FINAL

Environmental Assessment for BRAC 05 Base Realignment Fort Eustis, Virginia

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1 PURPOSE, NEED, AND SCOPE

1.1 PURPOSE AND NEED

The Department of the Army is realigning and closing installations to produce a more efficient and cost effective base structure for achieving national military objectives.

Recommendations of the Defense Base Closure and Realignment Commission made in conformance with the provisions of the Defense Base Closure and Realignment Act of 1990 (Base Closure Act), Public Law 101-510, as amended, require the realignment of Fort Eustis, VA. Pursuant to the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations, the Army has prepared this environmental assessment (EA) to evaluate the environmental and socioeconomic impacts of this proposed realignment.

In accordance with the Base Closure and Realignment Act amendments contained in Title XXX of the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107-107), the Secretary of Defense submitted a consolidated Department of Defense (DoD) list of recommended actions to an independent commission appointed by the President and confirmed by the Senate. The 2005 Defense Base Closure and Realignment Commission (Commission) evaluated the recommendations and sent its findings to the President, who forwarded the recommendations to Congress on September 23, 2005. The Base Closure Act provides that, unless disapproved by Congress within a specified period, the recommendations are to be implemented. In the absence of Congressional disapproval, the Commission's recommendations became binding on November 9, 2005. Action with respect to Fort Eustis is being implemented as required by the Base Closure Act.

The proposed action of realignment, as recommended by the Commission in its 2005 report to the President, is more fully described in Section 2.0. The purpose of the proposed action is to carry out the Commission's recommendations.

1.2 SCOPE

This EA has been developed in accordance with NEPA and implementing regulations issued by the Council on Environmental Quality (40 CFR 1500–1508), the Army (32 CFR Part 651), and the Office of the Secretary of Defense (Base Redevelopment and Realignment Manual - DoD 4165.66M). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives. This EA identifies, documents, and evaluates the potential environmental effects of realignment of Fort Eustis.

The Base Closure Act specifies that NEPA does not apply to actions of the President, the Commission, or DoD except "(i) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated."[1]

The Commission's deliberations and decision as well as the need for closing or realigning a military installation are also exempt from NEPA[2]. Accordingly, this EA does not address the need for realignment. NEPA does, however, apply to realignment as a direct Army action and this EA must consider the effects that may result from this realignment. Realignment alternatives and scenarios, and the rationale for their selection, are described in Section 3.0.

An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archeologists, historians, and military technicians performed the impact analysis. The team identified the affected resources and topical areas, analyzed the proposed action against the existing conditions, and determined the relevant beneficial and adverse affects associated with the action. Section 4.0, Affected Environment and Consequences, describes the baseline conditions of the affected resources and other areas of special interest at Fort Eustis as of November 2005. The environmental consequences of realignment are also described in Section 4.0. Conclusions regarding potential environmental and socioeconomic effects of the proposed action are presented in Section 5.0.

1.3 PUBLIC INVOLVEMENT

The Army invites full public participation in the NEPA process to promote open communication and better decision-making. All persons and organizations that have a potential interest in the proposed action including minority, low-income, disadvantaged, and Native American Groups are urged to participate in the NEPA environmental analysis process.

Public participation opportunities with respect to the proposed action and this EA are guided by the provisions of 32 Code of Federal Regulations (CFR) part 651, *Environmental Analysis of Army Actions*. The final EA and a draft Finding of No Significant Impact, if appropriate, will be made available for a 30 day comment period. During this time, the Army will consider any comments submitted by agencies, organizations, or members of the public on the proposed action, the EA, or the draft Finding of No Significant Impact. At the conclusion of the comment period, the Army may, if appropriate, execute the Finding of No Significant Impact and proceed

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[1] Public Law 101-510, Sec. 2905(c)(2)(A). The Base Closure Act further specifies in Section 2905(c)(2)(B) that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider (i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military instllation, or (iii) military installations alternative to those recommended or selected.

[2] Public Law 101-510, Sec. 2905(c)(2).

with the proposed action. If it is determined that implementation of the proposed action would result in significant impacts, the Army will publish in the *Federal Register* a notice of intent to prepare an Environmental Impact Statement (EIS).

1.4 RELEVANT STATUTES AND EXECUTIVE ORDERS

The methods by which the proposed action will be accomplished are determined by numerous factors such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, the Army is guided by several relevant statutes (and their implementing regulations) and Executive Orders that establish standards and provide guidance on environmental and natural resources management and planning. These include, but are not limited to, the Clean Air Act, Clean Water Act, Noise Control Act, Endangered Species Act, National Historic Preservation Act, Archaeological Resources Act, Resource Conservation and Recovery Act, Toxic Substances Control Act, Comprehensive Environmental Response, Compensation, and Liability Act, Executive Order 11988 (*Floodplain Management*), Executive Order 11990 (*Protection of Wetlands*), Executive Order 12088 (*Federal Compliance with Pollution Control Standards*), Executive Order 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), Executive Order 13045 (*Protection of Children from Environmental Health Risks and Safety Ris*ks), and Executive Order 13423 (*Strengthening Federal Environmental, Energy, and Transportation Management*), Where useful to better understanding, key provisions of these statutes and Executive Orders are described in more detail in the text of the EA.

2 THE PROPOSED ACTION

2.1 INTRODUCTION

The proposed action is implementation of the BRAC Commission's recommendations as required by Public Laws 101-510 and 107-107. It is the effect that BRAC-directed actions will have on Fort Eustis and the surrounding community that will be analyzed in this Environmental Assessment. BRAC 2005-directed actions specific to Fort Eustis are:

- **Close Fort McPherson, GA.** Relocate the Headquarters US Army Forces Command (FORSCOM), and the Headquarters US Army Reserve Command (USARC) to Pope Air Force Base, NC. Relocate the Headquarters 3rd US Army to Shaw Air Force Base, SC. ***Relocate the US Army Installation Management Command (IMCOM) Southeast Region Headquarters and the US Army Network Enterprise Technology Command (NETCOM) Southeastern Region Headquarters to Fort Eustis, VA.***

- **Close Fort Monroe, VA.** ***Relocate the US Army Training & Doctrine Command (TRADOC) Headquarters (HQ), the IMCOM Northeast Region Headquarters, the NETCOM Northeastern Region Headquarters, and the US Army Contracting Agency Northern Region Office to Fort Eustis, VA.***

- **Realign Fort Eustis, VA** ***by relocating the Transportation Center and School to Fort Lee, VA.*** A component of this organization that will remain at Fort Eustis is the watercraft, rail and cargo specialist training, and associated facilities.

- **Realign Fort Eustis** ***by relocating the Army Surface Deployment and Distribution Command to Scott Air Force Base, IL****,* and consolidating it with the Air Force Air Mobility Command Headquarters and Transportation Command (TRANSCOM) Headquarters at Scott Air Force Base, IL.

- **Realign Fort Eustis, VA,** ***by disestablishing the inpatient mission at the Fort Eustis Medical Facility; converting the hospital to a clinic with an ambulatory surgery center.***

- **Realign Ft Eustis, VA**, Ft Jackson, SC, and Ft Lee, VA, ***by relocating all mobilization processing functions to Ft Bragg, NC****,* designating it as Joint Pre-Deployment/Mobilization Site Bragg/Pope.

- **Realign Fort Eustis, VA,** ***by relocating the installation management functions to Langley AFB, VA***.

2.2 FORCE STRUCTURE AND FORT EUSTIS POPULATION CHANGES

Force structure, which refers to the numbers, size, and composition of units comprising Army forces, can be changed by BRAC recommended realignments. Inactivation of units assigned to the installation would reduce force structure, and force structure would increase through

creation of new units, additions to existing units, and/or reassignment of units from other installations or from overseas.

2.2.1 Existing Fort Eustis Structure and Population

Fort Eustis is an 8,248-acre facility located on the James River at the northern tip of the City of Newport News, VA (figure 2.2 1) and is approximately 20 miles from TRADOC HQ and the Joint Warfighting Center (JWFC) at Fort Monroe and Air Combat Command (ACC) at Langley Air Force Base. Across the Hampton Roads harbor entrance, where the James River meets the Chesapeake Bay, is the Norfolk Naval Base.

Fort Eustis contains the US Army Transportation Center and School (ATCS) as well as several tenant organizations including the US Army Aviation Logistics School, the NCO Academy, Aviation Applied Technology Directorate, Army Training Support Center (ATSC), and the Military Surface Deployment & Distribution Center (SDDC). Additionally, the Maritime Administration leases several acres of land to support maintenance of the James River Reserve Fleet. McDonald Army Health Center is a full service medical facility also located at Fort Eustis.

Fort Eustis is also home to the 7th Sustainment Brigade, one of the Army's most deployed units.

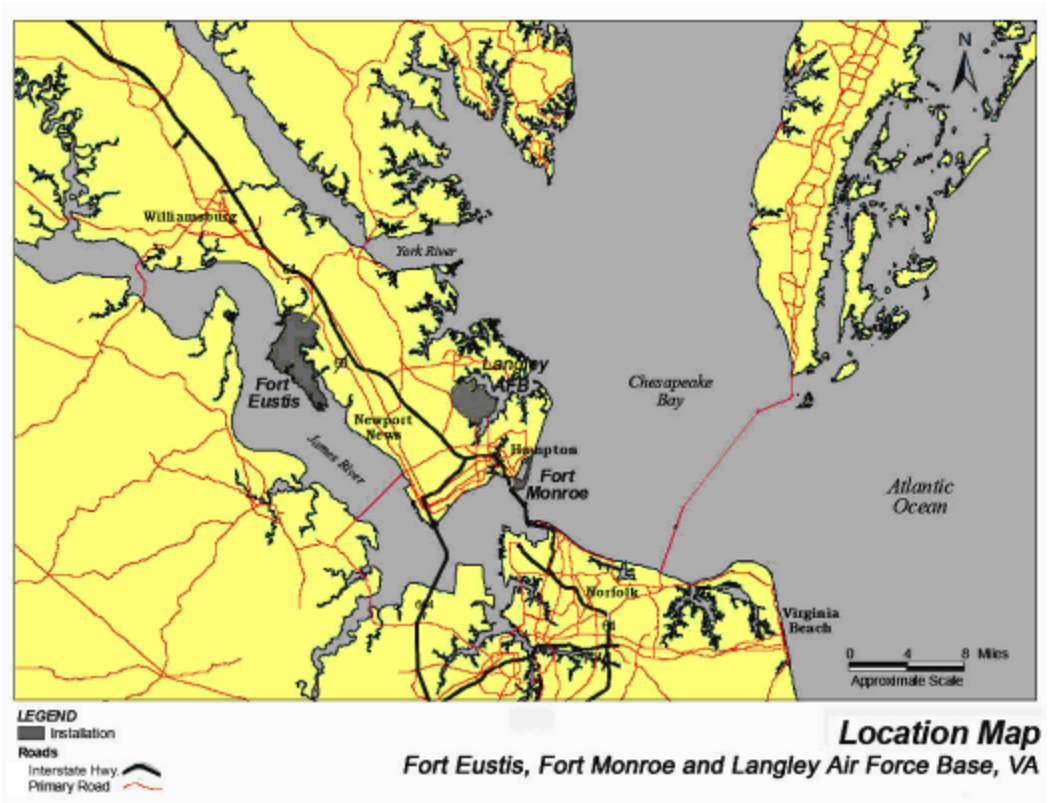

Figure 2.2-1 Location Map

The cantonment area of Fort Eustis occupies approximately 2,300 acres. The training areas comprise 5,386 acres distributed throughout the installation including 74 acres of small arms ranges and 1, 798 acres of duded impact area. The improved grounds include the Third Port marine pier complex and Felker Army Airfield that is used primarily for rotorwing aircraft operations and training. There are 77 miles of paved road and 15 miles of unpaved road that allow access to remote sections of the installation. For rail training on the installation, 31 miles of railroad track are used. The training areas include forests, wetlands and open fields to challenge the Soldiers with an assortment of terrain types.

The workforce of Fort Eustis is comprised of about 4,300 military and 4,950 civilian personnel. There are about 909 privatized housing units on-post, with 1,100 military personnel and 2,800 dependents in residence. On-post dormitories house about 1,600 military personnel. Additionally, there is an average of about 2,500 military personnel on-post for short-term training. In total, 14,550 military personnel and civilians work, live, or train at Fort Eustis.

2.2.2 BRAC Directed Population Changes at Fort Eustis

The most significant changes to the population of Fort Eustis would be **gains** from relocating TRADOC HQ and Army Contracting Agency Northern Region Office and consolidation of IMCOM Northeast and Southeast Regions and NETCOM Northeastern and Southeastern Region Headquarters from their present locations onto Fort Eustis as the IMCOM Eastern Region Headquarters and NETCOM Eastern Region Headquarters; and **losses** from realignments of the Transportation Center and School and Army Surface Deployment and Distribution Command.

Other Fort Eustis realignment actions would result in lower net changes of personnel, by comparison. These force changes would result in an increase of approximately 324 active duty personnel, 569 civilians, and 142 contractor personnel at Fort Eustis. Table 2.2-1 details this change in installation personnel associated with the proposed BRAC actions.

Table 2.2-1 Fort Eustis Population Changes as a Result of BRAC Actions[1]

Proposed Action	Military Personnel	Civilian Personnel	Contracted Personnel	TOTAL
BRAC Incoming to Fort Eustis				
TRADOC HQ	556	868	212	1636
IMCOM Northeast Region HQ	2	74	0	76
IMCOM Southeast Region HQ	2	53	19	74
NETCOM NE Region HQ	1	26	0	27
NETCOM SE Region HQ	0	25	0	25
Joint Task Force - Civil Support[2]	162	39	55	256
USAAA (Army Auditing Agency), LNO ATEC and 902nd Mil Group	5	29	0	34
ACA (Army Contracting Agency)	1	42	2	45
TOTAL BRAC INCOMING	**729**	**1156**	**288**	**2173**
BRAC Outgoing from Fort Eustis				
ATCS (Army Transportation Center and School)	-245	-165	-75	-485
SDDC (Army Surface Deployment and Distribution Command) On Post	-150	-300	-61	-511
SDDC (Occupies leased space in the City of Newport News)	-1	-102	-10	-113
McDonald Army Community Hospital Inpatient Mission Disestablished	-9	-20	0	-29
TOTAL BRAC OUTGOING	**-405**	**-587**	**-146**	**-1138**
NET BRAC CHANGE	**+324**	**+569**	**+142**	**+1035**
Footnotes: (1) Excludes impact of Joint Basing (worst case loss – 118 positions) and loss of 483 students (average daily load) to Fort Lee. Expected increases in USAALS student load are expected to offset the bulk of the loss of transportation students. (2) This is a BRAC Discretionary action (see section 3.3.3)				
Sources: Fort Eustis PAIO/BRAC and Fort Eustis DPW/ENRD				

2.2.3 Joint Basing Initiative

Fort Eustis and Fort Story are grouped together under a BRAC law that assigns one service as the lead agency for providing installation management services. The purpose of joint basing is to create efficiency and eliminate redundancy of functions between military posts. Of the 12 bases affected, there will be two bases with Army lead, four with Navy lead and six with Air Force lead. The Army expects the Air Force to take the lead for Fort Eustis and the Navy will take the lead for Fort Story. By law this must take effect in, or before, year 2011. At most, 118 positions would be eliminated by implementation of the Joint Basing Initiative.

At this early stage of planning the Army plans to relocate its installation management functions to nearby Langley Air Force Base, which is located three miles north of downtown Hampton, Virginia between Fort Eustis and Fort Monroe. Specific exceptions not included in the functions

to relocate are Health and Military Personnel Services. For all other base operating support functions and the operations and maintenance (O&M) portion of Sustainment, Restoration and Modernization (SRM), responsibility is expected to be transferred to Langley. Despite the 2011 deadline, this transfer is an administrative action and is likely to occur in within the next two years.

2.3 GARRISON FACILITIES

The Military Surface Deployment and Distribution Command (Bldg. 661) will be vacated, and implementation of the proposed action may require that space occupied by the ATCS (Bldg. 705) be vacated. Together, these two facilities will provide space for some, but not all, of the incoming functions and personnel. Modifications to existing facilities and construction of new facilities will be necessary to accommodate all of the BRAC mandated increase assigned to Fort Eustis. The installation would provide parking for approximately 80 percent of this anticipated increase.

2.4 TRAINING FACILITIES

Implementation of the proposed BRAC actions would not require improvements to Fort Eustis' field training facilities such as maneuver areas and firing ranges.

2.5 SCHEDULE

The Army must initiate the requirements for the realignment of all installations affected by the current BRAC law by 15 September 2007, and complete all realignments not later than 15 September 2011. Section 2904(a), Public Law 101-510, as amended, provides that the Army must "… initiate all closures and realignments no later than 2 years after the date on which the President transmits a report (by the BRAC Commission) to the Congress … containing the recommendations for such closures or realignments; and … complete all such closures and realignments no later than the end of the 6-year period beginning on the date on which the President transmits the report …" The President transmitted the BRAC Commission report on 15 September 2005.

The schedule for implementation of the proposed action must balance facilities construction timeframes and planned arrival dates of inbound units and stand-up dates of newly established units, all within the 6-year limitation of the BRAC law. Facilities construction would be synchronized to meet the needs, on a priority basis, of units being relocated. Establishment of new units would occur as facilities for the new units' operations and support become available.

3 ALTERNATIVES

3.1 INTRODUCTION

A basic principle of NEPA is that an agency should consider reasonable alternatives to a proposed Federal action. Considering alternatives helps to avoid unnecessary impacts and allows analysis of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be ready for decision-making (each necessary preceding event has already taken place), affordable, capable of implementation, and satisfactory with respect to meeting the purpose of and need for the action. The following discussion identifies alternatives considered by the Army and identifies whether they are feasible and, hence, subject to detailed evaluation in this EA.

Alternatives for implementation of the proposed action have been examined according to three variables: means to accommodate realigned units, siting of new construction, and schedule. This section presents the Army's development of alternatives and addresses alternatives available for the proposed action. The section also describes the No Action Alternative.

3.2 DEVELOPMENT OF ALTERNATIVES

3.2.1 Means to Accommodate Realigned or Relocated Units

Realignment or relocation of units and the establishment of new units requires that the installation has adequate support facilities for personnel and their operational needs. The Army considers four means of meeting increased space requirements, as follows:

- Use of existing facilities;
- Modernization or renovation of existing facilities;
- Leasing of off-post facilities; and
- Construction of new facilities.

Army Regulation 210-20, Master Planning for Army Installations, establishes Army policy to maximize use of existing facilities. The regulation directs that new construction will not be authorized to meet a mission that can be supported by existing underutilized, adequate facilities, provided that the use of such facilities does not degrade operational efficiency. Under this policy, selection and use of facilities to support mission requirements adheres to the foregoing four choices in the order in which they are listed. That is, if there are adequate existing facilities to accommodate requirements, and absent other overriding considerations, further examination of renovation, leasing, or construction alternatives is not required.

Similarly, if a combination of use of existing facilities and renovation satisfies the Army's needs, leasing or new construction need not be addressed. New construction may proceed only when

use of existing facilities, renovation, leasing, or a combination of such measures are inadequate to meet mission requirements.

3.2.2 Siting Alternatives for New Construction

Army land use planning recognizes 12 land use categories: Airfields, Maintenance, Industrial, Supply/Storage, Administration, Training/Ranges, Unaccompanied Personnel Housing, Family Housing, Community Facilities, Medical, Outdoor Recreation, and Open Space.

When options to reuse, renovate and lease in these areas are exhausted or non-feasible, the Army considers both general and specific siting criteria for construction of new facilities.

General siting criteria include:

- Consideration of compatibility between the functions to be performed and the installation land use designation for the site;
- Adequacy of the site for the function required, proximity to related activities;
- Distance from incompatible activities, availability and capacity of roads;
- Efficient use of property;
- Development density;
- Potential future mission requirements; and
- Special site characteristics, including environmental incompatibilities.

Specific siting criteria for new functions or expansion of existing functions include consideration of location of the workforce and efficient, streamlined management of functions. Collocation of similar types of functions, as opposed to dispersion, permits more efficient use of equipment, vehicles, and other assets.

Siting locations should adhere to these general and specific siting criteria. While numerous variations of the present proposal for siting of facilities could be developed, the selected locations reflect the concepts and considerations developed within the Army's Master Planning process for Fort Eustis.

3.3 IMPLEMENTATION ALTERNATIVES

The following alternatives are analyzed in this Environmental Assessment.

3.3.1 No Action Alternative

The No Action Alternative will be included as required by the CEQ regulations to identify the existing baseline conditions against which potential impacts will be evaluated. The No Action

Alternative must be described because it is the baseline condition or the current status of the environment if the proposed action were not implemented. For actions directed by the BRAC Commission, it will be noted that for the No Action Alternative, maintenance of current conditions is not feasible, since the BRAC actions are required to be implemented by the BRAC legislation. Under the No Action Alternative, Fort Eustis would not be implementing the proposed action.

3.3.2 Implementation Alternatives for BRAC-directed Realignment and Relocation Actions

BRAC legislation is law and realignments that are directed by this law are therefore called *directed actions*. The BRAC legislation eliminates the need to decide whether to realign an installation by acquiring functions or transferring functions to another installation, but it does not eliminate the requirement for an environmental analysis of how the relocation of units or activities is conducted at the designated installation. Alternatives of how the units or activities could be transferred might include: phasing the move, relocating to interim facilities at the gaining installation, use of renovated facilities versus new construction, or alternative siting of construction at the gaining installation.

After all directed actions have been considered, there may be units and organizations not specifically provided for in a recommendation to close or realign an installation under base closure law. The future of these units and organizations is within the Secretary of the Army's discretionary authority to determine, and are therefore called *discretionary actions*. These actions are not exempted from the analysis of the full range of impacts that would be considered for any typical NEPA analysis.

3.3.3 The Proposed Action

BRAC Commission recommendations that affect Fort Eustis are the realignments of Fort Eustis and closures of Fort McPherson and Fort Monroe. It is the realignment of functions away from Fort Eustis that will begin first. Building 661 will be vacated by the Military Surface Deployment and Distribution Command (moving to Scott Air Force Base, IL) and portions of Building 705 will be vacated by the ATCS (moving to Fort Lee, VA). These vacancies are components of the proposed plan for occupancy by some of the incoming functions and personnel from the associated installations being closed. For the remaining incoming components, new facilities will be constructed on open land within Fort Eustis' cantonment area.

The Commission recommended closure of Fort McPherson, GA and relocation of the Installation Management Command (IMCOM) Southeast Region Headquarters and the US Army Network Enterprise Technology Command (NETCOM) Southeastern Region Headquarters to Fort Eustis, VA. The Commission also recommended closure of Fort Monroe, VA, including relocation of the US Army Training & Doctrine Command (TRADOC) Headquarters, the IMCOM Northeast Region Headquarters, the US Army Network Enterprise Technology Command (NETCOM) Northeast Region Headquarters and the Army Contracting Agency (ACA) Northern Region Office to Fort Eustis, VA. Joint Task Force – Civil Support (JTF-CS) will also be relocated from Fort Monroe to Fort Eustis as a BRAC discretionary action.

3.3.4 Development of Implementation Alternatives

Alternative methods of supporting the BRAC action were identified by a diverse team of military planners and environmental specialists. This team of personnel identified a range of implementation components and then reviewed, screened, and grouped them into alternatives. The implementation components were grouped into two categories:

- Means to physically accommodate the relocated units, and
- Siting of proposed construction

3.3.5 Means to Accomplish the Preferred Action

Implementation of the recommendations at Fort Eustis would add approximately 324 active duty personnel, 569 civilians, and 142 contracted personnel. This total of 1,035 permanent party personnel would be offset by a reduction in the student population by 483. Evaluation of all facilities at Fort Eustis shows that after out-transferred functions have left and the buildings are prepared and reoccupied, there will remain a major shortfall in available built space to accommodate the additional personnel. Overall, the installation requires approximately 424,132 SF of additional space to meet the needs of the proposed action.

Use of off-post leased space to meet BRAC requirements for Fort Eustis would have several major drawbacks. Force protection policies specify certain facility characteristics, such as physical security features, setback distances from roadways, and “hardened” construction. Use of leased space in the private sector (i.e., having personnel and equipment both on- and off-post) would adversely affect command and control functions, result in higher operational costs, and impair efficient use of resources. For these reasons, use of leased space is not feasible and is not further evaluated in this EA.

Fort Eustis’ existing office space is, with very minor exception, fully utilized for current mission requirements. Because of this, and after accounting for space made available by transfer of the ATCS and SDDC, construction of new facilities on-post is necessary to ensure that adequate space is available for post-BRAC 2005 mission requirements.

To support these actions and the personnel increases that would result, Fort Eustis proposes the following measures:

- Renovation of the new wing and portions of Building 705 to contain the ACA, AAA, IMCOM, NETCOM, and the 902nd Military Intelligence Group.
- Renovation of the existing SDDC facility (Building 661) to house a component of TRADOC HQ.
- New construction of a building complex and parking facility on a 33 acre site to house the majority component of TRADOC HQ. Construction will be in the eastern portion of an area that is known as Murphy Field, which currently serves as a recreation area and as a parade ground.

- New construction of a building and parking facility on a 3.5 acre site in the 1500 block to house JTF-CS.
- New construction of General and Flag Officers Quarters (GFOQ) near the Warwick River and within the cantonment area. The 9.22 acre site is adjacent to the 2900 Block area, southeast of Summerall Circle. The complex will contain eight stand-alone housing units that will consist of one four star home, two three star homes, and five one/two star homes.

Table 3.3-1 summarizes the above measures that are identified to support BRAC 05.

