

**FINAL**

**ENVIRONMENTAL ASSESSMENT  
FOR THE PROPOSED  
ASYMMETRIC WARFARE GROUP RANGES**

**U. S. Army, Fort A. P. Hill  
Bowling Green, Virginia**



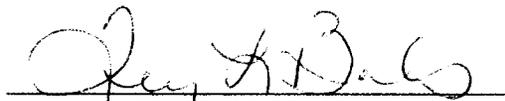
**December 8, 2006**

**Environmental Assessment**  
**U.S. Army Garrison Fort A.P. Hill**

**Asymmetric Warfare Group Ranges**

December 2006

Reviewed by:



**TERRY L. BANKS**  
Chief, Environmental Division  
Directorate of Public Works

Reviewed by:



**ROBERT C. SHAW**  
COL, SF  
Commanding

Approval by:



**MICHAEL S. GRAESE**  
LTC, AD  
Commanding

**Final Finding of No Significant Impact**  
**Asymmetric Warfare Ranges**  
**U.S. Army Garrison, Fort A.P. Hill, Virginia**  
**Directorate of Public Works**

The U.S. Army Garrison, Fort A.P. Hill in Caroline County, Virginia, proposes to construct and operate a demolition range, an 800-meter firing range and an indoor firing range.

The demolition range is proposed for land in the eastern portion of post within the existing Training Area 25C southeast of Route 301 and adjacent to North Range Road. The 225 acre range would be used to train individual Soldiers on the techniques of handling and exploding light explosives charges up to 10 pounds TNT equivalent during the day and up to 1 pound TNT equivalent during the night. The range would be configured to train a unit consisting of an average of 30 Soldiers.

The proposed 800-meter firing range would be constructed on 226 acres between existing Ranges 33 and 34. The range design would be in accordance with the Corps of Engineers Standard Design for an open land, walking 800-meter range with support facilities. The flat, non-instrumented range would provide capabilities for ten (10) shooters using a fixed firing line. Free standing, portable radio controlled targets would allow both day and night firing capabilities.

The indoor firing range is proposed for land within a planned 450-acre training site located on Training Area 22B east of Longstreet Camp in the northwestern portion of Fort A.P. Hill. This range would consist of a building and support structures on a portion of the 450 acre site. The range building would be designed to accommodate lighted shooting and night vision equipment. The range would accommodate .45 caliber, 9 mm, 12 gauge, 5.56 mm, 7.62 mm and laser mounted weaponry.

The U.S. Army Garrison at Fort A.P. Hill reviewed four (4) possible alternatives and determined demolition range construction in the aforementioned locations was the 'most preferred' based on established criteria: sufficient training space to ensure operations meet the standards established by the U.S. Army with a location in close proximity of the proposed 450-acre site, a location which meets the Army's current moratorium on producing additional duded impact areas and meets Army guidance for using existing impact areas and surface danger zones (SDZ); and a location which could be restricted from surrounding activities and used exclusively for specific unit training purposes.

Other alternatives considered included using existing facilities and/or upgrading and renovating facilities at Fort A.P. Hill as well as taking no action to provide unit-specific Ranges on Fort A.P. Hill. Existing range facilities do not support the unique training needs of the organization. A survey of space on Fort A.P. Hill indicated that there are no ranges which could be renovated and meet necessary training standards without extensive cost and effort.

The No Action Alternative would eliminate timber harvesting, clearing and grading, potential air emissions and potential noise complaints. This alternative, however, would not meet Fort A.P. Hill's objective to expand the installation's training capacity to prepare military personnel for deployment in combat or national emergencies, and it would not support the Installation Master Plan goal to maximize training capability. Therefore, the No Action Alternative was not considered reasonable and viable.

To avoid potential impacts, Fort A.P. Hill would implement mitigation measures including: HEPA filters on the indoor firing range to capture any air emissions; storm water management practices required by the Virginia Stormwater Management Program (VSMP); and forestry Best Management Practices (BMPs) to maintain water quality. Fort A.P. Hill would apply for the VSMP general permit for storm water discharges prior to construction. Noise complaints would be investigated and mitigated in accordance with Fort A.P. Hill policy. If necessary, Fort A.P. Hill would expand the perimeter noise monitoring system to add a noise monitor in the area of concern. Cultural resources eligible for the National Register of Historic Places would be avoided during construction and operation of the Ranges. Any wetland impacts will be permitted in accordance with federal, state and local laws and regulations.

The EA concludes that, with the implementation of appropriate mitigation measures as mentioned above, the proposed action would have no significant impacts on the quality of the physical and human environment at Fort A.P. Hill. In accordance with the requirements of the National Environmental Policy Act (NEPA), Fort A.P. Hill therefore issues a Finding of No Significant Impact (FONSI) for this project, and an Environmental Impact Statement (EIS) will not be prepared.



---

MICHAEL S. GRAESE  
LTC, AD  
Commanding

## ***EXECUTIVE SUMMARY***

### ***INTRODUCTION***

This Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act (NEPA), its implementing regulations published by the Council on Environmental Quality (40 CFR 1500-1508), and 32 CFR Part 651 which implements NEPA for the Army. Under NEPA, federal agencies are required to consider the environmental consequences of proposed actions. The Army can consider environmental consequences of proposed actions through the use of a Record of Environmental Consideration (REC), an EA or an Environmental Impact Statement (EIS) pursuant to 32 CFR Part 651.

This EA provides NEPA analysis and documentation for the proposed action, which is to construct and perform mission essential training at a demolition range, an 800-meter firing range and an indoor firing range at Fort A. P. Hill.

### ***PURPOSE AND NEED***

Despite U.S. conventional military superiority and successes against asymmetric attacks, there are still gaps in U. S. conventional force capabilities. The extent of these capability gaps varies based on the type of unit, training and combat experience; however, there is a need to defeat all our adversary's abilities through innovation and rapid adaptation to the environment. The purpose of constructing and operating Asymmetric Warfare Group (AWG) specific firing and demolition ranges is to provide a specialized training in weapons qualification and operations designed to augment the full-spectrum training, planning and execution of countermeasures to asymmetric warfare offered at the proposed Asymmetric Warfare Complex (AWC). This training will be made available to all forces within the U.S. military. The need for the ranges is to provide the AWG with full time ranges from which key weapons and demolition training tasks can be accomplished. The AWG currently has no firing or demolition ranges that can provide the effectiveness in training or force preparedness necessary to meet an existing need in multiple simultaneous areas of operation. The current and expected future threat requires that the U. S. military continue to change and modify its approach to ensure that assigned missions can be accomplished. Changing and modifying training approaches within the U.S. military to instill a culture of innovation and adaptability is key to this effort.

### ***PROPOSED ACTION***

The proposed action covered in this EA deals with construction and operation of a demolition range, an 800-meter firing range and an indoor firing range. The proposed location of the indoor firing range is adjacent to the AWC on Training Area 22B near Longstreet Camp. The proposed location of the demolition range is within Training Area 25C east of Route 301 in the northeastern portion of the installation. The proposed location of the 800-meter range is between Ranges 33 and 34 on the southern portion of the post.

### ***ALTERNATIVES CONSIDERED***

The No Action Alternative and the Preferred Alternative are the only alternatives to the proposed action described in detail within this EA. Although other alternatives were considered, the

Preferred Alternative, which is the proposed action, is the only one that meets the screening criteria established by the AWG Headquarters Office. The No Action Alternative serves as a benchmark against which the Preferred Alternative can be evaluated. For this analysis, the No Action Alternative is defined as continuing the current use of each property as existing.

### ***ALTERNATIVES CONSIDERED AND REJECTED***

The other alternatives which were considered were the use of existing ranges on Fort A. P. Hill, and the renovation, modernization and/or upgrading of existing ranges to provide the necessary training structures and meet training requirements. The indoor firing range was originally planned for an area south of Route 301 near the southwestern boundary, but this site was abandoned due to noise issues. These renovation, modernization and/or upgrading of existing ranges alternatives do not meet the screening criteria established by the AWG and have been eliminated from further consideration within this EA.

### ***ENVIRONMENTAL CONSEQUENCES***

The EA evaluates potential environmental consequences of implementing the proposed action and the No Action Alternative. Implementation of the proposed action, the installation's Preferred Alternative, would mean that training mission operations and facilities construction on the AWG Ranges would begin. Overall, implementation of the proposed action would have no significant impact on the resources evaluated, including: land use, noise, soils, water resources including wetlands, biological resources including vegetation and threatened and endangered species, cultural resources, socioeconomics and environmental justice/protection of children, infrastructure and hazardous materials/wastes. Insignificant impacts may be incurred temporarily on air and water quality during site grading and construction. Some noise impacts would occur during training operations; however, ranges are proposed for areas currently used for firing and military training. Noise contours were developed to compare existing small and large caliber noise to future AWG range noises. Noise contours indicate an insignificant increase in noise leaving post from small caliber operations. There would be an increase in noise leaving post due to AWG demolition operations. The Noise Zone II for the proposed AWG extends off-post into a primarily undeveloped area that contains scattered residential land uses. Noise contours are based on averages with a 10 dB penalty built into the calculations to account for operations occurring between 10 p.m. and 7 a.m. The night-time penalty results in each operation during those hours counting as much as ten daytime operations. Without such penalties, the Noise Zones would fall within the post. To mitigate risk of complaints, the largest charge detonated by the AWG after 10 p.m. would be one pound. Predicted peak noise levels for a one-pound charge indicate levels should not be high enough to generate complaints off-post. However, AR 200-1 states that Zone II noise levels are normally incompatible with residential land uses unless the dwellings are built in such a way that interior Noise Level Reduction (NLR) levels are 25 dB. Since residences that may not have NLR levels of 25 dB already exist in this area, Fort A.P. Hill has further assessed what mitigation steps may be taken to alleviate community annoyance. If necessary, Fort A.P. Hill will expand the perimeter noise monitoring system to add a noise monitor in the area of concern. The monitors will allow the installation to evaluate operations under varied weather conditions and assess how noise levels may impact neighbors off-post. Mission permitting, locations and/or scheduling of training activities may possibly be adjusted to lower off-post noise levels. The Installation will continue to promote an

open dialogue with neighboring localities, to include re-zoning reviews, education and outreach with local communities, and a comprehensive, proactive noise complaint management program.

Implementation of the No Action Alternative would mean existing conditions (as presented in Section 4.0) would continue as the *status quo*. Under the No Action Alternative, no new land use practices would be implemented and the sites would continue to be used for military training.

### **CONCLUSIONS**

Implementation of the proposed action would not result in significant impacts to the physical environment of Fort A. P. Hill. Insignificant impacts would be mitigated. Based upon the findings and conclusions within this EA, issuance of a Finding of No Significant Impact would be appropriate and an Environmental Impact Statement would not be prepared.

# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
INTRODUCTION .....	2
PURPOSE AND NEED .....	2
PROPOSED ACTION .....	2
ALTERNATIVES CONSIDERED.....	2
ALTERNATIVES CONSIDERED AND REJECTED.....	3
ENVIRONMENTAL CONSEQUENCES.....	3
CONCLUSIONS.....	4
<b>TABLE OF CONTENTS .....</b>	<b>5</b>
<b>SECTION 1.0 .....</b>	<b>8</b>
<b>1.0    PURPOSE AND NEED FOR ACTION.....</b>	<b>8</b>
1.1    INTRODUCTION AND SCOPE OF THE DOCUMENT .....	8
1.2    PURPOSE AND NEED FOR THE PROPOSED ACTION .....	8
1.2.1    Background.....	8
1.2.2    Purpose .....	9
1.2.3    Need.....	9
1.3    SCOPE OF THE DOCUMENT .....	10
1.4    INTERAGENCY COORDINATION AND REVIEW AND PUBLIC COMMENT PERIOD .....	10
<b>SECTION 2.0 .....</b>	<b>11</b>
<b>2.0    PROPOSED ACTION.....</b>	<b>11</b>
<b>3.0    ALTERNATIVES CONSIDERED .....</b>	<b>13</b>
3.1    ALTERNATIVES DEVELOPMENT .....	13
3.2    SCREENING CRITERIA .....	13
3.3    ALTERNATIVE 1, CONSTRUCT NEW RANGE FACILITIES AT FORT A. P. HILL, VIRGINIA.....	13
3.4    ALTERNATIVE 2, USE EXISTING FACILITIES AT FORT A. P. HILL, VIRGINIA.....	14
3.5    ALTERNATIVE 3, RENOVATE/UPGRADE FACILITIES AT FORT A. P. HILL, VIRGINIA.....	14
3.6    NO ACTION ALTERNATIVE.....	14
<b>SECTION 4.0 .....</b>	<b>16</b>
<b>4.0    AFFECTED ENVIRONMENT .....</b>	<b>16</b>
4.1    LOCATION DESCRIPTION.....	16
4.2    LAND USE .....	16
4.3    AIR QUALITY.....	16
4.4    NOISE .....	16
4.4.1    Noise Zones.....	17
4.4.2    PK15(met) Noise Levels.....	20
4.5    SOILS AND VEGETATION .....	22
4.5.1    Soils.....	22
4.5.2    Vegetation .....	22
4.6    WATER RESOURCES.....	22
4.6.1    Surface Water.....	22
4.6.2    Wetlands.....	22
4.6.3    Drinking Water .....	23

	AWG Ranges
4.7	BIOLOGICAL RESOURCES ..... 24
4.7.1	<i>Threatened and Endangered Species</i> ..... 24
4.7.2	<i>Threatened and Endangered Species Potential Habitat</i> ..... 25
4.8	CULTURAL RESOURCES ..... 26
4.8.1	<i>Archaeological Sites</i> ..... 26
4.8.2	<i>Architectural Resources</i> ..... 29
4.9	SOCIOECONOMIC RESOURCES ..... 30
4.9.1	<i>Demographics</i> ..... 30
4.9.2	<i>Economy</i> ..... 30
4.9.3	<i>Protection of Children</i> ..... 30
4.10	ENVIRONMENTAL JUSTICE ..... 30
4.11	INFRASTRUCTURE AND UTILITIES ..... 31
4.12	HAZARDOUS MATERIALS/WASTES ..... 31
4.12.1	<i>Hazardous Materials/Wastes</i> ..... 31
4.12.2	<i>Regulated Materials/Wastes</i> ..... 31
<b>SECTION 5.0</b>	<b>..... 32</b>
<b>5.0</b>	<b>ENVIRONMENTAL CONSEQUENCES ..... 32</b>
5.1	LAND USE ..... 32
5.1.1	<i>Effects of the Preferred Alternative</i> ..... 32
5.1.2	<i>Effects of the No Action Alternative</i> ..... 32
5.2	AIR QUALITY ..... 32
5.2.1	<i>Effects of the Preferred Alternative</i> ..... 32
5.2.2	<i>Effects of the No Action Alternative</i> ..... 32
5.3	NOISE ..... 33
5.3.1	<i>Effects of the Preferred Alternative</i> ..... 33
5.3.2	<i>Effects of the No Action Alternative</i> ..... 37
5.4	SOILS AND VEGETATION ..... 37
5.4.1	<i>Effects of the Preferred Alternative</i> ..... 37
5.4.2	<i>Effects of the No Action Alternative</i> ..... 37
5.5	WATER RESOURCES ..... 37
5.5.1	<i>Effects of the Preferred Alternative</i> ..... 37
5.5.2	<i>Effects of the No Action Alternative</i> ..... 38
5.6	BIOLOGICAL RESOURCES ..... 38
5.6.1	<i>Effects of the Preferred Alternative</i> ..... 38
5.6.2	<i>Effects of the No Action Alternative</i> ..... 38
5.7	CULTURAL RESOURCES ..... 39
5.7.1	<i>Effects of the Preferred Alternative</i> ..... 39
5.7.2	<i>Effects of the No Action Alternative</i> ..... 39
5.8	SOCIOECONOMIC RESOURCES ..... 39
5.8.1	<i>Effects of the Preferred Alternative</i> ..... 39
5.8.2	<i>Effects of the No Action Alternative</i> ..... 40
5.9	ENVIRONMENTAL JUSTICE ..... 40
5.9.1	<i>Effects of the Preferred Alternative</i> ..... 40
5.9.2	<i>Effects of the No Action Alternative</i> ..... 40
5.10	INFRASTRUCTURE AND UTILITIES ..... 40
5.10.1	<i>Effects of the Preferred Alternative</i> ..... 40
5.10.2	<i>Effects of the No Action Alternative</i> ..... 41
5.11	HAZARDOUS MATERIALS/WASTES ..... 41
5.11.1	<i>Effects of the Preferred Alternative</i> ..... 41

5.11.2 *Effects of the No Action Alternative* ..... 41

5.12 MITIGATION MEASURES ..... 41

5.13 SECONDARY AND CUMULATIVE EFFECTS..... 42

**SECTION 6.0 ..... 43**

**6.0 CONCLUSIONS ..... 43**

**SECTION 7.0 ..... 44**

**7.0 REFERENCES..... 44**

**SECTION 8.0 ..... 46**

**8.0 LIST OF PREPARERS ..... 46**

**SECTION 9.0 ..... 47**

**9.0 AGENCIES AND INDIVIDUALS CONSULTED ..... 47**

**APPENDIX A ACRONYMS AND ABBREVIATIONS ..... 49**

**APPENDIX B AGENCY CORRESPONDENCE..... 51**

**APPENDIX C PUBLIC NOTICES/PUBLIC COMMENTS ..... 87**

**APPENDIX D RESPONSE TO COMMENTS ..... 90**

**APPENDIX E COASTAL RESOURCES CONSISTENCY DETERMINATION..... 93**

## **SECTION 1.0**

### **1.0 PURPOSE AND NEED FOR ACTION**

#### **1.1 Introduction and Scope of the Document**

Fort A. P. Hill is proposing construction and use of one indoor firing range, one demolition range and one 800-meter firing range for AWG mission essential training. This Environmental Assessment (EA) identifies, reviews and evaluates the environmental impacts of construction and future training operations of the three range sites and of the No Action Alternative.

This EA is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, its implementing regulations published by the Council on Environmental Quality (40 CFR 1500-1508), and 32 CFR Part 651 which implements NEPA for the Army and will be republished as AR 200-2. Pursuant to NEPA, federal agencies are required to consider the environmental consequences of their proposed actions. NEPA typically applies when the federal agency is the proponent of the action or where federal funds are involved in the action.

#### **1.2 Purpose and Need for the Proposed Action**

##### **1.2.1 Background**

Fort A. P. Hill is situated within the boundaries of Caroline County, Virginia, along the I-95 corridor and astride US Route 301 (Figure 1). The post is 20 miles southeast of Fredericksburg and is situated roughly midway between Richmond, Virginia, and the Washington, D.C. metropolitan area. The installation rests on the upper Atlantic Coastal Plain and in the watersheds of the Rappahannock and Mattaponi Rivers. Fort A. P. Hill's terrain consists of rolling hills with some low areas and wetlands throughout post. Most of the installation is forested with wooded areas containing both hardwood and deciduous trees. U.S. Route 301 divides the post into northern and southern sections, allowing maneuver and range operations to occur simultaneously. The northwest portion of the post is dedicated to maneuver operations and the southeast portion contains a 27,000-acre modern range facility and impact area. To the south and west, the installation is bordered by forest, farmland, and the town of Bowling Green. Forests, farmland, and the town of Port Royal lie to the east and north.

The mission of Fort A. P. Hill is to maintain an all-purpose, year-round training facility that serves Active, Reserve, and National Guard troops of the Army, Marine Corp, Navy, and Air Force as well as personnel from other government agencies.

The Army began organizing the Asymmetric Warfare Group (AWG) in January 2005. The AWG was organized under a special table of distribution and allowances to provide the unit with the flexibility to change and adapt to evolving mission requirements. The AWG is targeted to become a lead organization in providing the conventional military force with a global perspective and expertise in full spectrum training, planning, and execution of countermeasures

to asymmetric warfare. Asymmetric warfare is that which constantly changes and adapts to an ever-changing environment. The AWG is being organized for continuous operations, capable of deploying quickly, and able to operate in multiple simultaneous areas of responsibility. The AWG will focus on current and evolving asymmetric threats to U. S. forces in order to devise counter-measures, such as anti-terrorist tactics, techniques, and procedures (TTP), training activities and technology, to these threats. The success of the AWG in accomplishing this mission will be crucial to ultimate victory in the global war on terrorism and is anticipated to be a critical component of future Army and joint military forces operations.

The AWG currently maintains a headquarters office on Fort Meade, Maryland, and conducts training operations on Fort A. P. Hill. Fort A. P. Hill supports the AWG through the use of pre-existing training areas, firing and maneuver ranges, barracks, bivouac areas, the existing combat village and the helicopter landing zone.

### **1.2.2 Purpose**

The AWG conducts operations in support of Army and Joint Force Commanders to mitigate and defeat specified asymmetric threats. In military terms, an asymmetric threat is one not readily fitting the concepts of conventional warfare, which have typically pitted defined military organizations against one another in combat directed by clear political authority. Asymmetric threats can include improvised explosive devices (IED), dirty bombs, infrastructure attacks, suicide bombers, biological weapons, and other tactics and techniques which occur in an ever changing and adapting environment.

The purpose of constructing and operating AWG specific indoor and outdoor firing ranges and a demolition range is to provide specialized, flexible and customized range training areas that support the constantly evolving environment needed to meet AWG training standards. These ranges would be designed to conduct and provide full-spectrum range and demolition training, planning and execution of countermeasures to asymmetric warfare to all forces within the U.S. military. The ranges would provide the AWG a location from which key training tasks can be accomplished. These tasks include providing support to:

- Assist in operational analysis and exploitation of asymmetric threats,
- Assist in identification, development and integration of counter-measure technologies,
- Conduct or assist in advisory training for in-theater or pre-deployment forces,
- Observe, collect, develop, validate and disseminate emerging TTP type training, and
- Deploy, integrate, coordinate and execute command and control procedures of trained and ready military forces.

### **1.2.3 Need**

Despite U.S. conventional military superiority and past successes against asymmetric attacks, there are still gaps in U. S. conventional force capabilities. The extent of these capability gaps varies based on the type of unit, training and combat experience; however, there is a need to defeat all adversaries' abilities to innovate and rapidly adapt to the environment. The AWG currently has no weapons firing or demolition range facilities that can provide the effectiveness in training or force preparedness necessary to meet the existing need in multiple simultaneous areas of operation. The current and expected future threat requires that the U. S. military continue to change and modify its approach to ensure that assigned missions can be accomplished. Changing military organizations to instill a culture of innovation and adaptability is key to this effort. The AWG ranges at Fort A. P. Hill are needed to:

- Provide target arrays, configuration density and the ability to support multi-task training needed or the combined explosive charge weight needed for AWG training which meets Army standards;
- Provide a more generic and flexible range and demolition training area configuration to support quick configuration changes and to optimize scenario flexibility;
- Provide the optimum in flexibility in order to respond to a dynamic and constantly changing threat environment; and
- Provide small arms gunnery engagement procedures meeting complete training standards for sustained combat proficiency.

### ***1.3 Scope of the Document***

This EA is limited to assessing the effects of construction and training operations within the AWG indoor and outdoor firing ranges and demolition range on the following environmental resources: land use, air quality, traffic, noise, geology and soils, water resources including wetlands, biological resources including on-site vegetation and threatened and endangered species, cultural resources, socioeconomics, environmental justice, infrastructure, and hazardous/regulated materials/wastes. Any potential cumulative and secondary impacts associated with this project are also analyzed. Proposed mitigation measures to minimize environmental impact are also provided.

### ***1.4 Interagency Coordination and Review and Public Comment Period***

The preparation of this EA was coordinated with appropriate federal, state and local agencies. Copies of agency correspondence are provided in Appendix B. In addition, agency and public input will be obtained during a public comment period. The initial public comment period will be held following completion of the draft EA. Comments submitted by agencies, organizations and members of the public on the proposed action or EA will be considered. If the EA concludes that there are no significant impacts, a Finding of No Significant Impact (FONSI) will be issued.

## **SECTION 2.0**

### **2.0 PROPOSED ACTION**

The overall proposed action for this EA is to construct and operate indoor and outdoor ranges necessary to meet training requirements for the AWG. Three separate but related projects are included in this EA under the proposed action. The purpose of the AWG is to provide “train the trainer” assistance to all military services. While the anticipated average daily number of military personnel expected on site is 100 persons, the AWG ranges could accommodate up to 150 individuals simultaneously participating in multiple training activities and operations.

#### **Indoor Range.**

An indoor firing range is proposed for land within the planned Asymmetric Warfare Complex (AWC) located on Training Area 22B east of Longstreet Camp in the northwestern portion of Fort A. P. Hill. This range would consist of a 26,220 square foot windowless, single-story, flat-roofed building with 21 shooting booths each five feet wide and 300 feet long, a weapons cleaning area, a range officer control booth, administrative offices, a general purpose room, target storage, a small arms weapons storage vault and a latrine. The building would be designed to accommodate lighted shooting and night vision equipment. The range would accommodate .45 caliber, 9 mm, 12 gauge, 5.56 mm, 7.62 mm and laser mounted weaponry.

