilers	4.87E-02	2.68E-03	2.92E-04	3.70E-03	9.85E-06
Generators	6.03	0.18	0.10	0.18	0.14
Heavy Construction (Site Preparation)	NA	NA	NA	32.15	NA
Construction Vehicles	0.41	0.19	NA	0.07	1.65
Commuter Vehicles	1.27	2.02	NA	0.52	28.56
Paved Roads	NA	NA	NA	1.56	NA
TOTALS	**7.77**	**2.39**	**0.10**	**34.48**	**30.35**
LIMITS	**100**	**100**	**100**	**100**	**100**

All construction activities would meet applicable State and federal air quality regulations and pollution control requirements to prevent exceedance of air quality standards during construction. In addition, to minimize any potential air quality effects during construction, VANG would implement best management practices and agency environmental controls. These may include, but are not limited, to dust control measures and limiting idling of vehicles and equipment.

Project related emissions of criteria air pollutants from the Preferred Alternative would be less than de minimis thresholds. Therefore, there would be no significant project related impact on criteria air pollutants. Additionally, operational activities fall within the scope of projects listed in 40 CFR 93.153(c)(2)(ii), (iv), (vii), (x), and (xiii). The Proposed Action would not be regionally significant and is exempt from the General Conformity Rule, as emissions are below the applicable de minimis requirements.

As analyzed, the Proposed Action would not

1) cause or contribute to any new violation of any standard in any area;
2) increase the frequency or severity of any existing violation of any standard in any area; or
3) delay timely attainment of any standard, required interim emission reductions, or other milestones in any area. Therefore, this action is exempt from the General Conformity Rule requirement to prepare a full Conformity Determination, and a detailed analysis of emissions is not warranted.

Pursuant to Section 176 (c) of the Clean Air Act, as amended by the 1990 amendments; the General Conformity Rule at 40 CFR Parts 51 and 93; the VAARNG determined that the Proposed Action is exempt

from conformity requirements in accordance with sections 40 CFR 93.153 (c) (2) (ii), (iv), (vii), (x), and (xiii), as the actions would result in emissions that are clearly de minimis, as outlined in 40 CFR 93.153 (c) (2). Therefore, this action is exempt from the General Conformity Rule requirement to prepare a full Conformity Determination.

Date RONA Prepared: 31 March 2016

RONA Prepared By: Virginia National Guard

RONA Approval

Pam Coleman 31 Mar 16

Signature **Date**

Pam Coleman, Environmental Program Manager

OVERALL PROJECT RELATED EMISSION ESTIMATES

Source	Emissions (tons/yr)				
	NO_x	**VOC**	**SO_2**	**$PM_{2.5}$**	**CO**
Boilers	4.87E-02	2.68E-03	2.92E-04	3.70E-03	9.85E-06
Generators	6.03	0.18	0.10	0.18	0.14
Heavy Construction (Site Preparation)	NA	NA	NA	32.15	NA
Construction Vehicles	0.41	0.19	NA	0.07	1.65
Commuter Vehicles	1.27	2.02	NA	0.52	28.56
Paved Roads	NA	NA	NA	1.56	NA
TOTALS	**7.77**	**2.39**	**0.10**	**34.48**	**30.35**
LIMITS	**100**	**100**	**100**	**100**	**100**

Boiler Emissions Estimates (tons/12-month period of operation)

Boiler Information and Assumptions:

1	natural gas-fired boiler(s) (approximately 500,000 Btu/hr heat input each)
500000	Btu/hr total heat input
1027	Btu/scf heating value for natural gas
8760	hours/12-month period
4380	MMBtu of gas to be burned in 12-month period (based on estimate of heat needs)
4.273128	10^6 scf of gas to be burned in 12-month period (based on estimate of heat needs)

*multiplied MMBtu by 0.9756 to convert to Mcf of natural gas, then divided by 1000 to convert to MMcf (10^6 scf)

Boiler Emissions Summary:

Criteria Pollutant	Emissions (tons/yr)	Emission Factor	Reference
NO_X	4.87E-02	100 lb/10^6 scf	Table 1.4-1 Uncontrolled Small Boiler factor (<100 MMBtu/hr heat input)
VOC	2.68E-03	5.5 lb/10^6 scf	Table 1.4-2 VOC factor
SO_2	2.92E-04	0.6 lb/10^6 scf	Table 1.4-2 SO2 factor based upon 100% conversion of fuel sulfur to SO2
$PM_{2.5}$	3.70E-03	7.6 lb/10^6 scf	Table 1.4-2 (Total) factor - all PM from natural gas combustion is assumed <1 um in diameter
CO	9.85E-06	84 lb/10^6 scf	Table 1.4-2 (CO) factor

Generator Emissions Estimates (Tons/12-month period of operation)

Generator Information and Assumptions

750 kw Diesel Generator

500 Total hours/12-month period

Generator Emissions Summary:

Criteria Pollutant	Emissions (tons/yr)	Emission Factor	Reference
NO_X	6.033	0.032175 lb/kw-hr	Table 3.4-1 Uncontrolled NOx factor (0.024 lb/hp-hr) converted to kg/kw-hr by multiplying factor by 0.608 per Table note a. Converted to lb/kw-hr by multiplying by 2.205.
VOC	0.177	0.000945 lb/kw-hr	Table 3.4-1 TOC factor (7.05E-04 lb/hp-hr) adjusted to VOC per note a by assuming 91% nonmethane (VOC = nonmethane HC) and converted to lb/kw-hr per note a and multiplication by 2.205
SO_2	0.102	0.000542 lb/kw-hr	Table 3.4-1 SOx factor (8.09E-03S lb/hp-hr) incorporating 0.05%S in diesel and converted to lb/kw-hr per Table note a; multiplied by 2.205 to convert to lb/kw-hr
$PM_{2.5}$	0.176	0.000938 lb/kw-hr	Table 3.4-1 PM factor (0.0007 lb/hp-hr) converted to lb/kw-hr by multiplying factor by 0.608 per Table note a; multiplied by 2.205 to convert to lb/kw-hr
CO	0.138	0.000737 lb/kw-hr	Table 3.4-1 CO factor (0.00055 lb/hp-hr) converted to lb/kw-hr by multiplying factor by 0.608 per Table note a; multiplied by 2.205 to convert to lb/kw-hr

HEAVY CONSTRUCTION (SITE PREPARATION) EMISSIONS

Operating Assumptions:	13.6	acres to be disturbed
	113	tons topsoil per inch of thickness per acre
	24	inches of thickness to be disturbed
	2712	tons soil to be disturbed per acre
	16	vehicle miles traveled/day for heavy equipment

Direct Ground Excavation/Material Movement Emission Estimates

Source	EPA AP-42 Table Ref.	Tons of material handled	lbs/tons material handled	Uncontrolled Emissions (TPY)
				PM 2.5
Scrapers unloading topsoil	11.9-4	36883	0.058	1.07
Loading of excavated material into trucks	13.2-4	36883	0.07	1.29
Truck dumping of fill material, road base, or other materials	13.2-4	36883	0.07	1.29
TOTAL				**3.65**

Material Handling Emission Factor Calculation

Taken from EPA AP-42 section 13.2.4. Aggregate Handling and Storage Piles, Equation 1

E = emission factor (lb/ton)

K = particle size multiplier (dimensionless)

U = wind speed (m/s)

M = material moisture content

$K_{PM2.5}$ = 0.053, per AP-42 section 13.2.4.

U = Approx. average wind speed for Chesterfield County (based upon Chesterfield County Airport information) =	11.5	mph
M = mean of moisture content range (0.25 - 4.8%) provided in AP-42 section 13.2.4 =	2.3	%
E (lb/ton) = $K(0.0032) \times (U/5)^{1.3}/(M/2)^{1.4}$	0.07	lb/ton

Bulldozing and Compacting Emission Estimates

Source	EPA AP-42 Table Ref.	Hrs/12-month period (8 hrs/day, 16 weeks)	lb/hr	Uncontrolled Emissions (TPY)
				PM 2.5
Bulldozing (2 bulldozers for 16 weeks)	11.9.1 (overburden)	640	0.105	0.03
Compacting (2 compactors for 16 weeks)	11.9-1 (overburden)	640	0.105	0.03
TOTAL				**0.07**