Table 3.3-1 Proposed BRAC Related Construction Projects at Fort Eustis

Project Title	Estimated Funding Requirement*	Location	Type
TRADOC Headquarters Complex	$113.0M	Murphy Field between Jefferson Avenue and Lee Blvd.	New Construction
TRADOC Personnel Overflow	$1.6M	Building 661 on Washington Blvd. between Darcy Place and Sheppard Place	Renovation of existing SDDC
Joint Task Force - Civil Support Facility	$15.0M	10th Street and Patton Avenue (1500 block)	New Construction
IMCOM East Region (consolidated) Facility	$6.7M	Annex of Building 705	Renovation of existing ATCS
ACA/NETCOM/ 902nd MI Facility	$3.25M	Annex of Building 705	Renovation of existing ATCS
GFOQ (housing)	$5.5M	Adjacent to 2900 Block of cantonment area	New Construction
Source: Fort Eustis PAIO/BRAC			

Figure 3.3-1 represents the Fort Eustis cantonment area and indicates where the incoming functions are proposed to be located.

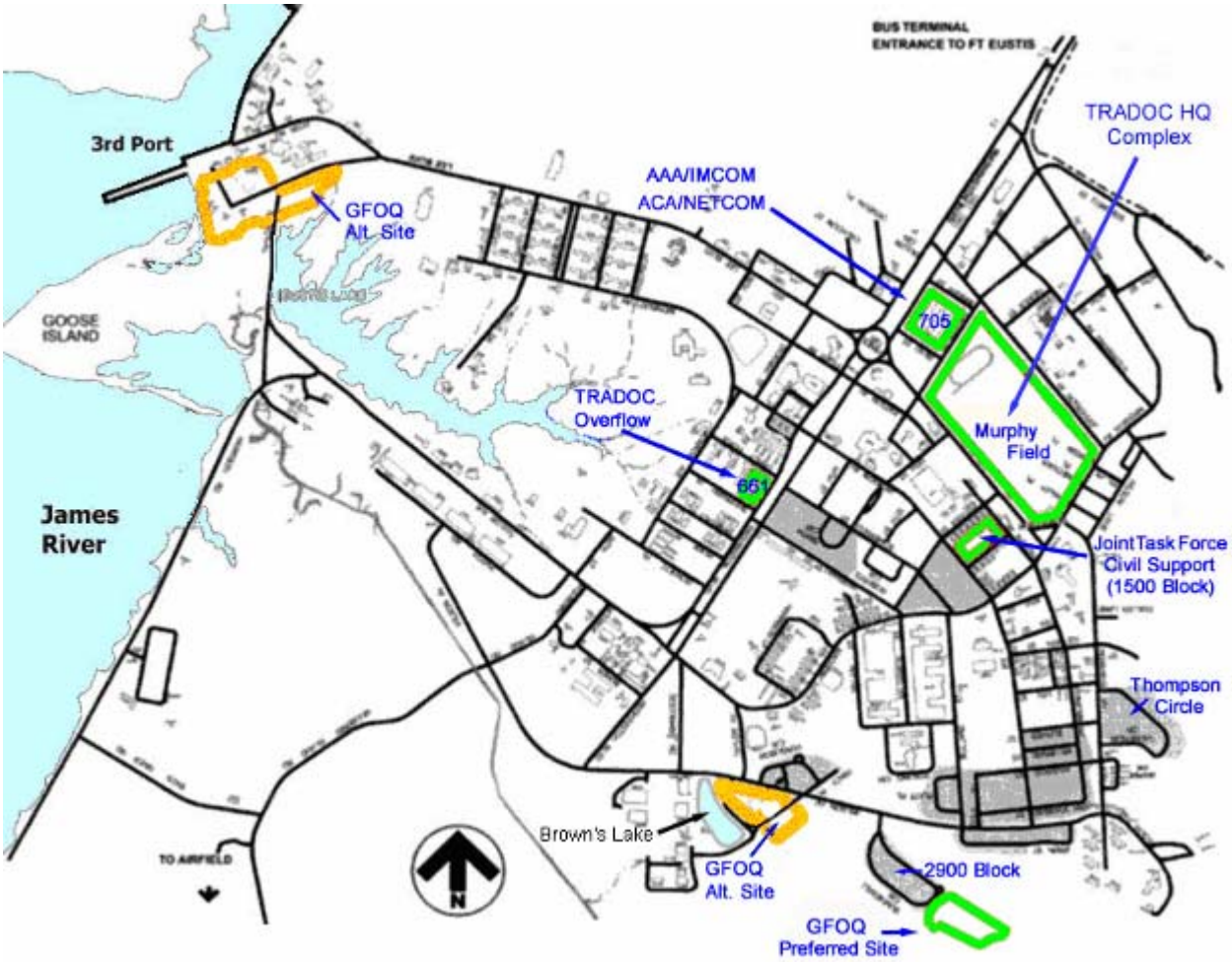

Figure 3.3-1 Proposed BRAC Sites at Fort Eustis, VA

Regardless of what plan is implemented for IMCOM, JTF-CS, ACA, AAA and NETCOM, the TRADOC HQ complex will still require new construction on a large open property. There are no other adequately sized properties within the Fort Eustis cantonment area other than Murphy Field. This location, at 57 acres, is nearly twice the 33 acre size requirement for TRADOC HQ, and there are various siting options to consider. The long axis of the field runs from the northwest to the southeast. Along the southwestern border are operational facilities and along the northeastern border is newly constructed residential housing. Any new construction should be kept as far away as possible from this residential area and may require unique storm water controls due to excessive flooding at the field and the capping of the existing storm water line.

The most permanent features currently on Murphy Field are the two tennis courts in the southeastern quadrant, the running track at the northwestern end of the field, and the picnic shelter, nearer the center of the property. Any or all of these could be relocated to the portion of the field closest to the residential housing but considering space requirements downrange from home plate, insufficient space would remain for any of the five ball-fields that are currently distributed within Murphy Field. There is insufficient open space within the cantonment area for

these fields to be relocated and there are no open areas on the installation outside the main cantonment area for the ball fields. To address this issue, a new location for the recreation field is planned using a wooded area near the intersection of Washington Boulevard and Taylor Avenue. This area was addressed in a prior Environmental Assessment as an alternative site for the Army Surface Deployment and Distribution Command (SDDC). That EA concluded there would be no significant impacts from construction and operation of the SDDC in this area. Impacts of an open field recreation area are considered to be lower than facility construction. Thus, the recreation fields on Murphy Field are currently planned to be relocated to the area shown in figure 4.8-2.

During the initial planning stages, consideration was given to moving JTF-CS into renovated portions of Bldg. 661 or Bldg. 705, but it was determined that 661 was better suited for TRADOC Headquarters. Building 705 does not meet the physical requirements of JTF-CS.

3.3.6 Scheduling Considerations

Alternatives for scheduling the proposed relocation actions are principally affected by three factors: the availability of facilities to house relocated personnel and functions, efforts to minimize potential disruption of mission activities based on the number of personnel involved in the relocation or the amount of work to be performed, and early realization of benefits to be gained by completion of the realignments. In most cases, minor shifts in schedule would not produce any measurable difference in environmental results.

3.4 ALTERNATIVES FOR IMPLEMENTING THE PROPOSED ACTION

3.4.1 TRADOC Facility Alternatives

With current populations of 406 ATCS personnel in Building 705 and 524 SDDC personnel in Building 661 the vacated space would be available to be filled in various configurations from the incoming functions. Any additional available space would be filled by installation groups currently occupying lesser facilities. Two alternatives are available for occupation of these two buildings with TRADOC personnel.

Alternative 1. IMCOM East Region (150 personnel) would relocate into Building 661, leaving Building 661 available for about 200 personnel associated with TRADOC. TRADOC HQ would require new construction of a larger facility on open space for nearly all personnel attached to its relocation to Fort Eustis.

Alternative 2. ACA/NETCOM would collocate with the IMCOM-East in Building 661. Building 705 or portions of building 705 would be used on a short-term basis to accommodate a portion of TRADOC's space requirements or would be used to provide offices for personnel currently located in sub-standard semi-permanent or WWII Wood temporary facilities. The TRADOC Headquarters complex would still require new construction on open space for all or a major portion of its requirement.

3.4.2 GFOQ Siting Alternatives

For the eight homes that will be constructed under the GFOQ housing project, three other locations had been considered. At Thompson Circle, a site was selected because it provided scenic views overlooking the Warwick River and was in the same area as the other officer homes. This location was dropped from consideration in July 2007 as not suited to the particular needs and requirements of general officers.

In addition to the proposed 2900 Block site for GFOQ housing, two feasible alternative sites will also be evaluated in this Environmental Assessment. Figure 3.3-1 shows the locations of these two sites:

Alternative 1. In south-central portion of the cantonment area near the 2700 Block and lying to the east of Brown's Lake is a six-acre site that also is adjacent to a closed landfill and a closed rifle range. Several long-term ongoing environmental monitoring and clean-up activities in and adjacent to this property are being conducted, but the location offers some logistic and aesthetic benefits.

Alternative 2. In the northwestern corner of Fort Eustis and adjacent to the Third Port marine terminal is the remaining GFOQ alternative site. Third Port is an industrialized area and there are possible facility expansion concerns. The 15.6-acre GFOQ site at Third Port is on the James River and offers scenic views as well as being more remotely located from other family housing areas.

4 AFFECTED ENVIRONMENT AND CONSEQUENCES

4.1 INTRODUCTION

Fort Eustis is located in southeastern Virginia on a large peninsula which extends southeasterly on the James River and is aligned toward the mouth of the Chesapeake Bay. At the lower end of this peninsula are the cities of Hampton, Newport News, Williamsburg and Yorktown.

4.2 LAND USE

4.2.1 Affected Environment

4.2.1.1 Setting and Location

Fort Eustis is bounded by the James River to the west, the Warwick River and the City of Newport News to the east and to the south, and James City County to the north. Elevations on developed portions range from about +5 feet mean sea level (msl) along the Felker Field runway on Mulberry Island to approximately +30 feet msl in the northern portion of the installation where the cantonment area is located.

4.2.1.2 Installation Land Use

The cantonment area covers approximately 2,300 acres and comprises a concentration of built-up land uses, including administrative offices, community facilities, privatized family housing, bachelor housing, Soldier billets, industrial, maintenance shops, medical facilities, and supply/storage sheds. Open areas used for recreation include the installation's golf course and Murphy Field, which contains ball fields, tennis courts and a running track. The remaining lands on the installation to the southeast are natural areas such as wetlands and forested areas that are used for military training.

4.2.1.2.1 Surrounding Land Use

Fort Eustis is buffered from surrounding land uses by the James River to the west and the Warwick River to the east. Skiffes Creek separates the installation from other land uses to the north. The city of Newport News lies east of the installation beyond the Warwick River.

Suburban communities border the river across from the installation. Commercial establishments near Fort Eustis, where existing and planned housing areas are located, are convenience stores and service shops.

Beyond the immediate proximity, numerous military installations are neighbors to Fort Eustis. These include, to name only the most conspicuous, Fort Monroe, Fort Story, Langley Air Force Base, Oceana Naval Air Station, Yorktown Naval Weapons Station, Little Creek Amphibious Base and Norfolk Naval Base, the largest of its type in the world. These have all contributed to the development of a widespread and nearly homogenous residential/commercial/recreational complex that is known as Hampton Roads, Virginia.

4.2.1.2.2 Installation Airspace Use

Felker Army Airfield, the world's first military heliport, was established in 1954 and historically was home to over 120 aircraft and 700 aviators. Felker remains a major component of the United States Army Aviation Logistics School (USAALS), which provides trained aviation mechanics in response to the needs of the Army world wide. The School headquarters and main administration offices are located within the Fort Eustis cantonment area.

4.2.1.2.3 Surround Airspace Use

Newport News/Williamsburg International Airport, located 5 miles east of Fort Eustis, has two concrete runways (8,003 ft and 6,526 ft). Neither of these is directionally aligned with Fort Eustis for takeoffs and landings, which total approximately 60 per day. Norfolk International Airport, located 28 miles southeast of Fort Eustis, offers nearly 200 arrivals and departures daily to major cities throughout the United States and serves the entire Hampton Roads metropolitan area of southeast Virginia (along with Newport News/Williamsburg International Airport in Newport News), as well as northeast North Carolina.

4.2.1.2.4 Coastal Zone Consistency

Fort Eustis is located entirely within the coastal zone of Virginia, as established in the State's Coastal Zone Management Act (CZMA). Activities conducted within the coastal zone are required to be consistent with the provisions established in the CZMA. In accordance with the Virginia Coastal Resources Management Program (VCRMP), a CZM evaluation has been prepared for the proposed action (Appendix B). Based on a review of Virginia's rules of coastal zone management, it has been determined that the proposed action is consistent with the long-term goals and policies of the VCRMP.

4.2.2 Consequences

Impacts to land use were determined by the following criteria:

No Effect – No impacts to surrounding land use.

No Significant Effect - The impact to land use would be measurable or perceptible, but would be limited to a relatively small change in land use that is still consistent with the surrounding land uses.

Significant Effect – The impact to land use would be substantial. Surrounding land uses are expected to substantially change in the short- and long-term. The action would not be consistent with the surrounding land use.

4.2.2.1 No Action Alternative

No direct or indirect effect would be expected. Implementation of the No Action Alternative would not alter the existing land use at the sites being considered under the proposed action.

4.2.2.2 Proposed Action Alternative

Regional Geographic Setting and Location - No direct or indirect effects would be expected. All proposed projects would occur within the Fort Eustis boundary.

Installation Land – Effects would not be significant. All proposed projects would occur within the Fort Eustis boundary. Siting of the new facilities construction is consistent with the *Installation Master Plan for Fort Eustis, Virginia*. The proposed office facilities would be located to support mission goals and objectives and would enhance the real property value of the Installation.

The 2900 Block area proposed for GFOQ housing is southeast of the Antwerp Village enlisted housing area and is defined by Summerall Circle. The site is heavily wooded with pines and hardwoods, and site preparation will require clearing and minor grading. Timber will be sold at market price, which is estimated to be approximately $26,000 total value of saw timber and pulpwood as of October 2007 (internal study, not released). Construction of single-family housing on this site would be compatible with Antwerp Village. The change from woodland to residential would have a minor adverse effect because of the small size of the site and retention of the 100 foot upland buffer from wetlands.

Surrounding Land – No direct or indirect effect would be expected. All proposed projects would be located within the Fort Eustis boundary. None of the projects would interfere with public surrounding lands.

4.2.2.3 Alternative 1

TRADOC Facility. Environmental consequences to land use under Alternative 1 would be the same as for the Proposed Action alternative.

GFOQ Siting. The Brown's Lake site is adjacent to a closed landfill, closed rifle range, and Brown's Lake, which is a relatively scenic retention pond in which no fishing, swimming, or even wading is permitted due to contamination issues. There would be a minor adverse effect because these all conflict with the intended residential use of the GFOQ property.

4.2.2.4 Alternative 2

TRADOC Facility. Environmental consequences to land use under Alternative 2 would also be the same as for the Proposed Action alternative.

GFOQ Siting. The effect on land use would not be significant. The site is adjacent to the Third Port marine terminal, which places it in an industrialized area. Installation planners are considering expanding the port facility and that would also be in conflict with placement of premium housing.

4.3 AESTHETICS AND VISUAL RESOURCES

4.3.1 Affected Environment

Aesthetics and visual resources are those natural resources, land forms, vegetation, and man-made structures in the environment that generate one or more sensory reactions and evaluations by the observer, particularly with respect to pleasurable response.

The larger office-style buildings along the main thoroughfare, Washington Boulevard, reflect the various styles of architecture representative of the time at which they were built. Modernizations and facelifts are an ongoing process intended to enhance utility and overall continuity of style.

Housing areas are in a state of transition between those built predominantly in the late 1950s and early 1960s and new homes completed, under construction or planned under the nationwide Residential Communities Initiative (RCI) for family housing. The former are composed of buildings and structures that vary in size and style. Brick and wood siding construction, ample parking, limited landscaping, and lawns characterize the units. Pre-RCI housing for high-ranking officers is farmhouse-style homes that were built in 1941. These are separated from other units and are more spacious.

There are visually disorganized elements—including substations, exterior mechanical systems (heating, ventilating, and fuel storage, for example), dumpsters, storage yards, and maintenance yards—which are often unscreened. Facilities and parking areas often disrupt the scenic natural environment.

The training areas have retained the typical oak-hickory-pine forest vegetation native to the southern Coastal Plain. Along the waters edges are the marshes and all the wildlife viewing opportunities they provide as well as the rivers and creeks on which can be seen everything from a one-person kayak to large military and commercial vessels.

One of the most obvious visual elements on Fort Eustis is the Army Transportation Museum that lies just inside the main entrance. Much of this collection of aircraft, boats, trains, etc. is displayed outdoors and is readily seen when entering and leaving the installation by automobile through this gate.

4.3.2 Consequences

The levels of impacts to visual resources are defined as follows:

No Effect – No impacts to the viewshed of any visual resources and/or the aesthetic character of the installation.

No Significant Effect – No permanent direct or indirect substantial degradation of the viewshed's overall character for a visual resource and/or the aesthetic character of the installation would be expected. Any temporary visual disturbances that alter the character of the viewshed would be returned to its original state following the action.

Significant Effect – Direct or indirect impacts to the viewsheds of any visual resources of the installation are anticipated, and these effects would be greater in number, extent, and/or duration than non-significant impacts. Significant impacts could include disturbances (such as the long-term alteration of the viewshed that would require mitigation) that could alter the overall character of the viewshed of a visual resource, and the viewshed might not resume its original character following the action.

4.3.2.1 No Action Alternative

No effects to aesthetic or visual resources are expected since action does not involve physical change to the installation.

4.3.2.2 Proposed Action Alternative

The proposed actions would be concentrated within the cantonment area of Fort Eustis. The Eastern Region IMCOM and the ACA/NETCOM facilities would be interior renovations of existing buildings, and there would be no effect on the viewshed. There would also be no effect from the Joint Task Force – Civil Support facility, which would be constructed where a similarly sized building was recently demolished and cleared.

The new TRADOC HQ Complex is planned for a maximum height of five stories to accommodate a requirement of 360,000 square feet for office space. It would be the tallest office structure on the installation, excluding the existing electronic and observation towers. Visual and aesthetic impacts would depend to a great extent on the exterior design and orientation of the facility. These elements have not been revealed but as plans are developed, much input and review will be provided from all levels of the Army.

Visual and aesthetic impacts of the GFOQ Housing would not be significant. The housing would not be visible from off post; would be adjacent to the Antwerp Village housing, and would not impact the view of the installation's more scenic elements.

4.3.2.3 Alternative 1

<u>TRADOC Facility.</u> Environmental consequences to visual resources under Alternative 1 would be the same as for the Proposed Action alternative.

<u>GFOQ Siting.</u> There would be no significant effect. The GFOQ housing would be adjacent to existing enlisted housing and maintenance areas. Brown's Lake, with its "T" pier and aeration fountain, is visually attractive and would be a draw to residents. Fort Eustis Landfill #7 is located within the visual field of the GFOQ site adjacent to Brown's Lake. It was operated from 1951 to 1972 and received trash, construction debris, and miscellaneous refuse. This monitored landfill has been closed, capped and vented and is covered with grass and shrub vegetation. Visually, it is of little interest and presents itself as a minor topographic feature. The closed landfill would ensure unobstructed views toward the Warwick River, but the elevation of the fill would prevent a clear view of the Warwick, or the James River beyond it. Security fencing around the landfills and vent pipes, appearing as large inverted snorkels half-buried into the landfill cap are not as appealing.

4.3.2.4 Alternative 2

TRADOC Facility. Environmental consequences to visual resources under Alternative 2 would also be the same as for the Proposed Action alternative.

GFOQ Siting. There would be no significant effect. The property on which the GFOQ housing would be placed is currently occupied by two senior officers' quarters, parking lots for the terminal facility, a pond, wooded areas and open grassy areas. Density of housing would be increased and the pond would be a focal point of the small GFOQ community. Parking lots would require relocation.

4.4 AIR QUALITY

4.4.1 Affected Environment

Air quality is regulated at the national level through regulations established under the Clean Air Act of 1970 and its subsequent amendments. The act directed the US Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for air pollutants that endanger public health. EPA subsequently adopted air quality standards for six of these criteria pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter less than 10 microns, particulate matter less than 2.5 microns, and lead particles. Table 4.4-1 lists the primary and secondary NAAQS.

The Clean Air Act requires state or local governments to monitor ambient levels of these pollutants and to develop air quality management plans to ensure compliance with the standards. To evaluate compliance with the NAAQS, EPA has divided the country into attainment and nonattainment areas commonly delineated by Air Quality Control Regions (AQCR) and further separated by county. Each AQCR has multiple air monitoring stations to sample ambient air concentrations of the criteria pollutants. Attainment and nonattainment indicate the compliance status of a region with respect to the NAAQS. Air quality regulations related to Fort Eustis are administered by EPA Region 3 and by the Virginia Department of Environmental Quality (VDEQ).

4.4.1.1 Regional Air Quality Conditions

The Hampton Roads area, which is Fort Eustis' air quality region, was classified by EPA in April 2004 as a marginal nonattainment area based on the 8-hour standard and data from the area's ozone monitoring sites. Federal actions located in nonattainment and maintenance areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR Part 93 Determining Conformity of Federal Actions to State or Federal Implementation Plans. In May 2007, Hampton Roads was reclassified as a maintenance area, which is a geographic area that had a history of nonattainment, but is now consistently meeting the NAAQS. Maintenance areas have been re-designated by EPA from "nonattainment" to "attainment with a maintenance plan". This area, which encompasses the cities of Newport News and Hampton, the southeastern point of Virginia from Virginia Beach to Suffolk, and York and James City Counties, is in attainment with all other NAAQS.

Table 4.4-1 National Ambient Air Quality Standards

Air Pollutant	EPA Standard	Concentration	Remarks	AQCR Classification
Particulate matter ≤ 10 microns (PM_{10})	Primary and Secondary Standard	Revoked	Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the agency revoked the annual PM_{10} standard in 2006 (effective December 17, 2006).	N/A
	Primary and Secondary Standard	150 μg/m³	The standard is attained when the number of days per calendar year with a 24-hour average above 150 μg/m³ is equal to or less than one	Attainment
Particulate matter ≤ 2.5 microns ($PM_{2.5}$)	Primary and Secondary Standard	15 μg/m³	The standard is attained when the 3-year average annual weighted mean is less than or equal to 15 μg/m³	Attainment
	Primary and Secondary Standard	35 μg/m³	The standard is attained when the 3-year average of the 98th percentile of 24-hour concentrations within an area must not exceed 35 μg/m³.	Attainment
Sulfur dioxide	Primary Standard	80 μg/m³	Annual arithmetic mean	Attainment
	Primary Standard	365 μg/m³	Maximum 24-hour concentration not to be exceeded more than once per year	Attainment
	Secondary Standard	1,300 μg/m³	Maximum 3-hour concentration not be exceeded more than once per year	Attainment
Carbon monoxide	Primary Standard	10 mg/m³	8-hour average not to be exceeded more than once per year	Attainment
	Primary Standard	40 mg/m³	1-hour average not be exceeded more than once per year	Attainment
Ozone	Primary and Secondary Standard	157 μg/m³	The standard is attained when the 3-year average of the 4th-highest daily maximum 8-hour average concentration measured at each monitor within an area over each year must not exceed 157 μg/m³.	Maintenance
Nitrogen dioxide	Primary and Secondary Standard	100 μg/m³	Annual arithmetic mean not to be exceeded	Attainment
Lead	Primary and Secondary Standard	1.5 μg/m³	Quarterly average not to be exceeded.	Attainment
Sources: 40 CFR 50				

4.4.1.2 Fort Eustis Air Emissions

The Virginia Department of Environmental Quality issued Fort Eustis a Stationary Source Permit to Operate, on March 18, 2002. It was recently modified on August 23, 2006 to reflect current operating conditions. Emission sources that are monitored include boilers, helicopter engines testing, marine engine testing, generators, fuel pumping station, landfills, storage tanks, woodworking shops, paint booths and abrasive bead blasting. The maximum allowable emissions and the actual emissions in 2006 from these sources are listed in Table 4.4-2 in tons per year by pollutant category. Any new source of air pollutant emissions would have to be reviewed to determine if a permit modification is necessary. Examples of new sources would be a stationary emergency generator, boiler plant, or maintenance facility.

Table 4.4-2 Annual Emissions Summary of Criteria Pollutants from Stationary Sources at Fort Eustis in 2006

Abbreviation	Pollutant	Emissions (tons/year)	Permitted Emissions (tons/year)
SO_2	Sulfur Dioxide	8.9	57.8
NO_x	Nitrogen Oxides	32.9	99.7
VOC	Volatile Organic Compounds	12.6	66.5
CO	Carbon Monoxide	21.6	71.0
$PM_{10}/PM_{2.5}$	Particulate Matter	3.7	21.6
Source: VDEQ 2006 Emission Statement & 23 August 2006 Operating Permit			

4.4.2 Consequences

Thresholds for air emissions caused by Federal activities in areas that do not meet the national ambient air quality standards (NAAQS) are, by definition, *de minimis* emissions levels. If Federal activities are expected to produce emissions greater than the *de minimis,* or "virtually safe," level, the responsible Federal Agency would be required to show that emissions would not interfere with the goals of the state implementation plan (SIP) or the state's ability to attain and maintain the NAAQS. The *de minimis* thresholds for ozone pre-cursors are listed in Table 4.4-3.

Table 4.4-3 *De minimis* Levels for Maintenance Areas

Pollutant	Abbreviation	Pollutant	Emissions (tons/year)
Ozone (Marginal)	NO_x	Nitrogen Oxides	100
	VOC	Volatile Organic Compounds	100
Source: 40 CFR 93 (Amended 17 July 2006)			

Air quality impacts discussed below relate directly to *de minimis* levels and are defined as follows:

No Effect – No impacts to air quality.

No Significant Effect – Impacts to air quality would not exceed *de minimis* levels for a pollutant and there would be no new sources of air pollutant emissions requiring permitting above *de minimis* levels (i.e., no construction of a stationary emergency generator, boiler plant, or maintenance facility).

Significant Effect – In order for the impact on air quality from the 2005 BRAC actions at Fort Eustis to be significant, the construction and/or operational emissions in any calendar year would have to exceed the *de minimis* levels for a pollutant.

4.4.2.1 No Action Alternative

No direct or indirect effects would be expected. Implementation of the No Action Alternative would not affect current air quality conditions.