#### **Demolition Range.**

The proposed location of the demolition range is in the eastern portion of post within the existing Training Area 25C southeast of Route 301 and adjacent to North Range Road. The demolition range would be used to train individual soldiers on the techniques of handling and exploding light explosives charges up to 10 pounds TNT equivalent during the day and up to 1 pound TNT equivalent during the night. The range would be configured to train a unit consisting of an average of 30 soldiers.

The demolition range would consist of approximately 225 acres for actual demolition training, a parking area, concrete pad, observation bunkers, a covered working area, a crater pit, a loading and unloading ramp, a latrine, training roads and an access road into the site and an open storage area. Electricity and communications lines would be needed on this range. The range would also contain safety berms on each side of the demolition points, three missile-proof shelters and a class V storage bunker. No automation or targetry is required for this range. Construction of this range would require clearing and grubbing of approximately 174 acres.

#### **800-Meter Range.**

The proposed 800-meter firing range would be constructed on 226 acres between existing Ranges 33 and 34. The range design would be in accordance with the Corps of Engineers Standard Design for an open land, walking 800-meter range with support facilities. The flat, non-instrumented range would provide capabilities for 10 shooters using a fixed firing line. Free standing, portable radio controlled targets would allow both day and night firing capability. The range would be a controlled access area. The range would include natural, not concrete, shooting pads, a stabilized firing zone 30 feet by 200 feet in size. A gravel parking area, a gravel

down range maintenance access road, an operations and storage building, an ammunition breakdown building, a vault latrine and a covered mess shelter would also be constructed. Construction of this range would require clearing and grubbing of approximately 25 acres

---

## **SECTION 3.0**

### **3.0 ALTERNATIVES CONSIDERED**

#### **3.1 Alternatives Development**

For proposed actions that require preparation of an EA, Council of Environmental Quality regulations (§1508.9[b]), NEPA (§102[2][E]), and Army regulations (32 CFR Part 651) and policy require that appropriate alternatives for the proposed action be described and evaluated. A reasonable range of alternatives that meet the underlying purpose and need for the proposed action should be analyzed for their environmental impacts to support a fully informed decision by the decision-maker. An EA must include an evaluation of the No Action Alternative as a reference for the comparison of potential environmental impacts associated with the proposed action. Additionally, the EA should identify any alternatives eliminated from detailed analysis and indicate the reasons for their elimination.

Three alternatives and the No Action Alternative were considered by AWG as part of the NEPA process. Each alternative was considered for meeting the purpose and need, cost and impact to the human and natural environment. Alternatives which did not meet the screening criteria established by the AWG were not considered throughout the EA.

#### **3.2 Screening Criteria**

Screening criteria established by AWG for the proposed ranges includes:

- Sufficient training space to ensure operations meet the standards established by the Army Improvised Explosive Devices (IED) Task Force and the Joint IED Defeat Task Force including instrumentation and target systems necessary to support current weapons systems and engagement platforms;
- A location within close proximity of the proposed Asymmetric Warfare Complex (AWC) including easy access and a close proximity to existing roads;
- Placement in a geographic area which meets the Army's current moratorium on producing additional duded impact areas and meets Army guidance for using existing impact areas and surface danger zones (SDZ); and
- A location which could be restricted from surrounding activities and used exclusively for AWG purposes.

#### **3.3 Alternative 1, Construct New Range Facilities at Fort A. P. Hill, Virginia**

The proposed action presented in Section 2.0 is a description of the AWG's Preferred Alternative. Existing Training Areas 22B and 25C and the land adjacent to Ranges 33 and 34 on Fort A. P. Hill meet the screening criteria listed in Section 3.2 above. Any location on Fort A. P.

Hill is geographically close to the proposed AWC. There is sufficient space available for proposed range activities and the sites can be secured for safety and security purposes. Similar range activities and operations are performed on Ranges 33 and 34 adjacent to the proposed 800-meter range site. While demolition does not currently occur on Training Area 25C, within one kilometer of the proposed demolition site Fort A. P. Hill has several existing demolition sites. Training Area 22B is the proposed location of the AWC as well as the indoor range. Fort A. P. Hill is also currently supporting the AWG training activities and operations on other parts of the installation.

### ***3.4 Alternative 2, Use Existing Facilities at Fort A. P. Hill, Virginia***

AWG considered using existing range facilities at Fort A. P. Hill. Existing range facilities do not support the unique and constantly evolving target arrays or target configurations needed by the AWG. Diversity and uniqueness of training mission dictate a more generic and flexible range training area configuration to support quick changes and to optimize scenario flexibility.

### ***3.5 Alternative 3, Renovate/Upgrade Facilities at Fort A. P. Hill, Virginia***

AWG considered upgrading, renovating, and modernizing existing range facilities at Fort A. P. Hill. Existing range facilities do not support the unique and constantly evolving target arrays or target configurations needed by the AWG. Diversity and uniqueness of training mission dictate a more generic and flexible range training area configuration to support quick changes and to optimize scenario flexibility. A survey of space on Fort A. P. Hill indicated that there are no ranges which could be renovated and meet necessary training standards without extensive cost and effort. Alternative 3 does not meet the screening criteria established by AWG and has been eliminated from further consideration within this EA.

### ***3.6 No Action Alternative***

Under the No Action Alternative, AWG ranges would not be constructed at Fort A. P. Hill. The No Action Alternative would be expected to have a negative impact on national security and joint forces training objectives and mission, but would eliminate the potential environmental impacts associated with construction and utilization of the indoor and outdoor firing ranges and the demolition range. The existing Training Areas 22B and 25C and the land between Ranges 33 and 34 would continue to be used for their current purposes and the existing conditions of the affected environment on the proposed site would not change under the No Action Alternative. The AWG would continue to use pre-existing facilities and ranges on Fort A. P. Hill. These baseline environmental conditions are described in Section 4.0 of this EA and serve as a benchmark for the evaluation of potential impacts of the proposed action. CEQ regulations and 32 CFR Part 651 require consideration of the No Action Alternative.

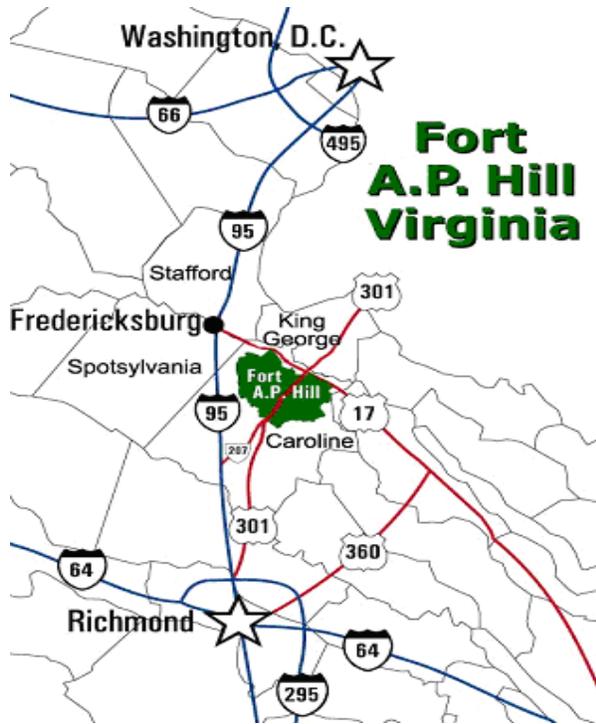


Figure 1. Location of Fort A. P. Hill, Caroline County, Virginia

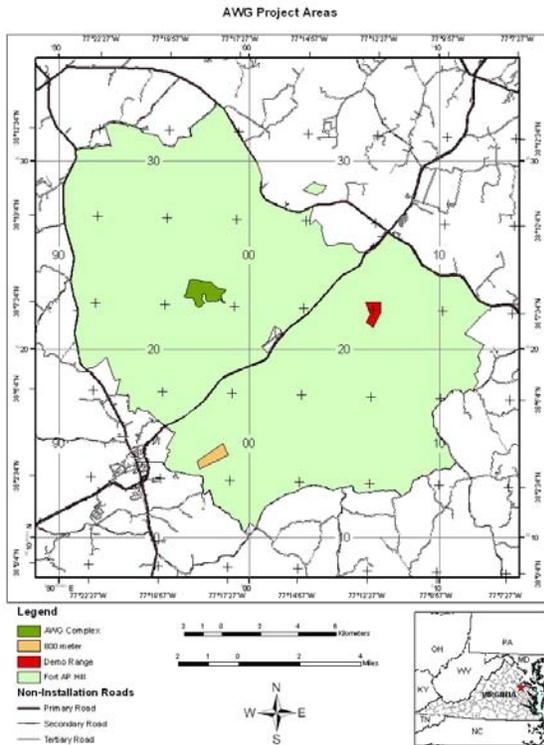


Figure 2. AWG Proposed Range Areas

---

## **SECTION 4.0**

### **4.0 AFFECTED ENVIRONMENT**

#### **4.1 Location Description**

Fort A. P. Hill is a Department of the Army training facility located in Caroline County, Virginia, north of the town of Bowling Green. The installation is approximately 76,000 acres in size and is bisected east and west by U. S. Route 301 (Figure 2). The mission of Fort A. P. Hill is to maintain an all-purpose year-round training facility for the military units assigned to the installation. Active Army, National Guard and Reserve units as well as the Marines and the Navy use the installation for training activities. The proposed location of the indoor firing range (labeled AWG Complex on Figure 2) is adjacent to the Asymmetric Warfare Complex on Training Area 22B east of Longstreet Camp in the northwestern portion of Fort A. P. Hill. The proposed location of the demolition range (labeled Demo Range on Figure 2) is on Training Area 25C southeast of Route 301 near Gouldman's Corner. The proposed location of the 800-meter firing range (labeled 800-meter range on Figure 2) is between Ranges 33 and 34 south of Route 301 near Carter's Corner.

#### **4.2 Land Use**

The proposed 800-meter range site would be located on 226 acres between Ranges 33 and 34, within the impact area and the surface danger zones of these two ranges. This area is currently used as a control area for small arms weapons training. The proposed site is hilly and moderately forested. The demolition site is proposed for 225 acres within Training Area 25C which is used regularly for training operations which do not require an improved area. The site is hilly and forested with one open area used for an artillery firing point. It has been used in the past as a maneuver training area for tracked and wheeled vehicles and for artillery firing. The area has also experienced disturbance for road access, trail access, aboveground telephone lines, controlled burning and limited timber harvesting. The proposed location for the indoor firing range is within the proposed AWC 450 acre compound on Training Area 22B. The site is both cleared and moderately forested. Portions of the site have been previously used for infantry training and the National Scout Jamboree.

#### **4.3 Air Quality**

Fort A. P. Hill is located in the Northeastern Virginia Air Quality Control Region. The Virginia Department of Environmental Quality (VDEQ) has classified Caroline County as an attainment area for all National Ambient Air Quality Standards (NAAQS). Fort A. P. Hill currently has an air quality permit for all emissions activities which occur on post including tenant activities.

#### **4.4 Noise**

The Federal Interagency Committee on Urban Noise (FICUN) has developed land use guidelines, adopted by the Department of Defense, for areas on or near noise producing

activities, such as highways, airports and firing ranges. The Army uses these guidelines to designate Noise Zones (NZ) for land use planning. Land use guidelines are meant to ensure the compatibility with the noise environment while allowing maximum beneficial use of contiguous property. Fort A. P. Hill has an obligation to the surrounding communities to determine ways to protect both the people living and working adjacent to the installation and the public's investment in the installation and the training which occurs there.

#### **4.4.1 Noise Zones**

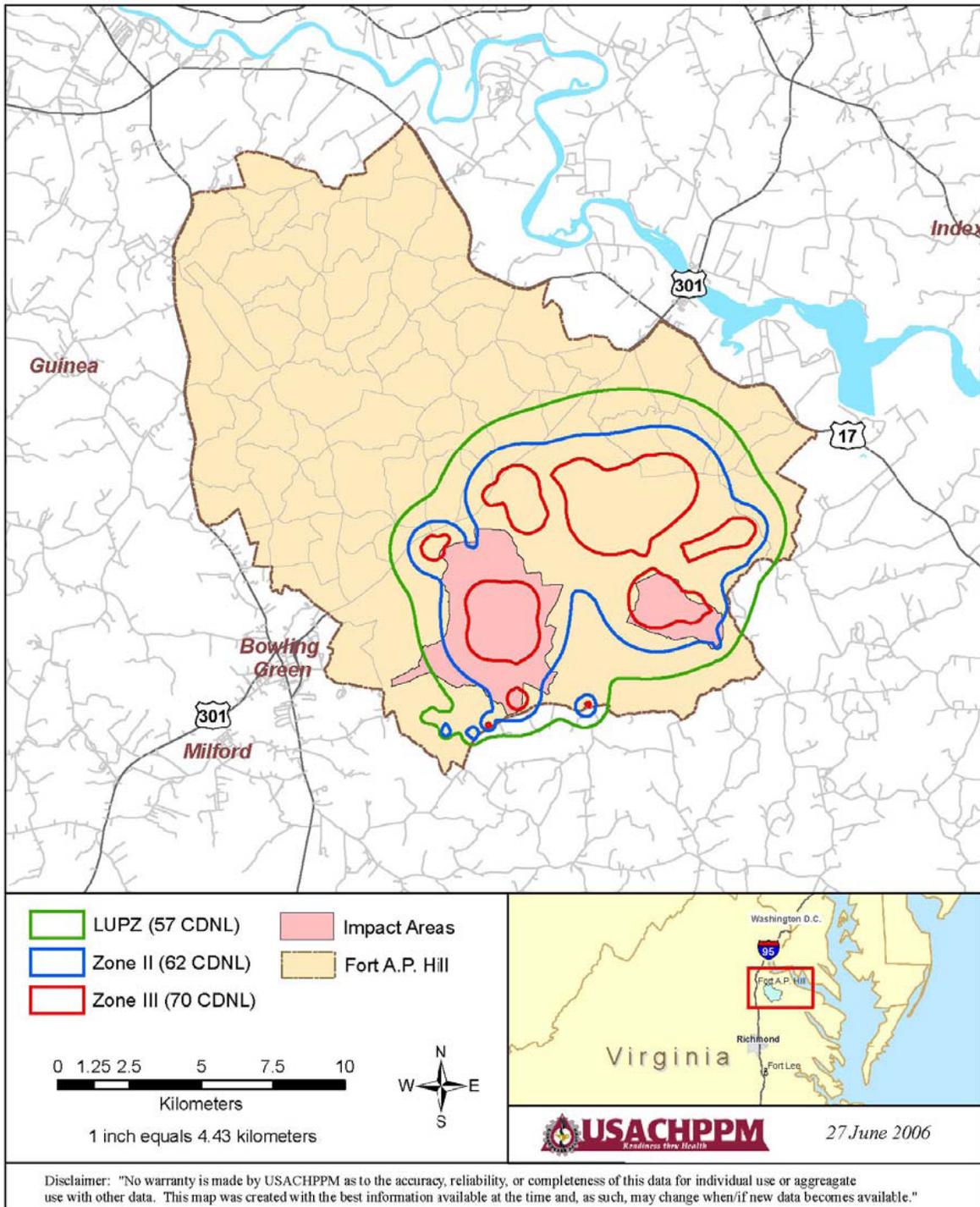
Noise Zones (NZ) are designated as Land Use Planning Zone (LUPZ), I, II or III based on the number of decibels (dB) produced for both long term and impulsive events. NZ descriptions for Fort A. P. Hill include:

- LUPZ consists of the areas around a noise source where the C-weighted day-night level (CDNL) is less than 57 dB for all noise. A LUPZ is usually acceptable for all types of land use activities.
- NZ I consists of the areas around a noise source where a single event noise is less than 87 dB for small arms and the C-weighted day-night level (CDNL) is less than 62 dB for large arms impulsive noise. The CDNL is the time weighted average sound level with a 10 dB penalty added to night time (2200 to 0700 hours) noise levels.
- NZ II consists of the area where a single event noise is between 87 and 104 dB for small arms and the CDNL is between 62 and 70 dB for large arms impulsive events. Land use within a NZ III area is normally limited to industrial, manufacturing and transportation type activities.
- NZ III consists of the area around a noise source where a single event noise is greater than 104 dB for small arms and the CDNL is greater than 70 dB for large arms impulsive events. Noise sensitive land uses are not recommended for NZ III areas.

The existing large caliber weapons noise contours are shown in Figure 3. The LUPZ extends beyond the eastern boundary approximately 800 meters and beyond the southern boundary less than 900 meters. NZII extends beyond the southern boundary less than 300 meters. NZ III does not extend beyond the boundary.

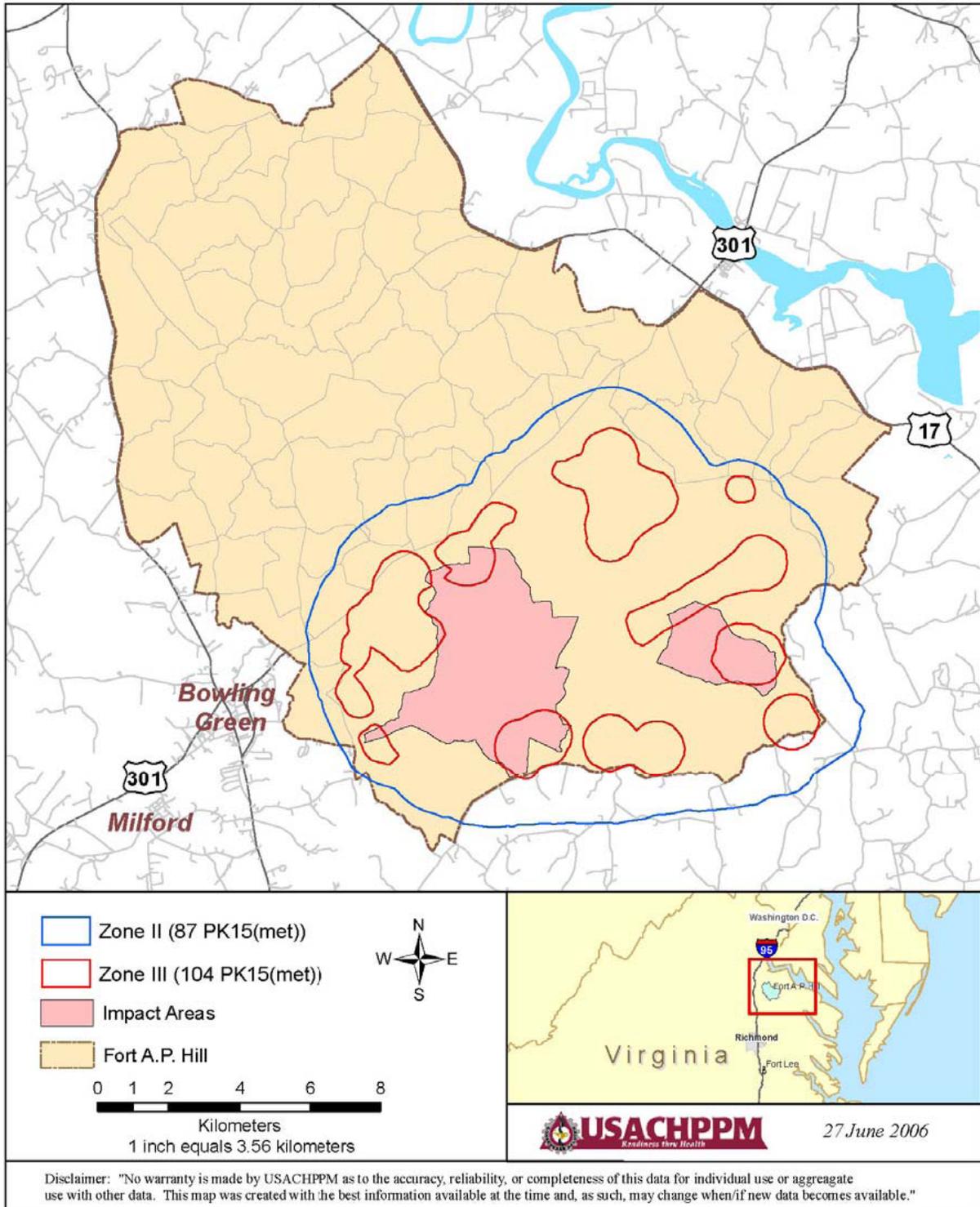
The existing small caliber weapons noise contours are shown in Figure 4. NZ II extends beyond the eastern boundary approximately 1,100 meters, beyond the southern boundary between 700 and 1,700 meters and beyond the western boundary less than 300 meters. NZ III extends beyond the southern boundary less than 400 meters.

### FORT A.P. HILL EXISTING LARGE CALIBER OPERATIONAL NOISE CONTOURS



**Figure 3. Existing Large Caliber Operational Noise Contours**

### FORT A.P. HILL EXISTING SMALL CALIBER OPERATIONAL NOISE CONTOURS



**Figure 4. Existing Small Caliber Operational Noise Contours**

#### 4.4.2 PK15(met) Noise Levels

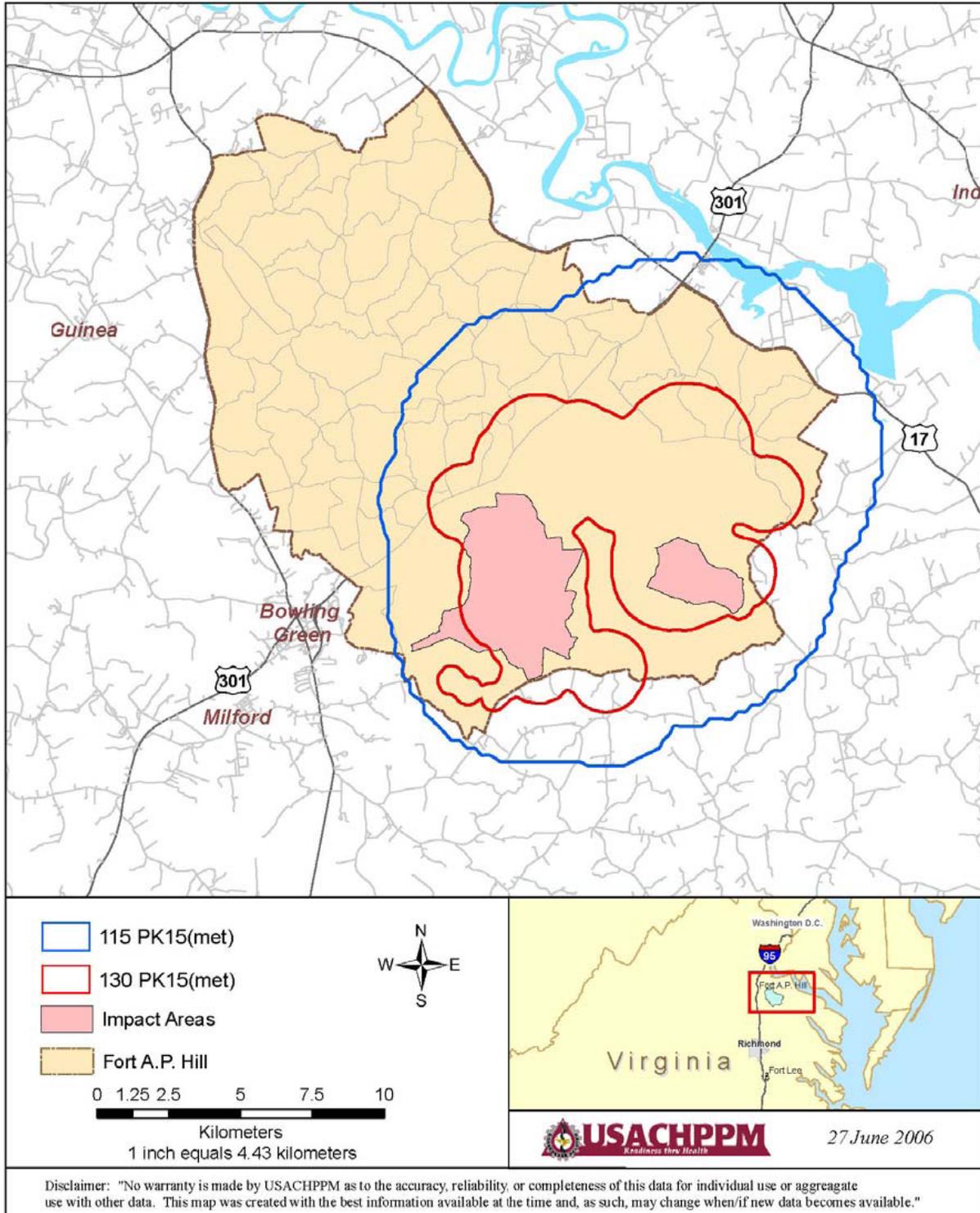
PK15(met) noise levels are calculated to account for statistical variation in received weapons noise level due to weather. These peak contours show the expected level that one would get on a sound level meter when a weapon is fired. Since weather conditions can cause noise levels to vary significantly from day to day, the noise programs calculate a range of peak levels. This range is based on weather conditions that favor or hinder sound propagation. By plotting the PK15(met) contour, noise events would be expected to fall within the contours 85% of the time. Plotting the calculations provides the installation a more realistic noise contour which may be generated by training due to weather conditions. This gives the installation and community a more realistic means to consider the areas impacted by training noise without putting stipulations on land that would only receive high sound levels under infrequent weather conditions that favor sound propagation. PK15(met) noise contours are defined as:

- High risk for complaint is that area around the source of noise in which the contour is greater than 130 dB for large caliber weapons.
- Moderate risk for complaint is that area around the source of noise in which the contour is between 115 dB and 130 dB for large caliber weapons.
- Low risk for complaint is that area around the source of noise in which the contour is less than 115 dB for large caliber weapons.

