

FINAL ENVIRONMENTAL IMPACT ANALYSIS FOR ARMY GROWTH AND FORCE STRUCTURE REALIGNMENT

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Final Programmatic Environmental Impact Statement

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Cooperating Agencies: None

Title of the Proposed Action: Army Growth and Force Structure Realignment

Affected Jurisdictions:

Installation	Counties in the Region of Influence (ROI)
Fort Benning	Chattahoochee, Muscogee, Harris, and Marion, GA; Russell, AL
Fort Bliss	El Paso, TX; Dona Ana and Otero, NM
Fort Bragg	Cumberland, Lee, Moore, Hoke, and Harnett, NC
Fort Campbell	Christian and Trigg, KY; Montgomery and Stewart, TN
Fort Carson	El Paso, Fremont, Pueblo, and Teller, CO
Pinon Canyon Maneuver Site	Las Animas, Huerfano, Pueblo, Otero, and Bent, CO
Fort Drum	Jefferson, Lewis, and St Lawrence, NY
Fort Knox	Bullitt, Hardin, Meade, Breckinridge, Floyd, Grayson, Harrison, Larue, Nelson, and Spenser, KY
Fort Hood	Bell and Coryell, TX
Fort Hunter Liggett	Monterey and San Luis Obispo, CA
Fort Irwin	San Bernardino, CA
Fort Lewis	Pierce and Thurston, WA
Fort Riley	Clay, Geary, Riley, Dickinson, Morris, Ottawa, Pottawatomie, and Wabaunsee, KS
Fort Polk	Beauregard, Rapides, and Vernon, LA
Fort Stewart	Liberty, Long, Bryan, Chatham, and Tattnall, GA
White Sands Missile Range	El Paso, TX; Dona Ana, Sierra, Socorro, and Otero, NM
Yakima Training Center	Kittitas County, WA; Yakima, WA
Yuma Proving Ground	Yuma, AZ; Imperial, CA

Document Designation: Final Programmatic Environmental Impact Statement

Abstract: The Department of the Army announces the availability of a Final PEIS for the Growth and Force Structure Realignment of the United States Army. Pursuant to the National Environmental Policy Act (NEPA), the Department of the Army has prepared a PEIS that evaluates the potential environmental and socioeconomic effects associated with alternatives for growing and realigning the Army's force structure. Potential impacts of scenarios have been analyzed at installations that are being considered for the stationing of 1,000 or more Soldiers. The Army proposes to increase its end strength permanently, in accordance with Congressional authorizations, to a size and configuration that is capable of meeting national security and defense objectives. The growth of the Army would allow for the rebalancing of the composition of its forces to continue to accommodate Transformation objectives and create additional unit capabilities in high demand areas where mission requirements exceed current manning authorizations.

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1 EXECUTIVE SUMMARY

2 INTRODUCTION

3
4
5 On 12 October, 1999, the Senior Leadership of the Army articulated a vision for the
6 Transformation of the Army to ensure that it remained an effective operational force in
7 the 21st Century. The Army's decision to transform began a dynamic 30-year process
8 through which the Army is continuously assessing and calibrating its force structure and
9 capabilities to face the evolving threats and mission requirements. The decision to
10 transform the Army was described in the 2002 Record of Decision for the *Programmatic*
11 *Environmental Impact Statement for Army Transformation*. Since this decision, the
12 Army has accelerated the pace of Transformation activities and is continuing to
13 implement those actions required to field a force that is most capable of meeting the
14 nation's growing national security and defense needs. The overall goal of Army
15 Transformation and force structure review is to provide the nation with a relevant and
16 ready all-volunteer force that is capable of supporting the nation's security, defense and
17 policy interests.

18
19 The Army continues to conduct detailed planning to carry out Transformation in a way
20 that addresses capabilities shortfalls of the cold war force and implements the guiding
21 recommendations of the Quadrennial Defense Review (QDR). The Army's guiding
22 document for the implementation of this plan is the Army Campaign Plan (ACP). The
23 ACP directs the detailed planning, preparation, and execution of a full range of
24 Transformation tasks that are underway to ensure the synchronization of
25 Transformation activities across all facets of the organization.

26
27 As part of the overall Army Transformation effort, the Army has transitioned to a
28 modular, or standardized force structure. Organizationally, this has meant a transition
29 of the Army from large, powerful, fixed organizations constituted at the Division level
30 (10,000 to 12,000 personnel) to an Army designed around smaller, standardized, self-
31 contained, rapidly deployable Brigade Combat Teams (BCTs). The Transformation of
32 the Army's BCTs to a standardized, BCT-based structure is almost complete across the
33 Active and Reserve components of the Army. The Army is also conducting ongoing
34 analysis of the size and structure of Combat Support (CS) and Combat Service Support
35 (CSS) units to ensure the Army is fielding the proper force to support modular BCTs and
36 operational mission requirements. A realignment of CS/CSS units required to support
37 Army requirements is discussed and evaluated along with those programs that further
38 implement modular forces concepts in the subsequent chapters of this document.

39
40 In addition to the realignment of CS/CSS forces, the Army has identified a critical need
41 to grow its forces to meet increased national security and defense needs of the 21st
42 Century. The Army has identified that shortfalls in people, equipment, and time to train
43 that have posed considerable challenges to Army force managers as they attempt to
44 sustain force readiness and Soldier and Family quality of life while supporting growing
45 Army mission requirements. As a result of the imbalance between current mission
46 requirements and available forces, the Army has defined the growth and restructuring to

1 meet the greater demands of the current security environment as its top priority
2 (General Casey, Chief of Staff of the Army, *Army Initiatives Charter* 2007).

3
4 The Army proposes to increase its end strength permanently, in accordance with
5 Congressional authorizations, to a size and configuration that is capable of meeting
6 national security and defense objectives. The growth of the Army would allow for the
7 rebalancing of the composition of its forces to continue to accommodate Transformation
8 objectives and create additional unit capabilities in high demand areas where mission
9 requirements exceed current manning authorizations. This EIS analyzes three action
10 alternatives for Army growth and evaluates and compares the environmental and socio-
11 economic impacts that would result from the implementation of these alternatives. The
12 Army has considered seventeen major training and testing installations for supporting
13 Army growth. Sites carried forward for analysis to support stationing actions as part of
14 Army growth and realignment include: Fort Benning, Ga.; Fort Bragg, N.C.; Fort Bliss,
15 TX; Fort Campbell, KY; Fort Carson, CO; Fort Drum, NY; Fort Hood, TX; Fort Hunter
16 Liggett, CA; Fort Irwin, CA; Fort Knox, KY; Fort Lewis, WA; Fort Polk, LA; Fort Riley,
17 KS; Fort Stewart, GA; White Sands Missile Range, NM; Yakima Training Center, WA;
18 and Yuma Proving Grounds, AZ.