4.4.2.2 Proposed Action Alternative

Short and long-term direct negligible adverse effects would be expected. Fort Eustis will be realigned such that the facility will expand by 1,069 personnel. The expansion will have air quality impacts on Fort Eustis and the surrounding area. This action is subject to the requirements of the Federal Clean Air Act General Conformity Rule for the Hampton Roads 8-hour ozone maintenance area. Emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOC) as a result of the action in the ozone maintenance area must be compared to de minimis thresholds for each year, including any construction activities necessary before the transfer of personnel from other facilities. The personnel and equipment changes and resultant construction activities are described below.

4.4.2.2.1 Construction Activities

As discussed in Section 3.3.5, the installation requires approximately 424,132 SF of additional space to meet the needs of the proposed action. In addition, two other buildings will be repurposed. The construction schedule is summarized in Table 4.4-4.

Table 4.4-4 Construction Schedule

Project Title	Type	Begin	End	Occupied
TRADOC Headquarters Complex	New Construction	Apr 2009	Apr 2011	Jul 2011
Joint Task Force – Civil Support Facility	New Construction	Jan 2010	Apr 2011	Jul 2011
IMCOM East Region Facility	Repurpose	Oct 2010	Jun 2011	Jul 2011
ACA/NETCOM Facility	Repurpose	Oct 2010	Jun 2011	Jul 2011
GFOQ (housing)	New Construction	Jan 2011	Jun 2011	Jul 2011

The 42.5 acres of new construction will require grading, hauling, construction, paving, architectural coating, and worker commuting trips to the building sites. No demolition activity is required at the new construction sites or at the buildings that will be repurposed. The construction emissions are summarized in Table 4.4-5.

Table 4.4-5 Construction Emissions (tons/year)

Emission Category	2009		2010		2011	
	NOx	VOC	NOx	VOC	NOx	VOC
Site Grading & Hauling	5.77	0.81	11.14	1.60	4.58	0.66
Building Construction	24.53	3.82	39.25	6.11	14.72	1.87
Asphalt Application	-	0.50	-	0.83	-	0.28
Architectural Coating	-	3.50	0.00	6.41	0.00	3.05
Construction Worker Trips	0.68	0.71	1.21	1.27	0.61	0.65
Construction Total	30.98	9.33	51.60	16.21	19.91	6.50
Source: SCAQMD Emission Factors						

4.4.2.2.2 Area Sources

This category considers emissions related to residential activities such as cleaning, degreasing, painting, lawn mower use, and the use of pesticide and herbicides. To estimate area source emissions, 8 new housing units were assumed. Only emissions from housing units were evaluated. Emissions in this category would begin as housing units were completed and occupied in July 2011. Area source emissions are listed in Table 4.4-6

Table 4.4-6 Residential Area Source Emissions (tons/year)

Emission Category	2011		2012	
	NO_x	VOC	NO_x	VOC
Residential Area Sources	0.01	0.07	0.01	0.13
Source: SCAQMD Emission Factors				

4.4.2.2.3 Space Heating and Boilers

Energy requirements were assessed on the basis of the floor area (sq. ft.) for each building to be constructed. The energy requirement for office space is 0.0907 MMBtu/ sq. ft. in the southern half of the United States per US Department of Energy guidelines. The energy requirements and AP-42 emission factors were used to estimate the emissions the boilers. The emissions from the boilers are summarized in Table 4.4-7. Fort Eustis has a Stationary Source Permit and any new stationary sources associated with this action will need to be added to this permit. The 2006 emissions inventory shows that additional equipment can be incorporated into the current permit and not exceed the facility's emission limits; however a permit modification would be necessary. A permit to construct may also be required by VDEQ.

Table 4.4-7 Boiler Emissions (tons/year)

Emission Category	2011		2012	
	NO_x	VOC	NO_x	VOC
Boilers	1.79	0.05	3.58	0.10
Source: AP-42 Table 1.4-1 & 1.4-2, US DOE				

4.4.2.2.4 Emergency/Standby Generator Emissions

There was no data available regarding the size or number of emergency generators to be installed at Fort Eustis due to the 2005 BRAC action. It is anticipated that there would be some new emergency generators installed. To account for some of the associated emissions, it was assumed that two 500 kW emergency diesel generators would be installed with a limit of 250 operating hours per unit. Emissions were calculated using emissions factors obtained from AP-42 Table 3.4-1. The estimated emissions for the generators are given in Table 4.4-8.

Table 4.4-8 Emergency Generator Emissions (tons/year)

Emission Category	2011		2012	
	NO_x	VOC	NO_x	VOC
Emergency Generators	1.76	0.05	3.51	0.10
Source: AP-42 Table 3.4-1				

4.4.2.2.5 On and Off-Post Commuting

The increase of privately owned vehicles on base would be transferring primarily from Fort Monroe, Virginia, a distance of less than 20 miles away. This shift would occur within the same air quality control region and would already be accounted for in the State Implementation Plan. Only 172 of the personnel transferring to Fort Eustis will be from outside the region. It was conservatively assumed that all of the personnel would live off-post with each household having two vehicles. The personnel would commute an average of 30 miles round-trip (20 miles off-post, 10 miles on-post) to Fort Eustis each work-day and the second vehicle in each household would drive an average of 20 miles per day. Emission factors from MOBILE6 were used to calculate vehicle emissions starting in July 2011, as shown in Table 4.4-9.

Table 4.4-9 Estimated Vehicular Emissions (tons/year)

Category	Number of Vehicles	Miles	Total Miles per Year	2011		2012	
				NO_x	VOC	NO_x	VOC
Average Daily Resident Commute	152	20	1,106,560	0.96	1.16	1.91	2.33
Average Daily Worker Commute	152	30	1,140,000	0.99	1.20	1.97	2.40
			TOTAL	**1.94**	**2.36**	**3.88**	**4.73**

A summary of the emissions for this action are shown in Table 4.4-10. The NO_x and VOC emissions for each year are below the *de minimus* thresholds and a General Conformity Analysis is not required.

Table 4.4-10 Estimated Emissions Summary (tons/year)

Emission Category	2009		2010		2011		2012	
	NO_x	VOC	NO_x	VOC	NO_x	VOC	NO_x	VOC
Site Grading & Hauling	5.77	0.81	11.14	1.60	4.58	0.66	-	-
Building Construction	24.53	3.82	39.25	6.11	14.72	1.87	-	-
Asphalt Application	-	0.50	-	0.83	-	0.28	-	-
Architectural Coating	-	3.50	0.00	6.41	0.00	3.05	-	-
Construction Worker Trips	0.68	0.71	1.21	1.27	0.61	0.65	-	-
Boilers/Heaters (Natural Gas)	-	-	-	-	1.79	0.05	3.58	0.10
Emergency Generators	-	-	-	-	1.76	0.05	3.51	0.10
Area Sources	-	-	-	-	0.01	0.07	0.01	0.13
On-post Commuting	-	-	-	-	0.99	1.20	1.97	2.40
Off-post Commuting	-	-	-	-	0.96	1.16	1.91	2.33
TOTAL	**30.98**	**9.33**	**51.60**	**16.21**	**25.41**	**9.03**	**10.99**	**5.06**

4.4.2.3 Alternative 1

<u>TRADOC Facility.</u> Environmental consequences to local and regional air quality under Alternative 1 would be the same as for the Proposed Action alternative.

<u>GFOQ Siting.</u> Site preparation and construction and use of eight homes would have no significant effect.

4.4.2.4 Alternative 2

TRADOC Facility. Environmental consequences to local and regional air quality under Alternative 2 would also be the same as for the Proposed Action alternative.

GFOQ Siting. Site preparation and construction and use of eight homes would have no significant effect.

4.5 NOISE

4.5.1 Affected Environment

The Noise Control Act of 1972 (Public Law 92-574) directs Federal agencies to comply with applicable Federal, state, interstate, and local noise control regulations. In 1974 EPA provided information on negative effects of noise, identifying indoor and outdoor noise limits that protect public health and welfare (e.g., prevent hearing damage, sleep disturbance, and communication disruption). In addition, sound quality criteria established by EPA, the US Department of Housing and Urban Development, and DoD have identified noise levels to protect public health and welfare with an adequate margin of safety.

These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting. Noise levels below 65 decibels (dB) are considered to be normally acceptable in suitable living environments.

An Installation Operational Noise Management Plan for Fort Eustis was prepared by the US Army Center for Health Promotion and Preventive Medicine with a draft submitted in 2007. This Plan evaluated noise produced by activities at Fort Eustis and identified compatibility of land uses on or adjacent to the installation. The study also provided noise contours, which are graphic representations of noise levels around noise-emitting sources. The contours define noise zones, which correspond to exposure guidelines. According to the study, noise sources within the cantonment area of Fort Eustis consist primarily of roadway traffic and general activities associated with office and training activities.

There are no significant environmental noise issues at Fort Eustis.

4.5.2 Consequences

The levels of impacts to assess noise impacts are defined as follows:

No Effect – Existing background sounds would prevail; noise generated by construction and operation of the facility would be infrequent or absent, mostly immeasurable.

No Significant Effect – Noise levels would exceed existing background sounds, as described under no effect, but would not exceed applicable noise standards.

Significant Effect – Noise levels would exceed applicable noise standards on a temporary, short-term, or permanent basis or for a prolonged period of time.

4.5.2.1 No Action Alternative

No effects would be expected. Implementation of the No Action Alternative would not alter the existing noise at any of the sites being considered under the proposed action, nor at any additional locations.

4.5.2.2 Proposed Action Alternative

Effects would not be significant. Short-term direct effects would be expected during site preparation and construction of each of the proposed projects. Arrival of heavy equipment and materials would be scheduled to occur during normal work hours to the greatest extent possible to avoid disturbing personnel on post and the surrounding communities. By confining construction activities to normal working hours and use of newer construction equipment with improved exhaust systems, noise impacts during the construction and demolition phases would be minimized and compatible with surrounding land use.

Noise effects from facility operations would not be significant. After the facilities become operational there would be minor long-term noises from vehicles, primarily on week days during peak commuting hours. TRADOC HQ complex is the largest of the new BRAC facilities and is to be sited within a parade ground/recreational area. It is also closest to existing base housing units; however, high levels of noise would not under normal conditions emanate from that facility. If emergency electric ‘standby’ generators are installed in conjunction with the HQ TRADOC facility, there will short term increases in noise from during testing and during times of emergency.

The Joint Task Force – Civil Support Facility is the other facility to be newly constructed. It will be much smaller than the TRADOC facility and is sited within a commercially developed area.

GFOQ housing will be adjacent to the Antwerp Village enlisted housing in the 2900 Block and wetlands along the Warwick River. Construction activities will be limited to normal working hours and no significant noise impacts associated with the new housing. Operationally, there will be no effects.

Renovation of Buildings 661 and 705 for IMCOM, NETCOM and ACA activities could have minor short-term noise impacts during construction, but operational noise would be no greater than the minimal noise now generated.

4.5.2.3 Alternative 1

<u>TRADOC Facility.</u> Environmental consequences of noise impacts under Alternative 1 would be the same as for the Proposed Action alternative.

<u>GFOQ Facility.</u> Housing will be adjacent to Brown’s Lake, a closed landfill and a closed rifle range. There will be no significant noise impacts associated with construction of either of these facilities, and operationally, there will be no effects.

4.5.2.4 Alternative 2

TRADOC Facility. Environmental consequences of noise impacts under Alternative 2 would also be the same as for the Proposed Action alternative.

GFOQ Siting. Third Port is an industrial area and there would be no significant effect on, or because of, noise.

4.6 GEOLOGY AND SOILS

4.6.1 Affected Environment

4.6.1.1 Geologic and Topographic Conditions

Fort Eustis lies on sediments recently deposited (within the past 28 million years) of sand and gravel under beach sands interbedded with clays and organic silts of varying thickness. Fort Eustis is low and flat, rising from approximately 5 feet above MSL on Mulberry Island to approximately 30 feet above MSL in the cantonment area.

4.6.1.2 Seismicity

Virginia is considered to be relatively active seismically, but the earthquakes are rarely strong. The central and western parts of the state are the most active areas; very few earthquakes have been reported in the southeastern part of the state. Since records have been kept, no earthquakes have been centered in the Fort Eustis area. Fort Eustis is located within Earthquake Hazard Zone 2, which means the probability for damage, in the unlikely event of an earthquake, is moderate.

4.6.1.3 Soils

The eastern part of Fort Eustis is underlain by stiff surface clays over dense silty sands and shell fragments. The soils on Fort Eustis are composed of two general groups, the names of which generally indicate where they are found: (1) low river terrace and marsh soils, and (2) low coastal plain upland soils. Twenty-two percent of the installation's soils belong to the low coastal plain upland association.

4.6.1.4 Prime Farmland

Although the Craven silt loam with slopes of 2 percent or less is considered to be a prime farmland soil, the land in the cantonment area is occupied by infrastructure and has not been used for agriculture since the installation was established.

4.6.2 Consequences

To assess the magnitude of impacts to geology, topography, and soils in the area of the project sites, the following impact thresholds were used:

No Effect – Geology, topography, or soils would not be impacted or the impact to these resources would be below or at the lower levels of detection, or existing conditions do not exist for impacts to occur.

No Significant Effect – Impacts to geology, topography, or soils would be detectable. Impacts to undisturbed areas would be small. Mitigation would be needed to offset adverse impacts and would be relatively simple to implement and would likely be successful.

Significant Effect – Impacts on geology, topography, or soils would be readily apparent and result in a change to the character of the resource over a relatively wide area. Mitigation measures would be necessary to offset adverse impacts and may or may not be successful.

4.6.2.1 No Action Alternative

No effects would be expected. Implementation of the No Action Alternative would result in no changes to the sites being considered under the proposed action. There would be no new construction or demolition, and as a result, there would be no impacts to geology, topography, or soils

4.6.2.2 Proposed Action Alternative

Geologic and Topographic Conditions – No significant adverse impacts to geologic or topographic conditions would be expected. All of the sites proposed for construction under the proposed action are essentially flat, and would likely require only minor leveling and grading. No alteration of the general topographic character of the site would occur.

Soils – No significant adverse impacts to soils would be expected. Soils found within the footprints of the proposed new construction areas would likely be affected by activities associated with leveling and grading of the site. Soils would be compacted, and soil layer structure would be disturbed and modified. Soil productivity, (i.e. the capacity of the soil to produce vegetative biomass), would decline in disturbed areas and be completely eliminated for those areas within the footprint of building structures or parking facilities. These effects would not be considered significant, given that the majority of soils within the Fort Eustis cantonment area have been previously disturbed or modified. Disturbed areas outside of the building and parking facility footprints would be reseeded following construction activities, and soil productivity on these sites would return. Soil erosion and sediment production would be minimized for all construction operations as a result of following an approved sediment and erosion control plan. All sites would be re-graded and re-vegetated, where appropriate, following construction activities, and soil erosion and sediment control measures would be included in site plans to minimize long term erosion and sediment production at each site. Each site would be constructed with storm water controls favoring methods that allow for storm water to reenter the groundwater system rather than leaving the site as surface flow.

Prime Farmland – Because the land in the cantonment area has not been used for agriculture since the installation was established, and because much of the land within the cantonment area has been filled, a Farmland Conversion Impact Rating (Form AD-1006) of the project area

is not warranted and no further action is required under the Farmland Protection Policy Act (FPPA).

4.6.2.3 Alternative 1

TRADOC Facility. Environmental consequences of project impacts under Alternative 1 on geology and soils would be the same as for the Proposed Action alternative.

GFOQ Siting. Environmental consequences of project impacts under Alternative 1 on geology and soils would be the same as for the Proposed Action alternative.

4.6.2.4 Alternative 2

TRADOC Facility. Environmental consequences of project impacts under Alternative 2 on geology and soils would be the same as for the Proposed Action alternative.

GFOQ Siting. Environmental consequences of project impacts under Alternative 2 on geology and soils would be the same as for the Proposed Action alternative.

4.7 WATER RESOURCES

4.7.1 Affected Environment

The installation is bordered on the east with the Warwick River, the west by the James River, on the north by Skiffes Creek and has about 21 miles of open, tidal shoreline. The lengths of the installation's shorelines along these borders are 10.4 miles, 9.2 miles and 2.0 miles, respectively. There are many more miles of small tidal creek shoreline within the boundaries of the base. The majority of the primary tidal shoreline around Fort Eustis is marsh that is remote from base infrastructure. Where they are open to the forces of waves and currents, tidal shorelines of the installation are generally erosional. Drainage along most of the area is low gradient flow into tidal marshes and creeks except for upland areas along the western part of Mulberry Island where drainage is controlled by intermittent small upland watersheds.

4.7.1.1 Surface Water and Wetlands

Surface water bodies within and adjacent to Fort Eustis include Eustis Lake, Brown's Lake, Skiffes Creek, Bailey Creek, and other smaller associated wetlands, creeks, and ponds. Drainage flows into Skiffes Creek, Bailey Creek, and the James and Warwick Rivers. None of these surface water features are within areas accepting the realignment.

Eustis Lake is a 45-acre impoundment located in the northern portion of Fort Eustis to the west of the cantonment area. The lake was constructed in the 1950s and has an average depth of 4 feet with a maximum depth of 8 feet. Swimming is not allowed, but the lake is used for recreational boating and "catch and release" fishing. Eustis Lake is an Installation Restoration Program (IRP) site and the restriction on fishing is due to contaminants in the sediment. The lake receives storm water from numerous industrial, barracks, and wooded areas. The two concrete spillways drain into a tidal wetland adjacent to the James River.

Brown's Lake is another man-made lake on Fort Eustis property. It was constructed in the 1950s near what is now the intersection of Wilson Avenue and Goodman Road by constructing an earthen dam and concrete spillway across a small stream flowing southward into the Warwick River. Brown's Lake has contaminated water and sediment because it collects storm water from the helicopter maintenance area, the transportation motor pool, the locomotive storage yard, and the Directorate of Public Works (DPW) compound. Brown's Lake is an IRP site with cleanup efforts underway for the upper drainage ditch leading to the lake. No fishing, swimming, or wading is permitted at Brown's Lake, which discharges to an intermittent stream/wetlands area just to the south that feeds into the Warwick River at a point approximately 1,500 feet from the Brown's Lake spillway. The lake is roughly triangular in shape and its total surface area is approximately 2.5 acres. Maximum lake water depth is 10.9 feet.

Bailey Creek, also an IRP site, is a one to two mile meandering tidal creek, which discharges to Skiffes Creek. It is located on the northern boundary of Fort Eustis where it borders the southern boundary of Inactive Landfill 15.

The site proposed for construction of TRADOC Headquarters is within Murphy Field and there is no record of previous development on the site. There are no wetlands on the area proposed for construction and the nearest portion of the property to a wetland conservation area is its southeastern boundary, which is approximately 500 feet from the western fringe of the *Warwick River South Seeps*. Madison Avenue and General Stanford Elementary School are between the TRADOC HQ Complex site and the wetland (figures 4.7-1 and 4.8-1).

Figure 4.7-1 Surface Drainage from Proposed TRADOC Site on Murphy Field

The 2900 Block GFOQ site drains into the Warwick River through its surrounding wetland and tributaries. The US Army Corps of Engineers completed a wetlands delineation of this property and a 100-foot forested upland buffer setback has been established to designate the site boundary shown in yellow. See figure 4.7-2.

Figure 4.7-2 2900 Block and related surface drainage

Other sites proposed for accepting the realignments are either renovations of existing buildings (IMCOM, ACA and NETCOM) or new construction on previously constructed sites (JTF-CS). In these cases, surface water and wetland impacts would be unchanged.

4.7.1.2 Groundwater

The uppermost aquifer at Fort Eustis is about 10–15 feet thick. Being unconfined, groundwater from this aquifer discharges into streams, rivers, and lakes. The upper part of the aquifer comprises the surface of the water table. Recharge of the aquifer is through infiltration of precipitation.

Groundwater on the installation is pumped from eight wells at depths of over 400 feet, and is mainly used to fill ponds and a sand pool for swimming, and to irrigate the golf course.

4.7.1.3 Floodplains

Fort Eustis is located on a peninsula formed by the James River, the York River and the Chesapeake Bay in eastern Virginia. The region is tidal, subject to storms and is relatively flat.

With an average elevation of approximately 29 feet above mean sea level, most of the installation, but none of the cantonment area, is within the 100-year floodplain.

Mulberry Island, encompassing the southeastern portion of the Fort Eustis reservation, is a sub-peninsula between the Warwick and James Rivers and is relatively level with large areas of tidal marsh, freshwater wetlands, and mixed forested areas. Mulberry Island lies below the standard flood line at 13 feet above mean sea level.

4.7.2 Consequences

To assess the effect of impacts to water resources in the area of the project sites, the following criteria were used:

No Effect – Current water quality and hydrologic conditions would not be altered or existing conditions do not exist for impacts to occur.

No Significant Effect – Impacts (chemical, physical, or biological effects) would be either not detectable, or detectable only at or below water quality standards or criteria. Alterations in water quality and hydrologic conditions relative to historical baseline may occur, however, only on a localized and short-term basis.

Significant Effect – Impacts (chemical, physical, or biological effects) would be detectable and would be frequently altered from the historical baseline or desired water quality conditions; and/or chemical, physical, or biological water quality standards or criteria would be locally, slightly and singularly, exceeded on either a short-term or prolonged basis.

4.7.2.1 No Action Alternative

No effects would be expected. Implementation of the No Action Alternative would not alter the existing water resources at the sites being considered under the proposed action.

4.7.2.2 Proposed Action Alternative

Although minor direct impacts would be expected, impacts on water resources from construction and operation of the TRADOC HQ Complex, Joint Task Force – Civil Support and GFOQ are not anticipated to be significant. The topography is nearly flat, which minimizes erosion and sediment production during construction. Long-term increases in storm water runoff derived from newly created impervious surface area would follow. Overall, these impacts would not be significant, given the implementation of sediment and erosion control measures during the construction phase and installation of required storm water controls to reduce runoff associated impacts over the operational lifetime of the proposed structures.

Surface Water/Wetlands – Short term impacts would be expected, but would not be considered significant. Measures would be implemented to comply with storm water permits from the State during both construction and operation, which would ensure that impacts from increased runoff, altered drainage patterns, or changes in water quality due to surface water runoff during construction would not be significant.

Long-term impacts associated with increased runoff volumes and potential concerns regarding the quality of runoff from newly created impervious surfaces would be minimized through the design and construction of storm water control measures, under an approved storm water plan for these sites. Storm water runoff would be managed, as agreed by the Federal government under the Chesapeake Bay Program Directive No. 01-1: "Managing Storm Water on State, Federal and District-Owned Lands and Facilities," which was developed for better management of storm water on government-owned lands and facilities, and to set an example for local governments and private landowners.

Hydrogeology/Groundwater – Adverse effects would be expected; however, they would not be significant. Any pollutant leaching as a result of demolition activities and oil and antifreeze spills and leaks from construction equipment in the short term and vehicle parking areas in the long term could pose a threat to groundwater. However, spills and leaks would be minimized by adherence to standard operating procedures for vehicle maintenance and the operation of equipment. Any potentially toxic substances in areas proposed for construction and/or demolition would be removed and safely disposed of prior to operations.

Floodplains – None of the proposed sites are located within the floodplain. Therefore, no impacts on floodplains are anticipated as a result of the proposed actions.

4.7.2.3 Alternative 1

TRADOC Facility. Environmental consequences of project impacts under Alternative 1 on water resources would be the same as for the Proposed Action alternative.

GFOQ Siting. Environmental consequences of project impacts under Alternative 1 on water resources would be the same as for the Proposed Action alternative.

4.7.2.4 Alternative 2

TRADOC Facility. Environmental consequences of project impacts under Alternative 2 on water resources would be the same as for the Proposed Action alternative.

GFOQ Siting. Environmental consequences of project impacts under Alternative 2 on water resources would be the same as for the Proposed Action alternative.

4.8 BIOLOGICAL RESOURCES

4.8.1 Affected Environment

4.8.1.1 Vegetation

Most of Fort Eustis, with the exception of the cantonment area, is forest or wetland. Common tree species in upland forests include loblolly pine (*Pinus taeda*), yellow poplar (*Liriodendron tulipifera*), American beech (*Fagus grandifolia*), white oak (*Quercus alba*), and red maple (*Acer rubrum*). Shrub and herbaceous species, such as paw paw (*Asimina triloba*), blueberry

(*Vaccinium* spp.), various species of fern, false nettle (*Boehmeria cylindrica*), and common greenbrier (*Smilax rotundifolia*) are common as well.

The site proposed for the TRADOC HQ facility serves as a parade ground and recreational field, Major features on the site are five baseball / softball diamonds and a running track. Except where activities prevent or preclude ground cover, mowed lawn grasses cover the majority of the site.

The 2900 Block GFOQ site is densely forested with mature hardwoods and pine throughout. Large tulip poplar, sweetgum, cherrybark oak, and loblolly pine make up the majority of the upper canopy species. Vegetation within the 2900 Block site is predominately a pine/hardwood mix that creates a tall canopy. Groundcover is sparce due and limited mostly to seedlings emerging through a thick layer of decomposing fallen leaves, branches, and trees. Fort Eustis is preparing a “Timber Inventory and Forestry Management Plan for Fort Eustis.” This study is in Draft form but the data yields a total market value of the timber resource within the 2900 Block site of approximately $26,000 based on the amount of each of the three types of timber (Table 4.8-1).

Table 4.8-1 Harvestable Timber Values within 2900 Block Site

Saw timber	Board feet/acre	Acres	Value/1000 Board Feet	Value
Pine	8154.31	9.22	222	$16,690.57
Hard Hardwood	2402.66	9.22	140	$3,101.35
Soft Hardwood	4022.18	9.22	140	$5,191.83
Pulpwood	**Cords/acre**	**Acres**	**Value/Cord**	**Value**
Pine	1.05	9.22	21.55	$208.63
Hard Hardwood	0.83	9.22	13.78	$105.45
Soft Hardwood	4.08	9.22	13.78	$518.37
TOTAL VALUE				**$25,816.20**

A forested upland buffer area of no less than 100 feet outside the perimeter of the 2900 Block site has been established based on the wetland delineation conducted by the US Army Corps of Engineers.