The existing PK15(met) noise contour (Figure 5) extends beyond the northeastern and eastern boundary less than 2,400 meters and beyond the southern boundary less than 1,200 meters. These contours indicate a moderate probability of receiving noise complaints.

Based on Department of Defense guidance, the Department of the Army has developed an Environmental Noise Management Program which considers noise from all sources of military activities. Fort A. P. Hill has an installation Environmental Noise Management Plan (ENMP). The ENMP, which applies to all tenants, including the AWG, provides information and recommendations for reducing noise impact during land and air training exercises. It also provides limits for weapons firing and noise complaint investigation procedures.

### FORT A.P. HILL EXISTING LARGE CALIBER OPERATIONAL PK15(met) NOISE CONTOURS



**Figure 5. Existing Large Caliber PK(met) Noise Contours**

## 4.5 Soils and Vegetation

### 4.5.1 Soils

Fort A. P. Hill is located in the Atlantic Coastal Plain physiographic province. The terrain includes rolling countryside to mostly level plains, interrupted by numerous shallow valleys. The elevation ranges from 10 to 255 feet above mean sea level. The soils on the AWG sites range from potentially erodible to highly erodible due to location, soil texture, structure, slope and permeability. Soil types include Bibb-Chastain silt loam, a listed hydric soil, Kempsville-Emporia-Remlik complex on stream slopes and Kempsville-Emporia complex in upland areas.

### 4.5.2 Vegetation

The proposed AWG range sites are composed of upland forests and wetlands areas. Upland forests contain a mixture of deciduous trees including oaks (*Quercus* spp.), hickories (*Carya* spp.), Yellow Poplar (*Lirodendroan tulipifera*), American beech (*Fagus grandifolia*), loblolly pine (*Pinus taeda*) and Virginia pine (*Pinus virginiana*). Vegetation near streams contains a variety of wetlands plants including common greenbrier (*Smilax rotundifolia*), stout wood-reedgrass (*Cinna arundinacea*) and various sedges (*Carex* sp.). Scrub/shrub plants in wetlands areas and seeps include spicebush (*Lindera benzoin*), American holly (*Ilex opaca*) and American beech (*Fagus grandiflora*). Dominant tree species in forested wet areas include loblolly pine, red maple (*Acer rubrum*), American sycamore (*Platanus occidentalis*) and sweet gum (*Liquidambar styraciflua*).

## 4.6 Water Resources.

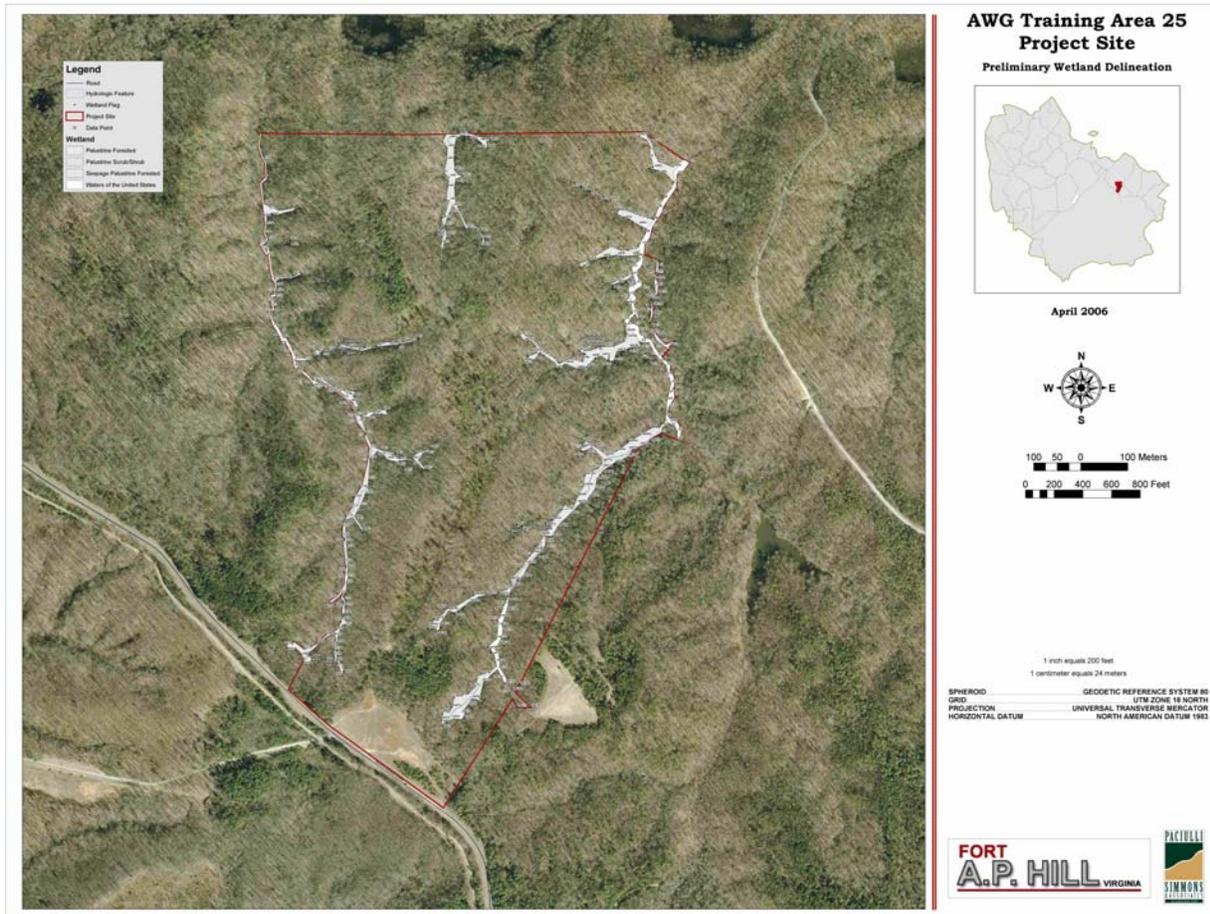
### 4.6.1 Surface Water

The proposed 800-meter range site contains several streams which are unnamed tributaries of Maracossic Creek and a pond adjacent to South Range Road. Maracossic Creek is a major stream which runs between the town of Bowling Green and the southwestern boundary of Fort A. P. Hill. The proposed demolition range contains several intermittent streams which are tributaries to Mill Creek which runs into the Rappahannock River north of post. An unnamed tributary to Mill Creek flows through Training Area 22B where the proposed indoor range would be located.

### 4.6.2 Wetlands

Wetlands have been identified and delineated throughout the installation in the National Wetlands Inventory (NWI) Survey. Additionally, water quality protection standards have been established for lands adjacent to wetlands and water bodies with perennial flow. Fort A. P. Hill imposes a 100 foot buffer around all wetlands to minimize impacts from erosion or soil disturbance. Wetlands delineations, conducted in April and June 2006, identified wetland areas within the proposed AWG range sites. Wetlands indicators included hydric soils, wetlands

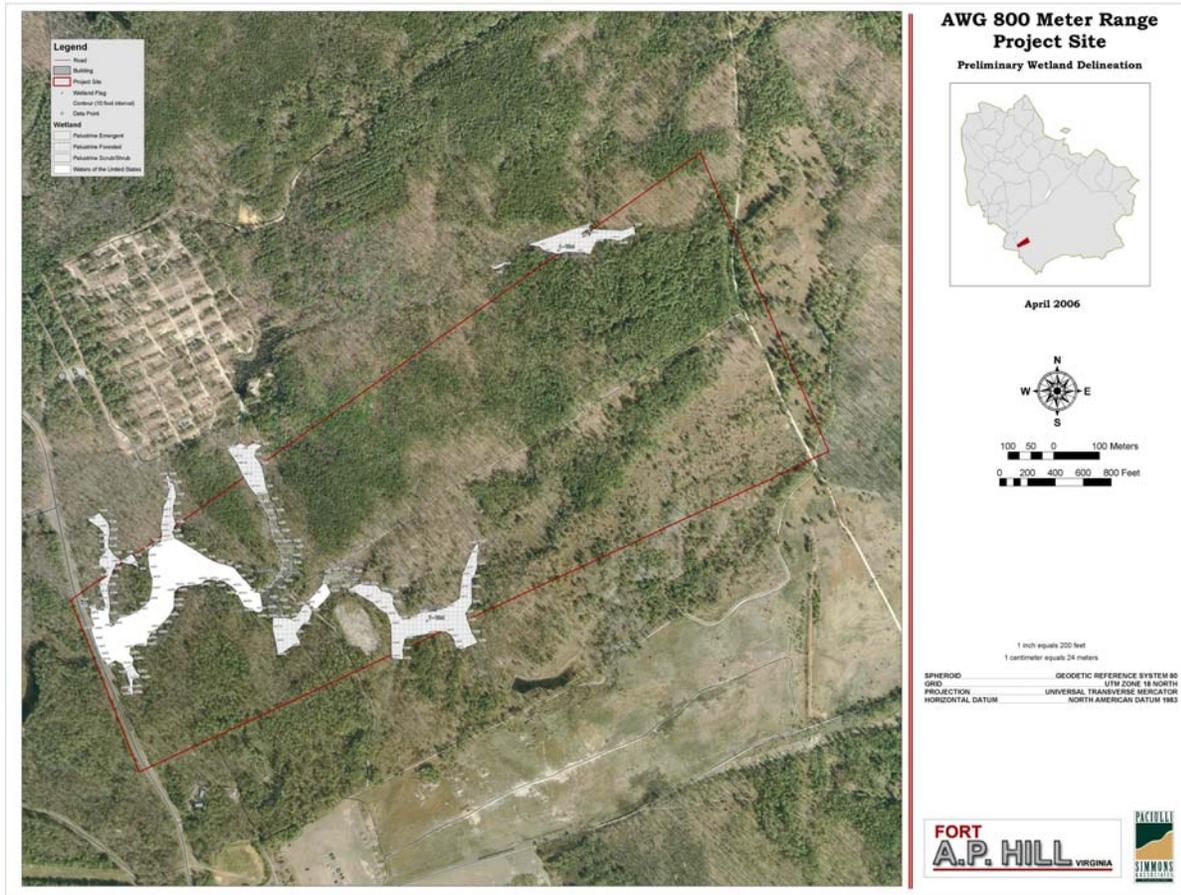
(hydrophytic) vegetation and hydrology (the presence of water) as defined by the Army Corps of Engineers. According to the April and June 2006 surveys, the majority of land on the three proposed range sites is non-wetland. Wetlands on the proposed demolition range (Figure 6) include seepage palustrine forested, palustrine scrub/shrub and palustrine forested. Wetlands on the proposed 800-meter range site (Figure 7) include palustrine emergent, palustrine scrub/shrub and palustrine forested. Wetlands on the proposed indoor range site (Figure 8) includes palustrine emergent, palustrine scrub/shrub, palustrine forested, palustrine forested/palustrine emergent, palustrine forested/palustrine scrub/shrub and seepage palustrine forested wetlands. Non-wetland areas on all three proposed range sites lack one or more indicators for wetland determination.



**Figure 6. Wetlands on Proposed Demolition Range Site**

#### 4.6.3 Drinking Water

Drinking water on Fort A. P. Hill is provided by a series of ground water wells located throughout the installation. These wells are typically 350 to 500 feet deep and provide approximately 100 to 250 gallons per minute. Drinking water lines currently run along all major roads within Fort A. P. Hill including roadways used to access each of the proposed ranges.



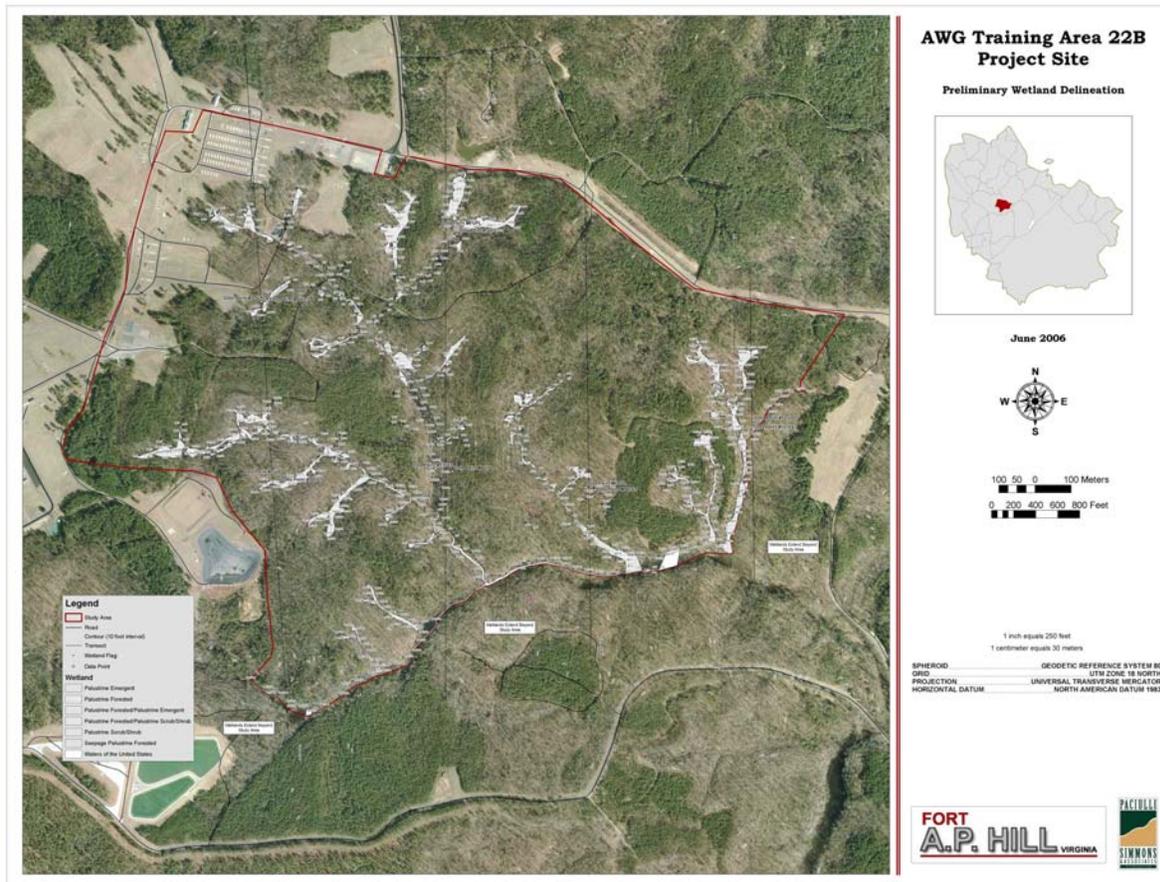
**Figure 7. Wetlands on Proposed 800-Meter Range Site**

## 4.7 Biological Resources.

### 4.7.1 Threatened and Endangered Species

A threatened and endangered species survey was performed on the proposed AWG demolition range site on 9 June 2006. The proposed demolition range area is located in Training Area 25C along North Range Road. The demolition range would be located approximately 1,850 feet west of the Mill Creek Marshes Conservation Area on Fort A. P. Hill. This conservation area is noted for the presence of the federally listed bald eagle (*Haliaeetus leucocephalus*). The nearest known occurrence of a bald eagle nest is approximately 5,185 feet from the northeastern edge of the proposed range.

Other species included in the threatened and endangered species demolition range survey during June 2006 included swamp pink (*Helonias bullata*), small whorled pogonia (*Isotria medeoloides*) and American ginseng (*Panax quinquefolium*). None of these species were found during the field survey.



**Figure 8. Wetlands on Proposed Indoor Range Site**

A threatened and endangered species survey was performed on the proposed AWG 800-meter range site on 21 June 2006. The proposed project area, located within the Fort A. P. Hill Impact Area, is also located within the Carters Corner Macrosite Conservation Area. This conservation area is noted for the presence of the federally listed swamp pink and Bachman's sparrow (*Aimophila aestivalis*). Neither of these species was identified during the field survey.

Surveys of swamp pink (*Helonias bullata*), small whorled pogonia (*Isotria medeoloides*), and New Jersey Rush (*Juncus caesariensis*) were performed by the Department of Conservation and Recreation, Division of Natural Heritage during 9-11 May, on 14 June and on 13 September 2006 respectively. Surveys were conducted on Training Area 22B including the proposed indoor range site. None of these species was identified during the field survey.

#### **4.7.2 Threatened and Endangered Species Potential Habitat**

The habitat within the proposed demolition range project area does not appear suitable to support swamp pink. A survey of the wetlands areas found no plants. Areas within the proposed demolition range dominated by mature hardwoods are marginally suitable to support small

whorled pogonia and American ginseng. However, none of these plants were observed during the survey.

The northern seepage area within the proposed 800-meter range project area was suitable habitat to support swamp pink; however none was found possibly due to the area being overcrowded with sun-loving vegetation. Habitat to support New Jersey rush, (*Juncus caesariensis*), small whorled pogonia and American ginseng were not found due to heavy disturbance and pine dominated overstory.

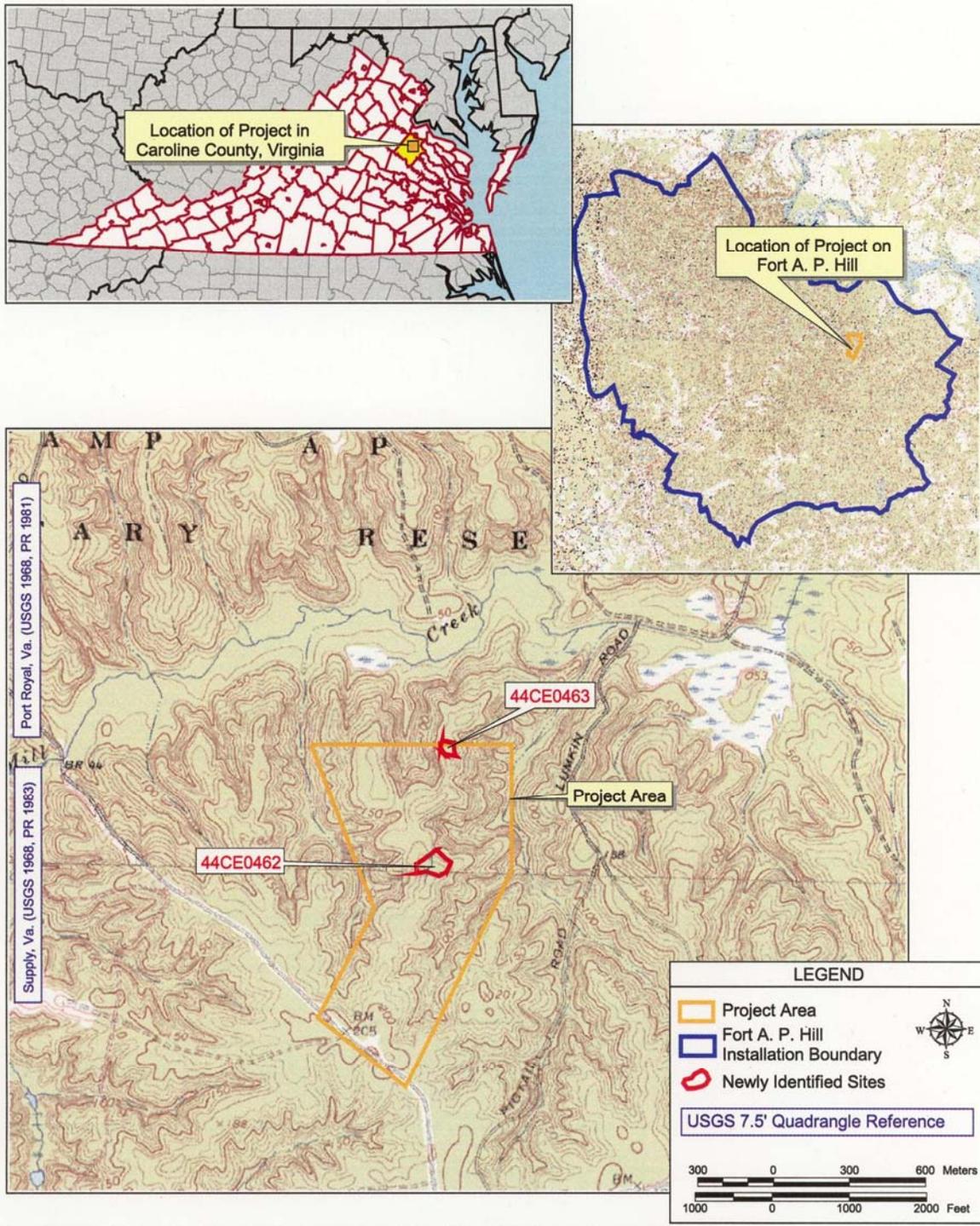
A limited amount of appropriate seepage habitat for small whorled pogonia was present in the area north of Mill Creek on Training Area 22B. Habitat for New Jersey Rush was present along a small tributary drainage swale within the project area and in small patches along the project area's southern boundary along Mill Creek. However, no species were observed during the field survey.

## **4.8 Cultural Resources**

### **4.8.1 Archaeological Sites**

Cultural resources surveys of the proposed AWG demolition and 800-meter range sites were conducted during January and February 2006. A Phase I intensive level identification survey identified two archaeological sites (44CE0462 and 44CE0463) at the proposed demolition range (Figure 9). Site 44CE0462 is a twentieth-century historic domestic site located in the center section of the area. As this type of site is ubiquitous to the Fort A.P. Hill vicinity and is unlikely to yield additional information important in history, Site 44CE0462 is recommended as not eligible for inclusion in the National Register of Historic Places (NRHP). Site 44CE0463 is a late eighteenth- to mid twentieth-century domestic site that was identified near the northeastern edge of the proposed demolition range. Although domestic sites are common occurrences within the installation, they typically do not date to this period. Site 44CE0463 is recommended as potentially eligible for inclusion in the NRHP under Criterion D, as the site is likely to yield additional information important in history. Additionally, the survey recommended a Phase II archaeological evaluation in the event that the site could not be avoided by the proposed development.