19
20 Installation locations carried forward for analysis in this Programmatic Environmental
21 Impact Statement (PEIS) are those sites that may receive more than 1,000 new
22 Soldiers from Fiscal Year (FY) 2008-13 as part of the initiatives discussed above. The
23 1,000-Soldier threshold was chosen because it represents a level of growth at a
24 majority of installations at which significant environmental impacts could occur and
25 should be considered at the programmatic level.

26
27 The three alternatives carried forward for analysis in this document address the Army's
28 needs to increase its overall end strength while continuing to realign force structure to a
29 size and composition that is better able to meet national security and defense
30 requirements, rebalances the force in accordance with Army Transformation, sustains
31 unit equipment and training readiness, and preserves Soldiers and Family quality of life.
32 In addition to the three alternatives, the no-action alternative is discussed and provided
33 to serve as a basis for comparison.

34
35 The Army's decision maker will consider all significant environmental information and
36 public issues of concern disclosed in this PEIS related to alternatives. In addition, he
37 will consider several non-environmental factors critical to a final force structure decision
38 as discussed below. After thoroughly evaluating this information, the decision maker
39 will document the decision, selecting one of the proposed action alternatives in a
40 Record of Decision (ROD), which will be signed no earlier than 30 days from the
41 publication of the Notice of Availability. The ROD will clearly and definitively articulate
42 the decision made and provide a supporting explanation. It will explain both the
43 significant factors he relied on in making a final decision and why the final alternative
44 best meets the purpose and need. He will also acknowledge the comparative
45 environmental impacts and benefits resulting from his decision particularly if the
46 alternative chosen is not the environmentally preferred alternative. Once the ROD is

1 finalized, the Army will forward a Notice of Availability to the Federal register. The ROD
2 will be available for public review.
3

4 **ALTERNATIVES**

5

6 Three action alternatives have been formulated to take into account the Army's needs
7 for growth and force realignment. Common elements to these alternatives include the
8 growth and force structure realignment of Army units from the fiscal year 2008 to 2013.
9 All alternatives consider BRAC directed actions and those stationing actions that have
10 occurred prior to the start of Fiscal Year 2008 as part of the baseline condition for
11 analysis. Programmatic alternatives carried forward for analysis in this PEIS include:
12

13 ***Alternative 1 - Implement Army Growth, Realignment, and associated activities***
14 ***between fiscal year 2008 and 2013 to support the Army's Modular Transformation***
15 ***and Global Defense Posture Review (GDPR) decisions.*** The Army has a number of
16 separate programs and initiatives that evaluate the existing force composition and its
17 manning and stationing. Major on-going force development initiatives include Total
18 Army Analysis (TAA), Modular Support Forces Analysis (MSFA), and GDPR. Several
19 smaller sub-programs that deal with specific components of the Army, feed into these
20 larger modular force redesign initiatives. These programs have led to recommendations
21 that would result in a realignment and supplementation together equaling approximately
22 20,000 Active Duty Soldiers. Also included as part of this alternative are numerous unit
23 deactivations that are needed to restructure the Army to a modular configuration that
24 best implements Transformation to a more efficient operating force.
25

26 ***Alternative 2- Execute those actions discussed in Alternative 1 and, in addition,***
27 ***add approximately 30,000 Combat Support (CS) and Combat Service Support***
28 ***(CSS) Soldiers to the Active and Reserve Components of the Army to address***
29 ***critical shortfalls in high demand military skills.*** Under this alternative, a "right-
30 sizing" of the Army force structure would add approximately 20,000 additional Active
31 Duty and approximately 10,000 Reserve Component Soldiers to areas of high demand
32 and critical need. Additional Explosive Ordnance Disposal (EOD), Military Police (MP),
33 Military Intelligence (MI), Engineers, and other critical CS/CSS units would be added to
34 provide for increased strategic flexibility for the Army and a greater level of stability for
35 the Soldiers in these units.
36

37 ***Alternative 3: Execute those actions proposed in Alternatives 1 and 2 and, in***
38 ***addition, grow the Army by up to 6 Active Duty Brigade Combat Teams (BCTs).***
39 This alternative would allow the Active Army grow by up to an additional 6 BCTs based
40 on projected national defense and security assessments. Selection of this alternative
41 would result in the growth of the Army from a current total of 42 BCTs up to a total of 48
42 BCTs and end strength of 547,400 Active Duty Soldiers. This alternative would add
43 between 20,400 to 24,000 additional Soldiers to the Army depending on the type of
44 BCTs added as part of Army Growth. Additional BCTs would be stationed at existing
45 Army installations within the Continental United States.
46

1 **No Action:** The No Action Alternative is to retain the Army at a permanent force level
 2 of 512,400 Active Duty Soldiers, 350,000 Army National Guard Soldiers, and 205,000
 3 Reserve Soldiers as is currently authorized. The No-Action alternative assumes that
 4 units will remain stationed where they are currently stationed at the end of Fiscal Year
 5 2007, or where they are directed to be stationed pursuant to BRAC law.

6
 7 Under the No-Action alternative, stationing moves, unit activations, unit conversions,
 8 and deactivations required to implement Army Growth and Realignment beyond 2007
 9 authorizations and BRAC Law would not occur as described in Alternatives 1, 2, and 3.
 10 No additional CS/CSS Soldiers would be added to the Army to balance the composition
 11 of Army skill sets to match current and projected future mission requirements.
 12 Furthermore, no new Brigade Combat Teams would be added to the Army to slow the
 13 tempo of deployments for existing units. The Army would remain at its 2007 authorized
 14 end strength in its current configuration and implement only those realignments or
 15 closures directed by BRAC 2005 law.

16
 17
 18 **SCREENING CRITERIA FOR STATIONING LOCATIONS**

19
 20 The Army initially included all of its installations as potential stationing locations to
 21 support Army growth and rebalance initiatives. To narrow the field of installations to
 22 those capable of supporting new stationing requirements of growth and realignment, the
 23 Army used the need criteria of the proposed action in conjunction with other external
 24 limiting factors. The installation screening criteria included: the capability to support the
 25 NSS, NDS and ACP, the capability to provide the necessary training infrastructure for
 26 new units, quality of life, and garrison support infrastructure, and cost considerations.
 27 Seventeen installations within the United States have been identified as meeting the
 28 purpose and need for the proposed action, and are included in this Programmatic EIS.

29
 30
 31 **PEIS METHODOLOGY**

32
 33 This Programmatic EIS presents a top-tier perspective that provides decision makers,
 34 regulatory agencies, and the public with information on the potential environmental and
 35 socioeconomic impacts resulting from the implementation of Army growth and
 36 realignment through different types of unit stationing scenarios. This information will
 37 allow decision makers to review the proposed alternatives and environmental and
 38 socioeconomic impacts for implementing Army growth initiatives, enabling them to make
 39 informed decisions when determining installation stationing locations.

40
 41 This PEIS identifies those installations that are capable of supporting growth of more
 42 than one thousand (1,000) Soldiers. This PEIS reviewed all Army installations, and
 43 identified the seventeen (17) CONUS Army installations capable of supporting the
 44 proposed action.