The two alternative sites identified for GFOQ housing are covered with a mix of grasses, shrubs, and a mix of pine and hardwood trees. The Brown’s Lake site contains mostly shrub and bush, and tree density is low compared to other wooded locations on the installation. Unmaintained and unused, the Brown’s Lake site is reverting to natural conditions.

The site at Third Port has a far more manicured appearance than either of the other two GFOQ sites being considered. This site contains approximately 57,000 square feet (1.31 acres) of

paved areas for parking and roads and a one-acre pond. The remaining portion of the site has a mix of dense tree growth and mowed lawns.

4.8.1.2 Wildlife

Mammals. Several species of wildlife occur throughout the installation or in natural areas on Mulberry Island. Whitetail deer (*Odocoileus virginianus*), raccoons (*Procyon lotor*), opossums (*Didelphis marsupialis*) and Eastern gray squirrels (*Sciurus carolinensis*) are commonly observed in the cantonment area as well as Mulberry Island. Other mammalian species such as river otters (*Lutra canadensis*), muskrat (*Ondatra zibethica*), red foxes (*Vulpes fulva*), Eastern cottontails (*Sylvilagus floridans*) as well as various rodents and insectivores (bats and shrews) tend to occur more so in natural areas.

Birds. Many bird species also occur throughout the installation. Ground-nesting birds such as bobwhite quail (*Colinus virginianus*) and wild turkeys (*Meleagris gallopavo*) and most waterfowl occur outside the more heavily developed areas of the installation. Passerine and woodpecker species, being mobile, may nest in cantonment areas but will also occur in more remote training areas. Canada geese (*Branta canadensis*) are found in the cantonment area including Murphy Field but are considered nuisances in these cases. The bald eagle (*Haliaeetus leucocephalus*) is the only species occurring at Fort Eustis that had been on the Federal List of Endangered and Threatened Species (listed as threatened); however, this species was completely delisted on June 28, 2007.

Herptiles. Reptiles and amphibians occur throughout the installation with a few common species being found in the cantonment such as the Eastern garter snake (*Thamnophis sirtalis*), black ratsnake (*Pantherophis allegenenis*), Northern black racer (*Coluber constrictor*) and Northern watersnake (*Nerodia sipedon*). Some aquatic turtles such as common snapping turtles (*Chelydra serpentina*) and redbelly turtles (*Pseudemys rubriventris*) occur in Brown's Lake and females may move into cantonment areas to lay eggs during Spring. Most amphibians tend to occur in surface waters, wetlands or in adjacent uplands.

4.8.1.3 Sensitive Species

An inventory of endangered, threatened, and rare animal species was conducted on Fort Eustis in 1995–1996 by the Virginia Department of Conservation and Recreation, Division of Natural Heritage (DCRDNH,1997). Species targeted in the survey included mammals, birds, reptiles, amphibians, fish, and invertebrates listed as endangered or threatened, or determined to be candidates for listing, by the United States Fish and Wildlife Service (USFWS), Virginia Department of Game and Inland Fisheries, or Virginia Department of Agriculture and Consumer Services. Key findings of the inventory are as follows:

Vertebrates. The Mulberry Island-Marshy Point and the Jail Creek conservation areas contain active and inactive bald eagle (*Haliaeetus leucocephalus*) nests but these are approximately 2.5 miles from the cantonment area and will not be affected by BRAC project construction and operation activities.

The species described below could be of concern with respect to the proposed action:

Plants. The Virginia Department of Conservation and Recreation Division of Natural Heritage (VADNH) completed a rare plant inventory of Fort Eustis in 1994. Seven wetland plant species on the VADNH Watchlist (those that have between 20 and 100 known occurrences) were identified on Fort Eustis (USATCFE, 1999). Three of the seven plant species on the VADNH Watchlist, few-flowered milkweed (*Asclepias lanceolata*), beaked spikerush (*Eleocharis rostellata*), and three-ribbed arrowgrass (*Triglochin striatum*), were identified in habitats along the Warwick River that are near the proposed TRADOC HQ Complex. Beaked spikerush and three-ribbed arrowgrass were fairly abundant and few-flowered milkweed was far rarer.

Invertebrates. The tidewater interstitial amphipod (*Stygobromus araeus*), a small, blind crustacean and a Federally listed species of special concern (more abundant than *threatened, and threatened is* more abundant than *endangered*). *S. araeus* was documented on the installation after being collected at the Warwick River South Seeps conservation area during a 1995–1996 survey. Potential threats to this species include changes to the groundwater or seepage areas such as groundwater pollution, lowering of the water table, timber harvest, and land disturbance.

This conservation area is one of two freshwater seeps on the installation that was identified as conservation sites that are needed to enhance protection and facilitate management of rare species at Fort Eustis. The Warwick River North Seeps is farther upstream and beyond the range of influence of BRAC activities (figure 4.8.1). The footprint of the proposed TRADOC HQ Complex is the closest of the BRAC sites in proximity to the South Seeps.

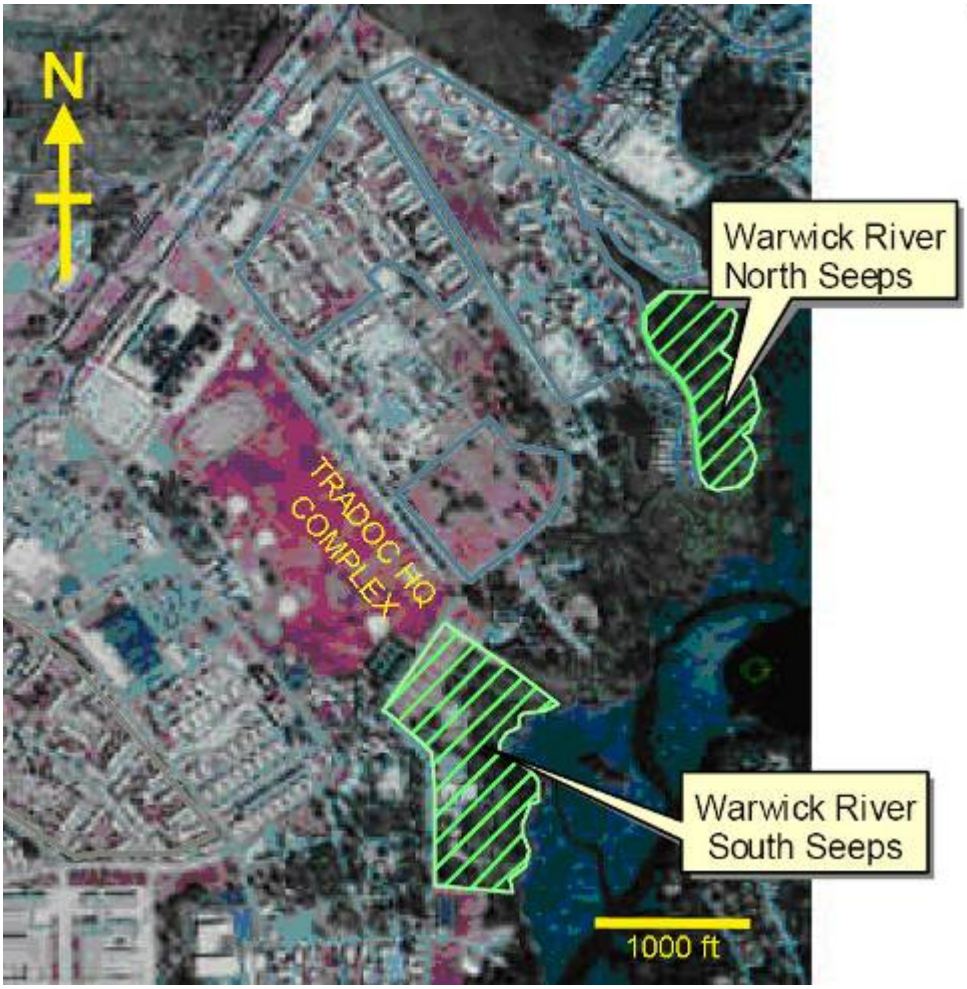

Figure 4.8-1 Fort Eustis Conservation Areas (color infrared photograph)

4.8.2 Consequences

The above discussion of biological resources focuses largely on Fort Eustis property surrounding the cantonment area while areas planned for BRAC construction projects are all within the cantonment area and the habitat is considerably less viable. It is not expected that a significant alteration of the habitat will occur, or that there will be any significant removal of marketable timber or any other effect on forested lands.

The following criteria were used to determine the magnitude of effects on wildlife, wildlife habitat and vegetation, with separate criteria being used to evaluate impacts to threatened and endangered species:

No Effect – No impacts to native species, their habitats, or the natural processes sustaining them would occur, or such conditions do not exist for impacts to occur.

No Significant Effect – Impacts would be detectable, but would not be expected to be outside the natural range of variability and would not have any long-term effects on native species, their habitats, or the natural processes sustaining them. Occasional responses to disturbance by some individuals could be expected, but without interference to feeding, reproduction, or other factors affecting population levels. Sufficient habitat would remain functional to maintain viability of all species.

Significant Effect – Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability for long periods of time or be permanent. Population numbers, population structure, genetic variability, and other demographic factors for species might have large, short-term declines, with long-term population numbers significantly depressed. Frequent responses to disturbance by some individuals would be expected, with negative impacts to feeding, reproduction, or other factors resulting in a long-term decrease in population levels. Loss of habitat might affect the viability of at least some native species.

Impacts to threatened and endangered species were classified using the following terminology, as defined under the Endangered Species Act (ESA):

No effect – The proposed action will have no impacts, positive or negative, to a listed or proposed to be listed species or designated critical habitat; or listed or proposed to be listed species or designated critical habitat are not present. Generally, this means no listed resources will be exposed to the proposed action and its environmental consequences.

May affect, but not likely to adversely affect – Effects on special status species are beneficial, insignificant, or discountable (i.e., extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated) or completely beneficial. Beneficial effects have contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated

May affect, and is likely to adversely affect – When an adverse effect may occur as a direct or indirect result of proposed actions and the listed species will respond in a negative manner to the exposure.

Likely to jeopardize proposed species and/or adversely modify proposed critical habitat – The appropriate conclusion when Fort Eustis identifies situations in which actions could jeopardize the continued existence of a proposed species or adversely modify critical habitat to a species within and/or outside Fort Eustis boundaries.

4.8.2.1 No Action Alternative

No effects would be expected. Under the No Action Alternative, new BRAC facilities would not be constructed on the proposed sites and no adverse impacts to biological resources would occur. Under the ESA criteria, there would be no effect.

4.8.2.2 Proposed Action Alternative

Vegetation. Although the proposed sites for the TRADOC HQ Complex and the Joint Task Force – Civil Support site are open grassy fields, short- and long-term direct minor effects on vegetation would be expected. With the exception of the proposed 2900 Block GFOQ site, the proposed sites have already been highly altered by human activities. Impacts to vegetation in all BRAC construction areas would not be significant and could be reduced by adherence to Best Management Practices (BMPs).

A secondary effect of siting the TRADOC HQ Complex on Murphy Field is that ball fields would require relocation. DPW, Master Planning has selected a 10.33 acre site at the corner of Washington Avenue and Taylor Avenue that is adjacent to an existing ball field (figure 4.8-2). This wooded area is composed mostly of a mature hardwood/pine forest type. Medium to large saw timber-sized tulip poplar, white oak, American beech, and loblolly pine. Density of trees is lower than in other surrounding wooded areas and the understory is kept in a park-like state by periodic mowing.

Figure 4.8-2 Ball field relocation site at Washington and Taylor Avenues.

Clearing of the site for the relocated ball fields would be accomplished to harvest the trees, rather than cut and burn or grind for mulch. The total estimated value of the timber within the 10.33 acres is approximately $27,000 (Table 4.8-2).

Table 4.8-2 Harvestable Timber Values within Ball Field Relocation Site

Saw timber	Board Feet/Acre	Acres	Value/1000 Board Feet	Value
Pine	7927.72	10.33	222	$18,180.32
Hard Hardwood	4075.51	10.33	140	$5,894.00
Soft Hardwood	1520.00	10.33	140	$2,198.22
Pulpwood	**Cords/Acre**	**Acres**	**Value/Cord**	**Value**
Pine	0.66	10.33	21.55	$146.92
Hard Hardwood	1.42	10.33	13.78	$202.13
Soft Hardwood	2.24	10.33	13.78	$318.86
TOTAL VALUE				**$26,940.46**

The proposed GFOQ site is a densely wooded area. Trees that are tightly packed compete for light and tend to grow tall, straight, and are sparsely foliated, which makes them strikingly different from their counterparts that grow in open spaces. When this type of growth is thinned, the remaining trees are a potential threat to nearby homes and can be particularly dangerous during high winds. Consideration of this possibility must be given during site preparation and home placement within the 2900 Block GFOQ site; and the safest solution is to completely harvest the trees that are within 100 feet of the homes. From tree harvesting that is proposed to accommodate construction of the TRADOC HQ Complex and the GFOQ housing facility, impacts to native species and their habitat would occur but would be minor. Based on the above definitions, there would be no significant effect

Wildlife. Short- and long-term direct minor effects on common wildlife species in undeveloped BRAC construction areas would be expected but would not be significant. Some terrestrial animals could be displaced or destroyed when the GFOQ area is cleared for new homes. Construction in this area could temporarily disturb wildlife in the immediate area, particularly birds and deer. Diversity of wildlife on-site is limited and, considering the site is located adjacent to the Antwerp Village housing area, species that utilize this area have clearly adapted to living conditions in habitats altered by humans.

Sensitive Species. Under the Endangered Species Act criteria, no effects would be expected. A buffer of no less than 100-feet will be maintained between construction areas and the Warwick River South Seeps conservation site. The proposed action would not be expected to affect the Warwick River North Seeps conservation site, which lies upstream and therefore beyond the influence of the proposed footprints.

4.8.2.3 Alternative 1

TRADOC Facility. Environmental consequences of project impacts under Alternative 1 on biological resources would be the same as for the Proposed Action alternative.

GFOQ Siting. There would be no significant effect from trees removed at Brown's Lake for housing footprints, or construction equipment access and maneuverability. There would also be removal of timber already compromised by age and disease, and for safety. The amount of timber on this site is insufficient to warrant harvesting with the intent to sell. Diversity of wildlife on-site is limited and, considering the site is located partially within a closed rifle range (figure 4.8-3) and proximal to other housing units. Species that utilize this area have adapted to living conditions in habitats altered by humans.

Under the ESA criteria there would be no effect on sensitive species.

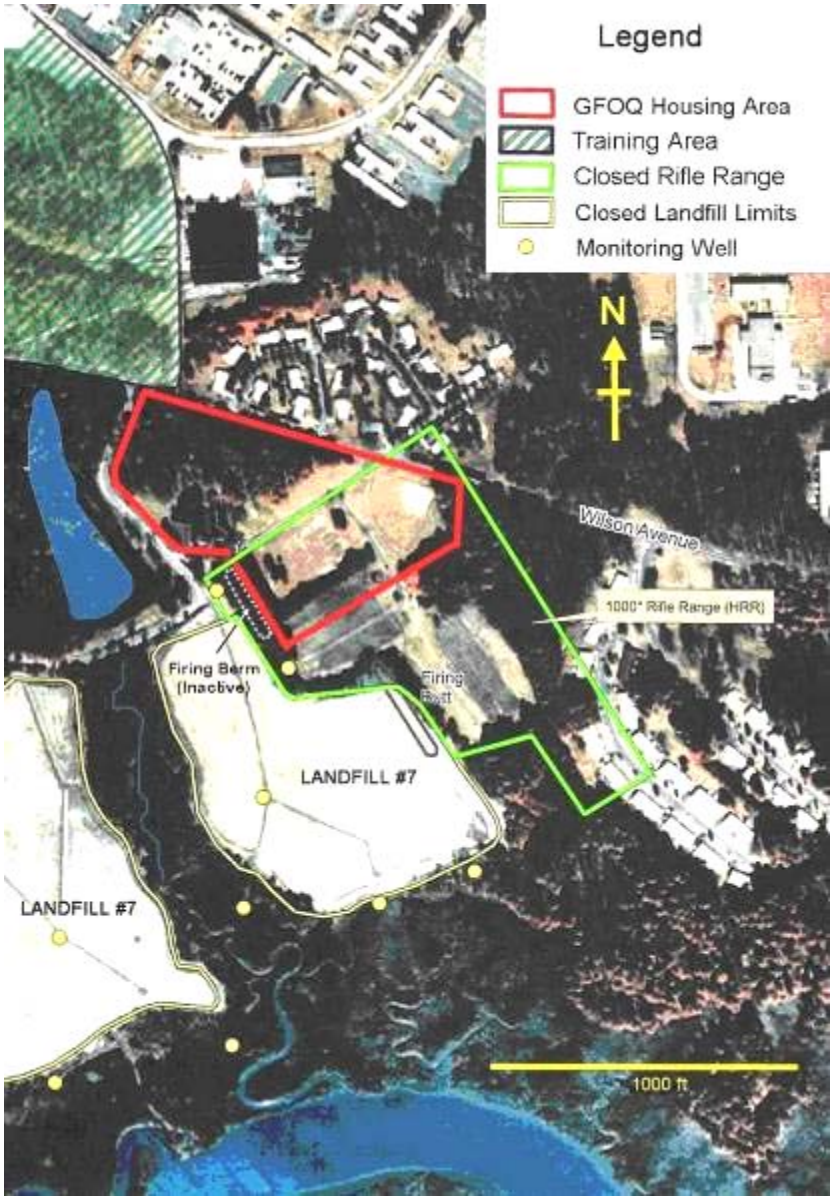

Figure 4.8-3 Location of Alternative 1 GFOQ Housing Area

4.8.2.4 Alternative 2

TRADOC Facility. Environmental consequences of project impacts under Alternative 2 on biological resources would be the same as for the Proposed Action alternative.

GFOQ Siting. Significant portions of Third Port site are open grassy areas and parking lots (figure 4.8-4). Where present, trees are less dense than at 2900 Block or at Brown's Lake. There would be no significant effect from trees removed at Third Port for housing footprints, construction equipment access and maneuverability, and there would be removal of any timber already compromised by age and disease, and for safety. Biodiversity on-site is very limited with the site located partially within an industrial area that also contains several other housing units. Species present have adapted to living conditions in habitats altered by humans.

There would be no effect under the ESA criteria.

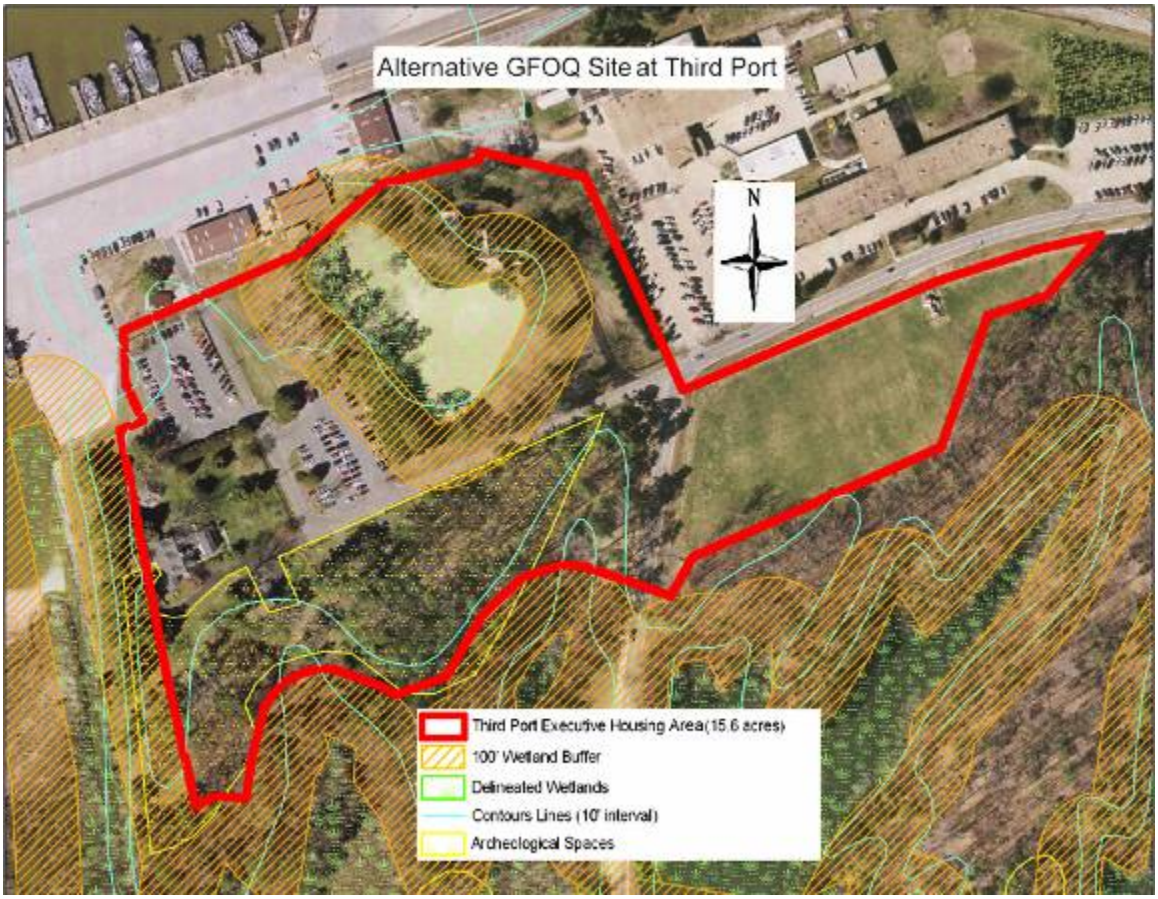

Figure 4.8-4 Location of Alternative 2 GFOQ Housing Area at Third Port

4.9 CULTURAL RESOURCES

4.9.1 Affected Environment

Identified prehistoric occupations at Fort Eustis include sites dating to the Early Archaic, Middle Archaic, Late Archaic, Early Woodland, Middle Woodland, and Late Woodland periods. Site types ranged from small, seasonally-occupied campsites situated along the interior portion of tidal creeks, marshes and along high interior drainages to larger base camps and possibly villages typically situated adjacent to the principal estuaries and lower tidal creeks.

Historical archaeological resources range in date from the earliest period of settlement during the first quarter of the seventeenth century to the early twentieth century when the property was acquired for development as Camp Eustis. Historic site types predominantly consist of rural, domestic farmsteads, although numerous Civil War earthworks, a few cemeteries, and several industrial sites have also been identified. Several historical sites exist at Fort Eustis that are either listed on the National Register of Historic Places (NRHP) or are potentially eligible for inclusion. These include the Matthew Jones House, Fort Crafford and the Compton Brickyard. These sites are not located within the BRAC project areas.

The Fort Eustis Integrated Cultural Resources Management Plan (ICRMP) (Engineering & Environment, Inc., 1999) provides a detailed description of the prehistoric and historic background of Fort Eustis.

Although archaeological surveys of Fort Eustis have been conducted on of the installation, unidentified archaeological resources may yet exist within the installation. Of concern is the possibility of findings within the areas proposed for BRAC related construction.

IMCOM, NETCOM and ACA will be moving into renovated modern-era buildings, and JTF/CS will be constructed on property where buildings have recently been demolished and cleared. For these sites, cultural resources investigations are not warranted.

Murphy Field Artillery Range was constructed around 1918 and closed in 1926. The range reportedly held gun emplacements that were used to practice fire 8-inch and 155-mm artillery pieces. Maps from this era depict Murphy Field as maneuver grounds. Buildings were illustrated along the northern and southern portion of this field beginning in 1918 and buildings were also located on the southern portion of maneuver ground area in the 1920 Artillery Training Field Map. Figure 4.8-3 illustrates the maneuver grounds, including the surrounding buildings as presented in the *1918 Camp Abraham Eustis, VA Layout of Camp* map (Historical Records Review, August 2006). Cultural resources investigations of Murphy Field are warranted. Additionally, there are no known cultural resources investigations of the GFOQ site adjacent to Brown's lake; therefore a survey of that location is also necessary.

Archaeological investigations by Louis Berger Group are nearing conclusion for the proposed TRADOC HQ location on Murphy Field and the proposed and alternate GFOQ locations at 2900 Block, Third Port and Brown's Lake. Preliminary indications are that each location has potential register-eligible archaeological sites. Emerging findings are a possible Civil War

embankment at the 2900 Block location and two prehistoric sites and one 16th century site at the Third Port location. The Brown's Lake site also has archaeological sites potentially eligible for listing.

Section 106 consultation with the Virginia Department of Historic Resources has commenced and compliance will be completed prior to any ground disturbing activities at both the TRADOC HQ and GFOQ locations.

Source: Historical Records Review, Fort Eustis, Virginia, August 2006

Figure 4.9-1 Murphy Field c.1918

4.9.2 Consequences

Potential impacts to cultural resources have been evaluated based on the extent of resources on or eligible for the NRHP in the area. This analysis parallels the procedures for determining the effects of a Federal undertaking upon historic properties under 36 CFR 800 implementing Section 106 of the National Historic Preservation Act (NHPA). For each valid alternative in the EA, an assessment has been made of what NRHP resources, if any, are within its potential area of impact and the reasonably foreseeable nature and extent of any impact. Usually, ICRMPs and underlying historic architectural and archaeological studies for Federal installations provide sufficient data to make this assessment. Where such information is inadequate, the requirement for additional effort to identify historic properties is noted. The following provides an explanation of the characterization of impacts to cultural resources as "no effect, not significant, and significant" in comparison with the terminology used for other resource sections in this EA.

Per 36 CFR 800.11 (i) *effect* means alteration to the characteristics of a historic property that qualify it for inclusion or eligibility for the NRHP. Per 36 CFR 800.5 (a) (1), the effect becomes *adverse* when "an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." Examples of adverse effects include: the physical destruction of all or part of the historic property; an alteration of the property that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68); the removal of the property from its historic setting; changing the character of the property's use or of the physical features of its setting that contribute to its significance; and the introduction of visual, aural, and atmospheric elements that diminish the integrity of the property's significant historic features.