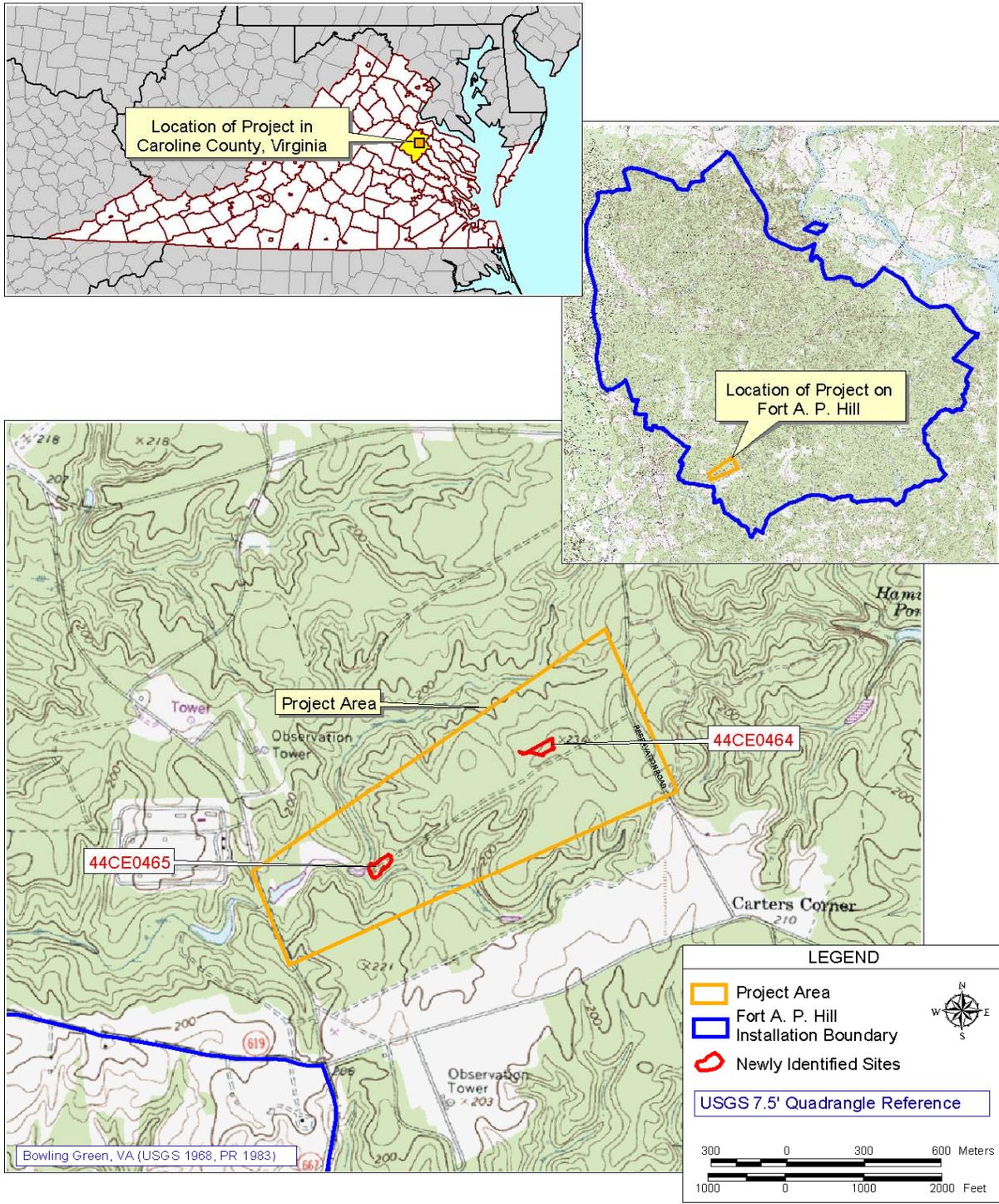
A 2006 Phase IA reconnaissance survey identified two archaeological sites (44CE0465 and 44CE0464) on the proposed 800-meter range (Figure 10). Site 44CE0465 is a prehistoric encampment site located adjacent to one of the unnamed tributaries to Maracossic Creek. Pottery sherds recovered at the site appear to date to the Middle Woodland period of prehistory (500 BC-AD 900). Although small portions of the site have been disturbed by road construction, additional survey work is recommended to determine the integrity of the site and whether the site is eligible for inclusion in the NRHP. Site 44CE0464 was identified as a domestic site dating from the early to mid-twentieth century. As this type of site is ubiquitous to the Fort A.P. Hill vicinity and is unlikely to yield additional information important in history, Site 44CE0464 is recommended as not eligible for inclusion in the NRHP.



Location of Newly Identified Sites within the  
Demo Survey Area  
Fort A. P. Hill, Caroline County, Virginia

GRAY & PAPE

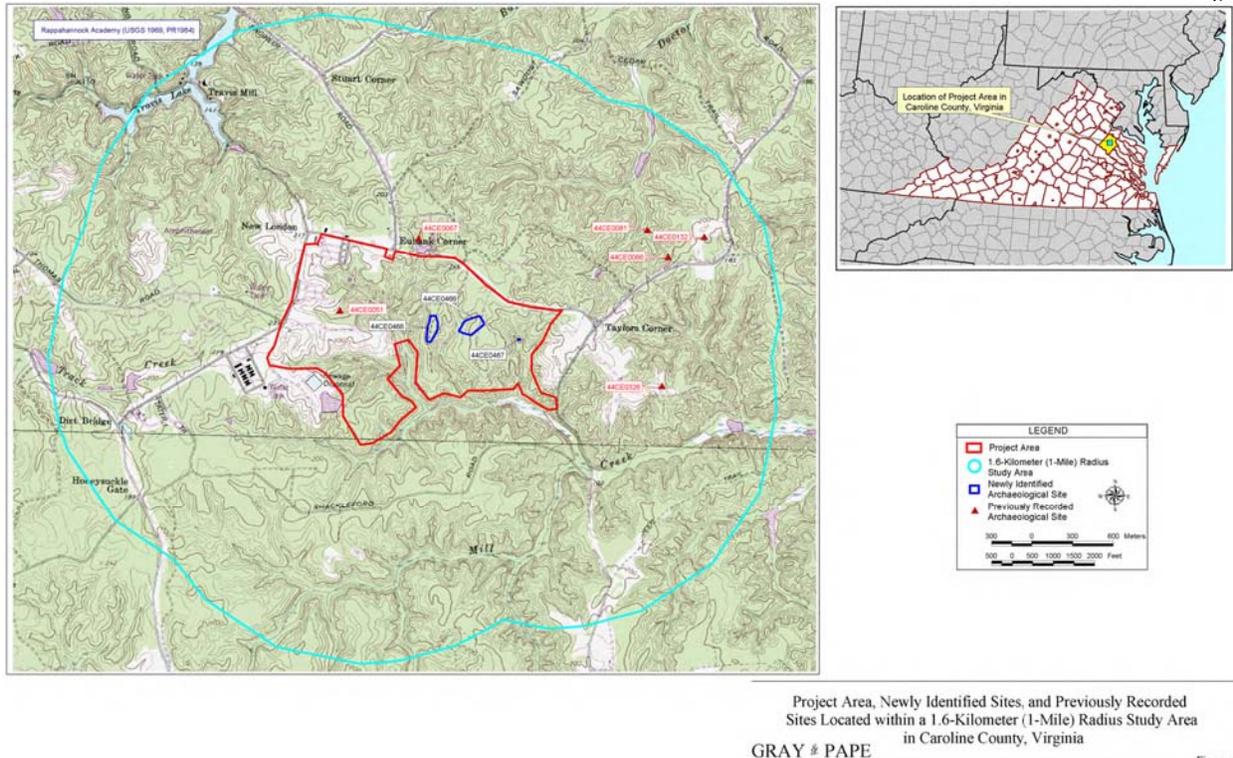
Figure 9. Cultural Resources Identified on Proposed Demolition Site



Location of Newly Identified Sites within the  
800 Meter Range Survey Area  
Fort A. P. Hill, Caroline County, Virginia

GRAY & PAPE

Figure 10. Cultural Resources on Proposed 800-Meter Site



**Figure 11. Cultural Resources Identified on Proposed Indoor Range Site**

The 2006 Phase I survey of the proposed indoor firing range site at Training Area 22B identified three archaeological sites (44CE0466, 44CE0467, and 44CE0468) within the interior center of the proposed project area (Figure 11). Site 44CE0466 was identified as a twentieth-century domestic site. Artifacts recovered from the site included whiteware, cut nails and container glass. As this type of site is ubiquitous to the Fort A.P. Hill vicinity and is unlikely to yield additional information important in history, Site 44CE0466 is recommended as not eligible for inclusion in the NRHP. Site 44CE0467 was identified as the remains of a prehistoric site of undetermined age. As the site lacks integrity and is unlikely to yield additional information important in prehistory, Site 44CE0467 is recommended as not eligible for inclusion in the NRHP. Site 44CE0468 was identified as a late nineteenth-early twentieth century domestic site. Artifacts recovered included whiteware, cut and wire nails, brick, window and container glass. As this type of site is ubiquitous to the Fort A.P. Hill vicinity and is unlikely to yield additional information important in history, Site 44CE0468 is recommended as not eligible for inclusion in the NRHP.

#### 4.8.2 Architectural Resources

According to a 2004 Phase I Cultural Resources Survey conducted on Fort A. P. Hill, no architectural resources exist within the boundaries of the proposed AWG range sites. Additionally, no architectural resources were observed during the archaeological surveys conducted in 2006.

## **4.9 Socioeconomic Resources**

### **4.9.1 Demographics**

Caroline County is located in the rapidly growing I-95 urban corridor, separating two major metropolitan statistical areas (MSA): the Baltimore-Washington MSA comprising a population in excess of 2,407,400 (Virginia portion only, 2005) and the Richmond-Petersburg MSA encompassing a population of nearly 1,167,500 (2005). Caroline County is part of the Fredericksburg Region, which was the fastest growing area in the state between 1980 and 1990, in terms of population and job creation. The Fredericksburg Region contains a population in excess of 215,000 (2000). As the southernmost locality in the Fredericksburg Region, Caroline County draws from both the Fredericksburg and Greater Richmond regional labor markets.

### **4.9.2 Economy**

Historically, Caroline County's major private industries have been tied directly to natural resources. These include agriculture and forestry products and nearly 51,604 acres of farmland. Principal crops are soybeans, wheat, barley and corn. There are over 261,700 acres of commercial forestland, which predominantly include loblolly pine, short leaf pine, oak and hickory. Significant mineral resources include sand, gravel, clay, mica and beryl. In addition to the expansion of some resource-based industries, Caroline County is seeing a new wave of activity from a variety of businesses and industries and growth in Caroline County has significantly changed in recent years.

The population areas surrounding Fort A. P. Hill tend to have lower incomes than Virginia residents as a whole; however, this fact most likely reflects the rural nature of the county and the lag in growth compared to its more rapidly urbanizing neighbors such as Stafford and Spotsylvania Counties.

### **4.9.3 Protection of Children**

Executive Order 13045 seeks to protect children from disproportionately incurring environmental health or safety risks that might arise as a result of installation policies, procedures, programs, activities and standards. The training lands and ranges of Fort A. P. Hill are restricted to authorized personnel only and access is limited, excluding the entry of unauthorized adults and children.

## **4.10 Environmental Justice**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires Federal agencies to identify and address disproportionate adverse effects of their programs, policies and activities on minority and low-income populations.

The Region of Influence (ROI) for this proposed action lies within the confines of Fort A. P. Hill. The training mission applies only to facilities that lie within the installation boundaries and has no applicability to resources that are located on lands outside Fort A. P. Hill. No low income or minority populations exist on the installation or immediately adjacent to the site.

#### ***4.11 Infrastructure and Utilities***

Existing infrastructure on the proposed AWG range sites consists of gravel roads and unimproved trails. Utilities, including water, sewer, power, and communications lines, run along main roadways throughout Fort A. P. Hill, but these utilities do not currently exist on the proposed sites.

#### ***4.12 Hazardous Materials/Wastes***

##### ***4.12.1 Hazardous Materials/Wastes***

Hazardous materials used on the existing range sites are handled within the guidelines provided by the Department of the Army. Hazardous wastes are not generated at any of these sites. Fort A. P. Hill has an on-going contract for collection and disposal of any regulated and hazardous waste generated on the installation. Hazardous and regulated materials and wastes on Fort A. P. Hill are regulated by Army Regulation (AR 200-1) and any other applicable state and local laws and regulations. Fort A. P. Hill follows Department of the Army pollution prevention and recycling methods wherever applicable.

##### ***4.12.2 Regulated Materials/Wastes***

Current use of Training Areas 22B and 25C and Ranges 33 and 34 and the surrounding land does not include generation of regulated waste. Fort A. P. Hill currently has a contract for collection and disposal of regulated waste generated on post.

---

## **SECTION 5.0**

### **5.0 ENVIRONMENTAL CONSEQUENCES**

#### **5.1 Land Use**

##### **5.1.1 Effects of the Preferred Alternative**

Current land use on all of the proposed range sites, Training Areas 25C and 22B, and Ranges 33 and 34, includes military operations and training. While the type of training conducted on the proposed demolition and indoor training range sites would change, the property has long been established as a training area within the confines of Fort A. P. Hill and would continue to be used for military training. Training on Ranges 33 and 34 includes small arms weapons firing and the proposed location of the 800-meter range is on land between these two ranges. No significant impact to land use is anticipated due to the proposed actions.

##### **5.1.2 Effects of the No Action Alternative**

The No Action Alternative would have no impact to land use because the sites would not be used for establishment of the AWG Ranges. The land would remain as wooded, unimproved property or pre-existing ranges used for military training.

#### **5.2 Air Quality**

##### **5.2.1 Effects of the Preferred Alternative**

Air impacts from the proposed action would include short-term, temporary emissions from construction equipment operation, the removal of trees and grubbing of stumps and possible fugitive dust from vehicle movement. During construction, all fugitive dust would be kept at a minimum using control methods recommended under the Virginia Air Quality Regulations, such as wetting roadways and construction entrances. During site operations, fugitive dust would be kept at a minimum through the use of operational controls such as limiting vehicle speed.

Training operations at the AWG range sites would be short-term and localized. There are no regulatory emissions restrictions for the proposed training at the AWG range sites.

No significant effects to air quality are anticipated by construction and operation of the AWG Ranges.

##### **5.2.2 Effects of the No Action Alternative**

The No Action Alternative would have no impact to air quality because the sites would not be used for establishment of the ranges. Existing conditions would continue.

## 5.3 Noise

### 5.3.1 Effects of the Preferred Alternative

Noise would be generated within the AWG Ranges during construction and during AWG training operations. Construction noise would be short-term and localized mainly due to construction of the indoor range and grading of the 800-meter range. Noise during training would include detonations from 1 to 10 pound charges on the demolition range, and small arms firing at the 800-meter range.

The U. S. Army Center for Health Promotion and Preventive Medicine (CHPPM) was tasked with modeling the potential noise contours created by proposed weapons firing and training operations within the AWG Ranges and comparing them to existing noise levels. Figure 12 shows the future large caliber weapons noise contours including the AWG demolition range. The LUPZ extends beyond the northern boundary approximately 3,800 meters, beyond the eastern boundary less than 2,000 meters and beyond the southern boundary less than 1,200 meters. NZ II extends beyond the northern boundary less than 900 meters, beyond the eastern boundary less than 200 meters and beyond the southern boundary less than 300 meters. NZ III does not extend beyond the boundary.

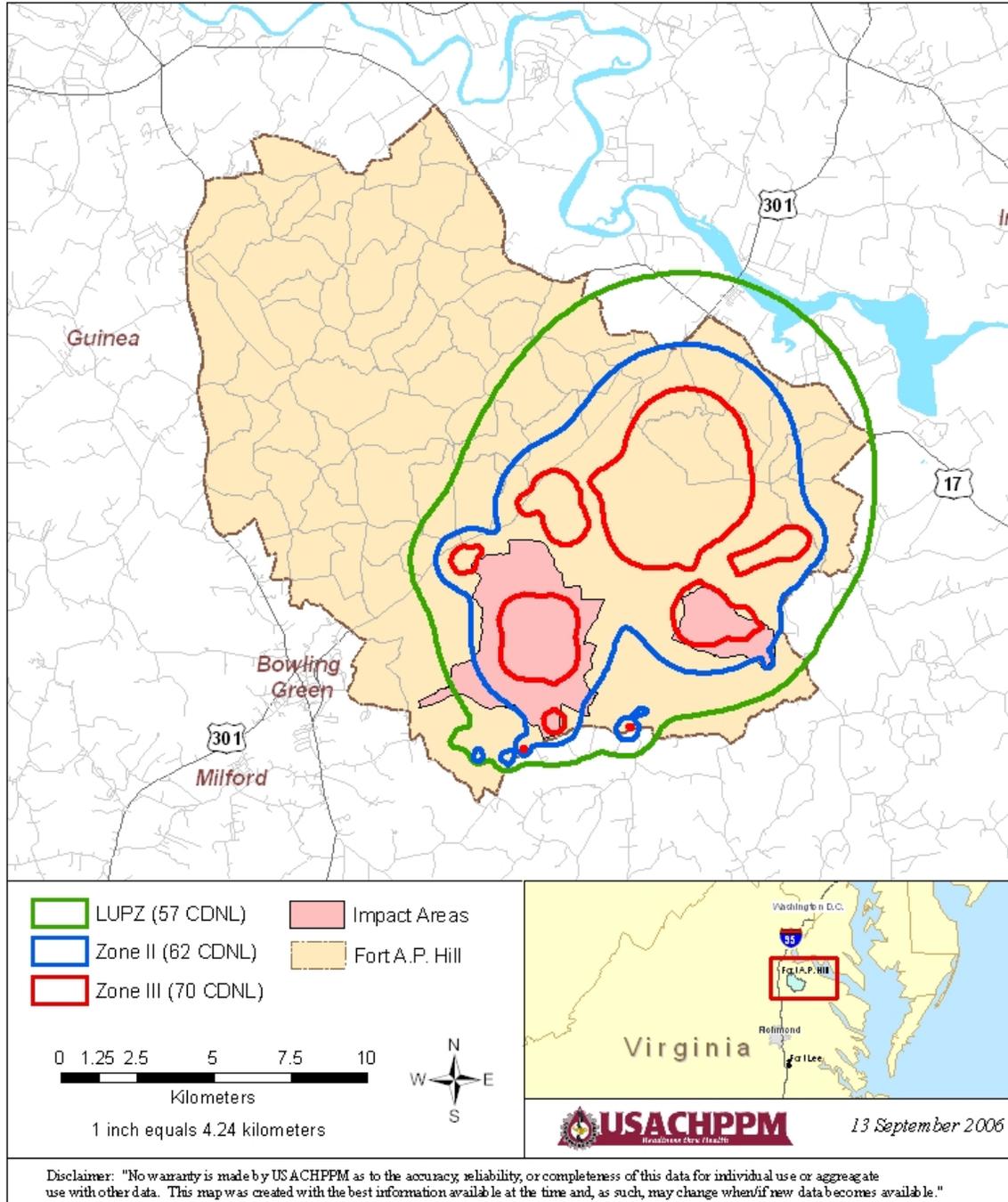
Small caliber weapons noise contours for the future small arms operations including the AWG 800 meter range are shown on Figure 13. NZ II extends beyond the eastern boundary approximately 1,100 meters, beyond the southern boundary between 700 and 1,700 meters and beyond the western boundary less than 1,200 meters. NZ III extends beyond the southern boundary less than 400 meters.

Noise at the indoor firing range will be contained within the range building once construction is completed.

Future PK15(met) noise contours reflecting the addition of the AWG demolition range are shown in Figure 14 . The AWG demolition range would create a slight difference to the existing PK15(met) noise contours at the northern boundary near U.S. Highway 17. Both the existing and the future contours indicate a moderate probability of receiving noise complaints.

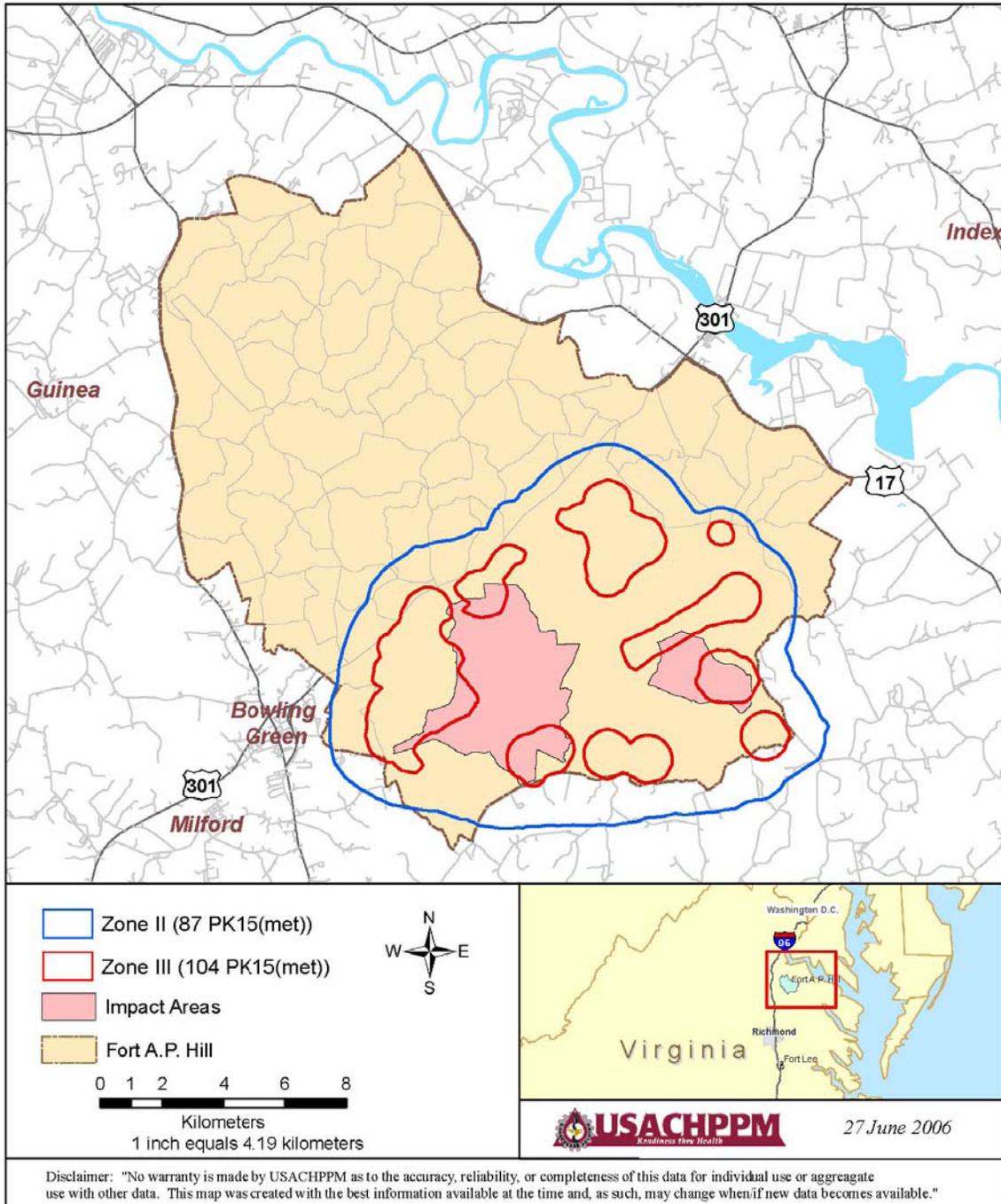
Noise complaints would be investigated and mitigated in accordance with the Fort A. P. Hill policy to promote an open dialogue with the local community. If necessary, Fort A.P. Hill would expand the perimeter noise monitoring system to add a noise monitor in the area of concern. The monitors would allow the installation to evaluate operations under varied weather conditions and assess how noise levels may impact neighbors off-post. Mission permitting, locations and/or scheduling of training activities may possibly be adjusted to lower off-post noise levels. The installation would continue to promote an open dialogue with neighboring localities, to include re-zoning reviews, education and outreach with local communities, and a comprehensive, proactive noise complaint management program.

FORT A.P. HILL  
 FUTURE LARGE CALIBER  
 AWG DEMOLITION RANGE  
 OPERATIONAL NOISE CONTOURS



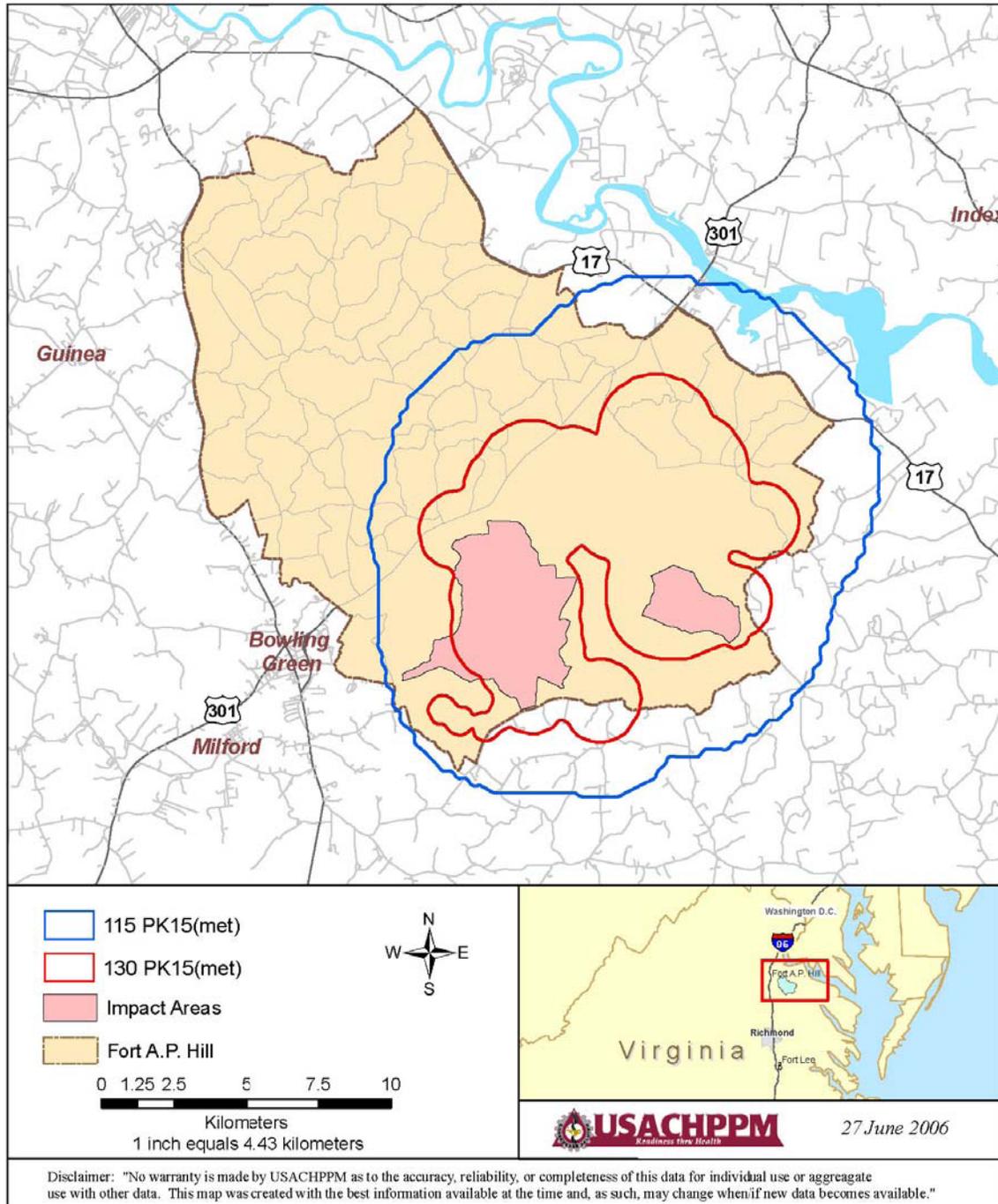
**Figure 12. Future Large Caliber Noise Contours Including AWG Demolition Range**

FORT A.P. HILL  
 FUTURE SMALL CALIBER  
 AWG 800 METER FLAT RANGE  
 OPERATIONAL NOISE CONTOURS



**Figure 13. Future Small Caliber Noise Contours Including AWG 800-Meter Range**

FORT A.P. HILL  
 FUTURE LARGE CALIBER  
 AWG DEMOLITION RANGE  
 OPERATIONAL PK15(met) NOISE CONTOURS



**Figure 14. Future Large Caliber Operational PK(met) Noise Contours**

### **5.3.2 Effects of the No Action Alternative**

The No Action Alternative would have no new impact to noise because the sites would not be used for establishment of the AWG Ranges. Existing conditions would continue.