Scraping and Grading Emission Estimates

Source	EPA AP-42 Table Ref.	VMT/12-month period	lb/VMT	Uncontrolled Emissions (TPY)
				PM 2.5
Scrapers in travel (2 scrapers for 80 days each)	11.9-1 (note g referencing unpaved road factor in AP-42 Section 13.2.2 equation)	2560	0.01	0.01
Scrapers removing topsoil (2 scrapers for 80 days each)	13.2.3-1	2560	20.2	25.86
Motor grading (for determination of factor-assumed 7.1 mph as grader speed per AP-42 Table 11.9-3 and multiplied by <2.5ug/TSP factor)(2 graders for 80 days each)	11.9-1	2560	0.001	2.56
TOTAL				**28.43**

Unpaved Roads Emission Factor Calculation (for estimating emissions from "Scrapers in Travel"
Equation 1a from AP-42 Section 13.2.2 - Miscellaneous Sources: Unpaved Roads.

E = size-specific emission factor (lb/MVT)

s = surface material silt content (%)	8.5	% mean Silt Content for Scraper Routes at Construction Sites (AP-42 Table 13.2.2-1)
W = mean vehicle weight (tons)	146	tons (mean of range provided in AP-42 Table 13.2.2-3 for industrial roads)

For PM2.5, the empirical constants are as follows according to AP-42 Table 13.2.2-2:

k =	0.15	
a =	0.9	
b =	0.45	
E (lb/VMT) = k(s/12)^a(W/3)^b =	0.01	lb/VMT

CONSTRUCTION VEHICLE EMISSIONS

Operating Assumptions:

2	5-ton cargo trucks	16	travel miles/day	2	idle hours/day
2	Cars	16	travel miles/day	2	idle hours/day
2	Light trucks/SUVs	16	travel miles/day	2	idle hours/day
2	Crane	16	travel miles/day	2	idle hours/day
2	Loaders	16	travel miles/day	2	idle hours/day

Note: 260 days of operation/12 month period

TOTAL CONSTRUCTION VEHICLE EMISSIONS

Criteria Pollutant	Emissions (tons/yr)
NO_x	0.412
VOC	0.189
$PM_{2.5}$	0.069
CO	1.65

Transit Emission Factors for Various Motor Vehicles

Vehicle	Vehicle Class	Altitude	Model Year	Emission Factor (g pollutant/mile traveled)				Transit Emissions (tons/yr)			
				NMHC[1,2]	NO_x[1]	CO[1]	$PM_{2.5}$[3]	NO_x	VOC	CO	$PM_{2.5}$
5-ton cargo truck	HDDV	High	2012	4.7	6.5	17.7	2.01	0.060	0.043	0.162	0.018
Passenger car	LDGV	Low	2012	0.7	0.6	8.3	0.2	0.006	0.006	0.076	0.002
Light truck/SUV	LDGTI	Low	2012	0.7	0.7	8.9	0.29	0.006	0.006	0.082	0.003
Crawler shovel crane	HDDV	Low	2012	2	8.2	10.4	2.01	0.075	0.018	0.095	0.018
Scoop loader	HDDV	Low	2012	2	6.5	10.4	2.01	0.060	0.018	0.095	0.018
TOTAL TRANSIT EMISSIONS								**0.21**	**0.09**	**0.511**	**0.06**

1 AP-42, Volume II, Appendix H, Tables 1.11A.1, 1.11B.1, 1.11C.1 (LDGV-Low Altitude); Tables 2.11A.1, 2.11B.1, 2.11C.1 (LDGT1-Low Altitude); Tables 7.11A.1, 7.11B.1, 7.11C.1 (HDDV-Low Altitude); and Tables 7.11A.2, 7.11B.2, 7.11C.2 (HDDV-High Altitude)

2 NMHC = non-methane hydrocarbon, which is equivalent to VOC

3 PM2.5 emission factors from Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations, Table 4-50 (Average Emission Factors for On-Road Vehicles)