Environmental Impacts to Cultural Resources vs. the Section 106 Scale

No effect – This equates to *no effect* for Section 106.

No Significant Effect – An impact that alters or has the potential to alter the historic characteristics or setting of an NRHP property but does not diminish its integrity. This equates to *no adverse effect* for Section 106.

Significant Effect – An impact that diminishes or destroys the integrity of an NRHP property. This equates to *adverse effect* for Section 106

4.9.2.1 No Action Alternative

No effects would be expected.

4.9.2.2 Proposed Action Alternative

Implementation of the realignment has been reviewed against the baseline knowledge of NRHP eligible resources present for each of the BRAC project areas. Although there are no known NRHP eligible sites within the projects' construction zones and there are no known Native American Traditional Cultural Places within the projects' construction zones, new construction of the TRADOC HQ Complex and GFOQ is on property that is being fully surveyed for archaeological and cultural resources.

Building 661 and Building 705 are modern-era structures; their renovations would have no adverse effect.

New construction of the Joint Task Force – Civil Support Facility is proposed within an open field which has been greatly disturbed by recent building demolition, and debris removal. Because of the level of disturbance in this area, it is unlikely that any intact subsurface cultural deposits remain. Therefore, impacts from new construction are anticipated to have no significant effect on cultural resources.

For TRADOC HQ Complex and the selected GFOQ site, all construction contracts would include a clause prohibiting removal or disturbing, causing, or permitting to be removed or

disturbed, any historical, archaeological, architectural, or other cultural artifacts, relics, remains, or objects of antiquity. In the event that such items are discovered, the contractor would be required to notify the installation commander or his or her designated representative immediately and protect the site and material from further disturbance until the installation commander or designated representative gives clearance to proceed. Cultural resources investigations are underway to determine if any historic properties exist within areas of potential effect of the proposed construction projects. Section 106 coordination with the Virginia Department of Historic Resources (State Historic Preservation Officer) will be carried out and compliance will be satisfied before construction is allowed to begin at either location.

4.9.2.3 Alternative 1

TRADOC Facility. Impacts to cultural resources under Alternative 1 would be the same as for the Proposed Action alternative.

GFOQ Siting. Impacts to cultural resources under Alternative 1 would be the same as for the Proposed Action alternative.

TRADOC Facility. Impacts to cultural resources under Alternative 2 would be the same as for the Proposed Action alternative.

GFOQ Siting. Impacts to cultural resources under Alternative 2 would be the same as for the Proposed Action alternative.

4.10 SOCIOECONOMICS

4.10.1 Affected Environment

Fort Eustis is located adjacent to the City of Newport and is within the Virginia Beach – Norfolk – Newport News Metropolitan Statistical Area (MSA). The MSA, which is the Region of Influence (ROI) for the realignment, includes the North Carolina County of Currituck and the Virginia Counties of Gloucester, Isle of Wight, James City, Mathews, Surry, and York. It also includes the independent Virginia cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg.

4.10.1.1 Economic Development

The employment within the MSA was 588,457 in 2003, which made up approximately twenty percent of the employment in the state of Virginia. The unemployment rate in 2004 was 4.1 percent within the MSA, higher than the statewide unemployment rate of 3.7 percent. The Cities of Hampton and Newport News had higher unemployment rates than the state and MSA in 2004, with rates of 5.0 percent and 4.7 percent, respectively (Bureau of Labor Statistics, Local Area Unemployment Statistics).

Per Capita Personal Income (PCPI) in the MSA was $31,811, somewhat lower than the state PCPI of $35,698. Throughout the MSA, PCPI of the individual counties ranged from $26,782 to

$40,551. The MSA saw an average annual growth rate in personal income of 4.6 percent from 1994-2004, which is higher than the national average of 4.1 percent within the same period.

Two of the major economic drivers in the region are the military and the Port of Hampton Roads. Department of Defense procurement and outsourcing has increased from an estimated $2.3 billion in 2000 to $3.0 billion in 2003. The port is the third-largest on the East Coast, with 1.65 million containers passing through in 2003. The leisure market at the port is also expanding, with the new $30 million cruise terminal in downtown Norfolk. In addition, Virginia Beach and Hampton have new convention centers, representing a combined investment of more than $300 million. Two Fortune 500 companies are based in the region. One is Smithfield Foods, the largest pork producer in the world. The other is Norfolk Southern Corp., which serves nearly half of the United States from its mid-Atlantic terminus located in the region. The largest employer in the region is Northrop Grumman Newport News Shipbuilding, which employs 18,000 workers.

Other large employers include Anheuser-Busch in Williamsburg that announced in 2004 a $200 million modernization of its brewing facility (Virginia Business, May 2004) (http://www.virginiabusiness.com/magazine/yr2004/may04/gd.shtml). In Norfolk, Ford Motor Co. recently completed a $400 million expansion at its F-150 pickup truck assembly plant. Although the plant closed in June 2007, it was open when the BRAC 05 decisions were made. The table below lists the major non-Federal employers within the MSA.

Table 4.10-1 Major non-Federal Employers in the MSA

Company	Product/Service	Estimated Employment
Manufacturing		
Canon VA, Inc.	Copiers and laser printers	600-999
Earl Industries LLC	Ship repair	600-999
Ford Motor Company, Inc.	Trucks	2500-4999
Gwaltney of Smithfield, Ltd.	Meat processing and packaging	1500-2499
International Paper Co.	Lumber and particleboard	1500-2499
Northrop Grumman Newport News	Ship building and repair	10000-19999
Smithfield Foods Inc.	Processed meat products	1500-2499
Stihl, Inc.	Power tools	1000-1499
Non-manufacturing		
APAC Services (for United Parcel Service)	Teleservices	1000-1499
Bank of America	Financial services	1500-2499
Bon Secours	Health services	1500-2499
Busch Gardens	Amusement park	1500-2499
Lillian Vernon Corporation	Fulfillment center	2500-4999
Old Dominion University	Higher education	2500-4999
QVC, Inc.	Shopping network distribution center	1000-1499
Riverside Regional Medical Center	Health care	2500-4999
The College of William & Mary	Higher education	1500-2499
Data source: VA Beach-Norfolk-Newport News MSA, Virginia Community Profile http://virginiascan.yesvirginia.org/CommunityProfiles/Profiles/MSA47260.pdf		

4.10.1.2 Demographics

The region as a whole, along with the state, has seen significant growth over the past decade. However, the growth has not been equally distributed. Norfolk, Portsmouth and Williamsburg experienced a negative growth rate between 1995 and 2005 while the state experienced a 13.4 percent population increase during the same period. The MSA growth rate was 6.9 percent though some localities had significantly higher growth rates, such as Currituck County at 44.0 percent and the City of Suffolk at 42.7 percent. The cities of Hampton and Newport News experienced small growth rates of 1.5 percent and 0.2 percent, respectively.

Projections through 2010 suggest more moderate growth throughout the region and both states. Norfolk and Portsmouth are projected to maintain negative growth rates while Williamsburg is expected to shift to a positive growth rate. The largest change is expected in Suffolk, where its significantly high growth rate is projected to change to a slightly negative growth rate of 1.5 percent. The cities of Hampton and Newport News are projected to experience higher growth rates in the coming five years than the previous decade. The MSA is projected to change from a 1995-2005 growth rate of 6.9 percent to a growth rate of 0.7 percent from 2005 to 2010.

The median age of the MSA (33.6 years) is somewhat lower than the median ages of the states of Virginia (35.7 years) and North Carolina (35.3). In addition, the percentage of the minority population is more in the MSA (38.6 percent) than the states of Virginia and North Carolina (29.9 percent and 29.8 percent, respectively). There is a much lower percentage of individuals living in rural areas within the MSA (8.66 percent) compared to Virginia (29.96 percent) and North Carolina (39.75 percent). The cities of Hampton and Newport News have similar median ages to that of the MSA. They have higher minority percentages compared to the MSA and are more urbanized with far less than one percent of the population of each city living in rural areas.

4.10.1.3 Housing

Regional Housing. In 2000 there were a total of 619,335 housing units within the MSA according to the 2000 US Census. Approximately 26 percent of the total housing units within the region are in Virginia Beach, the next largest percentile of housing units are within Norfolk, Newport News, Chesapeake, and Hampton, areas immediately adjacent to the installation. The remainder of the housing units are scattered throughout the MSA. According to the 2000 US Census, single-family residential is the dominant housing type, comprising approximately 60 percent of the total housing units in the MSA (US Bureau of the Census).

The median value of owner-occupied housing in the MSA in 2000 was $110,100 and was slightly higher than the North Carolina median of $108,300 and lower than the Virginia median of $125,400. Median home values ranged from $81,300 in Portsmouth, VA (city) to $212,200 in Williamsburg, VA (city). Approximately 6.7 percent of the housing units within the MSA were vacant in 2000.

Base Housing. All personnel with dependents are eligible to apply for quarters on post. There are 909 privatized dwelling units on post. On-post housing is fully occupied, though some units may be temporarily unavailable to allow maintenance to be completed between tenants. The occupancy rate for on-post housing is typically in excess of 98 percent. The waiting time for on-

post family housing ranges from 1 month to 2 years, depending on rank and the number of bedrooms required. The longest wait is for enlisted and officer 4-bedroom housing units. Of the family housing units on Fort Eustis, there are no one-bedroom units, 64 two-bedroom units, 872 three bedroom units, and 16 four-bedroom units. All personnel who require housing off post must process through the Housing Office before making any arrangements to reside off post.

The new General Smalls Inn, Fort Eustis' Billeting facility, provides lodging accommodations primarily for military students, PCS families and official visitors traveling on TDY orders. All military I.D. cardholders are welcome at the installation's lodging facilities on a space available basis. There are also 235 visiting officers' quarters and nine distinguished visitors' quarters located at the corner of Pershing and Wilson Avenues and 302 visiting enlisted quarters located on Lee Boulevard. (http://www.eustis.army.mil/sites/services/base.asp)

4.10.1.4 Quality of Life

Education. There are fifteen public school divisions within the MSA. Each jurisdiction has its own with the exception of the joint school division for Williamsburg and James City County. Total enrollment within the MSA in 2005 was 303,518 for grades K-12.

The Newport News Public Schools division educates over 32,500 children in 5 early childhood centers, 26 elementary schools, 9 middle schools and 5 high schools. One of the elementary schools is located on Fort Eustis property.

In June 1999, the Newport News School System accepted an offer by Fort Eustis to build an elementary school on the post. Current demographics for General Stanford Elementary School, updated by Newport News Public Schools in October 2006, are provided In Table 4.10-2.

Table 4.10-2 General Stanford Elementary Demographics

	Count	Percent of Total
Total Enrollment	571	100.0
Gender:		
- Male	274	48
- Female	297	52.0
Ethnicity:		
- Native American	9	1.6
- Asian/Pacific Islander	8	1.4
- Black	179	31.3
- Hispanic	76	13.3
- White	263	46.1
- Unspecified	36	6.3
Special Education:	72	12.6
Talented and Gifted:	6	1.1
Economically Disadvantaged:	241	42.2
(http://sbo.nn.k12.va.us/schools/)		

Health. Within the Virginia section of the MSA, there are 21 hospitals with over 5,386 beds. The 576-bed Riverside Medical Center in Newport News offers a full range of services including a nuclear medicine unit, comprehensive heart program, cancer treatment center, neurosurgery, and pediatrics. Sentara Norfolk General has been designated as the tertiary care facility and regional referral center for the Hampton Roads area. The Eastern Virginia Medical School in Norfolk is affiliated with more than 30 area hospitals and clinics. Seventy-three nursing homes offer extended care to the elderly in the area. The area is served by more than 2,425 physicians and 588 dentists (VA Beach-Norfolk-Newport News MSA, Virginia Community Profile). In the City of Hampton, there are two hospitals, the Hampton Veterans Administration Medical Center and Sentara Careplex Hospital.

On post is McDonald Army Health Center, which operates primarily as an outpatient facility. Clinics are available for urgent care, allergies and immunizations, dental care, nutrition, women's health, disease management, pediatrics, family health, dermatology, physical therapy, and preventive medicine. Other departments are internal medicine, gastroenterology, and orthopedics. There is also a pharmacy, radiology department, pathology lab, and an operating room for general surgery. (http://www.narmc.amedd.army.mil/mcdonald/).

Law Enforcement. Security at Fort Eustis is provided through the Provost Marshal Office (PMO). The PMO responds to law enforcement emergencies occurring on Fort Eustis, including the housing areas. The Military Police enforce laws, regulations, and directives; administer the physical security programs, investigations, crime prevention program, and AWOL apprehension; and act as a liaison with civil law enforcement agencies.

Fire protection. With two fire stations, Fort Eustis is able to provide 24- hour fire and rescue service for the installation (including its housing areas) and also responds to hazardous materials emergencies. The Fort Eustis/Fort Story Fire and Emergency Services Division also educates the on-post community about fire prevention practices.

4.10.1.5 Environmental Justice

On 11 February 1994, President Clinton issued Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low–Income Populati*ons. The purpose of this EO is to avoid the disproportionate placement of adverse environmental, economic, social, or health impacts from Federal actions and policies on minority and low–income populations or communities. An element emanating from this order was the creation of an Interagency Federal Working Group on Environmental Justice comprised of the heads of seventeen Federal departments and agencies, including the US Army. Each department or agency is to develop a strategy and implementation plan for addressing environmental justice.

It is the Army’s policy to fully comply with EO 12898 by incorporating environmental justice concerns in decision–making processes supporting Army policies, programs, projects, and activities. In this regard, the Army ensures that it would identify, disclose, and respond to potential adverse social and environmental impacts on minority and/or low–income populations within the area affected by a proposed Army action.

4.10.1.6 Protection of Children

On 21 April 1997, President Clinton issued EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO recognizes that a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because children's bodily systems are not fully developed; because they eat, drink, and breathe more in proportion to their body weight; because their size and weight can diminish protection from standard safety features; and because their behavior patterns can make them more susceptible to accidents. Based on these factors, President Clinton directed each Federal agency to make it a high priority to identify and assess environmental health risks and safety risks that might disproportionately affect children. It is the Army's policy to fully comply with EO 13045 by incorporating these concerns in decision-making processes supporting Army policies, programs, projects, and activities. In this regard, the Army ensures that it would identify, disclose, and respond to potential adverse conditions that would have an adverse effect on children.

4.10.2 Consequences

In considering the environmental consequences on socioeconomic resources relative to the realignment of Fort Eustis, it is important to understand that the largest component of the incoming population is being transferred from Fort Monroe, which is approximately 20 miles from Fort Eustis and is in the same MSA. In cases where employees, particularly all civilians and the military personnel that live off post, transition to a new job location in the general commuting area, they will rarely uproot their families. In this particular case, where most of Fort Monroe's employees live off post, they live between the two installations. As such, it was assumed that there would be no net change in employment and associated expenditures relative to those specific missions moving from Fort Monroe to Fort Eustis within the ROI. It would likely be for reasons beyond the realignment that they would consider moving. Keeping their lives stable with children in the same schools and attending the same churches would be key factors.

To determine the effects of the realignment on Fort Eustis, the US Army's EIFS model was used. The EIFS model is a computer-based economic tool that calculates multipliers to estimate the direct and indirect impacts resulting from a given action. The model requires input data for the names of cities and counties comprising the ROI, the number and income of civilian and military personnel affected by the action, change in local expenditures due to the action, the number of civilians expected to relocate, and the number of military personnel who live on base. Changes in employment and spending represent direct effects resulting from the realignment. Forecast changes in ROI sales volume, employment, income, and population represent indirect effects and are based on the input data and calculated multipliers within the model.

For the purposes of analysis, a change is considered significant if it falls outside the normal range of ROI economic variation. To determine normal variability, the EIFS model calculates a rational threshold value (RTV) profile for the ROI based on historical fluctuations in sales volume, employment, income, and population patterns. The historic extremes for the ROI become the threshold of significance for social and economic change. If the calculated effect of

a reuse scenario falls outside the RTV, the impact is considered significant. Appendix **C** describes the EIFS model in detail as well as the calculation of input parameters, and presents model input and output tables and RTV parameters for both reuse intensity scenarios considered.

No Effect – No change to socioeconomic conditions.

No Significant Effect – A change that does not fall outside the historic range of the economic variation within the MSA.

Significant Effect – A change is considered significant if it falls outside the historical range of the MSA's economic variation.

4.10.2.1 No Action Alternative

Economic Development – No effects would be expected. Under the no action alternative, the Installation working population and Installation expenditures would remain unchanged from baseline levels. No new construction would take place. Therefore, economic activity levels would be the same as under the baseline conditions.

Demographics – No effects would be expected. Under the No Action Alternative, the Installation working population would remain unchanged from baseline levels and no new construction would take place. Therefore, the MSA population growth would be the same as under baseline conditions.

Housing – No effects would be expected. Under the No Action Alternative, the Installation working population would remain unchanged from baseline levels. Therefore, the demand for housing units would be the same as under baseline conditions.

Quality of Life – No effects would be expected to quality of life, including education, healthcare, law enforcement, and fire protection services because demand for these services would remain unchanged from baseline levels.

Environmental Justice – No effects would be expected. The No Action Alternative would not result in significant adverse impacts to any demographic group residing or working in the economic region of influence. Therefore, there would be no disproportionately high and adverse impacts to minority populations or low income populations. Hence, the No Action Alternative for Fort Eustis would not result in any environmental justice impacts.

Protection of Children – No effects would be expected. The No Action Alternative would not result in adverse impacts to children.

4.10.2.2 Proposed Action Alternative

Economic Development. Expected direct and indirect beneficial and adverse effects would not be significant**.** The socioeconomic impact of both the direct and indirect changes is not predicted to exceed historical thresholds for socioeconomic change and sustainability in the ROI. Under

the proposed action, 324 military personnel, 142 contractors, and 569 civilian employees would be added to the Fort Eustis workforce, but the majority would be coming from within the MSA. In any event, the net decrease in employment within the ROI would result in overall minor adverse effects to the economy with respect to decreases in sales volumes, employment income, and overall employment (see Appendix C for further details). Locally, there would be additional jobs directly attributable to construction activities, but these would be of a short-term nature. In addition, the construction of the new facilities on the Installation would generate some economic activity due to the associated increase in expenditures on labor and materials during the building period.

Demographics. Direct and indirect effects would not be significant. Under the proposed action, the move of TRADOC personnel from Fort Monroe to Fort Eustis would have no effect on regional demographics, and minor effects on demographics at Fort Eustis. Also, incoming military and civilian personnel, and their dependents, associated with IMCOM and NETCOM relocating from Fort McPherson, GA would be offset by the departure from Fort Eustis of personnel and their dependents associated with ATCS (moving to Fort Lee, Virginia, and the Army Surface Deployment and Distribution Command to Scott Air Force Base, Illinois. With a Hampton Roads MSA (formally the Virginia Beach-Norfolk-Newport News MSA) population of 1.6 million, the net change would be statistically insignificant.

Housing. Expected adverse direct and indirect effects would not be significant. Under the proposed action, there would be a minor increase in the demand for housing. Given the fast growth in available housing within the MSA, the available off-base housing stock is likely to be capable of absorbing the predicted increase in population. Meanwhile, although the current Residential Communities Initiative family housing construction is in progress, on-base housing would continue to be scarce. Some new entrants may have to be put on waiting lists should they desire to live on post. The increase in demand is not expected to result in increases in local housing costs. Due to the rank of the proposed in-coming military personnel and the fact that many civilians will remain at their existing residences no significant impact is anticipated.

The GFOQ housing will have no effect because the number of units is statistically insignificant and availability is extremely limited.

Quality of Life. In the new General Stanford Elementary School, any additional students could slightly increase the student teacher ratios at certain schools, but the effect is not expected to be significant. No effects would be expected for any other of the public services including health, law enforcement and fire protection services, given the relative small size of the incoming population compared to the population size of the MSA.

Environmental Justice. No effects would be expected. The proposed action would not result in significant adverse impacts to any demographic group residing or working in the economic region of influence. Therefore, there would be no disproportionately high and adverse impacts to minority populations or low income populations. Hence, the proposed action for Fort Eustis would not result in any environmental justice impacts.

Protection of Children. No effects would be expected. All proposed construction would be carried out in areas where few or no children reside or visit. In all cases, proper precautions

including the placement of fencing and other types of barriers would be used to prevent potential harm to all civilians, including children.

4.10.2.3 Alternative 1

TRADOC Facility. Environmental consequences of project impacts under Alternative 1 on socioeconomic resources would be the same as for the Proposed Action alternative.

GFOQ Siting. Environmental consequences of project impacts under the Brown's Lake site alternative would be the same as for the 2900 Block location.

4.10.2.4 Alternative 2

TRADOC Facility. Environmental consequences of project impacts under Alternative 2 on socioeconomic resources would be the same as for the Proposed Action alternative.

GFOQ Siting. Environmental consequences of project impacts under the Third Port site alternative would be the same as for the 2900 Block location.

4.11 TRANSPORTATION

4.11.1 Affected Environment

4.11.1.1 On Post Roadways and Traffic

There are two primary access roads onto the post. Fort Eustis Boulevard (State Route 105) becomes Washington Boulevard, a divided four-lane roadway, at the northern entrance to Fort Eustis. The other is Dan Shellabarger Road, which is three lanes. At the eastern gate, Dan Shellabarger Road blends into Madison Avenue. Approximately 20,000 vehicle round trips per day are shared between the two access roads.

A network of secondary and tertiary roads extends from both gates and provides access to the cantonment area, the Third Port, community facilities, commercial buildings, and other parts of the installation. The existing road network is able to serve the needs and mission of the installation, although minor traffic problems do occur.

4.11.1.2 Public Transportation

Hampton Roads Transit serves Fort Eustis with bus lines 106/107 and 113 to Hines Circle on Washington Boulevard (Hampton Roads Transit, 2003). Installation residents rely on personally owned vehicles, bicycles, or walking to access facilities and services on the post.

The Peninsula Airport Commission operates the Newport News/Williamsburg International Airport, which is located 5 miles east of Fort Eustis, and along with Norfolk International Airport in Norfolk serves the entire Hampton Roads metropolitan area. Newport News/Williamsburg International does not currently handle any international passenger flights, but does service a number of corporate international flights.

4.11.2 Consequences

The following criteria are used to assess the transportation impacts for each of the alternatives:

No Effect – No alterations of traffic patterns and trends would result from the action.

No Significant Effect – Short- or long-term alterations of traffic patterns and trends would result from the action. The intersections and gates may reach capacity but this change would be temporary or managed through improvements.

Significant Effect – Traffic patterns would be permanently altered from the action. The intersections and gates would reach capacity and extensive delays would develop.

4.11.2.1 No Action Alternative

No effects would be expected. Implementation of the No Action Alternative would not alter the existing transportation infrastructure at the sites being considered under the proposed action.

4.11.2.2 Proposed Action Alternative

Roadways and Traffic. A Traffic Engineering Analysis is being conducted for the Fort Eustis DPW that will provide recommendations for road improvements and improved traffic signals. Implementation of these recommendations should offset the impact of the BRAC 2005 realignment on Fort Eustis and no significant adverse effects would be expected to on-post and off-post roadways.

Preliminary recommendations of the study are that the following measures be a priority for implementation, as funding allows.

- On Madison Avenue, at the General Stanford Elementary School entrance and parking areas, implement interim operations for revised drop-off/pick-up configurations.
- A new traffic signal at the intersection of Jefferson Avenue and Madison Avenue, at the General Stanford Elementary School intersection, be installed prior to or in conjunction to the opening of the TRADOC Headquarters.
- A new traffic signal at the intersection of Jefferson Avenue and Washington Boulevard.
- A new traffic signal at the intersection of Madison Avenue and Washington Boulevard.
- Additional turn lanes and signal modification at Warwick Boulevard and Shellabarger Drive.
- As an interim solution at Hines Circle at Washington Boulevard and Lee Boulevard, modify traffic channelization by additional striping and additional signage.

- From Madison Avenue to Hines Circle at Washington Boulevard, widen Lee Boulevard to three lanes with a center turn lane.
- Widen Washington Boulevard to six lanes from Lee Boulevard at Hines Circle, to the Main Gate.
- On Jefferson Avenue, from Madison Avenue to Washington Boulevard, widen to four lanes.

Costs for these "Priority 1" projects would total approximately $13 million.

All the BRAC project sites are easily accessed from either entrance, so increases would be shared between them. The Washington Boulevard gate was the only entrance for decades, but the Ashton Green/Madison Avenue access road is a recent feature on Fort Eustis, completed in 2004. It was conceived and constructed for the purpose of a second access in the event of an emergency. Together, the two entrances easily accommodate the current level of rush hour traffic. Adding the traffic component from the BRAC realignment would not result in roadways reaching capacity, excessive delays at the gates, or traffic backups onto the Newport News grid. During construction, there will be temporary increases in post traffic.

The GFOQ housing would place eight additional families on the installation traffic grid. These families are already presumed to be on the regional transportation grid. The impact on traffic would be negligible.

Public transportation. No effects would be expected on any form of public transportation. The installation estimates that nearly all incoming personnel will be using their personally owned vehicles to commute to and within Fort Eustis.

4.11.2.3 Alternative 1

TRADOC Facility. Environmental consequences of project impacts under Alternative 1 on transportation resources would be the same as for the Proposed Action alternative.

GFOQ Siting. The impacts on transportation under the Brown's Lake site alternative would be the same as for the 2900 Block location. There would be no effect on base or regional traffic.

4.11.2.4 Alternative 2

TRADOC Facility. Environmental consequences of project impacts under Alternative 2 on transportation resources would be the same as for the Proposed Action alternative.

GFOQ Siting. The impacts on transportation under the Third Port site alternative would be the same as for the 2900 Block location. There would be no effect on base or regional traffic.