## **5.4 Soils and Vegetation**

### **5.4.1 Effects of the Preferred Alternative**

An erosion and sediment control plan, generated in accordance with the latest local, state and federal requirements would be developed, reviewed and implemented prior to construction. Site topography varies on each proposed site from moderately hilly to very hilly. The 800-meter range would require heavy site development; however, existing topography would be used whenever possible. The demolition range would require heavy site development. However, the intent is to sculpt a clearing area which retains existing features as much as possible. Existing topography would be followed wherever possible so that excavation and grading would be minimal.

Vegetation would be removed during construction to provide space for necessary infrastructure and targetry. Some impacts to vegetation would occur during timbering, clearing and grubbing of the proposed range sites. However, clear cutting would be avoided wherever possible and selective cutting and tree removal would be completed in accordance with the Fort A. P. Hill Integrated Natural Resources Management Plan (INRMP). Timbering provides funds to the county through the Army Timber Management Fund. Because each site is greater than five acres, Fort A.P. Hill would obtain storm water construction permit coverage for these projects under the Virginia Stormwater Management Program (VSMP) and Chesapeake Bay Local Assistance Department (CBLAD). Fort A. P. Hill would prepare and implement a storm water pollution prevention plan in accordance with the VSMP Regulation for land disturbing activities. Impacts to vegetation would not be significant.

### **5.4.2 Effects of the No Action Alternative**

The No Action Alternative would have no impact to vegetation because the sites would not be used for establishment of the AWG Ranges. Existing conditions would continue.

## **5.5 Water Resources**

### **5.5.1 Effects of the Preferred Alternative**

Because of very sandy soils being located on each proposed site, natural infiltration would be used for storm water drainage. For the period of construction, Fort A. P. Hill would prepare and implement an erosion and sediment control plan and storm water management plan in accordance with the Virginia Stormwater Management Program and the CBLAD Regulations. In addition, Fort A.P. Hill has obtained storm water construction permit coverage for this project

under the VSMP Regulation. Fort A.P. Hill would prepare and implement a Storm Water Pollution Prevention Plan in accordance with the VSMP Regulation.

Wetlands delineations, conducted in April and June 2006, identified wetland areas within the proposed AWG range sites; however, the majority of each of the three proposed sites is non-wetland. Fort A. P. Hill policy is to avoid and protect wetlands through the use of a 100 foot buffer zone around planned activities. While all proposed range construction and training operations are expected to occur outside of this protective buffer zone, any wetland impacts would be mitigated and documented according to local, state, and federal regulations.

Based on local topography and stream networks, excavation depths for range construction and storm water drainage are not expected to encroach upon groundwater levels at the proposed ranges. Training operations would not involve the need for any water. To protect groundwater from possible spills, the construction contractor and the AWG would maintain spill control equipment on range sites during construction and operational use. The proposed actions would not be expected to impact groundwater.

Initially, no drinking water would be provided to the demolition and 800-meter range sites. Drinking water in these areas would be provided by water buffalos and personal canteens. Portable toilets would be placed on these sites. These sites may be upgraded at a later date to add latrines and drinking water. Water lines currently exist along North Range Road which runs south of the proposed demolition range and South Range Road which runs west of the proposed 800-meter range. The indoor range will contain a latrine with drinking water lines supplied from main waterlines which currently exist along Lee Drive.

### ***5.5.2 Effects of the No Action Alternative***

The No Action Alternative would have no impact to water resources, including surface water, wetlands, storm water, groundwater and drinking water because the sites would not be used for establishment of the AWG ranges. Existing conditions would continue.

## ***5.6 Biological Resources***

### ***5.6.1 Effects of the Preferred Alternative***

Threatened and endangered species surveys performed in May and June 2006 found no threatened or endangered species on any of the proposed range sites. Survey recommendations for these proposed areas included a statement that construction would follow the flattest terrain along the ridgeline to minimize impacts to future potential habitats.

### ***5.6.2 Effects of the No Action Alternative***

The No Action Alternative would have no impact to biological resources because these sites would not be used for establishment of the AWG ranges. Existing conditions would continue.

## **5.7 Cultural Resources**

### **5.7.1 Effects of the Preferred Alternative**

A Phase I Cultural Resources Survey performed in April 2006 identified two archaeological sites (44CE0465 and 44CE0464) on the proposed 800-meter range and two archaeological sites (44CE0462 and 44CE0463) on the proposed demolition range. On the demolition range site, Site 44CE0463 was recommended as eligible for inclusion in the NRHP and Site 44CE0462 was recommended as not eligible. On the 800-meter range site, Site 44CE0464 was recommended as not eligible for inclusion in the NRHP, while additional archaeological investigations were recommended at Site 44CE0465 if the site cannot be avoided during construction. Cultural resources on the two proposed ranges identified during this survey would be avoided during construction and operation. In a letter to Fort A. P. Hill dated 21 July 2006, the Virginia Department of Historic Resources/State Historic Preservation Officer concurred with the recommendations for these four sites and agreed that no further work is necessary if the sites are avoided during construction.

A Phase I Cultural Resources Survey performed in May 2006 identified three archaeological sites (44CE0466, 44CE0467, and 44CE0468) on the proposed indoor firing range site at Training Area 22B which includes the site for the proposed indoor firing range. All three sites are recommended as not eligible for inclusion in the NRHP. No further archaeological investigations will be completed on these resources as they will be avoided during construction

### **5.7.2 Effects of the No Action Alternative**

The No Action Alternative would have no impact to cultural resources because these sites would not be used for establishment of the AWC. Existing conditions would continue.

## **5.8 Socioeconomic Resources**

### **5.8.1 Effects of the Preferred Alternative**

Use of the proposed AWG Ranges could bring as many as 400 soldiers to Fort A. P. Hill annually. The AWG currently uses other facilities and training areas on Fort A. P. Hill and soldiers would also use the proposed AWC. During training at the ranges, soldiers would stay on post and spend a minimal amount of time and money in the local economy. However, by providing realistic training that meets military standards, Fort A. P. Hill can ensure regular use of the installation by Army, Reserve and National Guard units and other governmental law enforcement agencies. The economy of Caroline County benefits from the regular influx of troops using the post. Soldiers typically spend some money in the local economy.

Funds generated from the sale of training area timber harvesting are shared with Caroline County as a regular part of the Army Timber Management Fund. These funds help to support the local school system as well as other county programs.

The AWG Ranges would be fenced and restricted to authorized personnel only; therefore, the proposed action would have no effect on children. There would be no significant impact to socioeconomic resources due to establishment of the AWG Ranges on Fort A. P. Hill.

### ***5.8.2 Effects of the No Action Alternative***

The No Action Alternative would have no impact to socioeconomic resources because the site would not be used for establishment of the AWG Ranges. Existing conditions would continue.

## ***5.9 Environmental Justice***

### ***5.9.1 Effects of the Preferred Alternative***

Existing conditions at Fort A. P. Hill would continue under the proposed action. Construction and operation of the proposed ranges does not create any advantage or disadvantage for any group or individual, and their use would not create any adverse human health or environmental effects on children, minorities or low-income populations or communities within or surrounding the installation. The AWG Range operations and activities would be completely within the existing boundaries of Fort A. P. Hill.

### ***5.9.2 Effects of the No Action Alternative***

The No Action Alternative would have no disproportionate or adverse impacts or environmental or social effects on minority and low-income populations. Existing conditions would continue.

## ***5.10 Infrastructure and Utilities***

### ***5.10.1 Effects of the Preferred Alternative***

Infrastructure to support the AWG Ranges would include improved (gravel surfaced) and unimproved roads, parking areas, concrete block buildings and latrines. On-site utilities would tie into existing utility lines, which run along Lee Drive, North Range Road and South Range Road. Electrical power is the only utility necessary for the demolition range and the 800-meter firing range. Electricity, water and sewer would be supplied to the indoor range. Communication lines would be supplied to all of the ranges. On-site communication lines would tie into existing communication lines, which run along Lee Drive, North Range Road and South Range Road.

Except for existing roadways, infrastructure would be constructed on the proposed sites where only wooded areas currently exist. However, this new infrastructure would be consistent with buildings and roadways that exist throughout the installation. Existing topography would be followed wherever possible so that excavation and grading would be minimal. No significant impact to existing post infrastructure is anticipated due to the proposed action.

### ***5.10.2 Effects of the No Action Alternative***

Under the No Action Alternative there would be no additional infrastructure added to Fort A. P. Hill and existing conditions would continue.

## ***5.11 Hazardous Materials/Wastes***

### ***5.11.1 Effects of the Preferred Alternative***

Minimal amounts of hazardous materials would be used during normal military training operations for explosives training and weapons cleaning. These materials and any wastes generated would be handled, stored and disposed of in accordance with federal, state and Army regulations and requirements. Fort A. P. Hill would provide disposal for all AWG wastes through existing contracts. Fort A. P. Hill also has a program for recycling and pollution prevention which would apply to the AWG.

### ***5.11.2 Effects of the No Action Alternative***

The No Action Alternative would involve no hazardous materials and wastes on the proposed AWG Ranges. Existing conditions would continue.

## ***5.12 Mitigation Measures***

Air emissions would be temporary either during construction or during short duration training exercises. The indoor firing range will contain HEPA filters and capture any emissions prior to leaving the ventilation system. All new emissions equipment would be added to the Fort A. P. Hill Air Emissions Permit. Sources are monitored by the Fort A. P. Hill Environmental Division staff.

Noise complaints would be investigated and mitigated in accordance with the Fort A. P. Hill policy. If necessary, Fort A.P. Hill would expand the perimeter noise monitoring system to add a noise monitor in the area of concern. The monitors would allow the installation to evaluate operations under varied weather conditions and assess how noise levels may impact neighbors off-post. Mission permitting, locations and/or scheduling of training activities may possibly be adjusted to lower off-post noise levels. The installation would continue to promote an open dialogue with neighboring localities, to include re-zoning reviews, education and outreach with local communities, and a comprehensive, proactive noise complaint management program.

Vegetation removal would be done in accordance with the Fort A. P. Hill Integrated Natural Resources Management Plan. Existing topography would be followed wherever possible so that excavation and grading would be minimal.

Eligible cultural resources identified during the survey would be avoided during construction and operation of the AWG Ranges.

### ***5.13 Secondary and Cumulative Effects***

A cumulative effect is defined as an effect on the environment that results from the incremental effect of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes these actions. Cumulative effects can result from individually minor but collectively significant actions taking place locally or regionally over a period of time.

The proposed AWG Ranges would be constructed on pre-existing training and range areas within an active Army training installation. Future proposed activities at Fort A. P. Hill include construction of a training complex for use by the AWG. Other future activities include relocation of Fort Lee training activities to Fort A. P. Hill within the next 24 months. These relocation activities are being addressed in a separate Environmental Impact Statement (EIS). At this time, there are no plans to change the current use of the property contained within Fort A. P. Hill. All proposed range construction and military training activities are within the current mission of Fort A. P. Hill. The Preferred Alternative is not anticipated to have any significant secondary or cumulative effects on Fort A. P. Hill or the surrounding area of Caroline County.

## **SECTION 6.0**

### **6.0 CONCLUSIONS**

Construction and use of the AWG Ranges at Fort A. P. Hill would not result in significant environmental or socioeconomic impacts. Army regulations, management plans and environmental requirements implemented by Fort A. P. Hill would ensure activities are in compliance with all applicable federal and state and local laws, regulations, Executive Orders, Presidential Memoranda and Army guidelines. Mitigation measures implemented prior to construction and land disturbing activities and use of the AWG Ranges would minimize or prevent significant impact to environmental resources. Air emissions would be permitted and monitored. Noise complaints would be investigated and mitigated as necessary under the Fort A. P. Hill policy to have an open dialogue with the surrounding county and communities. Local socioeconomics would be enhanced through the Army Timber Management Fund which provides resources for Caroline County schools and other programs. Existing topography would be followed wherever possible so that excavation and grading would be minimal. Wetlands were identified on the proposed range sites but are expected to be avoided; therefore, there would be no impact to these resources. Any unavoidable impacts to wetlands would be permitted in accordance with applicable federal, state and local laws and regulations. Eligible cultural resources would be avoided during construction and operations.

As a result of the analyses performed by this EA, it has been determined that the known and potential impacts of the Preferred Alternative on the physical and socioeconomic environment would not be significant. Based on the findings and conclusions in this EA, issuance of a Finding of No Significant Impact (FONSI) would be appropriate and preparation of an Environmental Impact Statement (EIS) would not be required.

---

## **SECTION 7.0**

### **7.0 REFERENCES**

- AR 200-1, Army Regulation 200-1, *Environmental Protection and Enhancement*. 21 February 1997.
- AR 200-3, Army Regulation 200-3. *Environmental Quality. Natural Resources Land, Forest and Wildlife Management*. February 1995.
- AR 200-4, Army Regulation 200-4, *Cultural Resources Management*. 1 October 1998.
- Brown, Kristine. Proposed AWG 800 Meter Range Construction: Protected Plant Survey. 21 June 2006.
- Brown, Kristine. Proposed AWG Demolition Range Construction: Protected Plant Survey. 9 June 2006.
- Code of Federal Regulations 32 CFR Part 651 (to be published as AR 200-2), *Environmental Analysis of Army Actions*. 29 March 2002.
- Fort A. P. Hill, DD1391 AWG Demolition Range, Revision Date 30 Nov 2005.
- Fort A. P. Hill, DD1391 AWG Indoor Range, Revision Date 03 Nov 2005.
- Fort A. P. Hill, DD1391 AWG 800 Meter Range, Revision Date 29 Nov 2005.
- Fort A. P. Hill Public Affairs Office. *New Warfare Group Plans Training Complex at Fort A. P. Hill*. Media Release. 20 July 2005.
- Grossman, Elaine. *Army to Create 'Asymmetric Warfare Group' to Prepare for New Threats*. Inside Washington Publishers. 8 July 2004.
- Lovelace, Jr., James J. and Joseph L. Votel. *The Asymmetric Warfare Group: Closing the Capability Gaps*. The U. S. Army Professional Writing Collection. Army Magazine, March 2004.
- McDonald, Brad and Robert Clarke. Phase 1A Archaeological Reconnaissance of the Proposed 800 Meter Range and a Phase I Archaeological Survey of the Proposed Demo Range Area, Fort A. P. Hill, Caroline County, Virginia. (prepared by Gray and Pape, Inc.). 16 June 2006.
- McDonald, Brad and Robert Clarke. Draft Report, Phase I Archaeological Survey of the Proposed Asymmetric Warfare Group (AWG) Training Facility, Fort A. P. Hill, Caroline County, Virginia. (prepared by Gray and Pape, Inc.). 28 July 2006.

- Paciulli, Simmons and Associates, Ltd., Preliminary Wetland Delineation, AWG 800 Meter Project Site, Fort A. P. Hill, Virginia. April 2006.
- Paciulli, Simmons and Associates, Ltd., Preliminary Wetland Delineation, AWG Training Area 22B Project Site, Fort A. P. Hill, Virginia. June 2006.
- Paciulli, Simmons and Associates, Ltd., Preliminary Wetland Delineation, AWG Training Area 25 Project Site, Fort A. P. Hill, Virginia. April 2006.
- Socioeconomics of Caroline County, Virginia. <http://www.co.caroline.va.us/demographics.html>  
Website visited 18 October 2005.
- U. S. Army Center for Health Promotion and Preventive Medicine. *Environmental Noise Management Plan, Fort A. P. Hill, Bowling Green, Virginia*. December 1999.
- U. S. Army Center for Health Promotion and Preventive Medicine. Operational Noise Consultation No. 52-ON-04ER-06 for the Proposed Asymmetrical Warfare Group, November 2005.
- U. S. Army Center for Health Promotion and Preventive Medicine. Addendum to Operational Noise Consultation No. 52-ON-04ER-06 for the Proposed Asymmetrical Warfare Group, November 2005. 6 July 2006.
- Weldon Cooper Center for Public Service, Demographics and Workforce, Population Estimates. [http://www3.ccps.virginia.edu/demographics/estimates/2005/2005\\_estimates\\_Virginia.xls](http://www3.ccps.virginia.edu/demographics/estimates/2005/2005_estimates_Virginia.xls), website visited 8 May 2006.

---

## **SECTION 8.0**

### **8.0 LIST OF PREPARERS**

#### **Fort A. P. Hill**

Ms. Terry Banks, Chief, Environmental Division  
Ms. Kristine Brown, NEPA Coordinator  
Department of the Army  
Environmental Division  
19952 North Range Road  
Fort A. P. Hill, VA 22427-3123

#### **Asymmetric Warfare Group**

Randy Brumit, CW4 (Ret.)  
Randy Curtis  
2282 Morrison Street  
Fort Meade, MD 20755-5355

#### **Natural Alternatives LLC**

Eileen Williams, President  
8070 Bradbury Road  
Richmond, VA 23231

#### **Marshall Miller and Associates**

Eric Powers, Senior Scientist  
11277 Airpark Road  
Ashland, VA 23838

## **SECTION 9.0**

### **9.0 AGENCIES AND INDIVIDUALS CONSULTED**

Department of the Army  
Center for Health Promotion and Preventive Medicine  
5158 Blackhawk Road  
Aberdeen Proving Ground, MD 21010  
William Russell, Operational Noise Program  
Kristy Broska, Operational Noise Program

Department of Environmental Quality  
629 East Main Street  
Richmond, VA 23219  
Ellie Irons, Office of Environmental Impact Review  
Michelle Henicheck, Office of Wetlands, Water Protection and Compliance  
Allen Brockman, Waste Division  
Kotur Narasimhan, Division of Air Program Coordination

Department of Environmental Quality  
Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193  
John Bowden, Northern Virginia Regional Office

Department of Conservation and Recreation  
203 Governor Street  
Richmond, VA 23219  
John Davy, Planning and Recreation Resources  
Nancy VanAlstine, Division of Natural Heritage

Department of Conservation and Recreation  
101 N. 14<sup>th</sup> Street, 17<sup>th</sup> Floor  
Richmond, Virginia 23219  
Alice Baird, Chesapeake Bay Local Assistance Board

Department of Forestry  
900 Natural Resources Drive  
Charlottesville, VA 22903  
Michael Foreman, Division of Forest Management

Department of Game and Inland Fisheries  
4010 West Broad Street  
Richmond, VA 23230  
Raymond Fernald, Division of Project Review

---

Department of Historic Resources  
2801 Kensington Avenue  
Richmond, VA 23221  
Marc Holma, Division of Project Review

***APPENDIX A***  
***ACRONYMS AND ABBREVIATIONS***

APE	Area of Potential Effect
AR	Army Regulation
AWC	Asymmetric Warfare Complex
AWG	Asymmetric Warfare Group
BMPs	Best Management Practices
CAAA	Clean Air Act Amendments
CBLAB	Chesapeake Bay Local Assistance Board
CEQ	Council of Environmental Quality
CHPPM	Center for Health Promotion and Preventive Medicine
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
ED	Environmental Division
ENMP	Environmental Noise Management Plan
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
IED	Improvised Explosive Device
INRMP	Integrated Natural Resources Management Plan
MDW	Military District Washington
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NZ	Noise Zone
PK	Peak Level
TTP	Tactics, Techniques and Procedures
ROI	Region of Influence
VDEQ	Virginia Department of Environmental Quality
VPDES	Virginia Pollution Discharge Elimination System

***APPENDIX B***  
***AGENCY CORRESPONDENCE***



## COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.  
Secretary of Natural Resources

**Department of Historic Resources**  
2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick  
Director

Tel: (804) 367-2323  
Fax: (804) 367-2391  
TDD: (804) 367-2386  
www.dhr.virginia.gov

July 21, 2006

Ms Terry Banks  
Department of the Army  
US Army Garrison, Fort A. P. Hill  
1995 North Range Road  
Fort A. P. Hill, Virginia 22427-3123

Re: Proposed 800-Meter Range  
Ft. A. P. Hill, Caroline County  
DHR File No. 2006-1038

Dear Ms. Banks:

We have received for our review and comment the report titled *PHASE IA ARCHAEOLOGICAL RECONNAISSANCE OF THE PROPOSED 800 METER RANGE AND A PHASE I ARCHAEOLOGICAL SURVEY OF THE PROPOSED DEMO RANGE AREA, FORT A.P. HILL, CAROLINE COUNTY, VIRGINIA* prepared by Gray & Pape, Inc. We are pleased to inform you that the report meets the *Secretary of the Interior's Standards and Guidelines for the Documentation of Archaeological Sites* (48 FR 44734-44742) and our Department's *Survey Guidelines* (revised 2003). The survey documented four archaeological sites and three artifact locations. The locations are, by definition, not eligible for listing on the National Register of Historic Places and no further work is warranted at these resources.

The Phase IA survey of the 800 Meter Range was limited to surface collection because of the presence of unexploded ordnance. This survey identified two archaeological sites on the surface. Site 44CE464 is the remains of a 20<sup>th</sup> century domestic site. The consultant recommends that this site be found not eligible for listing on the National Register and we concur. No further work is warranted. Site 44CE465 is the remains of a Woodland period Native American site. Due to the limited scope of this survey, the consultant did not offer an eligibility recommendation, but proposes that this site receive additional survey in the form of systematic shovel testing. We concur with this recommendation; however, we understand that site 44CE465 will be avoided and protected during construction and, as such, requires no further study at this time. If future projects threaten this site, additional work may be necessary.

Administrative Services  
10 Courthouse Avenue  
Petersburg, VA 23803  
Tel: (804) 863-1624  
Fax: (804) 862-6196

Capital Region Office  
2801 Kensington Ave.  
Richmond, VA 23221  
Tel: (804) 367-2323  
Fax: (804) 367-2391

Tidewater Region Office  
14415 Old Courthouse Way, 2<sup>nd</sup> Floor  
Newport News, VA 23608  
Tel: (757) 886-2807  
Fax: (757) 886-2808

Roanoke Region Office  
1030 Penmar Ave., SE  
Roanoke, VA 24013  
Tel: (540) 857-7585  
Fax: (540) 857-7588

Winchester Region Office  
107 N. Kent Street, Suite 203  
Winchester, VA 22601  
Tel: (540) 722-3427  
Fax: (540) 722-7535

Page 2

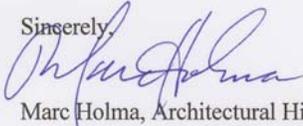
July 21, 2006

Ms Terry Banks

The Phase I survey of the Demo Range identified two archaeological sites. Site 44CE462 is the remains of a 20<sup>th</sup> century domestic site. The consultant recommends that this site be found not eligible for listing on the National Register and we concur. No further work is warranted. Site 44CE463 is the remains of a late 18<sup>th</sup> to mid 19<sup>th</sup> century site. Due to the rarity of historic sites of this age in the area and the potential for intact cultural features, the consultant recommends that this site be found eligible for listing on the National Register and we concur. Additional Phase II archaeological evaluation of the site is warranted; however we understand that site 44CE463 will be avoided and protected during construction and, as such, requires no further study at this time and that there are no historic properties that will be affected by this undertaking. However, if future projects threaten this site, additional work may be necessary.