1 The PEIS establishes alternatives to achieve three primary alternatives that result in
2 separate Army end strengths. To achieve the end strength under each alternative the
3 Army decision maker has the flexibility to develop a proper Army size and force
4 structure by choosing from six different unit stationing scenarios used in evaluation of
5 environmental impacts at the 17 potential stationing locations identified. It is important
6 to understand the relationship in the decision making process among the three action
7 alternatives for Army growth, the six installation stationing scenarios, and the 17
8 installations chosen for consideration in the PEIS. Consistent with NEPA, the
9 regulations published by the Council on Environmental Quality, and the Army's
10 implementing NEPA procedures (32 CFR Part 651) the Army engaged in a process to
11 develop a full range of reasonable alternatives for thorough consideration, evaluation
12 and comparison in this PEIS. It also identifies the Valued Environmental Components
13 (VECs) at each of the 17 installations and predicts the probable intensity of
14 environmental impact to each VEC if 1,000 or more Soldiers are selected for stationing
15 at that particular installation.

16
17 Using this approach to evaluation of alternatives, the decision maker is enabled to
18 compare and contrast the differing environmental impacts associated with selecting
19 different types and sizes of units for stationing at different installations.

20
21 The programmatic approach is designed to allow for early planning, coordination, and
22 flexibility throughout implementation of the Army growth and realignment process. The
23 analysis in this document is suited to the Headquarters stationing decisions being
24 made. It provides high-level officials within the Army an understanding of the important
25 environmental and socio-economic issues associated with each alternative and
26 compares and contrasts the consequences among alternatives. The PEIS is designed
27 to serve as a foundational document that can assist force managers in making
28 stationing decisions. It is not intended to encompass a series of site-specific analyses
29 as such an approach would not provide the relevant environmental information at a level
30 appropriate to the decision being made. This document may be supplemented as
31 proposals for changes to Army force structure are made in the future. Otherwise, this
32 PEIS will allow specific installations to "tier" their NEPA documents where appropriate.
33 Site-specific NEPA analyses will be conducted, where necessary, to implement
34 installation level actions implementing the selected alternative.

35 36 **IMPORTANT ENVIRONMENTAL AND SOCIO-ECONOMIC CONSEQUENCES FOR** 37 **DECISION MAKERS**

38
39 Table ES-1 provides a summary of important and potentially significant environmental
40 and socio-economic consequences that would be projected to occur for each of the
41 installations that have been carried forward for analysis to support Army growth and
42 realignment. The Army has coordinated with installation staff at each potential
43 stationing location to determine anticipated impacts from different unit stationing
44 scenarios. Environmental and socio-economic impact ratings are described below.

1 **Summary of Potentially Significant Impacts from the Six Unit Stationing**
 2 **Scenarios Analyzed in the PEIS**

3
 4 **Scenario 1**

5 **Stationing of an Additional 1,000 Combat Support (CS) or Combat Service**
 6 **Support (CSS) Soldiers.** Generally, installations' impacts that result from the
 7 accommodation of training and construction activities to handle the stationing of 1,000
 8 new Soldiers as part of this scenario are anticipated to be less than significant in nature.
 9 The CS/CSS units consist of approximately 1,000 Soldiers, light engineer equipment,
 10 High Mobility Multi-Wheeled Vehicles (HMMWV) or other light vehicles, and some
 11 medium to large cargo trucks. While these units are capable of off-road maneuver,
 12 typically, training occurs on roads and hardened surfaces, and live fire training typically
 13 involves an increase in small arms training. Off-road maneuver training for these units
 14 would be projected to take place within the footprint of combat units conducting
 15 maneuver training at the installation.

16
 17 Potentially significant impacts to Air Quality, Cultural Resources, Water Resources,
 18 Facilities, Socioeconomics, and Traffic and Transportation are:

19
 20 **Air Quality.** Fort Carson anticipates the need to address air quality issues resulting
 21 from additional stationing under this scenario to be a potentially significant issue. Fort
 22 Carson is currently located in a area near Colorado Springs, CO that is currently in non-
 23 attainment of National Ambient Air Quality standards. Fort Carson is designated as a
 24 major contributor (more than 100 tons/year) of regulated air pollutants, and is
 25 approaching the limits of its Title V air quality permit because of significant BRAC
 26 growth. The Army would need to take additional time to conduct a Clean Air Act
 27 conformity analysis and develop plans to address increases in stationary and mobile
 28 sources of air pollutants as a result of new stationing under this scenario at Fort Carson.

29
 30 **Cultural Resources.** Due to its large size, much of White Sands Missile Range
 31 (WSMR) has never been surveyed for cultural resources. The results of surveys of
 32 areas that would be affected by this action would determine if impacts to these
 33 resources would be significant.

34
 35 **Facilities.** There will be significant impacts at Fort Benning due to limited available
 36 space and capacity for training activities and new construction.

37
 38 Fort Bragg is challenged by a lack of buildable space on the installation to support the
 39 required facilities for a CS/CSS unit. The installation anticipates that construction to
 40 support growth will require considerable reallocation or modification of existing space
 41 (such as their old Ammunition Supply Point) and will require the use of non-standard
 42 solutions such as multi-story buildings.

43
 44 Fort Lewis does not have enough vacant space to accommodate the additional Family
 45 housing requirements and units would need to utilize temporary building space.

1 **Socio-economics.** There will be projected significant shortfalls with the school
2 systems, particularly at Fort Bliss, Yuma Proving Grounds (YPG), or WSMR.

3
4 **Traffic and Transportation.** Other considerations to note under this stationing
5 scenario are that traffic and transportation at Fort Bliss, Fort Bragg, and Fort Campbell,
6 that are currently rated as highly congested, would continue to be stressed by any
7 additional growth without accompanying infrastructure solutions to alleviate traffic
8 problems.

9
10 **Scenario 2**

11 **Stationing of a Sustainment BDE (3,000 to 3,500 Soldiers).** This stationing scenario
12 consists of the stationing of a sustainment brigade that would support logistics
13 operations of BCTs and other support units. Under this stationing scenario the
14 sustainment brigade consists of 1,000 to 1,200 maintenance vehicles and light medium
15 and heavy cargo trucks of all sizes (ex. HMMWVs, fuel trucks and Heavy Equipment
16 Transports (HETs). All wheeled vehicles are capable of on-road and off-road
17 maneuver, but will more often travel on-road. These units accomplish much of their
18 training at individual small arms weapons qualification ranges and during convoy live
19 fire training rehearsals. This type of unit would conduct off-road maneuvers in the
20 footprint of combat maneuver units during major field training exercises while providing
21 fuel, ammunition, food, repair parts, and other logistics services to these units.

22
23 Impacts of potential significance at installation sites requiring further analysis as part of
24 this stationing scenario include those to Air Quality, Cultural Resources, Soil Erosion,
25 Biological Resources (including vegetation and Threatened and Endangered Species
26 (T&E)), Wetlands, Water Resources, Facilities, Socioeconomics, Energy Demand, Land
27 Use, and Traffic and Transportation. Under this scenario, all impacts discussed above
28 as part of stationing scenario 1 are impacts that would occur as part of this stationing
29 scenario, as well. Potentially significant impacts resulting from the implementation of
30 Army growth and realignment under this scenario are:

31
32 **Air Quality.** Air quality impacts at Fort Carson would be intensified by more mobile and
33 stationary sources of emissions and increased construction requirements.