4.12 UTILITIES

In January 2007, the Deputy Assistant Secretary to the Army for Installations and Housing (DASA-I&H) signed into policy that the Army will construct all new buildings to meet the Silver level in the Leadership in Energy and Environmental Design (LEED) rating system beginning with the fiscal 2008 military construction program. The LEED standard, maintained by the US Green Building Council, will take the place of the Department of Defense Sustainable Project Rating Tool (SPiRiT). One example of green building design that the Army now requires is appropriate backflow prevention devices associated with all new facilities.

4.12.1 Affected Environment

4.12.1.1 Potable Water Supply

The city of Newport News supplies potable water to Fort Eustis from the Lee Hall Water Filtration Plant, approximately 1 mile from the installation. The Fort Eustis water distribution and wastewater collection systems were privatized in 2006, and are now owned and operated by Old Dominion Utilities Services, a subsidiary of American States Utility Services. The installation does not have a water contract with Newport News Water Works and thus there are no limitations on water use. Fort Eustis consumes approximately 1 million gallons per day. There is no potable water treatment on the post. Water storage consists of one 200,000-gallon elevated tank and one 500,000-gallon elevated tank. Both are located within the cantonment area. Potable water is delivered from the water filtration plant via 14-inch transmission line capable of delivering approximately 2.0 MGD.

Most of the system is 50 years old or more, though the potable water system throughout the installation has been improved over the past several years. ODUS maintains the Virginia Department of Health Water Works Permit. ODUS is responsible for repairs, upgrades, water quality, distribution system security, reporting, etc. ODUS also has a schedule for upgrading/replacing lines, valves, and associated equipment. Pressure throughout the system is typically about 60 pounds per square inch. Fire hydrants throughout the installation are in good condition because of recent reconditioning.

4.12.1.2 Wastewater System

Regarding its waste water system, Fort Eustis is under a Consent Order with the Virginia Department of Environmental Quality and an Administrative Order from Hampton Roads Sanitation District (HRSD) to address inflow and infiltration (I&I). A Sanitary Sewer Evaluation Study (SSES) was completed and identified I&I areas that need correction, but these fixes have not been completed.

The existing sanitary wastewater collection system, owned by Old Dominion Utility Services (ODUS) consists of gravity sewers that range in size from 6 to 30 inches and are mostly of terra-cotta with some concrete pipe. All force mains are composed of cast iron. Lift stations serve many areas of the installation. Even though privatized, Fort Eustis remains under a Consent Order to improve the quality of the sewer system. The Consent Order requires Fort Eustis make

improvements to the system over several Phases. Wastewater is conveyed to an on post pump station owned by HRSD, which pumps the wastewater to one of its wastewater treatment facilities. Average daily flow to HRSD is approximately 986,000 gallons per day. The wastewater system is generally in moderate condition considering its age, and more than 25,000 linear feet of sanitary sewer line have been rehabilitated since 1997.

4.12.1.3 Storm Water System

Approximately 32 miles of storm water infrastructure are available to collect and transport storm water runoff from the cantonment area into nearby waterways. Thirty-one storm water outfalls drain residential, office, or classroom locations on the cantonment area. The storm water system is not in good condition and there are no plans for improvement. New construction requires upgrading of storm water lines because they are hydrologically overloaded and there are integrity problems with the piping.

4.12.1.4 Energy Sources

Electricity. The electrical distribution system was privatized on 15 December 2004 and is owned and operated by Dominion Virginia Power, which supplies 110-kilovolt, three-phase, 60-hertz electrical power to Fort Eustis. The transmission line, which Dominion Virginia Power also owns, can be energized through either one or two interconnecting ties between the Chesterfield Power Plant and the Yorktown Power Plant. Electricity distribution on-post is mainly by overhead distribution lines that are owned by Dominion Virginia Power. The main post area is adequately lighted along the major thoroughfares and family housing areas.

Fuel-Natural Gas. The Virginia Natural Gas Company began service to the main post of Fort Eustis in 1991, and it owns, operates, and maintains the steel and plastic distribution system. An 8-inch main enters the post. Natural gas is generally used for heating in family housing units. Currently, the majority of Fort Eustis' larger boiler plants are dual fired natural gas and No. 2 fuel. The cost of natural gas and No. 2 fuel oil dictates which fuel is consumed at these plants.

4.12.1.5 Communications

Verizon provides telephone service to Fort Eustis through 95 incoming and 94 outgoing commercial trunk lines. Fiber optic cables have been installed to most major buildings on Fort Eustis. Telephone service, however, is still provided by a single copper cable supplying 200 telephone lines to each building.

4.12.1.6 Solid Waste

Solid waste generated at Fort Eustis, including both municipal waste and construction debris, is collected by a contractor and taken off-post. Municipal waste is taken to the steam generation plant at NASA Langley AFB where, if possible, it is incinerated and energy is recovered through steam generation. If the NASA landfill is not a viable option, then the Bethel landfill is used. The life expectancy of the Bethel landfill alone is more than 50 years when receiving a daily load of more than 2,000 tons. Fort Eustis disposed of 6,621 tons of solid waste in Fiscal Year (FY) 2005. A recycling program (white ledger paper, colored ledger paper, computer paper,

cardboard, wood pallets, newspaper, magazines, rubber tires, metals, aluminum cans, phone books, and glass) was initiated in 1990. GMH Military Housing is responsible for all solid waste and recycling pickup in privatized family housing areas.

4.12.2 Consequences

To assess whether impacts to utilities were potentially significant, the following impact thresholds were used to define significance for each utility:

No Effect – The proposed action does not impact the human or natural environment

No Significant Effect – An impact to the human and/or natural environment would occur, but it is less than thresholds indicated below for "significant effect."

Significant Effect – Thresholds for significance are defined below:

Potable Water Supply – Impacts would be considered potentially significant if the proposed action or alternatives would require more potable water than could be reliably provided by the combination of available potable water sources, leading to shortages, or if regulatory limitations on withdrawals or the treatment plant would potentially be exceeded.

Wastewater System – Impacts would be considered potentially significant if the proposed action or alternatives would require more wastewater treatment capacity than could be reliably provided by the wastewater treatment system, potentially leading to the discharge of effluents in excess of standards, or if regulatory limitations on the wastewater treatment plant would potentially be exceeded.

Storm water System – Impacts would be considered potentially significant if the proposed action or alternatives would not comply with State or Federal laws governing storm water discharges.

Energy Sources – Impacts would be considered potentially significant if the proposed action or alternatives would require energy in quantities that would exceed local and/or regional capacities for supply, leading to potentially unreliable service or shortfalls of power or other energy that could affect Fort Eustis' mission.

Communications – Impacts would be considered potentially significant if the proposed action or alternatives would require communication systems to meet mission requirements that could not be provided without major modifications to the existing Installation systems.

Municipal Solid Waste – Impacts would be considered potentially significant if the proposed action or alternatives would require collection and/or disposal that could not be provided in a reliable manner, which could cause waste to accumulate or be disposed of in a manner that could adversely affect human health or the environment.

4.12.2.1 No Action Alternative

No effects would be expected. Implementation of the No Action Alternative would not alter the existing utility/infrastructure at the sites being considered under the proposed action.

4.12.2.2 Proposed Action Alternative

Potable Water Supply – No modifications to the potable water supply system are required other than tapping into the distribution system for the new construction sites. No significant effects are anticipated.

Wastewater System – There would be no significant effects from increases in wastewater production and interruptions during tie-ins. These increases would be within the capacity of discharge and treatments systems, and the proposed action is not expected to affect the existing HRSD permit or the requirements of that permit.

Storm water System – For new construction sites, and in particular the TRADOC HQ Complex, the storm water collection and distribution system would require modification. There would be no significant effect because all changes or enhancements would comply with State or Federal laws governing storm water discharges in accordance with the installation Municipal Separate Storm Sewer System (MS4) requirements.

Energy Sources – No significant effect is anticipated from the additional energy requirements. Usage by the BRAC differential would not exceed local and/or regional capacities for supply.

Communications – Communications systems requirements will be met without major modifications to the existing Installation systems. Effects will not be significant.

Municipal Solid Waste – There would be no significant effect on waste handling. Much of the additional solid waste that would be generated by the new BRAC facilities would be removed by the installation's recycling program. The reminder would be readily accommodated by the NASA Langley Resource Recovery Facility, Bethel Landfill or other local disposal facilities.

4.12.2.3 Alternative 1

<u>TRADOC Facility.</u> Environmental consequences of project impacts under Alternative 1 on utilities would be the same as for the Proposed Action alternative.

<u>GFOQ Siting.</u> The impacts on utilities under the Brown's Lake site alternative would be the same as for the 2900 Block location.

4.12.2.4 Alternative 2

<u>TRADOC Facility.</u> Environmental consequences of project impacts under Alternative 2 on utilities would be the same as for the Proposed Action alternative.

GFOQ Siting. The impacts on utilities under the Third Port site alternative would be the same as for the 2900 Block location.

4.13 HAZARDOUS AND TOXIC SUBSTANCES

4.13.1 Affected Environment

Demolition and construction activities require the use of some hazardous and toxic substances and generate some hazardous and toxic waste. Typically, these activities involve the use or generation of petroleum, oils, lubricants, paints, and solvents, and the special hazards discussed below. The use and disposal of hazardous and toxic substances are regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and the Toxic Substances Control Act (TSCA). The installation complies with all applicable requirements of these laws and the Fort Eustis TCFE Regulation 200-6, *Environmental Management*, including all procedures for hazardous and toxic materials storage, handling, and disposal.

In 2001 the Military Munitions Response Program (MMRP) was established Army-wide to manage the environmental, health and safety issues presented by unexploded ordnance (UXO), discarded military munitions (DMM) and munitions constituents (MC) that are present to some degree at most training facilities and sites.. The MMRP is an element of the Defense Environmental Restoration Program (DERP), under which the Secretary of Defense carries out environmental restoration resulting from historical activities. The DERP, through the Installation Restoration Program (IRP), had historically focused on cleaning up sites contaminated with hazardous components, including explosives, but generally has not addressed either UXO or challenges presented by sites containing DMM or MC. A related concern is lead, which is suspected as being present in the soil due to past firing of lead ammunition at the closed1000” rifle range that is near the proposed GFOQ site. Based on the Historical Records Review Report, this rifle range that overlaps the GFOQ housing area is moving forward though the Site Inspection phase under the Military Munitions Response Program.

Regarding Murphy Field, the Closed, Transferring, and Transferred (CTT) Range Inventory supporting documentation and data subsequently collected indicate that it is unlikely that field artillery of the era (8-inch and 155-mm) were practice-fired from Murphy Field Artillery Range. The Historical Records Review (HRR) data indicate Murphy Field to have been used as a 57-acre maneuver ground. Based on the HRR findings, this site is not eligible for the MMRP because there is no evidence to suspect that Munitions and Explosives of Concern (MEC) or Munitions Components (MC) are present at the site.

The IRP is another of the Army's programs under the DERP which was developed to identify, investigate and clean up contamination at active Army installations and focuses on cleanup of contamination associated with past Army activities with the following goals; (1) to protect the health and safety of installation personnel and the public, and (2) to restore the quality of the environment. Fort Eustis’ IRP program is presented in detail in *Fort Eustis Virginia, Army Defense Environmental Restoration Program Installation Action Plan, February 2007*, which is available at https://aero.apgea.army.mil/pIAP-Doc/FortEustis.pdf . This Installation Action Plan

describes the type and suspected source of contamination, and discusses the Cleanup Strategy for each site. Eustis Lake, Bailey Creek, and Brown's Lake are surface waters that have been identified in this document's Water Resources section as IRP sites. Brown's Lake and Landfill 7 are the IRP sites that are in close proximity to the proposed GFOQ housing area.

Since 1996, Fort Eustis has taken an active role in preventing future releases into the Brown's Lake from the surrounding industrial areas. An oil/water separator was installed at the locomotive yard and now discharges its water to the sanitary sewer. Three new wash racks equipped with water recycling systems are now in use. USTs and dispensers at an old military gas station have been removed along with several heating oil tanks in the area. All these tanks had the potential to discharge fuel oil, diesel and gasoline into the lake.

Polychlorinated Biphenyls. There are special hazards that are items of concern with the proposed BRAC demolitions, construction and building renovations. A complete survey of electric power transformers was performed in 1996. The manufacture of transformers containing PCBs was banned by the US Environmental Protection Agency in 1979, but there was no requirement at that time to replace transformers already in use. Based on the 1996 survey, all PCB contaminated pad and pole-mounted transformers were removed and disposed in accordance with applicable regulations. Replacement of all regulated PCB-containing transformers with new non-PCB transformers was completed at Fort Eustis in October 2001. The replacement program also included remediation of contamination caused by leaking transformers.

Pesticides. Fort Eustis implements an Integrated Pest Management Plan in accordance with Department of Defense Instruction (DODI) 4150.7. By following this policy, pest control staff evaluates the need for pesticides before actual application. Such policies will continue with the realignment process and eventual completion of the project. Departure of selected tenant organizations under BRAC is not expected to generate any increased need for pesticide use. Conversion of Murphy Field to a non-industrial, administrative facility is not expected to generate pesticide use beyond that which currently takes place in the immediate area.

Asbestos-containing materials (ACM) and Lead-based paint (LBP). Asbestos and/or lead-based paint are likely to be present in buildings constructed prior to the early 1980s. ACM may be present in insulation on pipes, lighting fixtures, roofing materials transite wallboards, and vinyl tile or sheet flooring and associated mastic.

Any LBP is typically confined to trim including doors, door frames, window frames and baseboards. Exterior wood surfaces painted with LBP include siding, window frames, and mechanical room doors, though the majority of exterior surfaces with LBP have been covered with metal or vinyl siding and trim.

Radon. The Army Radon Reduction Program was initiated in 1988 to identify unhealthy levels of radon in Army facilities. The program, as described in AR 200-1 and DA PAM 200-1, Environmental Protection and Enhancement, Chapter 9, required testing of facilities in a phased, prioritized approach. The initial testing was to be conducted in Priority 1 structures, which includes schools, day care centers, hospitals and housing. Priority 2, structures with 24-hour operations, and Priority 3, remaining office buildings, did not need to be tested if none of

the Priority 1 structures had radon concentrations greater than 4 Pico curies per liter (pCi/L). The Environmental Protection Agency established 4 pCi/L of air as the level at which mitigation (corrective) action must be initiated.

Hazardous Materials and Hazardous Waste Generation. Fort Eustis obtains all serviceable hazardous material products through its Hazmart facility. This allows the installation to monitor and control the use of these materials thereby preventing excess quantities and supporting compliance with the Emergency Planning and Community Right To Know Act (EPCRA) as well as implementing efficient spill prevention techniques and develop feasible response assets. Additionally, Fort Eustis is a large quantity generator for hazardous wastes as defined under the Resource Conservation and Recovery Act and related Federal/state regulations. The realignment of Fort Eustis includes relocation of some tenant organizations that would likely use more hazardous materials and generate more hazardous waste than what would be expected from the gaining organizations that tend to follow more administrative functions.

4.13.2 Consequences

For the purposes of assessing the significance of impacts related to hazardous and toxic substances, the following impact thresholds were developed:

No Effect – No additional release or exposure to any of the above hazards would occur.

No Significant Effect – Action would result in an increase in the amount of materials or waste to be handled, stored, used, or disposed; but all hazardous or toxic materials and/or wastes could be safely and adequately managed in accordance with all applicable regulations and policies, with limited exposures or risks.

Significant Effect – Action would result in a substantial increase (more than 100 percent) in the amount of materials or waste to be handled, stored, used, or disposed of, and this could not be safely or adequately handled or managed by the proposed staffing, resulting in unacceptable risk, exceedence of available waste disposal capacity, or probable regulatory violation. Site contamination conditions would preclude development of the site for the proposed use.

4.13.2.1 No Action Alternative

No effects would be expected. Under the No Action Alternative, the existing facilities (Buildings 661 and 705) would not be renovated and proposed new BRAC facilities would not be constructed.

4.13.2.2 Proposed Action Alternative

Asbestos-containing materials (ACM) and Lead-based paint (LBP). No significant effects are anticipated. Bldg. 661 was demolished down to the concrete footer and one corner of the structure in 1999. There should not be any lead-based paint or asbestos in this facility due to major renovation project.

Portions of Bldg. 705 still contain asbestos transite wall panels and asbestos floor tile and associated mastic. The building was originally surveyed as part of a post-wide asbestos survey conducted in the early 1990's and additional surveying/sampling has more recently been conducted. Handling and remediation will be conducted in accordance with regulations administered by EPA and the Occupational Safety and Health Administration (OSHA).

Lead-based paint testing in Building 705 has also been associated with specific renovation projects. In general, the only lead-based paint that has been identified is located on some of the metal door frames...probably in the factory baked on primer. Under TCFE (Transportation Center Fort Eustis) Regulation 200-6 (revised March 2006), lead-contaminated paint on surfaces disturbed during renovation would be abated.

Pesticides. No significant increase in the use of approved pesticides is expected from the anticipated changes in force structure and land use.

Radon. No effect is expected. Although neither Bldg. 661 nor Bldg. 705 was tested for radon, no effects are expected. Since 1990, twelve percent of Priority 1 structures located at Fort Eustis have been tested for radon and all results were less than 4 pCi/L. In July 1996, TRADOC suspended the Army Radon Program at Fort Eustis because the results were strongly supporting the widely accepted position that radon is not a problem with coastal plain geology.

Other Issues. Construction activities could result in spills of hazardous chemicals, notably fuels, oils (motor and hydraulic), and antifreeze. Response to such spills is addressed in the installation’s Spill Prevention and Countermeasures Plan, and the procedures described by that plan will be followed.

When completed and functioning, the realigned facilities will not be generating a significant hazardous waste stream. The refuse collected will be typical of the office environment and will include items such as paper products (including cardboard), light bulbs, toner cartridges, and the general refuse from lunches (wrappings and uneaten food).

None of the planned construction projects or operation and maintenance of the completed facilities will adversely impact the ongoing MMRP or IRP programs being conducted under DERP as long as runoff from these facilities does not enter Brown's Lake. Cleanup of the Brown’s Lake and Landfill 7 IRP sites near the GFOQ housing area is an ongoing process by which the levels of contamination are expected to be reduced before the homes are completed, but it is unknown when, if ever, water quality of Brown’s Lake will be suitable for recreational use.

Soil samples collected during a Site Investigation of the closed 1,000-inch rifle range indicated levels of lead above both background and residential screening levels in the berms. Although residential screening levels were not exceeded in the gardening areas, an interim action that restricts or eliminates the use of these areas has been recommended, and the entire site is proposed for a remedial investigation and feasibility study (RI/FS). Accelerating this process and cleanup of this range will be required prior to construction activities because it overlaps nearly half of the proposed GFOQ site, as shown in figure 4.8-2.

4.13.2.3 Alternative 1

TRADOC Facility. Environmental consequences of project impacts under Alternative 1 on hazardous and toxic substances issues would be the same as for the Proposed Action alternative.

GFOQ Siting. The impacts on hazardous and toxic substances under the Brown's Lake site alternative would be the same as for the 2900 Block location.

4.13.2.4 Alternative 2

TRADOC Facility. Environmental consequences of project impacts under Alternative 2 on hazardous and toxic substances would be the same as for the Proposed Action alternative.

GFOQ Siting. The impacts on hazardous and toxic substances under the Third Port site alternative would be the same as for the 2900 Block location.

4.14 CUMULATIVE EFFECTS SUMMARY

A cumulative impact is defined as "the impacts on the environment that result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertake such other action" (40 CFR 1508.7). The section states: "such impacts can result from individually minor but collectively significant actions taking place over a period of time." Cumulative impacts associated with implementation of the Realignment (Preferred) Alternative would include any impacts from other on-going mission actions that would be incremental to the impacts of constructing and operating the BRAC projects at Fort Eustis. Within the foreseeable future, several new projects may occur concurrently with construction activities for the Proposed Action. These are:

- Implementation of the Joint Basing initiative as discussed in 2.2.3 that would, within itself, reduce installation staff by up to 118 positions.
- Army Power Projection Platform (AP3) Facilities at four distinct locations. These would consist of a deployment processing facility, a vehicle/equipment processing area, and upgraded marshalling areas for railhead operations, and for storage and marshalling the modular causeway system (MCS) in preparation for deployments;
- New range operations facility, which is currently being constructed at the corner of Mulberry Island Rd. and Klingenhagen Rd.;
- Addition of nine new holes to the existing golf course and a new golf course club house constructed in the same location as the previous one; and
- Two possible improvements at Felker Airfield (a new hanger and runway extension).

4.14.1 No Action Alternative

Implementation of the No Action Alternative would avoid new impacts that could interact with the impacts of other past, present, and reasonably foreseeable actions. Therefore, there would be no cumulative impacts associated with the No Action Alternative.

4.14.2 Realignment (Preferred) Alternative

Land Use. All the proposed actions are consistent with the mission of Fort Eustis and siting of activities as outlined in the Installation Master Plan. The Master Plan allows for the future establishment of projects and facilities, although it was unable to consider any of the proposed BRAC facilities at the time it was produced. No significant effects are expected.

Aesthetic and Visual Resources. The proposed projects and others that would also be implemented in the cantonment area will not affect either individually or collectively any viewshed. Non-BRAC projects outside the cantonment area would not visually conflict with the facilities needed to implement the realignment. As with the ongoing RCI housing construction, appearance matters, and all new construction is evaluated for architectural and visual elements that strive to be consistent with the aesthetic quality of the surrounding buildings and thereby bring a cohesiveness of design to the entire installation.

Overall, these projects will not adversely cause significant impacts when added cumulatively to the effects of other construction.

Air Quality. No significant effects are expected. Cumulative impacts to air quality would be associated with demolition and construction of the proposed projects. Increase in annual emissions from the construction and demolition activities from the proposed actions would not exceed *de minimis* levels. Minor effects from increased traffic would be transferring from within the same region of influence.

Noise. Impacts to noise levels at the Installation would be associated with construction activities and increased traffic. Increased noise levels during construction would be temporary, while noise associated with increased traffic would be long term, transient, and distributed throughout the day. Therefore, cumulative impacts associated with baseline noise levels would not be significant. Long term minor increases would result from the additive effect of increased traffic.

Geology and Soils. Topography, geology, and soil impacts are site-specific and are not affected by cumulative development in the region. Cumulative impacts would only occur if development immediately adjacent to the site affected these resources on the site, or if development on the site affected geologic resources of the site where other development may occur. Because sites of the proposed construction projects located near the project area are primarily flat terrain, and would likely require only minor leveling and grading, no significant effects to topography or geology would occur. In addition, given that the majority of soils in potential construction areas at Fort Eustis have been previously disturbed or modified, no significant effects to topography, geology, and soils are expected.

Water Resources. Cumulative impacts to water resources and soil erosion associated with storm water run-off would not be significant. These impacts would be minimized though the proper use of required BMPs as outlined in required Erosion and Sediment Control Plans and Storm water Management Plans.

Biological Resources. Cumulative impacts to biological resources would not be significant. Some species may be discouraged from the area through loss of habitat, dust, erosion, and/or noise. However, there are no rare, threatened, or endangered species present on Fort Eustis that will be compromised by any of the proposed projects.

Cultural Resources. For avoidance of impacts or for mitigation planning, new construction sites are coordinated with the Virginia Department of Historic Resources, evaluated against the Installation Cultural Resources Management Plan (ICRMP) and, if necessary, Phase I (or beyond) archaeological investigations. In addition, construction contracts prohibiting removal or disturbing, causing, or permitting to be removed or disturbed, any historical, archaeological, architectural, or other cultural artifacts, relics, remains, or objects of antiquity.

Socioeconomics. All cumulative construction projects are likely to have minor economic benefits for the region. Construction activity contributes to increases in sales volume. Additional construction activity related to all projects would also contribute to an increased sales volume, and an increase in the number of temporary jobs directly related to construction activity. The reduction in up to 118 positions associated with the Joint Basing Initiative; an increase of 76 positions associated with the Army Growth and Force Structure Realignment action (Programmatic EIS published October 2007); and increases associated with the BRAC realignment would, cumulatively, not be a significant impact.

Transportation. Operation of the proposed facilities could add to the existing traffic demand for transportation infrastructure inside and outside the Installation. The recent upgrades to the Washington Boulevard access control point and the new entrance at the Madison Avenue gate took into consideration the traffic growth from foreseeable future concurrent projects and therefore are expected to operate within their capacities. Cumulative impacts would be non-significant considering the improvements mentioned above.

Utilities. Operation of the BRAC facilities and other proposed projects would add to existing demand for utilities and waste management services on the Installation.

Potable water demand for the projects evaluated by this EA adds approximately 0.019 percent to total demand. Therefore, potable water impacts are not expected to be significant.

Wastewater discharges from the BRAC and other proposed projects would be a minor increase above present rates and is expected to have no significant effect on the wastewater treatment facility, which has a flow capacity well beyond current usage. Although a new hangar and runway extension improvements are being considered at Felker Army Airfield, and these projects are not co-located with or nearby the proposed BRAC sites, these improvements will put additional loads on the wastewater and storm water systems.

Energy requirements for new projects are within present capacities. The existing electrical distribution system and the natural gas system on Fort Eustis is adequate to support all currently known requirements and sufficient for all future needs.

The proposed actions would collectively contribute to the generation of construction and demolition waste which would have to be disposed of in area landfills. The total quantity of solid waste expected to be generated, however, would not pose a problem for area landfills.

Hazardous and Toxic Substances. Impacts related to hazardous and toxic materials use and associated human health and safety impacts would increase with the addition of the new facilities. However, in all cases, provisions and procedures will be in place for the proper handling, storage, and disposal of hazardous or toxic materials and wastes, and waste amounts would not exceed expected capacities. Adherence to applicable environmental and health and safety standards would minimize risk to the public and the employees of the facilities. Therefore, cumulative impacts would be expected to be long-term, but would not exceed the significant level.

5 FINDINGS AND CONCLUSIONS

5.1 FINDINGS

5.1.1 Consequences of No Action Alternative

Under the No Action Alternative, the proposed new BRAC facilities would not be constructed, and no environmental impacts or adverse effects would occur.