Idle Emission Factors for Various Motor Vehicles

Vehicle	Vehicle Class	Altitude	Emission Factor (g pollutant/hour idle)[1]				Idle Emissions (tons/yr)			
			VOC	PM2.5	CO	NOx	NOx	VOC	CO	PM2.5
5-ton cargo truck	HDDV	High	12.6	2.59	94.3	55.9	0.064	0.014	0.108	0.003
Passenger car	LDGV	Low	18.6	ND	300	5.4	0.006	0.021	0.344	ND
Light truck/SUV	LDGTI	Low	27.4	ND	413	6.6	0.008	0.031	0.473	ND
Crawler shovel crane	HDDV	Low	12.6	2.59	94.6	55.9	0.064	0.014	0.108	0.003
Scoop loader	HDDV	Low	12.6	2.59	94.3	55.9	0.064	0.014	0.108	0.003
TOTAL IDLE EMISSIONS							**0.21**	**0.10**	**1.14**	**0.01**

[1] Emission factors from Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations, Table 4-64 (Average Idling Emission Factors for On-Road Vehicles).

ND = No Data

COMMUTER VEHICLE EMISSIONS

Operating Assumptions:	0	Cars	20	travel miles/day	0.5	idle hours/day (traffic)
	259	Light trucks/SUVs	20	travel miles/day	0.5	idle hours/day (traffic)

Note: 260 business days of operation/12-month period

TOTAL COMMUTER VEHICLE EMISSIONS

Criteria Pollutant	Emissions (tons/yr)
NO_x	1.275
VOC	2.017
$PM_{2.5}$	0.523
CO	28.56

Transit Emission Factors for Various Motor Vehicles

Vehicle	Vehicle Class	Altitude	Model Year	Emission Factor (g pollutant/mile traveled)				Transit Emissions (tons/yr)			
				NMHC[1,2]	NO_x[1]	CO	$PM_{2.5}$[3]	NO_x	VOC	CO	$PM_{2.5}$
Passenger car	LDGV	Low	2012	0.7	0.6	8.3	0.2	0.00	0.00	0.00	0.00
Light truck/SUV	LDGTI	Low	2012	0.7	0.7	8.9	0.29	1.04	1.04	0.43	13.21
TOTAL TRANSIT EMISSIONS								**1.04**	**1.04**	**0.43**	**13.21**

[1] AP-42, Volume II, Appendix H, Tables 1.11A.1, 1.11B.1, 1.11C.1 (LDGV-Low Altitude); Tables 2.11A.1, 2.11B.1, 2.11C.1 (LDGT1-Low Altitude);
Tables 7.11A.1, 7.11B.1, 7.11C.1 (HDDV-Low Altitude); and Tables 7.11A.2, 7.11B.2, 7.11C.2 (HDDV-High Altitude)

[2] NMHC = non-methane hydrocarbon, which is equivalent to VOC
[3]PM2.5 emission factors from Air Emissions Inventory Guidance Document for Mobile Sources at Air Force
Installations, Table 4-50 (Average Emission Factors for On-
Road Vehicles).

Idle Emission Factors for Various Motor Vehicles

Vehicle	Vehicle Class	Emission Factor (g pollutant/hour idle)[1]				Idle Emissions (tons/yr)			
		VOC	$PM_{2.5}$	CO	NO_x	NO_x	VOC	$PM_{2.5}$	CO
Passenger car	LDGV	18.6	2.59	300	5.4	0.00	0.00	0.00	0.00
Light truck/SUV	LDGTI	27.4	2.59	430	6.6	0.24	0.98	0.09	15.35
TOTAL IDLE EMISSIONS						**0.24**	**0.98**	**0.09**	**15.35**

[1] Emission factors from Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations, Table 4-64 (Average Idling Emission Factors for On-Road Vehicles).
ND = No
Data

PAVED ROAD EMISSIONS

Operating Assumptions

VMT =	259	Vehicles	x	20	miles/day	x	250	days	=	1295000	miles/12-month period

Note: 250 business days of operation/12-month period

Emission Factor Derived from Ref. EPA AP-42, Section 13.2.1, Equation 2

PM10 (PM2.5) 0.0024 lbs PM10/VMT

	tons/yr
PM10	**1.56**