34
35 **Cultural Resources.** Additional studies would be needed at WSMR as discussed
36 under stationing scenario 1. At YPG, light vehicle maneuver could have adverse effects
37 on archaeological sites and protected resources that have not yet been inventoried or
38 are unknown/undiscovered.

39
40 **Soil Erosion.** Though not anticipated to travel off-road often, the Sustainment BDE
41 would continue to worsen already impacted soil conditions at Fort Bliss, exposing the
42 already arid soils to additional wind erosion. Fort Benning and Fort Bragg's loose sandy
43 and silty soils would be effected from the additional training in maneuver areas. Nearly
44 half of Fort Campbell's soils have moderate or significant potential for soil erosion and
45 would be significantly affected.

1 **Biological Resources (T&E Species).** A Sustainment BDE could cause significant
2 damage to shrub-steppe vegetation found on Yakima Training Center. This would also
3 lead to increased establishment of invasive weed species, and indirectly result in a loss
4 of cover for some of the installation's listed species.

5
6 **Water Resources.** Water demand is expected to be of more significance at Yuma
7 Proving Ground (YPG) due to the semi-arid and arid environments associated with
8 those installations. Additionally, Fort Campbell may need to consider upgrading its
9 water supply system and wastewater treatment system. The addition of a Full
10 Sustainment BDE would potentially cause the impairment or further impairment of state
11 priority waterways through increased sedimentation at Fort Campbell as well.

12
13 **Facilities.** Potential effects from this stationing scenario include those potential impacts
14 for stationing scenario 1 (CS/CSS). In addition to these considerations, other key
15 considerations include buildable space challenges at Forts Campbell, Carson, and
16 Riley. The current footprint of supporting infrastructure and environmental features will
17 require non-standard construction solutions to allow construction for this level of Army
18 growth to take place. Fort Irwin's solid waste facilities would need further upgrading to
19 support this scenario.

20
21 **Socioeconomics.** Impacts would be potentially significant in relation to
22 accommodating school aged children's educational requirements at Forts Bliss, YTC,
23 WSMR, YPG, Fort Riley, Fort Campbell, and Fort Lewis under this stationing scenario.
24 Eleven school districts around Fort Lewis are currently over-capacity and are using
25 modular facilities as additional classroom space. Other locations listed above do not
26 have the current capacity in their school systems to handle the additional approximately
27 1,500 school age children that would accompany 3,500 additional sustainment brigade
28 Soldiers.

29
30 **Energy Demand.** Fort Benning and Fort Campbell expect that this level of Soldier
31 increase in personnel and equipment will require expansion of existing utilities.

32
33 **Land Use.** Fort Campbell could potentially have difficulties siting new facilities in areas
34 with compatible land uses to accommodate a Full Sustainment BDE.

35
36 **Traffic and Transportation.** In addition to the anticipated effects from this level of
37 growth at Fort Bliss, Fort Bragg and Campbell (listed for the CS/CSS), Fort Knox and
38 YPG expect a significant impact to transportation systems and roadways, on- and off-
39 post including a decrease in the level of service in the road network leading to the
40 installation, particularly during peak morning and afternoon travel periods.

41 42 **Scenario 3**

43 **Stationing of an Additional IBCT (3,500 Soldiers).** The IBCT consists of
44 approximately 3,500 Soldiers, and has a range of light and heavy wheeled vehicles.
45 The IBCT is divided primarily into 2 infantry battalions, a reconnaissance and
46 surveillance battalion, a fires battalion, support battalion, and a special troops battalion

1 consisting of combat support units. The modular IBCT possesses towed M777 155 mm
 2 artillery, light engineer equipment, light tactical and medium/large cargo trucks. All
 3 vehicles are capable of on-road and off-road maneuver; and, dismounted training
 4 occurs in range areas as well. Infantry training involves the use of small arms, heavy
 5 caliber machine gun, and explosives training as individual Soldiers, crews, teams, and
 6 squads practice and qualify with a variety of weapons such as the pistol, rifle, shotgun,
 7 sniper rifle, grenade launchers, light-medium-heavy machine guns, anti-tank weapons,
 8 grenades, demolitions, and mortars. Weapons training occurs more often for the IBCT
 9 than the Full Sustainment BDE. Qualification is a semi-annual requirement and practice
 10 firing is completed as time, ammunition, and other resources permit. This weapons
 11 firing occurs on fixed ranges, as described in Army TC 25-8, *Training Ranges*. Infantry
 12 units, from squad to task force also participate in Live-Fire Exercises that include all
 13 weapons systems on a large and more complex range.

14
 15 Anticipated potentially significant impacts would include all impacts discussed and
 16 presented in scenario 2. Additional impacts would be experienced for Air Quality,
 17 Noise, Biological Resources, Facilities, and Traffic and Transportation to a greater
 18 degree at the following installations:

19
 20 **Air Quality.** Fort Irwin expects combustion emissions from stationary sources to
 21 increase significantly due to the increase in infrastructure and power generation
 22 equipment.

23
 24 **Noise.** Noise associated with additional live-fire activities of the IBCT could significantly
 25 impact residential communities surrounding Fort Lewis. Recent stationing actions for
 26 two aviation battalions at Fort Lewis have exacerbated noise impacts at the installation.

27
 28 **Biological Resources (T&E Species).** The increased foot traffic from dismounted
 29 training, and maneuver with IBCT vehicles could have an adverse affect on the Red-
 30 cockaded Woodpecker (RCW) population at Fort Bragg. In addition, Yuma Proving
 31 Ground expects significant impacts to its special status species.

32
 33 **Hunting and Outdoor Recreation.** Some areas within the PCMS are accessible to the
 34 public for recreational use when training activities do not occur. Restricted access
 35 would result in significant impacts to recreational activities if BCT training were to occur
 36 there.

37
 38 **Facilities.** There is currently limited buildable space within the Main Administrative
 39 area of YPG. The facilities requirements and construction required to support an IBCT
 40 may be beyond current carrying capacity of YPG's existing facilities and would need to
 41 be studied in great detail to determine how to support increased facilities and utilities
 42 requirements.