5.1.2 Consequences of Realignment (Preferred) Alternative

The proposed action would not have any significant adverse effects or impacts on any of the environmental or related resources areas at Fort Eustis or to areas surrounding the Installation. A summary of impacts by resource area for the No Action Alternative and the Realignment (Preferred) Alternative is provided in Table 5.1-1.

5.2 CONCLUSIONS

None of the predicted effects of the proposed action or alternatives would result in significant impacts. Therefore, the results of the analyses warrant issuance of a FNSI.

Table 5.2-1 Summary of Effects: Realignment and No Action Alternatives

Resource	No Action Alternative	Realignment Alternatives		
		Preferred Alternative	Alternative 1	Alternative 2
Land Use				
Regional Geographic Setting and Location	No effect	No effect	No effect	No effect
Installation Land	No effect	No significant effect. All projects occur within the Fort Eustis cantonment area. Woodland at 2900 Block will become residential.	No significant effect. All projects occur within the Fort Eustis cantonment area. At Brown's Lake site, IRP sites conflict with residential use.	No significant effect. All projects occur within the Fort Eustis cantonment area. Third Port GFOQ site may conflict with future port expansion needs.
Surrounding Land	No effect	No effect. All projects within Fort Eustis installation boundary.	No effect. All projects within Fort Eustis installation boundary.	No effect. All projects within Fort Eustis installation boundary.
Aesthetics & Visual Resources				
On and off post	No effect	Effects not significant. All facilities are confined to the cantonment area.	Effects not significant. All facilities are confined to the cantonment area.	Effects not significant. All facilities are confined to the cantonment area.
Air Quality				
Regional Air Quality	No effect	Effects not significant from emissions during construction or operation.	Effects not significant from emissions during construction or operation.	Effects not significant from emissions during construction or operation.
Fort Eustis Air Emissions	No effect	Short term minor effects during construction from equipment and dust.	Short term minor effects during construction from equipment and dust.	Short term minor effects during construction from equipment and dust.
Noise				
On and off post	No effect	Short term minor, but not significant effects during construction and operation.	Short term minor, but not significant effects during construction and operation.	Short term minor, but not significant effects during construction and operation.
Geology & Soils				
Geology and Topography	No effect	No significant effect from site minor leveling and grading.	No significant effect from site minor leveling and grading.	No significant effect from site minor leveling and grading.
Soils	No effect	No significant effect. Soils already disturbed or modified.	No significant effect. Soils already disturbed or modified.	No significant effect. Soils already disturbed or modified.
Prime Farmland	No effect	No effect	No effect	No effect

Table 5.2-1Summary of Effects: Realignment and No Action Alternatives (cont'd)

	No Action	Preferred Alternative	Alternative 1	Alternative 2
Water Resources				
Surface Water & Wetlands	No effect	Effects not significant. Impacts due to erosion and sedimentation would be mitigated through an approved Sediment and Erosion Control Plan.	Effects not significant. Impacts due to erosion and sedimentation would be mitigated through an approved Sediment and Erosion Control Plan.	Effects not significant. Impacts due to erosion and sedimentation would be mitigated through an approved Sediment and Erosion Control Plan.
Hydrogeology / Groundwater	No effect	Effects not significant. Possible impacts from minor oil and antifreeze spills and vehicle leakage.	Effects not significant. Possible impacts from minor oil and antifreeze spills and vehicle leakage.	Effects not significant. Possible impacts from minor oil and antifreeze spills and vehicle leakage.
Floodplains	No effect	No effect	No effect	No effect
Biological Resources				
Vegetation	No effect	No significant impact. Timber harvested at 2900 Block would be sold at market value	No significant impact. Timber harvested at Brown's Lake would be sold at market value.	No significant impact. Timber harvested at Third Port would be sold at market value.
Wildlife	No effect	No significant impact.	No significant impact.	No significant impact.
Sensitive Species	No effect	No effect. Buffers will be maintained by construction areas and conservation areas.	No effect. Buffers will be maintained by construction areas and conservation areas.	No effect. Buffers will be maintained by construction areas and conservation areas.
Cultural Resources				
National Register Sites	No effect	No effect	No effect	No effect
Native American Resources	No effect	No effect	No effect	No effect
Archaeological Resources	No effect	No significant effect expected. Additional surveys are being conducted and regulated procedures will be followed.	No significant effect expected. Additional surveys are being conducted and regulated procedures will be followed.	No significant effect expected. Additional surveys are being conducted and regulated procedures will be followed.
Socioeconomics				
Economic Development	No effect	No significant effect. Construction would generate short term economic activity.	No significant effect. Construction would generate short term economic activity.	No significant effect. Construction would generate short term economic activity.
Demographics	No effect	No significant effect. Most realigned personnel coming from within the MSA.	No significant effect. Most realigned personnel coming from within the MSA.	No significant effect. Most realigned personnel coming from within the MSA.
Housing	No effect	No significant effects	No significant effects	No significant effects
Quality of Life	No effect	No significant effects	No significant effects	No significant effects

Table 5.1-1 Summary of Effects: Realignment and No Action Alternatives (cont'd)

	No Action	Preferred Alternative	Alternative 1	Alternative 2
Socioeconomics (cont'd)				
Environmental Justice	No effect	No effect	No effect	No effect
Protection of Children	No effect	No effect	No effect	No effect
Transportation				
Roadways and Traffic	No effect	Effects not significant. Temporary increase during construction.	Effects not significant. Temporary increase during construction.	Effects not significant. Temporary increase during construction.
Public Transportation	No effect	No effect	No effect	No effect
Utilities				
Potable Water Supply	No effect	No significant effects. Short term interruptions from water line extensions.	No significant effects. Short term interruptions from water line extensions.	No significant effects. Short term interruptions from water line extensions.
Wastewater System	No effect	No significant effects. Short term interruptions during utility extensions.	No significant effects. Short term interruptions during utility extensions.	No significant effects. Short term interruptions during utility extensions.
Storm Water System	No effect	No significant effects. Short term interruptions during utility extensions.	No significant effects. Short term interruptions during utility extensions.	No significant effects. Short term interruptions during utility extensions.
Energy Sources	No effect	No significant effects. Short term interruptions during utility extensions.	No significant effects. Short term interruptions during utility extensions.	No significant effects. Short term interruptions during utility extensions.
Communications	No effect	No significant effects. Short term interruptions during utility extensions.	No significant effects. Short term interruptions during utility extensions.	No significant effects. Short term interruptions during utility extensions.
Solid Waste	No effect	No significant effects.	No significant effects.	No significant effects.
Hazardous and Toxic Substances				
PCBs	No effect	No effect	No effect	No effect
Asbestos & Lead	No effect	No significant effects. OSHA and other safety procedures for handling these materials will be followed.	No significant effects. OSHA and other safety procedures for handling these materials will be followed.	No significant effects. OSHA and other safety procedures for handling these materials will be followed.
Radon	No effect	No effect	No effect	No effect

Table 5.1-1 Summary of Effects: Realignment and No Action Alternatives (cont'd)

Cumulative Effects	No Action	Preferred Alternative	Alternative 1	Alternative 2
Land Use	No effect	No significant effects. All projects within scope of Installation Land Use Master Plan.	No significant effects. All projects within scope of Installation Land Use Master Plan.	No significant effects. All projects within scope of Installation Land Use Master Plan.
Aesthetics & Visual Resources	No effect	No significant effects. Design would follow Master Plan guidelines.	No significant effects. Design would follow Master Plan guidelines.	No significant effects. Design would follow Master Plan guidelines.
Air Quality	No effect	No significant effects. Increase in annual emissions would not exceed *de minimis* levels.	No significant effects. Increase in annual emissions would not exceed *de minimis* levels.	No significant effects. Increase in annual emissions would not exceed *de minimis* levels.
Noise	No effect	No significant effects. Short term increases at widely scattered sites would be easily tolerated.	No significant effects. Short term increases at widely scattered sites would be easily tolerated.	No significant effects. Short term increases at widely scattered sites would be easily tolerated.
Geology & Soils	No effect	No significant effects	No significant effects	No significant effects
Water Resources	No effect	No significant effects. Potential impacts minimized by BMPs and Erosion/Sediment Control Plans.	No significant effects. Potential impacts minimized by BMPs and Erosion/Sediment Control Plans.	No significant effects. Potential impacts minimized by BMPs and Erosion/Sediment Control Plans.
Biological Resources	No effect	No significant effects. Sensitive species not affected by project construction or operation	No significant effects. Sensitive species not affected by project construction or operation	No significant effects. Sensitive species not affected by project construction or operation
Cultural Resources	No effect	No significant effects. Projects are measured against SHPO, ICRMP, and construction contract clauses.	No significant effects. Projects are measured against SHPO, ICRMP, and construction contract clauses.	No significant effects. Projects are measured against SHPO, ICRMP, and construction contract clauses.
Socioeconomics	No effect	No significant effect. Large MSA can withstand moderate change.	No significant effect. Large MSA can withstand moderate change.	No significant effect. Large MSA can withstand moderate change.
Transportation	No effect	No significant effect. Recent updates to road network will accommodate increased traffic.	No significant effect. Recent updates to road network will accommodate increased traffic.	No significant effect. Recent updates to road network will accommodate increased traffic.
Utilities	No effect	No significant effect. All utilities are capable of sustaining proposed projects.	No significant effect. All utilities are capable of sustaining proposed projects.	No significant effect. All utilities are capable of sustaining proposed projects.
Hazardous and Toxic Substances	No Effect	No significant effect. Procedures are in place to assure safe handling	No significant effect. Procedures are in place to assure safe handling.	No significant effect. Procedures are in place to assure safe handling.

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10 ACRONYMS AND ABBREVIATIONS

AAA	Army Audit Agency
AAC	Army Accessions Command
ACC	Air Combat Command
ACHP	Advisory Council on Historic Preservation
ACA	Army Contracting Agency
ACM	Asbestos-Containing Material
AEI	Air Emissions Inventory
AEPI	US Army Environmental Policy Institute
AFB	Air Force Base
AFRC	Armed Forces Reserve Center
AHPA	Archaeological and Historic Preservation Act
AICUZ	Air Installation Compatible Use Zone
AQCR	Air Quality Control Regions
ARC	Army Reserve Center
ARNG	Army National Guard
ARPA	Archeological Resources Protection Act
AST	Aboveground Storage Tank
ATCS	Army Transportation Center and School
ATSC	Army Training Support Center
AVN TNG	Aviation Training
BEA	Bureau of Economic Analysis
BMP	Best Management Practices
BN	Battalion
BOC	US Bureau of Census
BRAC	Base Realignment and Closure
BRAC Commission	Base Closure and Realignment Commission
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
CZs	Clear Zones
CZM	Coastal Zone Management

DA	Department of the Army
dB	Decibel
dBA	A-weighted decibel
dBC	C weighting; suitable for use when the ear is exposed to higher sound levels
DCRDNH	Virginia Department of Conservation and Recreation, Division of Natural Heritage
DEQ	Virginia Department of Environmental Quality
DERP	Defense Environmental Restoration Program
DNL	Day-night Level
DoD	Department of Defense
DOIM	Directorate of Information Management
DOL	Department of Logistics
DOT	Department of Transportation
DPW	Directorate of Public Works
DRMO	Defense Reutilization Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIFS	Economic Impact Forecast System
EIS	Environmental Impact Statement
EO	Executive Order
EOD	Explosive Ordnance Disposal
ENRD	Environmental and Natural Resources Division
EPA	US Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
ESMP	Endangered Species Management Plan
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FNSI	Finding of No Significant Impact
FORSCOM	Forces Command
FUDS	Formerly Utilized Defense Sites
FY	Fiscal Year
FYDP	Future Years Defense Program
GFOQ	General/Flag Officers Quarters
HABS	Historical American Building Survey
HAER	Historical American Engineering Record

HRR	Historical Records Review
HRSD	Hampton Roads Sanitation District
HUD	US Dept of Housing and Urban Development
HWMP	Hazardous Materials Management Plan
ICRMP	Integrated Cultural Resources Management Plan
I&I	Inflow and Infiltration
IDG	Installation Design Guide
IGPBS	Integrated Global Presence and Basing Strategy
IMCOM	Installation Management Command
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management Plan
IRP	Installation Restoration Program
ISCP	Installation Spill Contingency Plan
JTF-CS	Joint Task Force - Civil Support
JWFC	Joint Warfighting Center
K-12	Kindergarten through 12th Grade
LBP	Lead-based Paint
MACOM	Major Command
MC	Munitions Constituents
MEC	Munitions and Explosives of Concern
MGD	Million gallons per day
MRS	Munitions Response Site
MSA	Metropolitan Statistical Area
MSL	Mean Sea Level
NCA	Noise Control Act
NEPA	National Environmental Policy Act
NETCOM	Network Enterprise Technology Command
NFA	No Further Action
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NO2	Nitrogen dioxide
NOx	Nitrogen oxide
NPL	National Priorities List
NRHP	National Register of Historic Places
NWP	Nationwide Permits
O3	Ozone
OSHA	Occupational Safety and Health Administration
PAIO	Plans, Analysis and Integration Office

PAM	Pamphlet
Pb	Lead
PCBs	Polychlorinated biphenyls
pCi/L	Pico curies per liter
PCPI	Per capita personal income
PM10	Particulate matter measuring less than 10 microns in diameter
POL	Petroleum, oil, and lubricant
PMO	Provosts Marshall's Office
PPP	Pollution Prevention Plan
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
ROI	Region of Influence
ROTC	Reserve Officers Training Corps
RPMP	Real Property Master Plan
RRF	Resource Recovery Facility
RTV	Rational threshold value
SARA	Superfund Amendments Reauthorization Act
SDDC	Army Surface Deployment and Distribution Command
sf	Square feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO2	Sulfur dioxide
SOP	Standard Operating Procedures
SOx	Sulfur oxides
SPCCP	Spill Prevention, Control, and Countermeasures Plan
TRADOC	US Army Training and Doctrine Command
USAALS	United States Army Aviation Logistics School
USACE	US Army Corps of Engineers
USAF	US Air Force
USARC	United States Army Reserve Center
USATCFE	US Army Transportation Center and Fort Eustis
USC	US Code
USCB	US Census Bureau
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
UST	Underground Storage Tank

UXO	Unexploded Ordnance
VADNH	Virginia Department of Conservation and Recreation Division of Natural Heritage
VOC	Volatile Organic Compound

APPENDIX A AGENCY CONSULTATION LETTERS

Letters to:

Virginia Department of Environmental Quality

US Geological Survey

US Department of Agriculture

National Oceanic and Atmospheric Administration

US Environmental Protection Agency, Region III

Virginia Department of Historic Resources

Responses from:

Virginia Department of Environmental Quality

Virginia Department of Historic Resources

DEPARTMENT OF THE ARMY
US ARMY GARRISON
Directorate of Public Works
1407 Washington Boulevard
Fort Eustis, VA 23604-5306

REPLY TO
ATTENTION OF:

March 19, 2007

Environmental Division

Ms. Ellie L. Irons
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Dear Ms. Irons:

The 2005 Base Realignment and Closure Commission has recommended the realignment of Fort Eustis, Virginia. That recommendation became a legally binding decision on November 9, 2005. An Environmental Assessment (EA) is being prepared in accordance with NEPA and implementing regulations issued by the Council on Environmental Quality (40 CFR 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives, and it will identify, document, and evaluate the potential environmental effects of realignment at Fort Eustis.

Fort Eustis is an 8,228-acre facility located on the James River at the northern tip of the City of Newport News, VA. It contains the US Army Transportation Center and School as well as several tenant organizations including the US Army Aviation Logistics School, the NCO Academy, Aviation Applied Technology Directorate, Army Training Support Center, and the Military Surface Deployment & Distribution Center. Fort Eustis is also home to the 7th Transportation Sustainment Brigade, one of the Army's most deployed units. In total, approximately17,500 military personnel and civilians work, live, or train at Fort Eustis

The most significant changes to Fort Eustis from realignment would be from construction and population gains necessary in receipt of the U.S. Army Training and Doctrine Command Headquarters, the Joint Task Force – Civil Support, the U.S. Army Contracting Agency Northern Region Office and consolidation of the U.S. Army Installation Management and U.S. Army Network Enterprise Technology Commands. These will come from Fort Monroe, Virginia, which is closing, and other locations. Fort Eustis will also experience losses from realignments of the Transportation Center and School and Army Surface Deployment and Distribution Command. Overall, there will be a net gain in population of less than 1,500 military, civilian, and contractor personnel. Costs for new construction and renovation of existing buildings will be approximately $150 million.

The Army must initiate the requirements for the realignment of all installations affected by the current BRAC law by 15 September 2007, and complete all realignments not later than 15 September 2011. This process begins with NEPA and continues through the planning, design, construction and implementation phases.

The purpose of this letter is to make you aware of this realignment and the forthcoming EA, and provide you the opportunity to voice any immediate concerns that you may have concerning this realignment.

Please send your comments to Mr. Tim Christensen, US Army Garrison, ATTN: IMNE-EUS-PW-E, 1407 Washington Boulevard, Fort Eustis, VA 23604-5306. Please contact Mr. Christensen at (757) 878-2375 ext 21 or via email at Tim.Christensen @us.army.mil if you require additional information.

Sincerely,

Susan P. Miller

Susan P. Miller
Acting Chief, Environmental Division
Directorate of Public Works

2

DEPARTMENT OF THE ARMY
US ARMY GARRISON
Directorate of Public Works
1607 Washington Boulevard
Fort Eustis, VA 23604-5306

March 19, 2007

Environmental Division

Mr. Celso Puente
USGS
Water Resources Division MS 423
John W. Powell Building
12201 Sunrise Valley Drive
Reston, VA 20192

Dear Mr. Puente:

The 2005 Base Realignment and Closure Commission has recommended the realignment of Fort Eustis, Virginia. That recommendation became a legally binding decision on November 9, 2005. An Environmental Assessment (EA) is being prepared in accordance with NEPA and implementing regulations issued by the Council on Environmental Quality (40 CFR 1500--1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives, and it will identify, document, and evaluate the potential environmental effects of realignment at Fort Eustis.

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The Army must initiate the requirements for the realignment of all installations affected by the current BRAC law by 15 September 2007, and complete all realignments not later than

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The purpose of this letter is to make you aware of this realignment and the forthcoming EA, and provide you the opportunity to voice any immediate concerns that you may have concerning this realignment.

Please send your comments to Mr. Tim Christensen, US Army Garrison, ATTN: IMNE-EUS-PW-E, 1407 Washington Boulevard, Fort Eustis, VA 23604-5306. Please contact Mr. Christensen at (757) 878-2375 ext 21 or via email at Tim.Christensen @us.army.mil if you require additional information.

Sincerely,

Susan P. Miller

Susan P. Miller
Acting Chief, Environmental Division
Directorate of Public Works

2

DEPARTMENT OF THE ARMY
US ARMY GARRISON
Directorate of Public Works
1407 Washington Boulevard
Fort Eustis, VA 23604-5206

March 19, 2007

Environmental Division

Ms. Karen Mayne
US Fish and Wildlife Service
VA Field Office
Division of Ecological Services
6669 Short Lane
Gloucester, VA 23061

Dear Ms. Mayne:

The 2005 Base Realignment and Closure Commission has recommended the realignment of Fort Eustis, Virginia. That recommendation became a legally binding decision on November 9, 2005. An Environmental Assessment (EA) is being prepared in accordance with NEPA and implementing regulations issued by the Council on Environmental Quality (40 CFR 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives, and it will identify, document, and evaluate the potential environmental effects of realignment at Fort Eustis.

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The Army must initiate the requirements for the realignment of all installations affected by the current BRAC law by 15 September 2007, and complete all realignments not later than

15 September 2011. This process begins with NEPA and continues through the planning, design, construction and implementation phases.

The purpose of this letter is to make you aware of this realignment and the forthcoming EA, and provide you the opportunity to voice any immediate concerns that you may have concerning this realignment.

Please send your comments to Mr. Tim Christensen, US Army Garrison, ATTN: IMNE-EUS-PW-E, 1407 Washington Boulevard, Fort Eustis, VA 23604-5306. Please contact Mr. Christensen at (757) 878-2375 ext 21 or via email at Tim.Christensen @us.army.mil if you require additional information.

Sincerely,

Susan P. Miller

Susan P. Miller
Acting Chief, Environmental Division
Directorate of Public Works

2

DEPARTMENT OF THE ARMY
US ARMY GARRISON
Directorate of Public Works
1407 Washington Boulevard
Fort Eustis, VA 23604-5808

REPLY TO ATTENTION OF:

March 19, 2007

Environmental Division

Mr. Eugene Crabtree
USDA, NRCS
310 Shea Drive, Building 3
Chesapeake, VA 23320

Dear Mr. Crabtree:

The 2005 Base Realignment and Closure Commission has recommended the realignment of Fort Eustis, Virginia. That recommendation became a legally binding decision on November 9, 2005. An Environmental Assessment (EA) is being prepared in accordance with NEPA and implementing regulations issued by the Council on Environmental Quality (40 CFR 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives, and it will identify, document, and evaluate the potential environmental effects of realignment at Fort Eustis.

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The Army must initiate the requirements for the realignment of all installations affected by the current BRAC law by 15 September 2007, and complete all realignments not later than 15 September 2011. This process begins with NEPA and continues through the planning, design, construction and implementation phases.

The purpose of this letter is to make you aware of this realignment and the forthcoming EA, and provide you the opportunity to voice any immediate concerns that you may have concerning this realignment.

Please send your comments to Mr. Tim Christensen, US Army Garrison, ATTN: IMNE-EUS-PW-E, 1407 Washington Boulevard, Fort Eustis, VA 23604-5306. Please contact Mr. Christensen at (757) 878-2375 ext 21 or via email at Tim.Christensen @us.army.mil if you require additional information.

Sincerely,

Susan P. Miller

Susan P. Miller
Acting Chief, Environmental Division
Directorate of Public Works

2

DEPARTMENT OF THE ARMY
US ARMY GARRISON
Directorate of Public Works
1407 Washington Boulevard
Fort Eustis, VA 23604-5305

REPLY TO
ATTENTION OF:

March 19, 2007

Environmental Division

Steve Kokkinakis
NOAA
PPI/SP (NEPA Coordinator)
Room 15603
1315 East West Highway
Silver Spring, MD 20910

Dear Mr. Kokkinakis:

The 2005 Base Realignment and Closure Commission has recommended the realignment of Fort Eustis, Virginia. That recommendation became a legally binding decision on November 9, 2005. An Environmental Assessment (EA) is being prepared in accordance with NEPA and implementing regulations issued by the Council on Environmental Quality (40 CFR 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives, and it will identify, document, and evaluate the potential environmental effects of realignment at Fort Eustis.

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The Army must initiate the requirements for the realignment of all installations affected by the current BRAC law by 15 September 2007, and complete all realignments not later than 15

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Please send your comments to Mr. Tim Christensen, US Army Garrison, ATTN: IMNE-EUS-PW-E, 1407 Washington Boulevard, Fort Eustis, VA 23604-5306. Please contact Mr. Christensen at (757) 878-2375 ext 21 or via email at Tim.Christensen @us.army.mil if you require additional information.

Sincerely,

Susan P. Miller
Acting Chief, Environmental Division
Directorate of Public Works

2

DEPARTMENT OF THE ARMY
US ARMY GARRISON
Directorate of Public Works
1407 Washington Boulevard
Fort Eustis, VA 23604-5306

March 19, 2007

REPLY TO ATTENTION OF

Environmental Division

Ms. Karen DelGrosso
USEPA, Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Ms. DelGrosso:

The 2005 Base Realignment and Closure Commission has recommended the realignment of Fort Eustis, Virginia. That recommendation became a legally binding decision on November 9, 2005. An Environmental Assessment (EA) is being prepared in accordance with NEPA and implementing regulations issued by the Council on Environmental Quality (40 CFR 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives, and it will identify, document, and evaluate the potential environmental effects of realignment at Fort Eustis.

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Please send your comments to Mr. Tim Christensen, US Army Garrison, ATTN: IMNE-EUS-PW-E, 1407 Washington Boulevard, Fort Eustis, VA 23604-5306. Please contact Mr. Christensen at (757) 878-2375 ext 21 or via email at Tim.Christensen @us.army.mil if you require additional information.

Sincerely,

Susan P. Miller

Susan P. Miller
Acting Chief, Environmental Division
Directorate of Public Works

2

DEPARTMENT OF THE ARMY
US ARMY GARRISON
Directorate of Public Works
1437 Washington Boulevard
Fort Eustis, VA 23604-5306

March 22, 2007

REPLY TO ATTENTION OF:
Environmental Division

Ms. Kathleen Kilpatrick

Director, Virginia Department of Historic Resources
2801 Kensington Avenue

Richmond, Virginia 23221

Dear Ms. Kilpatrick:

The 2005 Base Realignment and Closure Commission has recommended the realignment of Fort Eustis, Virginia. That recommendation became a legally binding decision on November 9, 2005. An Environmental Assessment (EA) is being prepared in accordance with NEPA and implementing regulations issued by the Council on Environmental Quality (40 CFR 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives, and it will identify, document, and evaluate the potential environmental effects of realignment at Fort Eustis.

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The Army must initiate the requirements for the realignment of all installations affected by the current BRAC law by 15 September 2007, and complete all realignments not later than 15 September 2011. This process begins with NEPA and continues through the planning, design, construction and implementation phases.

The purpose of this letter is to make you aware of this realignment and the forthcoming EA, and provide you the opportunity to voice any immediate concerns that you may have concerning this realignment.

Although archaeological surveys of Fort Eustis have covered much of the installation, unidentified archaeological resources may exist within the areas proposed for BRAC related construction (please see map on following page).

The Army Installation Management Command (IMCOM) the Army Network Enterprise Technology Command (NETCOM) and the Army Contracting Agency (ACA) will be moving into renovated modern-era buildings, and Joint Task Force Civil Support (JTF/CS) will be constructing on property where buildings have recently been demolished and cleared. For these sites, the Army believes cultural resources investigations are not warranted.

Headquarters of the US Army Training and Doctrine Command (TRADOC) will be constructed on a portion of Murphy Field, which is now used as a sports-type recreation area and as a parade ground. However, between 1918 and closed in 1926, Murphy Field was used as an artillery range. A housing area for General and Flag Officers will be constructed on a site adjacent to Brown's Lake. There are no known cultural resources investigations of this site.