If you have any questions please call me at (804) 367-2323, Ext. 114.

Sincerely,



Marc Holma, Architectural Historian  
Office of Review and Compliance

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

From: Nancy VanAlstine [<mailto:Nancy.VanAlstine@dcr.virginia.gov>]

Sent: Tuesday, September 19, 2006 8:56 AM

To: kristine.l.brown@us.army.mil

Cc: Bridget McGoldrick

Subject: Draft EA for Proposed Asymmetric Warfare Group Ranges

Hi Kristine: We have received a copy of the draft EA for the Proposed Asymmetric Warfare Group Ranges. Johnny Townsend, our staff botanist, is actually doing the review for botany but he asked me to look it over and I just have a few corrections/additions that I am sending to you and also bringing to the attention of our Environmental Review section.

The short paragraph on page 25, lines 8-11, relating to the proposed project (indoor range site) within TA 22B needs a correction. The survey for swamp pink was conducted 9-11 May 2006, but as the USFWS guideline for survey period for small whorled pogonia from Caroline County and north is June 1-July 20, I did not conduct the SWP survey in the project area north of Mill Creek until June 14 (the day after you and I surveyed south of Mill

Creek.) I found a limited amount of appropriate habitat in the area north of Mill Creek and no small whorled pogonia.

Also, I guess, from the date on the front cover, this was sent out before I did last week's New Jersey Rush survey. So I recommend adding a sentence along the lines of: "Habitat for New Jersey Rush (*Juncus caesariensis*) was present along a small tributary drainage within the project area and in small patches along the project area's southern boundary along Mill Creek.

The Virginia Department of Conservation and Recreation's Division of Natural Heritage conducted a survey in these areas on 13 September 2006 and no New Jersey Rush was found."

Thanks,

Nancy

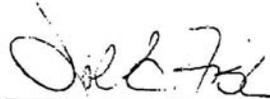
If you cannot meet the deadline, please notify JOHN FISHER at 804/698-4339 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.
- C. Use your agency stationery or the space below for your comments. IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.

Please return your comments to:

→ MR. JOHN E. FISHER  
 DEPARTMENT OF ENVIRONMENTAL QUALITY  
 OFFICE OF ENVIRONMENTAL IMPACT REVIEW  
 629 EAST MAIN STREET, SIXTH FLOOR  
 RICHMOND, VA 23219  
 FAX #804/698-4319

  
 \_\_\_\_\_  
 JOHN E. FISHER  
 ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

We have been in consultation directly with the Army regarding this project and concurred with their "no effect" determination.

(signed)  (date) 9-8-06  
 (title) ARCHAEOLOGIST  
 (agency) DNR (FILE # 2006-1038)

PROJECT # 06-151F

8/98



*COMMONWEALTH of VIRGINIA*

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

*Street address:* 629 East Main Street, Richmond, Virginia 23219

*Mailing address:* P.O. Box 1105, Richmond, Virginia 23218

Fax (804) 698-4500 TDD (804) 698-4021

[www.deq.virginia.gov](http://www.deq.virginia.gov)

L. Preston Bryant, Jr.  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

October 25, 2006

Ms. Terry Banks  
Chief, Environmental and  
Natural Resource Division  
U.S. Army Garrison  
Fort A.P. Hill  
19952 North Range Road  
Fort A.P. Hill, Virginia 22427-3123

RE: Environmental Assessment and Federal Consistency Determination for the  
Asymmetric Warfare Group Ranges, Fort A.P. Hill, Caroline County, Virginia (DEQ  
06-151F).

Dear Ms. Banks:

The Commonwealth of Virginia has completed its review of the above-referenced Environmental Assessment (hereinafter "EA"), which includes a federal consistency determination. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act and responding to appropriate federal officials on behalf of the Commonwealth. DEQ is also responsible for coordinating state reviews of federal consistency determinations submitted under the Coastal Zone Management Act. The following agencies joined in this review:

Department of Environmental Quality  
Department of Conservation and Recreation  
Department of Game and Inland Fisheries  
Marine Resources Commission  
Department of Agriculture and Consumer Services  
Department of Forestry  
Department of Historic Resources

Caroline County and the RADCO Planning District Commission were also invited to comment.

Ms. Terry Banks  
Page 2

### **Project Description**

The U.S. Army proposes to construct and operate a demolition range, an 800-meter firing range, and an indoor firing range at Fort A.P. Hill in Caroline County. The demolition range is proposed for land in the eastern portion of the post within the existing Training Area 25C southeast of Route 301 and adjacent to North Range Road. The 225-acre range would be used to train soldiers the techniques of handling and exploding light explosives charges up to 10 pounds TNT-equivalent. The proposed 800-meter firing range would be constructed on 226 acres between existing Ranges 33 and 34. The flat range would provide capabilities for 10 shooters using a fixed firing line. The indoor firing range is proposed for land within the planned Asymmetric Warfare Complex (AWC) located on Training Area 22B east of Longstreet Camp in the northwestern portion of the Fort. The range would consist of a building and support structures on a portion of the 450-acre AWC site.

### **Environmental Impacts and Mitigation**

**1. Water Quality & Wetlands.** The EA states (page 41) that existing topography would be followed wherever possible so the excavation and grading would be minimal. Vegetation removal would be done in accordance with the Fort A.P. Hill Integrated Natural Resources Management Plan.

According to the document (page 38), wetland delineations, conducted in April and June 2006, identified wetland areas within the proposed AWG range sites, however, the majority of each of the three proposed sites is non-wetland. Fort A.P. Hill policy is to avoid and protect wetlands through the use of a 100-foot buffer zone around planned activities (EA, page 38).

### **Agency Comments**

Staff of the DEQ Northern Regional Office (NRO) note that if impacts to surface waters are proposed, a Virginia Water Protection Permit (VWPP) (9 VAC 25-210-50) would be required. Upon receipt of a Joint Permit Application (JPA) for the proposed surface water impacts, DEQ-VWPP staff will review the proposed project in accordance with VWPP regulations and current VWPP program guidance.

The Virginia Marine Resources Commission (VMRC) serves as the clearinghouse for the JPA used by the:

- U.S. Army Corps of Engineers (Corps) for issuing permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act;
- DEQ for issuance of a Virginia Water Protection Permit (VWPP);
- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands; and
- local wetlands board for impacts to wetlands.

Ms. Terry Banks  
Page 3

Any construction related to the proposed project with the potential to impact water quality, or wetlands, would require the submission of a JPA. If necessary, contact VMRC at (757) 247-2200 for a JPA. VMRC will distribute the application to the appropriate agencies. Each agency will conduct its review and respond.

Please note that the Commonwealth does not support the filling of wetlands, particularly when alternative sites have been identified. It is the policy of the Commonwealth of Virginia to first avoid impacts to wetlands before considering other mitigation measures such as minimization and compensation. The Virginia Water Protection Permit regulations state that "mitigation means sequentially avoiding and minimizing impacts to the extent practicable, and then compensating for remaining unavoidable impacts of a proposed action" (9 VAC 25-210-10). According to State Water Control Law § 62.1-44.15:5D, "...except in compliance with an individual or general Virginia Water Protection Permit issued in accordance with this subsection, it shall also be unlawful to conduct the following activities in a wetland: (i) new activities to cause draining that significantly alters or degrades existing wetland acreage or functions, (ii) filling or dumping, (iii) permanent flooding or impounding, or (iv) new activities that cause significant alteration or degradation of existing wetland acreage or functions. Permits shall address avoidance and minimization of wetland impacts to the maximum extent practicable. A permit shall be issued only if the Board finds that the effect of the impact, together with other existing or proposed impacts to wetlands, will not cause or contribute to a significant impairment of state waters or fish and wildlife resources."

Furthermore, Federal wetlands mitigation policy is guided by a Memorandum of Agreement between the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency that clarify a three-step approach to avoiding, minimizing, and compensating for unavoidable impacts (see Clean Water Act Section 404 (b)(1) *Guidelines Mitigation Memorandum of Agreement*, February 1990). The Corps first makes a determination that potential impacts have been avoided to the maximum extent practicable; remaining unavoidable impacts will then be mitigated to the extent appropriate and practicable by requiring steps to minimize impacts and, finally, compensate for aquatic resource values. This sequence is considered satisfied where the proposed mitigation is in accordance with specific provisions of a Corps and EPA approved comprehensive plan that ensures compliance with the compensation requirements of the 404(b)(1) Guidelines (examples of such comprehensive plans may include Special Area Management Plans, Advance Identification areas (Section 230.80), and State Coastal Zone Management Plans).

In general, DEQ recommends that the amount of stream and wetland impacts be avoided to the maximum extent practicable. For unavoidable impacts, DEQ encourages the following practices to minimize the impacts to wetlands and waterways:

- operation of machinery and construction vehicles outside of stream-beds and wetlands;
- use of synthetic mats when in-stream work is unavoidable;

Ms. Terry Banks  
Page 4

- stockpiling of material excavated from the trench for replacement if directional drilling is not feasible; and
- preservation of the top 12 inches of trench material removed from wetlands for use as wetland seed and root stock in the excavated area.

**2. Subaqueous Lands Impacts.** According to the analysis contained in the Federal Consistency Determination (EA, Appendix D, page 57), the AWG Ranges would have no foreseeable impact on subaqueous resources.

#### **Agency Comments**

The Virginia Marine Resources Commission (VMRC) did not indicate that the proposed action would impact subaqueous lands. VMRC has jurisdiction over any encroachments in, on, or over any State-owned rivers, streams, or creeks in the Commonwealth, pursuant to Section 28.2-1204 of the Code of Virginia. If any portion of the proposed project involves encroachment channelward of ordinary high water along natural rivers and streams, a permit may be required from VMRC.

Any construction related to the proposed project with the potential to impact subaqueous lands would require the submission of a JPA. If necessary, contact VMRC at (757) 247-2200 for a JPA.

**3. Erosion and Sediment Control and Stormwater Management.** According to the EA (page 37), the Army would prepare and implement erosion and sediment control and stormwater management plans in accordance with the Virginia Erosion and Sediment Control Law and Regulations, the Chesapeake Bay Local Assistance Board Regulations, and the Virginia Stormwater Management Law and Regulations. Furthermore, the Army has obtained stormwater construction permit coverage for this project under the Virginia Pollutant Discharge Elimination System (VPDES) regulation (EA, page 37).

#### **Agency Comments**

The Department of Conservation and Recreation's (DCR's), Division of Soil and Water Conservation did not respond to our request for comments on the proposal. However, based on available DCR guidance, federal agencies and their authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations (VSWML&R), and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act Section 313, Federal Consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, or other structures, soil/dredge spoil areas, or related land conversion activities that disturb 10,000 square feet or more (2,500 square feet or more in a Chesapeake Bay Preservation Area) would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. Accordingly, the Army should prepare

Ms. Terry Banks  
Page 5

and implement erosion and sediment control (ESC) and stormwater management (SWM) plans to ensure compliance with state law. The federal agency is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and/or other mechanisms, consistent with agency policy.

**4. Coastal Lands Management/Chesapeake Bay Preservation Act.** As noted above (3. Erosion and Sediment Control and Stormwater Management.), the consistency determination states that the Army would prepare and implement erosion and sediment control and stormwater management plans in accordance with the Chesapeake Bay Local Assistance Board Regulations.

#### **Agency Comments**

The DCR Division of Chesapeake Bay Local Assistance (DCBLA) notes that the EA (pages 22-23) states that nontidal wetlands have been field delineated and water bodies with perennial flow have been identified. The proposed activity would avoid impacts to wetlands and water bodies with perennial flow, through the imposition of a 100-foot buffer around these resources. In addition, as previously noted, the development of the facility will include preparation and implementation of an erosion and sediment control plan and stormwater management plan in accordance with the State erosion and sediment and stormwater management laws.

Based on the information contained in the EA, and provided the project adheres to the requirements of the Caroline County Chesapeake Bay Preservation Act (Bay Act) program, DCR-DCBLA finds the project would be consistent with the Chesapeake Bay Preservation Act (Virginia Code sections 10-1-2100 through 10.1-2114) and Chesapeake Bay Preservation Area Designation and Management Regulations (§9 VAC 10-20-10 et seq.). For additional information, contact Alice Baird, DCR-DCBLA, at (804) 225-2307.

**5. Air Pollution Control.** The EA (page 16) states that Caroline County is classified as an attainment area for National Ambient Air Quality Standards (NAAQS). The Army anticipates that project actions would not increase these pollutants above NAAQS levels. The Army intends to implement regulations for the control and abatement of air pollution to address fugitive dust emissions.

DEQ states that during construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and

Ms. Terry Banks  
Page 6

- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

If project activities include the burning of cleared vegetation or construction material, this activity must meet the requirements under 9 VAC 5-40-5600 *et seq.* of the Regulations for open burning, and it may require a permit. The Regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. The Army should contact Caroline County officials to determine what local requirements, if any, exist. For more information contact John Bowden, DEQ Northern Regional Office, (703) 583-3880, and Percy Ashcraft, Caroline County, (804) 633-5380.

**6. Solid and Hazardous Wastes and Hazardous Materials.** According to the EA (page 41), minimal amounts of hazardous materials would be used during normal military training operations for explosives training and weapons cleaning. The Army would provide disposal for all AWG wastes through existing contracts.

#### **Agency Comments**

DEQ found that Hazardous waste issues were briefly mentioned in the report. The report did not include a search of waste-related data bases. The Waste Division staff performed a cursory review of its data files and determined that Fort A. P. Hill (VA2210020416) is on the EPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list but is not on the National Priority (NPL). The facility is also a large quantity generator (LQG) and a former treatment, storage and disposal (TSD) site. The following solid waste facilities are located in the vicinity:

- Caroline County Landfill, permit GW 182, Sanitary LF;
- Caroline County Landfill, permit SWP 147, closed Sanitary LF;
- Caroline County Landfill, permit SWP 182, closed Sanitary LF;
- US Army-Fort A P Hill, permit SWP 332 closed Sanitary LF; and
- US Army-Fort A P Hill, permit SWP 393, closed construction and demolition debris (CDD) LF.

The following websites may prove helpful in locating additional information using these identification numbers: [http://www.epa.gov/echo/search\\_by\\_permit.html](http://www.epa.gov/echo/search_by_permit.html) or [http://www.epa.gov/enviro/html/rcris/rcris\\_query\\_java.html](http://www.epa.gov/enviro/html/rcris/rcris_query_java.html).

According to DEQ files, a total of five parcels from Fort A. P. Hill, totaling 1,271.34 acres, were disposed of by the Department of Defense (DoD) between 1953 and 1985. All of these parcels are located around the perimeter of the active installation. The location of the nearest formerly used defense site (FUDS) parcel to the nearest proposed project area exceeds three miles. According to the DoD, there is no known or suspected ordnance and/or hazardous waste on these FUDS parcels. However, please be aware that DEQ has not investigated this issue. Given the distances between the

Ms. Terry Banks  
Page 7

five FUDS parcels and the proposed ranges, it is highly unlikely that any historic practices at the FUDS are likely to impact the proposed range project areas.

Pollution prevention was addressed in the report. All solid wastes generated from project activities should be reduced at the source, reused, or recycled. All hazardous wastes should be minimized. For additional information, contact John Bowden, DEQ Northern Regional Office, (703) 583-3880

**7. Pesticides and Herbicides.** The use of herbicides or pesticides for landscape maintenance should be in accordance with the principles of integrated pest management. The least toxic pesticides that are effective in controlling the target species should be used. Please contact the Department of Agriculture and Consumer Services at (804) 786-3501 for more information.

**8. Forestry Resources.** The EA (page 37) states that clear cutting of the site would be avoided and selective cutting and tree removal would be completed in accordance with the Fort A. P. Hill Integrated Resources Management Plan and the Timber Management Plan. According to the EA, the Timber Management Plan complies with requirements of the Virginia Department of Forestry and the DCR Division of Chesapeake Bay Local Assistance.

#### **Agency Comments**

After review of the EA by the Department of Forestry, the agency does not anticipate that the proposed action would have significant adverse impacts on the forest resources of the Commonwealth. In order to protect trees from the effects of this project, the Army should mark and fence them at least to the dripline or the end of the root system, whichever extends farther from the tree stem. Marking should be done with highly visible ribbon so that equipment operators see the protected areas easily.

Parking and stacking of heavy equipment and construction materials near trees can damage root systems by compacting the soil. Soil compaction, from weight or vibration, affects root growth, water and nutrient uptake, and gas exchange. The protection measures suggested above should be used for parking and stacking as well as for moving of equipment and materials. If parking and stacking are unavoidable, the Army should use temporary crossing bridges or mats to minimize soil compaction and mechanical injury to plants.

Any stockpiling of soil should take place away from trees. Piling soil at a tree stem can kill the root system of the tree. Soil stockpiles should be covered, as well, to prevent soil erosion and fugitive dust. Questions on tree protection may be directed to the Department of Forestry, Dean Cumbia, at (434) 977-6555.

**9. Natural Heritage Resources.** The EA (pages 24-26) discuss endangered species surveys performed at the proposed AWG demolition range and the proposed AWG 800-

Ms. Terry Banks  
Page 8

meter range. No suitable natural heritage habitat or species were identified in the surveys.

### **Agency Comments**

The DCR Division of Natural Heritage (DNH) searched its Biotics Data System for occurrences of natural heritage resources in the areas proposed for development. 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 documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, DCR-DNH does not anticipate that this project will adversely impact these natural heritage resources.

### *Indoor Range-22B*

DCR staff conducted surveys for Swamp-pink (*Helonias bullata*, G3/S2S3/LT/LE) on May 9-11, 2006 and Small whorled pogonia (*Isotria medeoloides*, G2/S2/LT/LE) on June 14, 2006. DCR staff found no individuals present at this site and a limited amount of appropriate habitat. In addition, DCR also conducted a survey for New Jersey rush (*Juncus caesariensis*, G2/S2/SOC/LT), where potential habitat was found along the project area near Mill Creek; no individuals were found.

### *800 Meter Range Site-33 & 34*

According to the information currently in DCR-DNH files, this site is located within the Carter's Corner Macrosite Conservation Site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Carter's Corner Macrosite Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance. The natural heritage resources that are associated with this conservation site are:

Epitheca spinosa	Robust baskettails	G3G4/S2/NL/NL
Celithemis Martha	Martha's pennant	G4/S2/NL/NL
Siren intermedia	Lesser siren	G5/S2/NL/NL
Nehalennia integricolis	Southern sprite	G5/S2S3/NL/NL
Nannothemis bella	Elfin skimmer	G4/S1/NL/NL

Ms. Terry Banks  
Page 9

#### *Demolition Range-25C*

The treetop emerald (*Somatochlora provocans*, G3G4/S2/NL/NL) is documented within the project vicinity for this site. The treetop emerald a rare state dragonfly, measures 53-56 mm in length. This brilliantly colored (Needham and Westfall, 1975) species inhabits forest or boggy seepages with lots of herbaceous vegetation and breeds in the headwaters of small streams (TNC, 1996).

DCR concurs with the results of the surveys conducted at the demolition range and the indoor range sites, for Swamp-pink (*Helonias bullata*, G3/S2S3/LT/LE), Small whorled pogonia (*Isotria medeoloides*, G2/S2/LT/LE), and American ginseng (*Panax quinquefolium*, G3G4/S3S4/NL/LT) in June 2006. The surveys found no individuals for these species present at the sites.

#### *Corrections*

Please note the following corrections for the draft EA.

- EA (page 25, line 8)-the survey for small whorled pogonia was conducted June 14, 2006, not May 9-11, 2006.
- EA (page 26, line 5)-the EA was released before the survey for the New Jersey rush was conducted. DCR-DNH recommends the Army include the date and results for the survey in the final document. The survey was conducted on September 13, 2006, and habitat for the New Jersey rush was present along a tributary drainage within the project area and in small patches along the southern boundary of Mill Creek. No species were found.

#### *Recommendations*

Due to the potential habitat for rare dragonflies and salamanders at Range 33 & 34, DCR recommends:

- implementation of an erosion and sediment control plan in areas excavated along the ponds;
- protection of the emergent vegetation adjacent to the ponds to minimize adverse impacts to the aquatic ecosystem as a result of the construction activities; and
- an inventory at Range 33 & 34 for the species listed above.

With the survey results DCR-DNH can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

Due to the legal status of the natural heritage resource associated with this site, DCR recommends coordination with the Virginia Department of Game and Inland Fisheries (DGIF) and Virginia Department of Agriculture and Consumer Services (VDACS) to ensure compliance with protected species legislation.

Ms. Terry Banks  
Page 10

VDACS, which has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act, has established a Memorandum of Agreement (MOA) with DCR. Under the MOA, DCR-DNH, in consultation with VDACS, represents VDACS in its comments and recommendations regarding the potential impact of reviewed projects or activities on state-listed plant and insect species. DCR-DNH determined that this project or activity may impact swamp-pink and small whorled pogonia, state-protected plants. VDACS determined that no additional comments are necessary in reference to endangered plant and insect species.

In addition, DCR-DNH files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please contact DCR at (804) 786-7951 for an update on this natural heritage information if a significant amount of time passes before it is utilized.

**10. Wildlife Resources.** The EA (page 16) states that Threatened and Endangered Species surveys conducted in May and June 2006 found no threatened or endangered species on any of the proposed range sites.

#### **Agency Comments**

##### *Bald Eagle*

According to Department of Game and Inland Fisheries (DGIF) records, there are several bald eagle nests in the general vicinity of the three proposed ranges. However, these ranges are outside the primary and secondary management zones of these nests. Therefore, DGIF does not anticipate a significant adverse impact upon the eagles using these nests to occur. However, the Army should be aware of the potential to encounter a new or previously unknown nest in closer proximity to a range. Should that occur, DGIF recommends further coordination regarding eagles.

##### *Great Blue Heron*

DGIF records indicate a great blue heron nesting colony approximately 2,000 feet southwest of the proposed demolition range. To assess potential adverse impacts upon the birds using this colony, the Army should conduct a survey to determine if the colony is still active during the breeding season. If the colony is active, within 0.5 mile of the colony, DGIF recommends:

- limiting tree removal and grading activities to outside the nesting season (March 15-July 30); and

Ms. Terry Banks  
Page 11

- establishing a permanent undisturbed wooded buffer of approximately 1,000 feet from the perimeter of the colony.

It is possible that nesting herons at the facility have become tolerant to certain levels of training activity. If this has been proven, then the recommended buffer may be adjusted accordingly.

#### *Bachman's Sparrow*

DGIF records indicate an occurrence of the Federal Species of Concern/State Threatened Bachman's sparrow approximately 1.5 miles from the proposed 800-meter firing range. DGIF understands that a 1-day survey of the site did not identify this species. However, without knowing the methodology used during this survey, DGIF cannot determine if the survey was sufficient. Therefore, DGIF recommends that a qualified biologist conduct a habitat assessment of the proposed range site. Bachman's sparrows are typically associated with abandoned fields and open pine plantations with abundant broom sedge.

If the assessment determines that appropriate habitat does not exist on-site, DGIF does not anticipate a significant adverse impact upon the species. If appropriate habitat does exist on-site, and will be disturbed, DGIF recommends:

- conducting initial land disturbance activities (such as clearing and grading) outside the nesting season (April 1-August 15); or
- if this is not possible, a qualified biologist should conduct a survey for Bachman's sparrows at the project site.

The methodology for this survey should be coordinated with DGIF biologist Jeff Cooper at (540) 899-4169. If sparrows are not identified, then the recommended timing restriction would not be necessary. If appropriate habitat is to be lost due to this project, DGIF recommends creating or restoring suitable habitat elsewhere on the base. This will aid in the long-term conservation of the species.

#### *Fisheries Management*

The proposed demolition range site eventually drains into Mill Creek. Mill Creek is a Confirmed Anadromous Fish Use Area. To minimize potential adverse impacts upon this important resource, DGIF recommends:

- maintaining wooded riparian buffers of at least 100 feet along all streams; and
- implementing strict erosion and sediment control measures.

Whenever possible, particularly in the vicinity of endangered, threatened, or other species of conservation need, buffer zones should be increased to at least 100 meters (approximately 328 ft).

Ms. Terry Banks  
Page 12

DGIF recommends avoiding or minimizing adverse impacts upon wetlands to the fullest extent possible. Any unavoidable impacts should be compensated based on ratios of:

- 2:1 for palustrine forested (PFO) wetlands;
- 1.5:1 for palustrine scrub shrub (PSS) wetlands; and
- 1:1 for palustrine emergent (PEM) wetlands and wetland conversion.

Any stream impacts should be compensated at a ratio of 1:1 based on full restoration of a similarly functioning stream.

Given the Army's commitment to implement strict erosion and sediment control measures, and preserve riparian buffers, DGIF finds this project to be consistent with the fisheries management enforceable policy of the Virginia Coastal Resources Management Program (VCP). For more information, see the DGIF website at [www.dgif.state.va.us](http://www.dgif.state.va.us) or contact Andrew Zadnick at (804) 367-2733.