43
 44 **Traffic and Transportation.** Traffic and transportation issues would require more in-
 45 depth analysis to provide solutions to off-post traffic problems with growth of an IBCT at
 46 Fort Bliss, Fort Bragg, and Fort Campbell. Fort Knox and Fort Lewis have identified the

1 need to address on-post traffic issues due to the increased amount of Soldiers,
2 Families, and support staff. The main post area at YTC is currently congested and is
3 programmed for significant roadway upgrades to support BRAC-related growth. A new
4 traffic study would be needed to examine growth beyond BRAC at the installation.
5

6 **Scenario 4**

7 **Stationing of an Additional HBCT (3,800 to 4,000 Soldiers).** An HBCT consists of
8 approximately 55 M1 Abrams tanks and 85 Bradley Infantry fighting vehicles. In
9 addition to these heavily armored tracked combat vehicles, the HBCT also possesses
10 16 self propelled 155 howitzers, tracked earthmoving vehicles, recovery vehicles, and
11 an assortment of other tracked vehicles. The HBCT also consists of a large number
12 and variety of wheeled-vehicles, to include light tactical trucks, medium trucks, and
13 large cargo and fuel trucks. HBCT training involves training with a full range of small
14 arms weapons. Additionally, vehicle crews must qualify on vehicle weapons systems of
15 the Abrams tanks, Bradley, and other combat vehicles. Artillery and explosives training
16 are needed to achieve combat proficiency. Off-road maneuver training is conducted to
17 maintain training readiness.
18

19 Potential significant impacts would include those impacts presented in scenario 3.
20 Additional impacts would be experienced by installations for Air Quality, Cultural
21 Resources, Noise, Soil Erosion Biological Resources, Vegetation, Habitat, Noxious
22 Weeds, Hunting and Recreation, Wetlands, Facilities, and Traffic and Transportation (to
23 a greater degree at the installations identified).
24

25 **Air Quality.** Fort Benning and Fort Lewis anticipate fugitive dust emissions from a
26 HBCT to increase significantly, though it should remain a localized issue and would be
27 addressed as an opacity issue if activities are close enough to installation boundaries
28 that visible emissions leave the Installation.
29

30 **Cultural Resources.** Fort Benning would require Phase II investigations in most areas
31 that would expected to be impacted by an additional HBCT. Fort Campbell expects the
32 use of heavier equipment in the maneuver training areas to introduce a much greater
33 degree of threat to archaeological sites. The weight and mobility characteristics of
34 heavy tracked vehicles, and the vibration/shock from the firing and discharge of large
35 caliber weapons would be anticipated to lead to the loss of significant cultural resources
36 under an HBCT stationing scenario. These additional impacts will probably trigger a
37 need to terminate and replace Fort Campbell's Programmatic Agreement with two State
38 Historic Preservation Offices in order to adequately deal with this new range of impacts.
39 At Fort Lewis and PCMS, off-road heavy and light vehicle maneuver could have
40 adverse effects on archaeological sites and protected resources that have not yet been
41 inventoried or are unknown/undiscovered.
42

43 **Noise.** An additional HBCT at Fort Bliss is expected to result in a change to noise
44 contours impacting off-post properties and residential areas. The additional noise and
45 level of training will have potentially significant adverse effects to Fort Stewart, Fort
46 Benning, and Fort Drum.

1
2 **Soil Erosion.** The HBCT stationing scenario would have significant impacts on soils at
3 Fort Stewart, Fort Benning, YTC, Fort Polk, Fort Carson and Pinon Canyon Maneuver
4 Site (PCMS) as a result of the impact from heavy tracked vehicle maneuvers, turns, and
5 digging. These areas could then be prone to wind and water erosion. In addition, the
6 relatively dry environments at Forts Hood, Hunter Liggett and YTC would continue to be
7 compacted, leading to significant rates of erosion of surface soils.

8
9 **Biological Resources.** The Red-cockaded Woodpecker would likely be significantly
10 affected by additional construction and training required for stationing of an additional
11 HBCT at Fort Benning. At Fort Hunter Liggett, the additional noise from live-fire and
12 maneuver training may have effects on the installation's bird species, the California
13 Condor and the Bald Eagle. Additional HBCT training at Fort Stewart would also make
14 it difficult for the installation to support conservation efforts for their SAR, and the listing
15 of SAR species would be more probable. The Western Sage-Grouse, a YTC SAR,
16 would likely be significantly affected by the reduction of vegetative cover on ranges.

17
18 **Vegetation, Habitat, Noxious Weeds.** Under this stationing scenario, Fort Carson and
19 PCMS' vegetative communities could be potentially degraded, and the prevalence of
20 invasive or noxious weed species would likely increase from training disturbance and
21 higher rates of unnatural wildfire caused by increased live-fire training.

22
23 **Hunting and Outdoor Recreation.** Certain areas currently designated for recreational
24 use within the PCMS would likely be restricted under this stationing scenario.

25
26 **Wetlands.** Significant percentages of land at Forts Stewart and Benning are
27 designated as wetlands, and further analysis will be required to be able to
28 accommodate additional growth. Construction activities to support required training and
29 garrison construction projects would likely have significant impacts on wetlands
30 resources. At Fort Bragg, impact minimization strategies will likely not be able to
31 support unavoidable impacts to wetlands, and impacts will likely be within the CWA
32 section 404 regulatory Nationwide permitting process threshold. Some of the impacts
33 will likely require compensatory wetland mitigation measures.

34
35 **Water Resources.** The increase in motorpool activities and washing of field-driven
36 heavy-tracked vehicles would produce a major increase on water demand and
37 associated treatment at Forts Benning and Bragg. Such an increase would likely
38 require significant upgrades to the Installation's private water and wastewater treatment
39 systems. WSMR is considering construction of a desalinization plant to meet its
40 increasing water demands. YTC expects significant effects to its biological resources
41 because the addition of a HBCT would result in upland disturbances (e.g. digging and
42 off-road maneuver) that would negatively impact water quality.

43
44 **Facilities.** The establishment of an HBCT at Forts Hood and Polk may exceed the
45 capacity of the installation, noted in the installations' Master Plan, due to the lack of
46 available space for expansion.

1
2 **Land Use.** Because of a lack of land compatible for garrison construction to support an
3 additional HBCT some installations would need to limit or stop use of currently
4 designated training areas to accommodate a new HBCT. At Fort Benning construction
5 of new facilities west of the Chattahoochee River would need to be considered, as
6 current space for construction activities is extremely limited. At Fort Bragg, the training
7 lands are currently maintained for airborne and light infantry operations; armored
8 elements would be incompatible with the present training land use. At Fort Polk,
9 building new facilities to support a HBCT would require the installation to re-zone
10 existing land uses, or re-use/remodel facilities in areas not compatible with land uses
11 associated with tactical units.

12
13 **Traffic and Transportation.** At Fort Benning, an additional HBCT with its
14 approximately 3,800 Soldiers and their Family members are anticipated to significantly
15 increase traffic congestion and decrease the Level of Service (LOS) to roads and
16 highways both on-post and in neighboring communities.

17 18 **Scenario 5**

19 **Stationing of an Additional Stryker BCT (4,000 Soldiers).** The Stryker BCT is a
20 highly mobile and agile unit that has augmented digital communications capabilities.
21 The Stryker BCT requires larger training areas to rehearse doctrinal maneuver tasks
22 and is only considered at select installations where maneuver land is available for the
23 unit to accomplish mission essential tasks to maintain training readiness. Installations
24 considered for the stationing of an SBCT include Fort Bliss; Fort Carson (including use
25 of PCMS as a maneuver training site); WSMR; Fort Lewis and Yakima Training Center.
26 While the Stryker BCT has approximately 4,000 Soldiers, roughly the same amount as a
27 HBCT, the Stryker requires a larger maneuver areas because of its increased mobility.