Archaeological investigations for Murphy Field and the Brown's Lake site are in the process of being planned, funded, and then conducted prior to the occurrence of any construction related activities at both the TRADOC HQ and GFOQ sites.

Please send your comments to Mr. Tim Christensen, US Army Garrison, ATTN: IMNE-EUS-PW-E, 1407 Washington Boulevard, Fort Eustis, VA 23604-5306. Please contact Mr. Christensen at (757) 880-6111 or via email at Tim.Christensen @eustis.army.mil if you require additional information.

Sincerely,

Signed

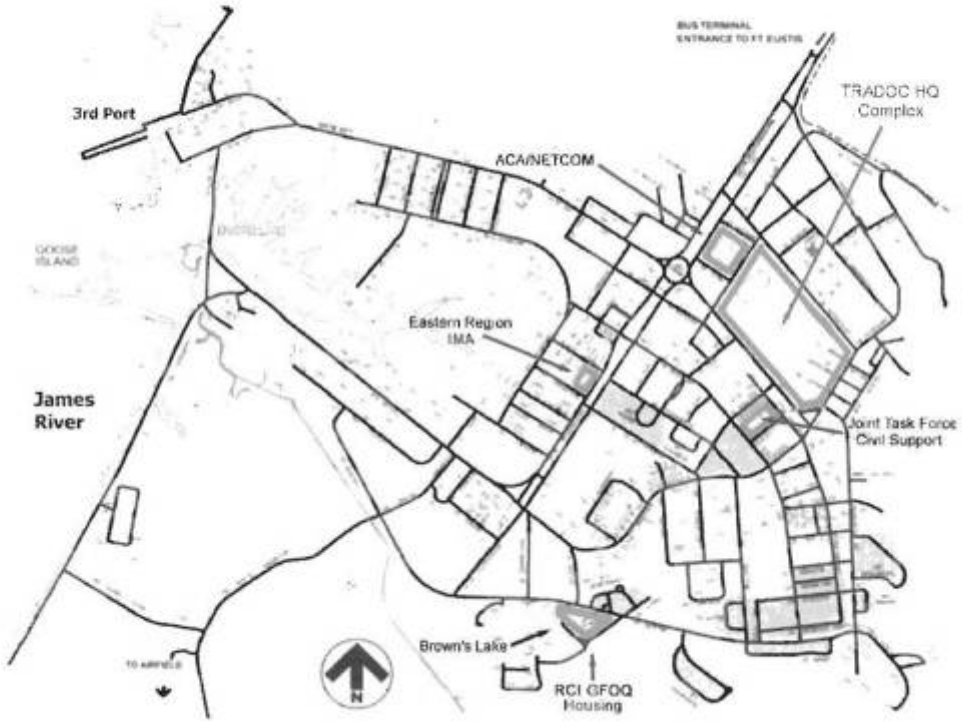
Ms. Susan Miller

Acting Chief, Environmental Division

1 Encl (construction sites map)

2

Proposed BRAC 2005 Construction Sites at Fort Eustis, VA.



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

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

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

March 28, 2007

Mr. Tim Christensen
US Army Garrison
ATTN: IMNE-EUS-PW-E
1407 Washington Boulevard
Fort Eustis, Virginia 23604-5306

RE: Scoping comments for the preparation of an Environmental Assessment for the Fort Eustis 2005 Base Realignment and Closure (BRAC) action

Mr. Tim Christensen:

This letter is in response to the March 19, 2007 letter (received March 27) from Ms. Susan Miller requesting scoping comments for the preparation of an Environmental Assessment (EA) for the proposed Fort Eustis 2005 Base Realignment and Closure (BRAC) action.

According to the letter, Fort Eustis will undergo changes in response to the BRAC decision that will involve construction and population gains as a result of the transfer to the base of the U.S. Army Training and Doctrine Command Headquarters, the Joint Task Force-Civil Support, the U.S. Army Contracting Agency Northern Regional Office, and consolidation of the U.S. Army Installation Management and U.S. Army Network Enterprise Technology Commands. Fort Eustis will also experience losses from realignments of the Transportation Center and School and Army Surface Deployment and Distribution Command. Overall, there will be a net gain in population of less than 1,500 military, civilian, and contractor personnel.

The roles of the Virginia Department of Environmental Quality (DEQ) in relation to the review of the documents to be prepared are as follows. First, DEQ's Office of Environmental Impact Review (this Office) will coordinate Virginia's review of any environmental documents prepared pursuant to the National Environmental Policy Act (NEPA) and comment to the Army on behalf of the Commonwealth. A similar review process will pertain to the federal consistency determination that must be provided pursuant to the Coastal Zone Management Act (CZMA). If the federal consistency determination is included as part of the EA, there can be a single review taking 60 days as allowed by the Federal Consistency Regulations (15 CFR Part 930, section

Mr. Tim Christensen
Page 2

930.41(a)). We recommend this approach to save time and extra effort for the Army as well as for the Commonwealth.

Environmental Review

The following state and local Virginia agencies are likely to be included in the coordinated review of submitted environmental documents (note: starred (*) agencies administer one or more of the Enforceable Policies of the Virginia Coastal Resources Management Program; see "Federal Consistency...," below):

- Department of Environmental Quality:
  - Office of Environmental Impact Review
  - Tidewater Regional Office*
  - Water Division
  - Air Division*
  - Waste Division
- Department of Game and Inland Fisheries*
- Department of Conservation and Recreation:
  - Division of Chesapeake Bay Local Assistance*
  - Division of Soil and Water Conservation*
  - Division of Planning and Recreation Resources
- Department of Health*
- Marine Resources Commission*
- Department of Historic Resources
- Department of Mines, Minerals, and Energy
- Department of Agriculture and Consumer Services
- Department of Forestry
- Department of Transportation
- Hampton Roads Planning District Commission
- City of Newport News

In order to ensure an effective coordinated review of the Environmental Assessment and the consistency determination, we will require 20 copies of the document when it is published. The document should include one or more U.S. Geological Survey topographic maps as part of its information. We recommend, as well, that project details be adequately described and analyzed. While this Office does not participate in scoping efforts beyond the advice given herein, other agencies may independently provide scoping comments to you concerning the preparation of the NEPA document for the proposed project.

Federal Consistency under the Coastal Zone Management Act

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities affecting Virginia's coastal resources or coastal uses must be consistent with the Virginia Coastal Resources Management Program (VCP) (see section 307(c)(1) of the Act and the Federal Consistency Regulations, 15 CFR Part 930, sub-part C, sections930.30 through 930.46). The Army must provide a consistency determination

Mr. Tim Christensen
Page 3

which involves an analysis of the activities in light of the Enforceable Policies of the VCP (first enclosure), and a commitment to comply with the Enforceable Policies. In addition, we invite your attention to the Advisory Policies of the VCP (second enclosure). The federal consistency determination may be provided as part of the NEPA documentation; as indicated above, we recommend this approach. Section 930.39 of the Federal Consistency Regulations and Virginia's Federal Consistency Information Package (see below) give content requirements for the consistency determination.

The Federal Consistency Information Package is available on DEQ's web site at http://www.deq.virginia.gov/eir/federal.html. This gives you access to the document.

If you have questions about the environmental review process, or the federal consistency review process, please feel free to call me at (804) 698-4325 or John Fisher of this Office (804) 698-4339.

I hope this information is helpful to you.

Sincerely,

Ellie L. Irons
Manager
Office of Environmental Impact Review

cc: Michelle Hollis, DEQ-TRO
Kotur S. Narasimhan, DEQ-Air
Paul Kohler, DEQ-Waste
Dave Davis, DEQ-Water Protection
Terry Wagner, DEQ-Water Resources
Andrew K. Zadnik, DGIF
Robbie Rhur, DCR
Susan Douglas, VDH
Tony Watkinson, MRC
Ethel R. Eaton, DHR
Mary Stanley, VDOT
Keith Tignor, VDACS
Matt Heller, DMME
Todd Groh, VDF
Arthur L. Collins, Hampton Roads PDC
Randy Hildebrandt, City of Newport News

COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
retary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P. O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.virginia.gov

David K. Paylor
Director

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

Attachment 1

Enforceable Regulatory Programs comprising Virginia's Coastal Resources Management Program (VCP)

a. Fisheries Management - The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC); Virginia Code 28.2-200 to 28.2-713 and the Department of Game and Inland Fisheries (DGIF); Virginia Code 29.1-100 to 29.1-570.

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture Consumer Services (VDACS) share enforcement responsibilities; Virginia Code 3.1-249.59 to 3.1-249.62.

b. Subaqueous Lands Management - The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, tidal wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ). The program is administered by the Marine Resources Commission; Virginia Code 28.2-1200 to 28.2-1213.

c. Wetlands Management - The purpose of the wetlands management program is to preserve wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

(1) The tidal wetlands program is administered by the Marine Resources Commission; Virginia Code 28.2-1301 through 28.2-1320.

(2) The Virginia Water Protection Permit program administered by DEQ includes protection of wetlands --both tidal and non-tidal; Virginia Code §62.1-44.15:5 and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

Attachment 1 continued

Page 2

d. Dunes Management - Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission; Virginia Code 28.2-1400 through 28.2-1420.

e. Non-point Source Pollution Control – (1) Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by the Department of Conservation and Recreation; Virginia Code 10.1-560 et.seq.).

(2) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater (see i) Virginia; Virginia Code §10.1-2100 –10.1-2114 and 9 VAC10-20 et seq.

f. Point Source Pollution Control - The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code 62.1-44.15. Point source pollution control is accomplished through the implementation of:

(1) the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to Section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.

(2) The Virginia Water Protection Permit (VWPP) program administered by DEQ; Virginia Code §62.1-44.15:5 and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

g. Shoreline Sanitation - The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code 32.1-164 through 32.1-165).

h. Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code 10-1.1300 through §10.1-1320).

(i) Coastal Lands Management is a state-local cooperative program administered by the DCR's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act; Virginia Code §10.1-2100 –10.1-2114 and Chesapeake Bay Preservation Area Designation and Management Regulations; Virginia Administrative Code 9 VAC10-20 et seq.

Attachment 2

Advisory Policies for Geographic Areas of Particular Concern

a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:

a) Wetlands
b) Aquatic Spawning, Nursery, and Feeding Grounds
c) Coastal Primary Sand Dunes
d) Barrier Islands
e) Significant Wildlife Habitat Areas
f) Public Recreation Areas
g) Sand and Gravel Resources
h) Underwater Historic Sites.

b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:

i) Highly Erodible Areas
ii) Coastal High Hazard Areas, including flood plains.

c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:

i) Commercial Ports
ii) Commercial Fishing Piers
iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCRMP is encouraged. Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCRMP recognizes two broad classes of priority uses for waterfront development APC:

i) water access dependent activities;
ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

Advisory Policies for Shorefront Access Planning and Protection

a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.

b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.

c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.

d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.

e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.

f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCRMP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

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

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April 23, 2007

Ms Susan P. Miller
Department of the Army
US Army Garrison
Directorate of Public Works
1407 Washington Boulevard
Fort Eustis, Virginia 23604-5306

Re: Base Realignment and Closure (BRAC) Environmental Assessment
Ft. Eustis, Virginia
DHR File No. 2007-0550

Dear Ms Miller:

We have received your letter of March 22, 2007, informing the Department of Historic Resources (DHR) of the Base Realignment and Closure (BRAC) actions that will occur at Fort Eustis. It is our understanding that the Army is in the process of developing an Environmental Assessment (EA) for the undertaking pursuant to the National Environmental Policy Act (NEPA). The EA will evaluate the environmental consequences of the activities associated with BRAC at Fort Eustis. We remind the Army that as part of the EA process, NEPA requires that the federal agency consider the implications of its undertaking on cultural resources. We request the opportunity to review the draft EA when it becomes available.

If you have any questions regarding our comments or the Section 106 process, please contact me at (804) 367-2323, Ext. 114.

Sincerely,

Marc Holma, Architectural Historian
Office of Compliance and Review

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APPENDIX B COASTAL ZONE MANAGEMENT

Federal projects that are located within Virginia's designated coastal management area must be consistent with the Virginia Coastal Zone Management Program (*Virginia CZM Program*). This program was established in 1986 and was approved by the Federal government under the Coastal Zone Management Act of 1972 (Public Law 92-583, 16 USC. 1451-1456), as amended. Federal approval of the state's program authorized Virginia to require that Federal actions are aligned with the state's Coastal Program's laws and enforceable policies.

Virginia's coastal management area (Coastal Zone) includes 5,000 miles of shoreline, four tidal rivers reaching as far as 100 miles inland, the Chesapeake Bay and Albemarle - Pamlico Sound watersheds, and the Atlantic Ocean coastline. Natural and cultural features range widely - from the wild, undeveloped beaches of the barrier islands to the "hard" shoreline of Hampton Roads' port facilities. Virginia's coastal zone encompasses the land and waters within 29 counties, 17 cities and 42 incorporated towns. These areas are shaded in yellow and blue on the outline map of Virginia below, which is from the Virginia Department of Environmental Quality (DEQ) CZM Program web site.

http://www.deq.state.va.us/coastal/coastmap.html

The Base Realignment and Closure (BRAC) Commission recommendations became binding on 09 November 2005 and, as required by Public Laws 101-510 and 107-107, Fort Eustis, Virginia is being realigned in accordance with those recommendations. The entire Fort Eustis installation lies within the Virginia Coastal Zone and projects necessary to complete the realignment must be consistent with the state's CZM program.

Implementation of the BRAC 2005-directed actions at Fort Eustis would add approximately 250 active duty personnel, 780 civilians, and 371 contracted personnel. This total of 1,401 permanent party personnel would be offset by a reduction in the student population by 473. Evaluation of all facilities at Fort Eustis shows that after out-transferred functions have left and the buildings are prepared and reoccupied, there will remain a major shortfall in available built space to accommodate the additional personnel.

Fort Eustis' existing office space is, with very minor exception, fully utilized for current mission requirements. Because of this, and after accounting for space made available by transfer of the ATCS and SDDC, construction of new facilities on-post is necessary to ensure that adequate space is available for post-BRAC 2005 mission requirements.

To support these actions and the personnel increases that would result, Fort Eustis proposes the following measures:

- Renovation of the new wing of Building 705 to contain the ACA and NETCOM.
- Renovation of the existing SDDC facility (Building 661) for use by IMCOM East Region.
- New construction of a building complex and parking facility on a 33 acre site to house TRADOC HQ. Construction will be in the eastern portion of an area that is known as Murphy Field, which currently serves as a recreation area and as a parade ground.
- New construction of a building and parking facility on a 3.5 acre site in the 1500 block to house JTF-CS.
- General and Flag Officers Quarters (GFOQ) in the south-central portion of the cantonment area on a 6 acre site to the east of Brown's Lake that will contain eight stand-alone housing units.

The proposed actions would be constructed in coastal management areas regulated by CZMA and the Virginia Coastal Program (VCP). Due to its location, Fort Eustis and the proposed actions are subject to a consistency determination as part of the Federal Consistency Regulations for activities in coastal areas.

Impacts to coastal zone resources would be minimized by following Virginia's Coastal Resources Management Program guidelines and by implementing erosion control and Best Management Practices (BMPs). No new facilities would be constructed that would cause any negative impacts to the coastal ecosystem.

Analysis of the Proposed Action and the Enforceable Policies of the VCP

- *Fisheries Management*. The Proposed Actions would not impact Fisheries Management as the construction of the new facilities would not encroach on or influence the finfish and shellfish resources and commercial and recreational fisheries. The construction activities would not include possession, sale, or use of any marine antifoulant paints.
- *Subaqueous Lands Management.* The Proposed Action would not impact Subaqueous Lands Management. No excavation or direct alteration of subaqueous lands is involved wit this project and the construction of the new facilities would not negatively impact state-owned bottomlands.
- *Wetlands Management.* The Proposed Action would not negatively impact Wetlands Management as the construction of the new facilities would not encroach or destroy any tidal wetlands.
- *Dunes Management.* The Proposed Action would not impact Dune Management as the construction of the new facilities would not be located near any dunes and therefore would not destroy or alter primary dunes.

- *Non-point Source Pollution Control.* The Proposed Action would involve the disturbance of soil during construction activities. The construction process would require personnel to follow the guidelines set forth in the Virginia Erosion and Sediment Handbook and the storm water construction permit to protect and minimize any soil erosion and potential contamination from hazardous material spills during construction.

- *Point Source Pollution Control.* Fort Eustis has a Stormwater Pollution Prevention Plan (SWPPP) in place with best management practices that would be followed for any construction that has the potential to introduce pollutants into the storm water system. The SWPPP is regulated under the Virginia Pollutant Discharge Elimination System (VPDES) and N (National) PDES.

- *Shoreline Sanitation.* The Proposed Action would not impact Shoreline Sanitation, as the construction of the new facilities would not involve the installation of septic tanks near any streams, rivers or other waters.

- *Air Pollution Control.* During the construction of the proposed facility, local air quality at Fort Eustis could be temporarily affected by fugitive dust emissions, by construction vehicle emissions, and by vehicular emissions from commuting activities of the workforce and suppliers. These impacts will stop once construction completes, therefore the effects on long-term air quality would be insignificant.

- *Coastal Lands Management.* The Proposed Action would not impact Coastal Lands Management, as all components of the proposed action are consistent with current coastal land usage.

Federal Advisory Policies for Geographic Areas of Particular Concern

- *Coastal Natural Resource Areas.* The Coastal Natural Resource Areas include wetlands, aquatic spawning, nursery, and feeding grounds, coastal primary sand dunes, barrier islands, significant wildlife habitat areas, public recreation areas, sand and gravel resources, and underwater historic sites. The Proposed Action would not have any measurable impacts on any of these areas.

- *Coastal Natural Hazard Areas.* The project will not adversely affect any Highly Erodible Areas or Coastal High Hazard Areas.

- *Waterfront Development Areas.* The area where construction activities will occur is not a designated Waterfront Development Area.

- *Underwater Historic Sites.* All projects are being constructed within the Fort Eustis cantonment area at elevations between +25 and +49 feet above mean sea level. There are no underwater historic sites within the project area.

Federal Advisory Policies for Shorefront Access Planning and Protection

- *Virginia Public Beaches.* There are no public beaches in the project area.

- *Virginia Outdoors Plan.* The Fort Eustis has an outdoor recreation program that includes many activities such as picnicking, camping, golfing, horseback riding, boating, wildlife watching, and hunting and fishing. The level of enjoyment derived from these activities is directly related to the quality of the natural resources and Fort Eustis succeeds in maintaining a quality outdoor recreation program. The BRAC construction projects will not impact these activities.

- *Parks, Natural Areas, and Wildlife Management Areas.* Forests on Fort Eustis are managed to maintain ecosystem viability and the forest cover required for military training. Wildlife areas on Fort Eustis are surveyed and managed to maintain wildlife populations for biodiversity, provide outdoor recreation, and conduct nuisance animal control and enhance wildlife values on the installation. These areas are outside the influence of the proposed realignment projects.

- *Waterfront Recreational Land Acquisition.* No land disposal or acquisition will occur in conjunction with the proposed project.

- *Waterfront Recreational Facilities.* No waterfront recreational facilities will be developed, disposed of, or otherwise affected by the proposed project.

- *Waterfront Historic Properties.* No historic waterfront buildings, structures or archaeological sites lie within the project area.

APPENDIX C ECONOMIC IMPACT FORECAST SYSTEM (EIFS) – MODELING RESULTS

Economic Impact Forecast System (EIFS) – Modeling Results

The EIFS Model

The primary metric used to determine significance of changes in socioeconomic activity from realignment of Fort Eustis is the US Army's Economic Impact Forecast System (EIFS) model. The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to basic economic activity. Basic economic activity, in this context, is defined as the production or employment engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to base income is measurable and sufficiently stable so that future changes in economic activity can be forecasted. This technique is especially appropriate for estimating aggregate impacts and makes the economic base model ideal for the estimation and analysis of sustainability thresholds.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its base sector; for instance, a dollar increase in local expenditures due to an expansion of its military installation. EIFS estimates its multipliers using a location quotient approach based on the concentration of industries within the region relative to the industrial concentrations for the nation.
The user inputs into the model the data elements that describe the Army action: the change in expenditures; change in civilian or military employment; average annual income of affected citizens or military employees; the percent of civilians expected to relocate due to the Army's action; and the percent of the military living on-post. From these inputs, the EIFS model provides projected changes in sales volume, income, employment, and population in the local economy. These variables are then used to measure and evaluate projected socioeconomic impacts. Sales volume is the direct and indirect change in local business activity and sales (total retail and wholesale trade sales, total selected service receipts, and value-added by manufacturing). Employment is the total change in local employment due to the proposed action, including not only the direct and secondary changes in local employment, but also those personnel who are initially affected by the military action. Income is the total change in local wages and salaries due to the proposed action, which includes the sum of the direct and indirect wages and salaries, plus the income of the civilian and military personnel affected by the proposed action. Population is the increase or decrease in the local population as a result of the proposed action.

Evaluation of Socioeconomic Impacts

The basis of EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures or employment. Once EIFS model projections are obtained, the Rational Threshold Values (RTV) profile allows evaluation of the context and intensity of the impacts. The RTV profile reviews the historical trends for the defined region, based on US Census data, and develops measures of local

historical fluctuations in sales volumes, employment, income, and population. These evaluations indicate the intensity of the positive and negative changes of a project.

The RTV provides boundaries (threshold values) to assess the magnitude of an action's impacts. The largest historical change (both increases and decreases) define the boundaries. These values thus provide a basis for comparing an action's impact to the historical fluctuations in a particular area. As such, the assignment of thresholds is made on a region-specific basis. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

	Increase	Decrease
Sales Volume	100%	75%
Income	100%	67%
Employment	100%	67%
Population	100%	50%

The percentage allowances are arbitrary but sensible. The maximum positive historical fluctuation is allowed with expansion because of the positive connotations of economic growth. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, the effects of reductions and closures are generally more controversial than expansions.

The major strengths of the RTV criteria are its specificity to the region under analysis and its basis on actual historical time-series data for the defined region. The EIFS impact model, in combination with the RTV, has proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring significance are theoretically sound and have been reviewed on numerous occasions.

The severity of conceivable impacts accelerates in the following order: total sales volume, total personal income, total employment, and total population. Sales volume impacts may be alleviated by manipulation of variables such as inventory and new equipment. Impacts on workers or proprietors are not easily or immediately assessed. Changes in employment and income are of primary interest. Employment and income impacts are followed by changes in personal income, directly affecting individuals within the region. Population threshold indicators are extremely important because they reflect the effects on local government revenues, housing, education, infrastructure, and other social services. They should be weighted accordingly.

Calculation of Model Input Parameters

The following presents the calculations and assumptions made in determining input parameters for the EIFS analysis for the realignment of Fort Eustis. These statistics were derived to reflect a reasonable maximum year change in economic activity.

Change in Local Expenditures: Changes in expenditures are expected to be positive because Fort Eustis will be gaining 1,035 employees and expanding facilities. To be conservative, it was

assumed that the increase in local expenditures would be $25 million. The actual net increase in expenditures would be expected to be far less than this statistic.

Change in Civilian Employment: Civilian employment changes include the net change in both civilian and government contractor jobs on Fort Eustis as a result of realignment. It was assumed that jobs relocating from Fort Monroe to Fort Eustis would not be lost to the ROI labor pool given the close proximity of these installations and that both are within the same ROI. As a result, the input for change in civilian employment is -607 rather than 711.

Average Income of Affected Civilians: The average wage for Fort Eustis was estimated based on total civilian salary expenditures for Fort Monroe, which is the current location for the majority of personnel relocating to Fort Eustis. . The model input of $60,000 was used as the broadly representative average wage.

Percent Expected to Relocate: The percent expected to relocate is uncertain. For the model runs, 90 percent were conservatively assumed to relocate, given the type of jobs being lost and gained at Fort Eustis.

Change in Military Employment: Fort Eustis will lose military jobs with realignment when discounting those coming in from within the same ROI. Instead of the total net increase of 324 personnel, -398 was used as the input to reflect only the realignment of personnel not currently affiliated with Fort Monroe.

Average Income of Affected Military: Average military income was based on known figures for Fort Monroe because they comprise the majority of incoming personnel at Fort Eustis. Total military salary expenditures were divided by the total number of military workers, yielding a model input of $74,000.

Percent of Military Living on Post: An estimated 87 percent of military personnel live on post.

EIFS REPORT

PROJECT NAME

Ft. Eustis EIFS Report

STUDY AREA

37053	Currituck, NC
51073	Gloucester, VA
51093	Isle of Wight, VA
51095	James City, VA
51115	Mathews, VA
51181	Surry, VA
51199	York, VA
51550	Chesapeake, VA
51650	Hampton, VA
51700	Newport News, VA
51710	Norfolk, VA
51735	Poquoson, VA
51740	Portsmouth, VA
51800	Suffolk, VA
51810	Virginia Beach, VA
51830	Williamsburg, VA

FORECAST INPUT

Change In Local Expenditures	$25,000,000
Change In Civilian Employment	-607
Average Income of Affected Civilian	$60,000
Percent Expected to Relocate	90
Change In Military Employment	-398
Average Income of Affected Military	$74,000
Percent of Militart Living On-post	87

FORECAST OUTPUT

Employment Multiplier	3.23	
Income Multiplier	3.23	
Sales Volume - Direct	($13,225,960)	
Sales Volume - Induced	($29,493,890)	
Sales Volume - Total	($42,719,840)	-0.13%
Income - Direct	($59,157,120)	
Income - Induced)	($7,921,918)	
Income - Total(place of work)	($67,079,030)	-0.19%
Employment - Direct	-1093	
Employment - Induced	-195	
Employment - Total	-1288	-0.14%
Local Population	-2351	
Local Off-base Population	-1489	-0.15%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	10.91 %	10.6 %	2.79 %	1.71 %
Negative RTV	-6.99 %	-5.71 %	-2.97 %	-0.69 %

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