**11. Historic Structures and Archaeological Resources.** According to the EA (page 39) a Phase I Cultural Resources Survey was conducted in April 2006. Two archaeological sites were identified on the proposed 800-meter range, and two archaeological sites were identified on the proposed demolition range. Based on a May 2006 survey, three archaeological sites were identified at the proposed indoor firing range.

#### **Agency Comments**

*Section 106 of the National Historic and Preservation Act of 1966, as amended, requires that federal agencies must consider the effects of its activities on properties that are listed or eligible for listing on the National Register of Historic Places. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources. DHR found that the undertaking would have no effect on any known architectural or archaeological resources listed in or eligible for the National Register or Virginia Landmarks Register. For additional information, contact Roger Kirchen, DHR at (804) 367-2323 #153. In the event that archaeological resources are encountered during project activities, immediately contact Ms. Ethel Eaton, DHR at (804) 367-2323.*

**12. Pollution Prevention.** DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. However, pollution prevention techniques also include decisions related to construction materials, design, and operational procedures that will facilitate the reduction of wastes at the source. We have several pollution prevention recommendations that may be helpful in constructing or operating this project:

Ms. Terry Banks  
Page 13

- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider contractors' commitment to the environment when choosing contractors. Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.

DEQ's Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques. For more information, contact DEQ's Office of Pollution Prevention, Mr. Tom Griffin at (804) 698-4545.

#### **Federal Consistency under the Coastal Zone Management Act**

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities located inside or outside of Virginia's designated coastal management area that can have reasonably foreseeable effects on coastal resources or coastal uses must, to the maximum extent practicable, be implemented in a manner consistent with the Virginia Coastal Resources Management Program (VCP). The VCP consists of a network of programs administered by several agencies. The DEQ coordinates the review of federal consistency determinations with agencies administering the Enforceable and Advisory Policies of the VCP.

The EA includes a consistency determination and accompanying analysis of the enforceable policies of the VCP (Appendix D). Based on the information provided in the EA and federal consistency determination, and the comments of reviewing agencies, we concur that the proposed activity is consistent with the Virginia Coastal Resources Management Program, provided that the Army complies with all requirements of applicable permits and other authorizations that may be required.

#### **Regulatory and Coordination Needs**

**1. Water Quality and Wetland Impacts.** Any Impacts to wetlands and streams would require a Virginia Water Protection Permit (VWPP) issued by DEQ (9 VAC 25-210-50). Application for VWPP may be made by submitting a Joint Permit Application (JPA) (form MRC 30-300) to VMRC, which acts as the clearinghouse for JPAs and distributes the application to the appropriate agency. Upon receipt of a JPA for the proposed surface water and wetland impacts, Virginia Water Protection Permit (VWPP) staff at DEQ's Northern Virginia Regional Office will review the proposed project in accordance with VWPP regulations and guidance. Questions regarding the VWPP process may be directed to John Bowden, DEQ-NRO, at (703) 583-3880.

Ms. Terry Banks  
Page 14

**2. Subaqueous Lands Impacts.** Project impacts to subaqueous lands would require a permit from VMRC, pursuant to Section 28.2-1204 of the Code of Virginia. Encroachments channelward of ordinary high water along creeks and streams may require permitting. As with water and wetland permitting, subaqueous lands permitting may be accomplished with the submission of a JPA (form MRC 30-300) to VMRC. For additional information, contact Ben McGinnis, VMRC, at (757) 247-8028.

**3. Erosion and Sediment Control and Stormwater Management.** The Army must comply with Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and regulations (4 VAC 50-30-30 *et seq.*) and Stormwater Management Law (Virginia Code 10.1-603.5) and regulations (4 VAC 3-20-210 *et seq.*). Activities that disturb 10,000 square feet or more of land (2,500 square feet in a Chesapeake Bay Preservation Area) would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. The Army is encouraged to contact DCR's York/Rappahannock Watersheds Office, (804) 443-6752, for assistance with developing or implementing E&S and/or Stormwater Management Plans to ensure project conformance during and after construction.

**4. Air Quality Regulations.** This project may be subject to air regulations administered by the Department of Environmental Quality. The following sections of Virginia Administrative Code are applicable: 9 VAC 5-50-60 *et seq.* governing fugitive dust emissions and 9 VAC 5-40-5600 *et seq.*, for open burning. For more information contact John Bowden, DEQ Northern Regional Office, (703) 583-3880. Also, contact Allen Ramsey, Caroline County Department of Public Works for information on any local requirements pertaining to open burning.

**5. Solid and Hazardous Wastes.** All solid waste, hazardous waste, and hazardous materials must be managed in accordance with all applicable federal, state, and local environmental regulations. Some of the applicable state laws and regulations are:

- Virginia Waste Management Act (Code of Virginia Section 10.1-1400 *et seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); and
- Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110).

Some of the applicable Federal laws and regulations are:

- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Section 6901 *et seq.*);
- Title 40 of the Code of Federal Regulations; and
- U.S. Department of Transportation Rules for Transportation of Hazardous materials (49 CFR Part 107).

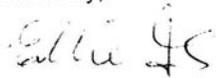
Ms. Terry Banks  
Page 15

Contact DEQ's Northern Regional Office, (703) 583-3880, concerning location and availability of suitable waste management facilities in the project area or if free product, discolored soils, or other evidence of contaminated soils are encountered.

**6. Natural Heritage Resources and Protected Species.** DCR's Division of Natural Heritage (DNH) recommends that an inventory at Range 33 & 34 be conducted for identified rare dragonflies and salamanders. Please contact J. Christopher Ludwig, Natural Heritage Inventory Manager, at (804) 371-6206 for additional information. Furthermore, the Virginia Department of Game and Inland Fisheries (DGIF) recommends the Army conduct a survey for Bachman's sparrows at the site of the proposed 800-meter firing range. This may be accomplished by contacting DGIF biologist Jeff Cooper at (540) 899-4169.

Thank you for the opportunity to review the Environmental Assessment and consistency determination for this undertaking. Detailed comments of reviewing agencies are attached for your review. Please contact me at (804) 698-4325 or John Fisher at (804) 698-4339 for clarification of these comments.

Sincerely,



Ellie L. Irons  
Program Manager  
Office of Environmental Impact Review

Enclosures

cc: Paul Kohler, DEQ-ORP  
John Bowden, DEQ-NRO  
Tony Watkinson, VMRC  
Andy Zadnick, DGIF  
Robert Munson, DCR  
Keith R. Tignor, VDACS  
Ethel Eaton, DHR  
Michael Foreman, DOF  
Percy C. Ashcraft, Caroline County  
Stephen H. Manster, RADCO PDC

**Bowden, John**

**From:** Bowden, John  
**Sent:** Thursday, September 21, 2006 10:56 AM  
**To:** Fisher, John  
**Subject:** EA #06-151F

**RECEIVED**

SEP 28 2006

DEQ-Office of Environmental  
Impact Review

NVRO comments regarding the Asymmetric Warfare Group Ranges project sponsored by the DOD/Department of the Army/Fort A. P. Hill are as follows:

VWP Program-The Department of the Army proposes construct a demolition range, an 800-meter firing range and an indoor firing range. The Environmental Assessment (EA) indicates that surface waters within the project boundaries were identified during wetland delineations conducted in April and June 2006. The EA indicates that the policy is to avoid impacts to surface waters; however it is unclear if impacts can be avoided completely.

If impacts to surface waters are proposed, a VWP permit from DEQ will be required for the proposed impacts in accordance with 9 VAC 25-210-50 of the VWP Permit Program regulations. Upon receipt of a Joint Permit Application for the proposed surface water impacts, DEQ-VWP Permit staff will review the proposed project in accordance with VWP permit program regulations and current VWP permit program guidance.

Waste Compliance-The description of handling solid and hazardous waste is adequate. If they encounter any solid and/or hazardous waste during the construction or operation of this project, they should follow the appropriate regulations for Virginia.

**John D. Bowden**  
**Deputy Regional Director**  
**Department of Environmental Quality**  
**Northern Virginia Regional Office**  
**(703) 583-3880**  
**[jdbowden@deq.virginia.gov](mailto:jdbowden@deq.virginia.gov)**

9/21/2006

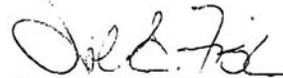
If you cannot meet the deadline, please notify JOHN FISHER at 804/698-4339 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.
- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR. JOHN E. FISHER  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF ENVIRONMENTAL IMPACT REVIEW  
629 EAST MAIN STREET, SIXTH FLOOR  
RICHMOND, VA 23219  
FAX #804/698-4319



JOHN E. FISHER  
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

This will acknowledge receipt of your transmittal letter with enclosures requesting Commission review of the above-referenced project.

Please be advised that the Marine Resources Commission, pursuant to Section 28.2-1204 of the Code of Virginia, has jurisdiction over any encroachments in, on, or over any State-owned rivers, streams, or creeks in the Commonwealth. Accordingly, if any portion of the subject project involves any encroachments channelward of ordinary high water along natural rivers and streams, a permit may be required from our agency.

(signed)  (date) 09/11/06  
(title) Ben McGinnis - Environmental Engineer  
(agency) Marine Resources Commission

PROJECT # 06-151F

8/98



L. Preston Bryant, Jr.  
Secretary of Natural  
Resources

Joseph H. Maroon  
Director

**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF CONSERVATION AND RECREATION**  
**DIVISION OF CHESAPEAKE BAY LOCAL ASSISTANCE**  
101 N. 14<sup>th</sup> Street, 17<sup>th</sup> Floor  
Richmond, VA 23219  
1-800-243-7229  
FAX (804) 225-3447

**MEMORANDUM**

**TO:** Bob Munson, Planning Bureau Manager

**FROM:** Alli Baird, Chesapeake Bay Local Assistance

**DATE:** September 25, 2006

**SUBJECT:** DEQ-06-151F  
DCR-DCBLA Project # FSPR-ARMY-09-06  
Fort AP Hill Construction and operation of a demolition range, Caroline County

According to page 22-23 of the Environmental Assessment, nontidal wetlands have been field delineated and water bodies with perennial flow have been identified. The proposed activity will avoid impacts to wetland and water bodies with perennial flow, through the imposition of a 100-foot buffer area as described on pages 22 and 38 of the Environmental Assessment. In addition, the EA notes that development of the facility will include preparation and implementation of an erosion and sediment control plan and stormwater management plan in accordance with the State erosion and sediment and stormwater management laws. Based on the above information, it appears this activity will conform to the requirements of the Chesapeake Bay Preservation Act and its associated regulations.

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF AIR PROGRAM COORDINATION**

**ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY**

TO: John E. Fisher

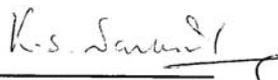
DEQ - OEIA PROJECT NUMBER: 06 - 151FPROJECT TYPE:  STATE EA / EIR / FONSI  FEDERAL EA / EIS  SCC CONSISTENCY DETERMINATION**RECEIVED**PROJECT TITLE: ASYMMETRIC WARFARE GROUP RANGES

SEP 15 2006

PROJECT SPONSOR: DOD / DEPARTMENT OF THE ARMY / FORT A. P. HILLDEQ-Office of Environmental  
Impact ReviewPROJECT LOCATION:  OZONE NON ATTAINMENT AREAREGULATORY REQUIREMENTS MAY BE APPLICABLE TO:  CONSTRUCTION  
 OPERATION**STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:**

1.  9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2.  9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3.  9 VAC 5-40-5490 et seq. – Asphalt Paving operations
4.  **9 VAC 5-40-5600 et seq. – Open Burning**
5.  **9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6.  9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to \_\_\_\_\_
7.  9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8.  9 VAC 5-50-400 Subpart \_\_\_\_\_, Standards of Performance for New Stationary Sources, designates standards of performance for the \_\_\_\_\_
9.  9 VAC 5-80-10 et seq. of the regulations – Permits for Stationary Sources
10.  9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the \_\_\_\_\_
11.  9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12.  9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to \_\_\_\_\_

**COMMENTS SPECIFIC TO THE PROJECT:**

  
 \_\_\_\_\_  
 (Kotur S. Narasimhan)  
 Office of Air Data Analysis

DATE: September 15, 2006



RECEIVED  
SEP 21 2006  
DEQ-Office of Environmental  
Impact Review

#### MEMORANDUM

**TO:** John Fisher, Environmental Program Planner  
*JFC*

**FROM:** Paul Kohler, Waste Division Environmental Review Coordinator

**DATE:** September 21, 2006

**COPIES:** Sanjay Thirunagari, Waste Division Environmental Review Manager; file

**SUBJECT:** Environmental Impact Report: Asymmetric Warfare Group Ranges, 06-151F

The Waste Division has completed its review of the Environmental Impact report for the Asymmetric Warfare Group Ranges, in Bowling Green, Virginia. We have the following comments concerning the waste issues associated with this project:

Hazardous waste issues were briefly mentioned in the report. The report did not include a search of waste-related data bases. The Waste Division staff performed a cursory review of its data files and determined that Fort A. P. Hill (VA2210020416) is on the EPA CERCLIS list but is not on the NPL. Fort A P Hill (VA2210020416) is also a LQG and a former TSD. The following solid waste facilities are located in the vicinity: Caroline County Landfill, permit GW 182 Sanitary LF; Caroline County Landfill, permit SWP 147, closed Sanitary LF; Caroline County Landfill, Permit SWP 182, closed Sanitary LF; US Army - Fort A P Hill, permit SWP 332 closed Sanitary LF; US Army - Fort A P Hill, permit SWP 393, closed CDD LF. Finally, there is a Formerly Used Defense Site (FUDS) in the vicinity. Eric Salopek will respond with separate comments regarding FUDS issues. The following websites may prove helpful in locating additional information for these identification numbers:  
[http://www.epa.gov/echo/search\\_by\\_permit.html](http://www.epa.gov/echo/search_by_permit.html) or  
[http://www.epa.gov/enviro/html/rcris/rcris\\_query\\_java.html](http://www.epa.gov/enviro/html/rcris/rcris_query_java.html).

Any soil that is suspected of contamination or wastes that are generated during construction-related activities must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Paul Kohler at (804) 698-4208.



DIVISION OF WASTE PROGRAM  
COORDINATION

OFFICE OF REMEDIATION PROGRAMS

RECEIVED

SEP 21 2006

DEQ-Office of Environmental  
Impact Review

MEMORANDUM

TO: John Fisher, OEIR  
FROM: Eric J. Salopek, ORP  
DATE: September 20, 2006  
COPY: Paul Kohler, OWP  
SUBJECT: Fort A. P. Hill FUDS – CO3VA0026

The purpose of this memorandum is to provide comments to your office on the referenced Formerly Used Defense Site (FUDS), in relation to the review of "Environmental Assessment for the Proposed Asymmetric Warfare Group Ranges." According to our files, a total of five parcels from Fort A. P. Hill totaling 1,271.34 acres were disposed of by the DoD between 1953 and 1985. All of these parcels are located around the perimeter of the active installation.

The location of the nearest FUDS parcel to the nearest proposed Project Area exceeds 3 miles.

According to the DoD, there is no known/suspected ordnance and/or hazardous waste on these FUDS parcels. However, please be aware that our office has not conducted an investigation to either support or contradict this assertion.

Given the distances between the five FUDS parcels and the proposed ranges, it is highly unlikely that any historic practices of the FUDS impacted, or are likely to impact, the proposed range Project Areas.

If you cannot meet the deadline, please notify JOHN FISHER at 804/698-4339 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.
- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR. JOHN E. FISHER  
 DEPARTMENT OF ENVIRONMENTAL QUALITY  
 OFFICE OF ENVIRONMENTAL IMPACT REVIEW  
 629 EAST MAIN STREET, SIXTH FLOOR  
 RICHMOND, VA 23219  
 FAX #804/698-4319

RECEIVED

SEP 07 2006

DEQ-Office of Environmental Impact Review

*John E. Fisher*  
 \_\_\_\_\_  
 JOHN E. FISHER  
 ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

*No significant impacts on the forest resources of the Commonwealth.*

(signed) *Jm Foreman* (date) 9-5-06  
 (title) *For. Mgt.*  
 (agency) *DOF*

PROJECT # 06-151F

8/98

L. Preston Bryant, Jr.  
Secretary of Natural Resources



Joseph H. Maroon  
Director

COMMONWEALTH of VIRGINIA  
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street  
Richmond, Virginia 23219-2010  
(804) 786-6124

MEMORANDUM

DATE: September 25, 2006

TO: John E. Fisher, DEQ

FROM: Robert Munson, DCR-DPRR 

SUBJECT: DEQ-06-151F: US Army Fort AP Hill-Demolition Range

The Department of Conservation and Recreation (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.

**Indoor Range-22B:**

Biotics documents the presence of natural heritage resources in 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.

DCR staff conducted surveys for Swamp-pink (*Helonias bullata*, G3/S2S3/LT/LE) on May 9-11, 2006 and Small whorled pogonia (*Isotria medeoloides*, G2/S2/LT/LE) on June 14, 2006. DCR staff found no individuals present at this site and a limited amount of appropriate habitat. In addition, DCR also conducted a survey for New Jersey rush (*Juncus caesariensis*, G2/S2/SOC/LT), where potential habitat was found along the project area near Mill Creek; no individuals were found.

**800 Meter Range Site- 33 & 34:**

According to the information currently in our files, this site is located within the Carter's Corner Macrosite Conservation Site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Carter's Corner Macrosite Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance. The natural heritage resources that are associated with this conservation site are:

*State Parks • Soil and Water Conservation • Natural Heritage • Outdoor Recreation Planning  
Chesapeake Bay Local Assistance • Dam Safety and Floodplain Management • Land Conservation*

<i>Epitheca spinosa</i>	Robust baskettails	G3G4/S2/NL/NL
<i>Celithemis martha</i>	Martha's pennant	G4/S2/NL/NL
<i>Siren intermedia</i>	Lesser siren	G5/S2/NL/NL
<i>Nehalennia integricollis</i>	Southern sprite	G5/S2S3/NL/NL
<i>Nannothemis bella</i>	Elfin skimmer	G4/S1/NL/NL

Adult Odonata (dragonflies and damselflies) are commonly seen flitting and hovering along the shores of most freshwater habitats, are accomplished predators. Adults typically forage in clearings with scattered trees and shrubs near the parent river. They feed on mosquitoes and other smaller flying insects, and are thus considered highly beneficial. Odonates lay their eggs on emergent vegetation or debris at the water's edge. Unlike the adults, the larvae have an aquatic larval stage where they typically inhabit the sand and gravel of riffle areas. Wingless and possessing gills, they crawl about the submerged leaf litter and debris stalking their insect prey. The larvae seize unsuspecting prey with a long, hinged "grasper" that folds neatly under their chin. When larval development is complete, the aquatic larvae crawl from the water to the bank, climb up the stalk of the shoreline vegetation, and the winged adult emerges (Hoffman 1991; Thorpe and Covich 1991). Because of their aquatic lifestyle and limited mobility, the larvae are particularly vulnerable to shoreline disturbances that cause the loss of shoreline vegetation and siltation. They are also sensitive to alterations that result in poor water quality, aquatic substrate changes, and thermal fluctuations.

Adult Caudata (salamanders, newts, and lungless salamanders) breed in fish-free vernal ponds (Pague & Mitchell, 1991) where the eggs are attached to submerged plant material or bottom debris (Behler and King, 1979). This species migrates up to a few hundred meters between their breeding and nonbreeding habitats, although, some adults will remain at the breeding site after the pond dries. Mass movements of adults have been documented at the same time as heavy winter and spring rains (TNC et. al., 1999). Adults and juveniles spend most of the year underground in the upland habitats, but return to the ponds to breed in February or March (VDGIF, 1994). Because of the amphibious life cycle, the presence of sufficient, suitable terrestrial and aquatic habitat is critical (VDGIF, 1994). Threats to this species include habitat loss, habitat fragmentation, and habitat contamination (VDGIF, 1994). The wetland habitats can be degraded or destroyed by filling, draining, ditching, and changing land use in the groundwater recharge zones or by contamination with pesticides or other chemicals. The upland habitats can be compromised by residential, commercial and industrial development, incompatible forest management practices, and other changes. Loss of suitable continuous terrestrial habitat between breeding sites may fragment populations and lead to extirpation through such factors as environmental perturbations, disease, and inbreeding (VDGIF, 1994).

#### Demolition Range-25C:

The treetop emerald (*Somatochlora provocans*, G3G4/S2/NL/NL) is documented within the project vicinity for this site. The treetop emerald a rare state dragonfly, measures 53-56 mm in length. This brilliantly colored (Needham and Westfall, 1975) species inhabits forest or boggy seepages with lots of herbaceous vegetation and breeds in the headwaters of small streams (TNC, 1996). Adult Odonata (dragonflies and damselflies), commonly seen flitting and hovering along the shores of most freshwater habitats, are accomplished predators. Adults typically forage in clearings with scattered trees and shrubs near the parent river. They feed on mosquitoes and other smaller flying insects, and are thus considered highly beneficial. Odonates lay their eggs on emergent vegetation or debris at the water's edge. Unlike the adults, the larvae have an aquatic larval stage where they typically inhabit the sand and gravel of riffle areas. Wingless and possessing gills, they crawl about the submerged leaf litter and debris stalking their insect prey. The larvae seize unsuspecting prey with a long, hinged "grasper" that folds neatly under their chin. When larval development is complete, the aquatic larvae crawl from the water to the bank, climb up the stalk of the shoreline vegetation, and the winged adult emerges (Terwilliger 1991, Thorpe and Covich

1991). Because of their aquatic lifestyle and limited mobility, the larvae are particularly vulnerable to shoreline disturbances that cause the loss of shoreline vegetation and siltation. They are also sensitive to alterations that result in poor water quality, aquatic substrate changes, and thermal fluctuations.

Due to the potential habitat for rare dragonflies and salamanders at Range 33 & 34, DCR recommends the implementation of an erosion and sediment control plan in areas excavated along the ponds and protection of the emergent vegetation adjacent to the ponds to minimize adverse impacts to the aquatic ecosystem as a result of the construction activities. Also, DCR recommends an inventory at Range 33 & 34 for the species listed above. With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

DCR concurs with the results of the surveys conducted at the demolition range and the indoor range sites, for Swamp-pink (*Helonias bullata*, G3/S2S3/LT/LE), Small whorled pogonia (*Isotria medeoloides*, G2/S2/LT/LE), and American ginseng (*Panax quinquefolium*, G3G4/S3S4/NL/LT) in June 2006. The surveys found no individuals for these species present at the site. Due to the legal status of the natural heritage resource associated with this site, DCR recommends coordination with the Virginia Department of Game and Inland Fisheries (VDGIF) and Virginia Department of Agriculture and Consumer Services (VDACS) to ensure compliance with protected species legislation.

Please note recommendations for corrections and additions to be made in the EA draft. In the paragraph on p.25, lines 8-11, relating to the Indoor Range, the survey for swamp-pink was conducted on May 9-11 2006, but USFWS guideline period for small whorled pogonia from Caroline County is June 1-July 20. Therefore, survey north of Mill Creek was conducted June 14<sup>th</sup> 2006. In addition, the EA was released before the survey for the New Jersey rush was conducted. Recommend the addition of the date and results for the survey conducted. The survey was conducted on September 13<sup>th</sup> 2006, habitat for the New Jersey rush was present along a tributary drainage within the project area and in small patches along the southern boundary of Mill Creek; where no individuals were found.

VDACS, which has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act, has established a Memorandum of Agreement with the Virginia Department of Conservation and Recreation (DCR). Under this Agreement DCR's Division of Natural Heritage, in consultation with VDACS, represents VDACS in its comments and recommendations regarding the potential impact of reviewed projects or activities on state-listed plant and insect species. Since it has been determined that this project or activity may impact swamp-pink and small whorled pogonia, state-protected plants, VDACS will respond directly to ensure compliance with Virginia's Endangered Plant and Insect Species Act. Further correspondence regarding the potential impacts of this project or activity on state-listed plant and insect species should be directed to VDACS.

In addition, our files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, which may

contain information not documented in this letter. Their database may be accessed from [http://www.dgif.virginia.gov/wildlife/info\\_map/index.html](http://www.dgif.virginia.gov/wildlife/info_map/index.html) , or contact Shirl Dressler at (804) 367-6913.

Thank you for the opportunity to comment on this project.