28
29 This BCT consists of approximately 317 Stryker combat vehicles, 588 wheeled support
30 vehicles, 18 155 mm howitzers, and numerous trailers and other pieces of equipment.
31 The Stryker vehicle is an 8 wheeled armored combat vehicle. Each major unit of the
32 Stryker BCT is composed of a number of smaller constituent units; about half of the
33 4,000 Soldiers would be assigned to Infantry Battalions within the unit. The rest are
34 distributed among the other battalions, companies, and platoons that comprise a Stryker
35 BCT. All vehicles are capable of on-road and off-road maneuver, but will often conduct
36 training on designated roads and trail networks.

37
38 The stationing of the Stryker BCT would include all impacts discussed for the IBCT in
39 the new growth stationing Scenario 3. The addition of a Stryker BCT would be
40 anticipated to have greater impacts to air quality and soil compaction due to the greater
41 weight and speeds at which the vehicles would travel. In addition to those impacts
42 discussed as part of stationing Scenario 4, potentially significant impacts resulting from
43 the stationing of a Stryker BCT as part of Army growth are:

44
45 **Air Quality.** Potentially significant impacts to air quality are anticipated at Fort Carson,
46 PCMS, and Fort Lewis under this potential stationing scenario. Fort Carson is already a

1 Title V permit holder for mobile and stationary sources, and an addition of a Stryker
2 BCT is expected to elevate the associated impacts. Fugitive dust and opacity is
3 expected to worsen with the addition of a Stryker BCT at PCMS. Fort Lewis currently
4 maintains a "Synthetic Minor" operating permit which means that any increase in
5 stationary source emission could require the transition to a major source status.
6

7 **Soil Erosion.** Although the Stryker BCT maneuvers mainly on roads at the installation,
8 some off-road maneuver does occur. In these areas soils are highly erodible and are
9 more prone to wind and water erosion.
10

11 **Biological Resources (T&E Species).** PCMS has two special status species, the
12 Dwarf Milkweed and Bald Eagle. This action could significantly impact these species.
13

14 **Scenario 6**

15 **Stationing of Additional Multiple BCTs (7,000 Soldiers).** The Multiple BCT
16 stationing scenario assumes a combination of two additional BCTs, totaling 7,000 or
17 more Soldiers being stationed at a given installation. These BCTs could include any
18 combination of BCT stationing scenario above.. Such a stationing action would likely
19 involve up to 4,000 spouses and 3,000 to 3,500 military dependents.
20

21 The stationing of multiple BCTs would include all impacts to installations that have been
22 discussed previously. Additional potentially significant environmental and socio-
23 economic impacts that could potentially occur at installations under this stationing
24 scenario are:
25

26 **Air Quality.** Fort Bragg, Fort Campbell, and Fort Hunter-Liggett anticipate fugitive dust
27 emissions from multiple BCTs to significantly increase, though it should remain a
28 localized issue. Combustion emissions from stationary sources are expected to
29 significantly increase due to infrastructure improvements required to support the influx
30 of new Soldiers and their Families.
31

32 **Cultural.** Fort Stewart could experience significant impacts to cultural resources to
33 accommodate the stationing of multiple BCT units. Currently about 60% of the installation
34 has been surveyed for cultural resources.
35

36 **Noise.** Noise is anticipated to have significant impacts at installations where there has
37 been significant growth of residential communities around military installations. In
38 addition, noise could represent a significant issue for Forts Bragg and Carson.
39

40 **Biological Resources.** Significant impacts discussed as part of previous alternatives
41 could be expected to be intensified under this stationing scenario. Construction and
42 training of multiple BCTs at Fort Benning, Bragg, Polk and Stewart would have
43 significant adverse impacts to the RCW and biological communities.
44

1 **Wetlands.** Significant wetlands impacts from construction and training would be
 2 anticipated at installations across the Southeastern United States under this stationing
 3 scenario in addition to those impacts discussed in previous stationing scenarios.

4
 5 **Water Resources.** Forts Carson, Irwin, and Polk would need to upgrade their current
 6 water utility systems. The addition of multiple BCTs will increase the sediment and
 7 erosion issues at these installations. Motorpool activities and washing of field-driven
 8 heavy-tracked vehicles would significantly increase water demand and associated
 9 treatment.

10
 11 **Socioeconomics.** For all locations, over-crowding of school systems would represent
 12 a potentially significant impact. This is particularly true for installations such as YTC,
 13 YPG, and WSMR. Installations crossing this threshold of significance in the ability to
 14 accommodate schooling requirements for DoD dependents under this scenario would
 15 include Forts Benning, Bragg, Carson, Knox, Polk, and Stewart.

16
 17 **Energy Demand.** Forts Bragg and Carson do not currently have the utility
 18 infrastructure to support 7,000 additional Soldiers. However, there is an adequate
 19 amount of energy available. These installations would require significant upgrades to
 20 their utility systems to accommodate this level of growth.

21
 22 **Land Use.** The amount of buildable space or lack of adequate facilities would present
 23 considerable challenges to the stationing of multiple at those installations discussed in
 24 scenarios 4 and 5 and in addition at Forts Carson, Riley, and Stewart.

25
 26 **Hazardous Materials.** The amount of hazardous material generated by this level of
 27 growth would generate significant issues for hazardous waste storage sites/facilities and
 28 collection. In addition to POL products, solvents and cleaning materials, there would
 29 also be an increase in the generation of range materials considered hazardous such as
 30 unexploded ordnance (UXO). Impacts would be projected to be significant at Forts
 31 Benning, Bragg, Campbell, and Stewart in addition to those impacts discussed under
 32 previous stationing scenarios.

33
 34 **Traffic and Transportation.** In addition to those installations experiencing significant
 35 impacts under scenario 4 and 5 significant degradation in levels of service of roads on
 36 the installation and for the surrounding communities would be projected at Forts
 37 Carson, Irwin, Riley and Stewart unless upgrades to the transportation systems on- and
 38 off-post at those locations were improved.

39 40 **VEC Impact Summary Tables**

41
 42 A consolidated table of significant impacts is illustrated by stationing scenario in table
 43 ES-1 through ES-6 below. These tables exclude those impacts that are less than
 44 significant. Tables 4-1 through 4-6 in Section 4 of this PEIS provide a comparison of all
 45 of the anticipated effects from each of the six stationing scenarios across each of the
 46 installations.

1
 2 The symbols below indicate the intensity of impact on Valued Environmental
 3 Components (VEC). Tables (found in Section 4) and the environmental consequences
 4 or “analysis of impacts” also found in Section 4. Unique or sensitive VEC issues at
 5 specific installation locations are also identified in the summary tables below, and are
 6 analyzed in the environmental consequences section for each relevant installation.
 7

Description of VEC Impact Ratings

Impact Symbol	VEC Impact Intensity Rating
○	No impact or minimal impacts are anticipated
◉	Minor impact anticipated
◐	Moderate impact anticipated (less than significant)
⊗	Significant impact anticipated (likely mitigable to less than significant)
●	Significant adverse impact anticipated
+	Beneficial Impact
**	Unique Issues Identified by the installation

8
 9 These ratings assess the composite intensity of impacts to the installation by individual
 10 VEC resulting from i) garrison construction, ii) training infrastructure construction, iii)
 11 live-fire training, and iv) maneuver training associated with each of the stationing
 12 scenario.
 13

14 While there are variations in the impacts from each of the unit stationing scenarios to
 15 the installations identified, generally, the broad comparison of these impacts
 16 demonstrate patterns of expected impacts from each of the stationing scenarios.

Table ES-1. Summary of Significant Impacts by the Combat Service and Combat Service Support Units Stationing Scenario

VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	PCMS (Stationing at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality					⊗													
Water Resources		⊗																
Facilities	⊗		●							⊗		⊗						
Socioeconomics		⊗				⊗												⊗
Traffic and Transportation		⊗	⊗	⊗														

Table ES-2. Summary of Significant Impacts by the Full Sustainment Brigade Stationing Scenario

VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	PCMS (Stationing at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality					●													
Cultural																⊗		⊗
Soil Erosion Impacts		⊗	⊗	⊗														
Biological Resources (T&E Species, other wildlife, Vegetation)																	⊗	
Wetlands																		
Water Resources				⊗														⊗
Facilities	⊗		●	⊗	⊗					⊗		⊗		⊗				
Socioeconomics		⊗		⊗		⊗						⊗		⊗			⊗, +	⊗
Energy Demand/ Generation	⊗			⊗														
Land Use Conflict/ Compatibility				⊗														
Traffic and Transportation		⊗	⊗	⊗							⊗							⊗

Table ES-3. Summary of Significant Impacts by the IBCT Stationing Scenario

VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	PCMS (Stationing at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality					●					⊗								
Cultural																⊗		⊗
Noise												⊗						
Soil Erosion Impacts		⊗	⊗	⊗														
Biological Resources			⊗														⊗	⊗
Wetlands																		
Water Resources				⊗														⊗
Facilities	⊗		●	⊗	⊗					⊗		⊗		⊗				⊗
Socioeconomics		⊗		⊗		⊗						⊗		⊗			⊗, +	⊗
Energy Demand/ Generation	⊗			⊗														
Land Use Conflict/ Compatibility				⊗														
Traffic and Transportation		⊗	⊗	⊗							⊗							⊗

Table ES-4. Summary of Significant Impacts by the HBCT Stationing Scenario

VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	PCMS (Stationing at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality	⊗				●					⊗		⊗						
Cultural	⊗			⊗		⊗						⊗				⊗		⊗
Noise	⊗	⊗					⊗					⊗			⊗			
Soil Erosion Impacts	⊗	⊗	⊗	⊗	⊗	⊗		⊗	⊗				⊗		⊗		⊗	⊗
Biological Resources	⊗		⊗						⊗						⊗		⊗	⊗
Wetlands	⊗		⊗												⊗			
Water Resources	⊗		⊗	⊗												⊗	⊗	⊗
Facilities	⊗		●	⊗	⊗					⊗		⊗	⊗	⊗				⊗
Socioeconomics		⊗		⊗		⊗						⊗		⊗			⊗, +	⊗
Energy Demand/ Generation	⊗			⊗														
Land Use Conflict/ Compatibility	⊗		⊗	⊗									⊗					
Traffic and Transportation	⊗	⊗	⊗	⊗							⊗							⊗

Table ES-5. Summary of Significant Impacts by the Stryker BCT Stationing Scenario

VEC	Fort Bliss	Fort Carson	PCMS (Stationing at Fort Carson)	Fort Lewis	White Sands Missile Range	Yakima Training Center
Air Quality		●	⊗	⊗		
Cultural			⊗	⊗	⊗	
Noise				⊗		
Soil Erosion Impacts	⊗	⊗	⊗	⊗		⊗
Biological Resources			⊗			⊗
Water Resources					⊗	⊗
Facilities		⊗		⊗		
Socioeconomics	⊗		⊗	⊗		⊗, +
Traffic and Transportation	⊗		⊗			

Table ES-6. Summary of Significant Impacts by the Multiple BCT Stationing Scenario

VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	PCMS (Stationing at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality	⊗		⊗	⊗	●	⊗			⊗	⊗		⊗						
Cultural	⊗			⊗		⊗						⊗			⊗	⊗		⊗
Noise	⊗	⊗	⊗		⊗		⊗					⊗			⊗			
Soil Erosion Impacts	⊗	⊗	●	●	⊗	⊗		⊗	⊗			⊗	⊗		⊗		⊗	⊗
Biological Resources	⊗		●	⊗	⊗	⊗			⊗				⊗		⊗		⊗	⊗
Wetlands	⊗		●												⊗			
Water Resources	⊗		●	●	⊗					⊗			⊗			⊗	⊗	⊗
Facilities	⊗		●	●	⊗					⊗		⊗	⊗	⊗				⊗
Socioeconomics	⊗	⊗	⊗	⊗	⊗	⊗	⊗				⊗	⊗	⊗	⊗	⊗		⊗, +	⊗
Energy Demand/ Generation	⊗		⊗	⊗	⊗													
Land Use Conflict/ Compatibility	⊗		●	●	⊗								⊗	⊗	⊗			
Hazardous Materials/ Hazardous Waste	⊗		⊗	⊗											⊗			
Traffic and Transportation	⊗	⊗	⊗	⊗	⊗	⊗				⊗	⊗			⊗	⊗			⊗

**Final Programmatic Environmental Impact Statement
Army Growth and Force Structure Realignment**

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1.0 PURPOSE, NEED, AND SCOPE

1.1 Introduction

This Programmatic Environmental Impact Statement (PEIS) conducts an analysis of the proposed action and alternatives to realign the Army's force structure in accordance with Army Transformation objectives and field a force that is of sufficient size and configuration to meet the nation's current and projected future security and defense requirements. The PEIS will provide a top-tier perspective that will provide decision makers, regulatory agencies, and the public with information on the potential environmental and socioeconomic effects resulting from the implementation of different types of stationing decisions. This information will allow decision makers to compare alternatives and assess environmental and socio-economic impacts for implementing Army growth initiatives and enable them to make informed decisions when choosing locations at which to station new units.

The Army is in a period of critical transition. On 12 October, 1999, the Secretary of the Army and the Army's Chief of Staff presented a vision for the Transformation of the Army to ensure it remained an effective and relevant operational force in the 21st Century. The leadership of the Army recognized the emerging need to shift away from a Cold War focus to meet new unconventional threats to national security. A decision was made to begin the 30 year process of transforming the Army, this was described in the 2002 Record of Decision for the PEIS for Army Transformation. Since this decision, the Army has completed the initial phases of this Transformation effort and is continuing to implement those actions that are needed to field a force that is best configured to meet the evolving national security and defense requirements of the 21st century.