Cc: Eric Davis, USFWS  
Keith Tignor, VDACS

#### Literature Cited

- Behler, J.L. and F.W. King. 1979. The Audubon Society field guide to North American reptiles and amphibians. Alfred A. Knopf, New York. p. 719.
- Hoffman, R. 1991. Arthropods. Pp. 173 in: K. Terwilliger (ed.), Virginia's Endangered Species: proceedings of a symposium. The McDonald and Woodward Publishing Company, Blacksburg, VA.
- Martof, B.S., W.M. Palmer, J.R. Bailey and J.R. Harrison, III. 1980. Amphibians and reptiles of the Carolinas and Virginia. University of North Carolina Press, Chapel Hill, North Carolina. p. 264.
- Needham, J.G. and M.J. Westfall. 1975. A Manual of the Dragonflies of North America (Anisoptera). University of California Press, Berkeley and Los Angeles, California. p. 406.
- Pague, C.A. and J.C. Mitchell. 1991. Mabee's salamander. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. p. 427 - 429.
- The Nature Conservancy. 1996. Biological and Conservation Data System. Arlington, Virginia, USA.
- The Nature Conservancy and The Network of Natural Heritage Programs and Conservation Data Centers. 1999. Natural Heritage Conservation Databases. Accessed through the Biosource web site project. The Nature Conservancy, Arlington, VA. (7/14/99).
- Thorpe, J.H., and A.P. Covich. 1991. Ecology and Classification of North American Freshwater Invertebrates. Academic Press, Inc., San, Diego, California.
- VDGIF. 1994. Draft *Ambystoma mabeei*, Mabee's Salamander, Recovery Plan. Nongame and Endangered Species Program, Virginia Department of Game and Inland Fisheries, Richmond, VA.

If you cannot meet the deadline, please notify JOHN FISHER at 804/698-4339 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.
- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

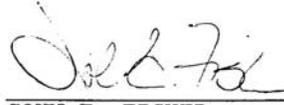
Please return your comments to:

MR. JOHN E. FISHER  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF ENVIRONMENTAL IMPACT REVIEW  
629 EAST MAIN STREET, SIXTH FLOOR  
RICHMOND, VA 23219  
FAX #804/698-4319

RECEIVED

SEP 15 2006

DEQ-Office of Environmental  
Impact Review



JOHN E. FISHER  
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Statements in the project document concerning endangered species were reviewed and compared to available information. No additional comments are necessary in reference to endangered plant and insect species regarding this project.

(signed)  (Keith R. Tignor) (date) September 14, 2006  
 (title) Endangered Species Coordinator  
 (agency) VDACS, Office of Plant and Pest Service

PROJECT # 06-151F

8/98

**Fisher, John**

**From:** Andrew Zadnik [Andrew.Zadnik@dgif.virginia.gov]  
**Sent:** Friday, September 15, 2006 1:36 PM  
**To:** Fisher, John  
**Cc:** nhreview@dcr.virginia.gov; ProjectReview.Richmond\_PO.DGIF@dgif.virginia.gov  
**Subject:** 06-151F\_ESSLOG 22888\_Asymmetric Warfare\_A.P. Hill

This project involves constructing a 225-ac demolition range, 226-ac firing range, and indoor firing range at Ft. A.P. Hill, Caroline Co. The EA states that any wetland impacts will be mitigated and documented according to regulations.

According to our records, there are several bald eagle nests in the general vicinity of the three proposed ranges. However, these ranges are outside the primary and secondary management zones of these nests. Therefore, we do not anticipate a significant adverse impact upon the eagles using these nests to occur. However, the base should be aware of the potential to encounter a new or previously unknown nest in closer proximity to a range. Should that occur, we recommend further coordination regarding eagles.

Our records indicate a great blue heron nesting colony approximately 2,000 ft southwest of the proposed demolition range. To assess potential adverse impacts upon the birds using this colony, we recommend a survey to determine if the colony is still active during the breeding season. If the colony is active, within 0.5 mile of the colony, we recommend limiting tree removal and grading activities to outside the nesting season, approximately March 15 - July 30. We also recommend establishing a permanent undisturbed wooded buffer of approximately 1,000 ft from the perimeter of the colony. It is possible that nesting herons at Ft. A.P. Hill have become tolerant to certain levels of training activity. If this has been proven, then the recommended buffer may be adjusted accordingly.

The proposed demolition range site eventually drains into Mill Creek. Mill Creek is a Confirmed Anadromous Fish Use Area. To minimize potential adverse impacts upon this important resource, we recommend maintaining wooded riparian buffers of at least 100 ft along all streams and implementing strict erosion and sediment control measures. Whenever possible, particularly in the vicinity of endangered, threatened, or other species of conservation need, we recommend increasing these buffer zones to at least 100 m (approximately 328 ft).

Our records indicate an occurrence of the Federal Species of Concern/State Threatened Bachman's sparrow approximately 1.5 miles from the proposed outdoor firing range. We understand that a 1-day survey of the site did not identify this species. Without knowing the methodology used during this survey, we cannot determine if the survey was sufficient. Therefore, we recommend that a qualified biologist conduct a habitat assessment of the proposed range site. Bachman's sparrows are typically associated with abandoned fields and open pine plantations with abundant broom sedge. If the assessment determines that appropriate habitat does not exist on-site, we do not anticipate a significant adverse impact upon the species. If appropriate habitat does exist on-site, and will be disturbed, we recommend conducting initial land disturbance activities (such as clearing and grading) outside the nesting season, approximately April 1 - August 15. If this is not possible, we recommend that a qualified biologist conduct a survey for Bachman's sparrows at the project site. The methodology for this survey should be coordinated with DGIF biologist Jeff Cooper (540-899-4169). If sparrows are not identified, then the recommended timing restriction would not be necessary. If appropriate habitat is to be lost due to this project, we recommend creating or restoring suitable habitat elsewhere on the base. This will aid in the long-term conservation of the species.

We recommend avoiding or minimizing adverse impacts upon wetlands to the fullest extent possible. Any unavoidable impacts should be compensated based on ratios of 2:1 for PFO, 1.5:1 for PSS, and 1:1 for PEM and wetland conversion. Any stream impacts should be compensated at a ratio of 1:1 based on full restoration of a similarly functioning stream.

Given strict erosion and sediment control measures, and preservation of riparian buffers, we find this project consistent with the Fisheries Section of the VA Coastal Resources Management Program.

Thank you,

Andrew K. Zadnik  
Environmental Services Section Biologist  
Department of Game and Inland Fisheries  
4010 West Broad Street  
Richmond, VA 23230

(804) 367-2733  
(804) 367-2427 (fax)



***APPENDIX C***  
***PUBLIC NOTICES/PUBLIC COMMENTS***

**THE FREE LANCE STAR**  
**616 Amelia Street**  
**Fredericksburg, Virginia 22401**

NEPA Cultural Coordinator  
 Eng. & Env., Inc.  
 Fort AP Hill  
 Bowling Green, Va. 22427

**DRAFT FINDING OF NO SIGNIFICANT IMPACT  
 RANGE COMPLEX  
 US ARMY GARRISON, FORT A.P. HILL, VIRGINIA  
 DIRECTORATE OF PUBLIC WORKS**

The US Army Garrison, Fort A.P. Hill in Caroline County, Virginia, proposes to construct and operate a demolition range, an 800-meter firing range and an indoor firing range.

The demolition range is proposed for land in the eastern portion of post within the existing Training Area 25C southeast of Route 301 and adjacent to North Range Road. The 225 acre range would be used to train individual soldiers on the techniques of handling and exploding light explosives charges up to 10 pounds TNT equivalent during the day and up to 1 pound TNT equivalent during the night. The range would be configured to train a unit consisting of an average of 30 soldiers.

The proposed 800-meter firing range would be constructed on 226 acres between existing Ranges 33 and 34. The range design would be in accordance with the Corps of Engineers Standard Design for an open land, walking 800-meter range with support facilities. The flat, non-instrumented range would provide capabilities for 10 shooters using a fixed firing line. Free standing, portable radio controlled targets would allow both day and night firing capabilities.

The indoor firing range is proposed for land within a planned 450-acre training site located on Training Area 22B east of Longstreet Camp in the northwestern portion of Fort A.P. Hill. This range would consist of a building and support structures on a portion of the 450 acre site. The range building would be designed to accommodate lighted shooting and night vision equipment. The range would accommodate .45 caliber, 9 mm, 12 gauge, 5.56 mm, 7.62 mm and laser mounted weaponry.

The US Army Garrison at Fort A.P. Hill reviewed four possible alternatives and determined demolition range construction in the aforementioned locations was the 'most preferred' based on established criteria: sufficient training space to ensure operations meet the standards established by the U.S. Army with a location in close proximity of the proposed 450-acre site, a location which meets the Army's current moratorium on producing additional duded impact areas and meets Army guidance for using existing impact areas and surface danger zones (SDZ); and a location which could be restricted from surrounding activities and used exclusively for specific unit training purposes.

Other alternatives considered included using existing facilities and/or upgrading and renovating facilities at Fort A.P. Hill as well as taking no action to provide unit-specific Ranges on Fort A.P. Hill. Existing range facilities do not support the unique training needs of the organization. A survey of space on Fort A.P. Hill indicated that there are no ranges which could be renovated and meet necessary training standards without extensive cost and effort.

The No Action Alternative would eliminate timber harvesting, clearing and grading, potential air emissions and potential noise complaints. This alternative, however, would not meet Fort A.P. Hill's objective to expand the installation's training capacity to prepare military personnel for deployment in combat or national emergencies, and it would not support the Installation Master Plan goal to maximize training capability. Therefore, the No Action Alternative was not considered reasonable and viable.

To avoid potential impacts, Fort A.P. Hill would implement mitigation measures including: HEPA filters on the indoor firing range to capture any air emissions; storm water management practices required by the Virginia Stormwater Management Program (VSMP); and forestry Best Management Practices (BMPs) to maintain water quality. Fort A.P. Hill would apply for the VSMP general permit for storm water discharges prior to construction. Noise complaints would be investigated and mitigated in accordance with Fort A.P. Hill policy. If necessary, Fort A.P. Hill would expand the perimeter noise monitoring system to add a noise monitor in the area of concern. Cultural resources eligible for the National Register of Historic Places would be avoided during construction and operation of the Ranges. Any wetland impacts will be permitted in accordance with federal, state and local laws and regulations.

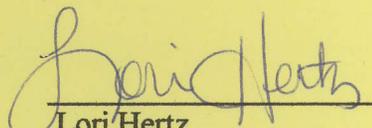
The EA concludes that, with the implementation of appropriate mitigation measures as mentioned above, the proposed action would have no significant impacts on the quality of the physical and human environment at Fort A.P. Hill. In accordance with the requirements of the National Environmental Policy Act (NEPA), Fort A.P. Hill therefore issues a Finding of No Significant Impact (FONSI) for this project, and an Environmental Impact Statement (EIS) will not be prepared.

This Environmental Assessment is available for public review at the Public Affairs Office, Fort A.P. Hill, Virginia. Interested parties are invited to submit written comments for consideration on or before 30 days after publication of this notice to Com-

**Subject: Asymmetric Warfare Range**

I hereby certify that the attached notice was published in The Free Lance-Star, a newspaper published daily in Fredericksburg, Va. on the following date (s):

**October 17, 2006**



Lori Hertz

Accounting Assistant

Subscribed and sworn to before me,  
 This 24<sup>th</sup> day of October 2006



Notary Public

**Draft Finding of No Significant Impact**  
**Asymmetric Warfare Ranges**  
**US Army Garrison, Fort A.P. Hill, Virginia**  
**Directorate of Public Works**

The US Army Garrison, Fort A.P. Hill in Caroline County, Virginia, proposes to construct and operate a demolition range, an 800-meter firing range and an indoor firing range.

The demolition range is proposed for land in the eastern portion of post within the existing Training Area 25C southeast of Route 301 and adjacent to North Range Road. The 225 acre range would be used to train individual soldiers on the techniques of handling and exploding light explosives charges up to 10 pounds TNT equivalent during the day and up to 1 pound TNT equivalent during the night. The range would be configured to train a unit consisting of an average of 30 soldiers.

The proposed 800-meter firing range would be constructed on 226 acres between existing Ranges 33 and 34. The range design would be in accordance with the Corps of Engineers Standard Design for an open land, walking 800-meter range with support facilities. The flat, non-instrumented range would provide capabilities for 10 shooters using a fixed firing line. Free standing, portable radio controlled targets would allow both day and night firing capabilities.

The indoor firing range is proposed for land within a planned 450-acre training site located on Training Area 22B east of Longstreet Camp in the northwestern portion of Fort A. P. Hill. This range would consist of a building and support structures on a portion of the 450 acre site. The range building would be designed to accommodate lighted shooting and night vision equipment. The range would accommodate .45 caliber, 9 mm, 12 gauge, 5.56 mm, 7.62 mm and laser mounted weaponry.

The US Army Garrison at Fort A.P. Hill reviewed four possible alternatives and determined demolition range construction in the aforementioned locations was the 'most preferred' based on established criteria: sufficient training space to ensure operations meet the standards established by the U.S. Army with a location in close proximity of the proposed 450-acre site, a location which meets the Army's current moratorium on producing additional duded impact areas and meets Army guidance for using existing impact areas and surface danger zones (SDZ); and a location which could be restricted from surrounding activities and used exclusively for specific unit training purposes.

Other alternatives considered included using existing facilities and/or upgrading and renovating facilities at Fort A. P. Hill as well as taking no action to provide unit-specific Ranges on Fort A. P. Hill. Existing range facilities do not support the unique training needs of the organization. A survey of space on Fort A. P. Hill indicated that there are no ranges which could be renovated and meet necessary training standards without extensive cost and effort.

The No Action Alternative would eliminate timber harvesting, clearing and grading, potential air emissions and potential noise complaints. This alternative, however, would not meet Fort A.P. Hill's objective to expand the installation's training capacity to prepare military personnel for deployment in

combat or national emergencies, and it would not support the Installation Master Plan goal to maximize training capability. Therefore, the No Action Alternative was not considered reasonable and viable.

To avoid potential impacts, Fort A.P. Hill would implement mitigation measures including: HEPA filters on the indoor firing range to capture any air emissions; storm water management practices required by the Virginia Stormwater Management Program (VSMP); and forestry Best Management Practices (BMPs) to maintain water quality. Fort A. P. Hill would apply for the VSMP general permit for storm water discharges prior to construction. Noise complaints would be investigated and mitigated in accordance with Fort A. P. Hill policy. If necessary, Fort A.P. Hill would expand the perimeter noise monitoring system to add a noise monitor in the area of concern. Cultural resources eligible for the National Register of Historic Places would be avoided during construction and operation of the Ranges. Any wetland impacts will be permitted in accordance with federal, state and local laws and regulations.

The EA concludes that, with the implementation of appropriate mitigation measures as mentioned above, the proposed action would have no significant impacts on the quality of the physical and human environment at Fort AP Hill. In accordance with the requirements of the National Environmental Policy Act (NEPA), Fort A.P. Hill therefore issues a Finding of No Significant Impact (FONSI) for this project, and an Environmental Impact Statement (EIS) will not be prepared.

This Environmental Assessment is available for public review at the Public Affairs Office, Fort A.P. Hill, Virginia. Interested parties are invited to submit written comments for consideration on or before 30 days after publication of this notice to **Commander, US Army Garrison Fort A.P. Hill, ATTN: ED, 19952 North Range Road, Fort A.P. Hill, VA 22427-3123.**

***APPENDIX D***  
***RESPONSE TO COMMENTS***

---

## Response to comments on the Draft Final EA

### **In a letter dated October 25, 2006 from the Department of Environmental Quality, the Virginia Department of Game and Inland Fisheries made the following comments:**

*Our records indicate an occurrence of the Federal Species of Concern/State Threatened Bachman's sparrow approximately 1.5 miles from the proposed outdoor firing range. We understand that a 1-day survey of the site did not identify this species. Without knowing the methodology used during this survey, we cannot determine if the survey was sufficient. Therefore, we recommend that a qualified biologist conduct a habitat assessment of the proposed range site.*

In the spring of 2005, as part of an ongoing effort to maintain an up-to-date and accurate inventory of the natural resources on the installation, DNH has initiated a re-inventory of Fort A.P. Hill. Surveys of the one known Bachman's sparrow occurrence area and surrounding habitat were conducted on four separate occasions in June 2005 by qualified DNH biologists. From 30 May through 2 June of 2006, DNH biologists accompanied by a Virginia Audubon volunteer once again surveyed the known location along with multiple other locations with potential habitat for the Bachman's Sparrow.

The survey methodologies that the DNH biologists employed were to start the surveys during the early morning, from late April into June. Do to the large potential habitat to be surveyed; the biologists would drive from survey point to survey point. At each point, a taped recording of Bachman's song was played (only in appropriate habitat) to elicit a response. The surveys from 2005 and 2006 yielded no visual or auditory confirmation that the species is present.

These surveys for the sparrow have been given a high priority by DNH and will continue in the following years until the re-inventory is completed. The proposed project area for the 800 meter range was not surveyed during the DNH re-inventory, because no potential Bachman's Sparrow habitat is found within its footprint.

### **The Virginia State Historic Preservation Office comments in a letter to Fort A.P. Hill dated July 21, 2006:**

*The Phase IA survey of the 800 meter range was limited to surface collection because of the presence of unexploded ordnance. This survey identified two archaeological sites on the surface. Site 44CE465 is the remains of a Woodland period Native American site. Due to the limited scope of this survey, the consultant did not offer an eligibility recommendation, but proposes that this site received additional survey in the form of systematic shovel testing. We concur with this recommendation; however, we understand that site 44CE465 will be avoided and protected during construction and, as such, requires no further study at this time. If future projects threaten this site, additional work may be necessary.*

The Fort A.P. Hill Cultural Resource Manager, under the Environmental Division of the Directorate of Public Works within Fort A.P. Hill, Virginia, has completed Phase II archaeological evaluation investigations at Site 44CE0465, Fort A.P. Hill, Caroline County, Virginia. Site 44CE0465 was originally identified during a Phase Ia, reconnaissance-level,

survey conducted in association with the construction of a proposed 800-meter range (McDonald and Clarke 2006). The current Phase II fieldwork was conducted in association with proposed improvements to an existing dirt road that cuts through the site.

The objective of the archaeological evaluation of Site 44CE0465 was to (1) determine the site's boundary and subsurface integrity, and (2) to determine if the site is eligible for inclusion in the National Register. The investigations included pedestrian surface survey and the excavation of 33 shovel tests and four 1x1-meter test units, and resulted in the recovery of 111 artifacts, including 48 surface collected artifacts, 24 artifacts from seven shovel tests, and 39 artifacts from four test units.

Based on the results of the archaeological fieldwork, Site 44CE0465 appears to represent a prehistoric habitation site dating to the Early/Middle Woodland periods, with later historic disturbances. The site measures approximately 20x60-meters as defined by negative shovel tests and landforms. Soil profiles encountered during the archaeological evaluation indicate that the site has been extensively disturbed, with the majority of artifacts having been recovered from redeposited soils. The general soil profile consists of an Ap-horizon and disturbed A-horizon (or older Ap-horizon) overlying subsoil. The upper layers of soil have been truncated in the vicinity of the dirt road, with push piles evident over large areas of the site. There do not appear to be any intact surface soil deposits at the site, and no intact cultural deposits or cultural features were encountered at the site. Subsequently, Site 44CE0465 is recommended as not eligible for inclusion in the National Register under Criterion D (as the site is not likely to yield additional information important in history or prehistory). Criteria A, B, and C were applied to this resource type and found to be not applicable.

***APPENDIX E***  
***COASTAL RESOURCES CONSISTENCY DETERMINATION***

## **Determination of Consistency with Virginia's Coastal Resources Management Program Asymmetric Warfare Group Ranges**

Pursuant to Section 307 of the Coastal Zone Management Act of 1972, as amended, this is a Federal Consistency Determination for Fort A.P. Hill's construction and use of Asymmetric Warfare Group (AWG) Ranges. The Army is required to determine the consistency of its activities affecting Virginia's coastal resources or coastal uses with the Virginia Coastal Resources Management Program (VCRMP).

This document represents an analysis of project activities in light of established VCRMP Enforceable Programs. Furthermore, submission of this consistency determination reflects the commitment of the Army to comply with those Enforceable Programs. The proposed project will be constructed and operated in a manner, which is consistent with the VCRMP. Fort A. P. Hill has determined that the construction and use of AWG Ranges would not affect the land and water uses or natural resources of the Commonwealth of Virginia's coastal zone.

### **1. Description of Proposed Action**

Under the Proposed Action, Fort A.P. Hill would construct ranges to support AWG, which would provide both weapons firing and demolition training. The demolition range would be within Training Area 25C. The demolition range would be used to train individual soldiers on the techniques of handling and exploding light explosives charges up to 10 pounds of TNT. The 800-meter range would be located between Ranges 33 and 34 within the active Impact Area on post. The flat, non-instrumented range would provide capabilities for 10 shooters using a fixed firing line. Free standing, portable radio controlled targets would allow both day and night firing capability. The indoor range would be part of the Asymmetric Warfare Complex (AWC) located on Training Area 22B. The range would consist of 21 shooting booths and accommodate .45 caliber, 9 mm, 12 gauge, 5.56 mm, 7.62 mm, and laser mounted weaponry.

### **2. Assessment of Probable Effects**

The planning and design phase of the proposed action would have no coastal zone effects to relevant VCRMP elements. All 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 have been conducted. Fort A.P. Hill staff evaluated the construction and operation of the AWC based on the foreseeable effect on the following enforceable policies:

**Fisheries** - The AWG Ranges have no foreseeable impacts on finfish or shellfish resources and would not affect the promotion of commercial or recreational fisheries at the project site area. The project site is approximately six miles from the Rappahannock River. The project implements best management practices (BMPs) recommended by the Virginia Department of Conservation and Recreation and Fort A.P. Hill's Environmental Division.

**Subaqueous Lands Management** – The AWG Ranges have no foreseeable impact on subaqueous resources. The proposed Ranges are located on Training Area 25C, within the Fort A. P. Hill Impact Area and within Training Area 22B. The project implements BMPs recommended by the Virginia Department of Conservation and Recreation and the Department of Forestry.

**Wetlands Management** –A wetlands survey of the proposed sites was conducted during April 2006. Small areas of wetlands were found. It is Fort A. P. Hill’s policy to avoid wetlands and maintain a 100 foot buffer around all wetland areas; therefore, there will be no impacts on wetlands from construction and operation of the AWG Ranges.

**Dunes Management** – Construction and operation of the AWG Ranges has no foreseeable impact on coastal primary sand dunes. The project would not destroy or alter coastal primary sand dunes.

**Non-Point Source Pollution Control** – During project construction and long-term operation, storm water runoff will either be collected in erosion control basins or directed to a vegetated area for natural infiltration. All erosion control will be designed in accordance with the Virginia Erosion and Sediment Control Regulations handbook. Land disturbing activities within the AWG Range sites are limited to timber harvesting, clearing, grubbing and grading. Erosion and sediment controls will be implemented in accordance with the Virginia Stormwater Management Program (VSMP); Forestry BMPs for Water Quality; Chesapeake Bay Preservation Area Designation and Management guidelines; and the Virginia Department of Conservation and Recreation (DCR) VSMP General Permit for Storm Water discharges associated with land disturbing activities. Fort A.P. Hill natural resource staff will implement the Forestry BMPs described in the installation Integrated Natural Resources Management Plan (INRMP) for land and water quality monitoring, impact mitigation and land rehabilitation programs specific to this project. These programs would continue into the operational phase of the project. The AWG Ranges would not cause non-point source pollution.

**Point Source Pollution Control** – The AWG Ranges would not have water or sewer connections on site. The proposed project would not generate any new point source discharges.

**Shoreline Sanitation** – The AWG Ranges would have no impact on shoreline sanitation.

**Air Pollution Control** – The AWG Ranges are located in an attainment area for air pollutants. Construction activity related to the proposed action is likely to give rise to fugitive dust emissions. During construction, fugitive dust will be kept to a minimum by employing measures that include, but are not limited to: installing and using material to enclose and vent the handling of dusty material, covering open equipment for transporting materials, washing down construction vehicles, providing construction entrances, applying water to suppress dust, and washing down paved roadways immediately adjacent to the construction site.

The AWG Ranges would have negligible impact on air quality. Construction and operation of the proposed project would be subject to regulation 9 VAC 5-50-80/ 90, *Visible and Fugitive Dust Emissions*, by the Department of Environmental Quality (DEQ).

**Coastal Lands Management** – The AWG Ranges would have no impact on any coastal lands.

**Chesapeake Bay Preservation Areas** –The AWG Ranges would not involve either development or redevelopment activities on any properly designated 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 Environmental Assessment, Fort A.P. Hill finds the proposed AWG Ranges fully consistent, or consistent to the maximum extent practicable, with the federally approved enforceable provisions of VCRMP, 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 VCRMP Enforceable Programs, the Commonwealth of Virginia will be notified that it has 60 days from receipt of this letter, in which to concur with or object to this Consistency Determination. However, pursuant to 15 CFR Part 903.63(b), if the Commonwealth of Virginia has not issued a decision by the 60<sup>th</sup> day from receipt of this determination, it shall notify Fort A.P. Hill 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:

***Commander, US Army Garrison Fort A.P. Hill***

***ATTN: ED***

***19952 North Range Road***

***Fort A.P. Hill, VA 22427-3123***