The Army continues to conduct detailed planning to effectively carry out Transformation in a way that addresses capability shortfalls of the cold war force and implements the guiding recommendations of the Quadrennial Defense Review (QDR). The Army's guiding document for the implementation of this plan is the Army Campaign Plan (ACP). The ACP directs the detailed planning, preparation, and execution of a full range of Transformation tasks that are underway to ensure the synchronization of Transformation activities across all facets of the organization.

As part of the overall Army Transformation effort, the Army has almost completed the transition to a modular, or standardized force structure. This has meant a transition of the Army from large Division-level organizations (10,000 to 12,000 personnel) to an Army designed around smaller, standardized, self-contained, rapidly deployable Brigade Combat Teams (BCTs) (3,500 to 4,000 personnel). There are three types of BCTs with differing equipment, training, maneuver, and support needs. These include Heavy, Infantry, and Stryker BCTs. Subsequent phases of Transformation analyze the realignment of Combat Support (CS) and Combat Service Support (CSS) units to ensure the Army is fielding the proper force to support its modular BCTs and operational

mission requirements. Realignment of CS/CSS units required to support the Army's operational needs is discussed in the subsequent chapters of this document and evaluated along with those programs that further implement modular forces concepts.

In order to further Army Transformation, meet the increased national security and defense requirements of the 21st century, maintain training and operational readiness levels of the force, and preserve a high quality of life for U.S. Army Soldiers and Families, the Army has identified the need to increase its overall size while continuing to restructure its forces in accordance with modular Transformation decisions. This increase in the numbers and configurations of units will enhance operational readiness by allowing Soldiers more time to train and maintain their equipment, and will provide Soldiers and Families more time together at home station while providing the nation with greater capability to respond to increased national defense and security challenges.

The Army's Proposed Action is to realign existing forces and increase its end strength permanently in accordance with expected Congressional authorizations to a size and configuration that is capable of meeting national security and defense objectives, implements Quadrennial Defense Review (QDR) recommendations, sustains unit equipment and training readiness, and eases the deployment burden on its Soldiers and Families. The growth of the Army would allow for the adjustment of the composition of its forces to continue to accommodate Transformation objectives and create additional unit capabilities in high demand areas where mission requirements exceed current manning authorizations. These units, such as military police and explosive ordnance are not currently available in enough numbers to sustain on-going mission requirements and Soldier and Family quality of life. The implementation of Army growth will allow the Army to field a sustainable force that matches mission requirements of the current security environment.

1.2 Need for the Proposed Action

This section of the document presents and discusses the Army's need for growth and realignment of its current forces. This discussion references several underlying source documents that must be discussed in order to place the full need and purpose for the Army growth in its proper context. Source documents referenced in this section include the National Security Strategy (NSS), the National Defense Strategy (NDS), the Quadrennial Defense Review (2006), and the ACP. Army growth and realignment of the force must meet the requirements defined in these guiding national security and defense policy documents, which lay the framework for the Army mission and how the United States will utilize its military to deter conflict and shape the global security environment. In addition to discussing the Army's requirements to take action from an organizational perspective this section also discusses the needs of individual units as well. The implementation of Army growth and restructuring must be considered in the context of several major ongoing initiatives including Army modular Transformation, those moves recommended by the Defense Base Closure and Realignment Commission in 2005 and Global Defense Posture Realignment (GDPR).

1.2.1 Need for Army Growth and Realignment

The need for the Proposed Action is best described by the Chief of Staff of the Army's (CSA) 2007 assessment of the disposition of the Army that states the following:

“The need for Army growth is driven by the fact that the current operational demand is greater than the Army’s sustainable supply of forces. Because of shortages in people, equipment and time to train, the non-deployed force does not meet readiness goals. As a result, the Army lacks strategic depth to respond to new contingencies, and generating forces to meet demands, which results in short term stress and long term institutional risk. These are symptoms of a larger strategic problem: the Army’s strategic requirements and resources are not in balance.” (General Casey, Chief of Staff of the Army [Army Initiative Charter, April 2007])

As a result of the imbalance between current mission requirements and available forces, the Army has defined the growth and restructuring to meet the greater demands of the current security environment as its top priority (CSA, 2007).

The need for the Proposed Action focuses on three primary areas. These areas of need include:

- **Matching Army Force Capabilities with mission requirements.** The NSS and NDS provide a framework which directs Army mission requirements and contingency planning. The Army must be able to meet the nation’s security and defense policy objectives as defined in these documents while continuing to implement recommendations for Army Transformation as defined in the QDR in 2001 and 2006. The ACP is the Army’s guiding document for managing the force and carrying out recommendations put forth in the QDR.
- **Sustaining Force Readiness.** Sustaining the force entails ensuring that the Army consists of enough Soldiers to support both operational deployment requirements and home station training and equipment maintenance activities. Striking the proper balance of deployments with these activities is critical to ensure a professional, well-trained, and well-equipped force can consistently meet unit readiness standards and successfully accomplish the national security and defense missions of the nation.
- **Preserving Soldier and Family Quality of Life and the All Volunteer Force.** Keeping a long-term sustainable balance between the operational activities is required to support U.S.sSecurity and quality of life for Soldiers and their Families. A larger pool of available forces will allow the Army to set more sustainable ratios of home-station time versus time spent deployed to support mission requirements abroad. This reduces stresses placed on individual Soldiers and their Families and allows Soldiers to maintain a higher quality of life at home station. Taking care of Soldiers and their Families is a critical element of

need and will help to ensure the Army is capable of maintaining an all-volunteer force by encouraging Soldier retention and attracting new recruits.

1.2.2 Supporting Increased Security and Defense Mission Requirements

The Army is established as a land-based military force, and its forces are to be organized, trained, and equipped to protect the nation's global security interests provide for national defense. The Army does this primarily through prompt intervention and sustained combat, peacekeeping, and support and stability operations in key regions of interest defined by national strategic policies and objectives. Key policy documents for national security and national defense include the NSS (March 2006), the NDS (March 2005), and the QDR (February 2006). As Commander in Chief of the Armed Forces, the President of the United States, in conjunction with his security advisors, promulgates and defines national security and defense policy. Using these defense policy documents for strategic guidance, military commanders conduct contingency planning to ensure that their forces are able to respond to crises, shape the global security environment, and implement security and defense policies in their regions of interest. The Army is responsible for the implementation of national security and defense policy as outlined in these over-arching security and defense policy documents.

1.2.2.1 National Security Strategy

The President of the United States establishes the nation's goals and objectives for promoting secure global conditions and for shaping of the global security environment. The NSS establishes the policy goals and objectives that begin to shape mission requirements for the Department of Defense (DoD) and Department of the Army (DA). NSS goals include:

- 1) Disrupting and destroying terrorist organizations with global reach.
- 2) Denying terrorist groups the support and sanctuary provided by rogue states.
- 3) Preventing and resolving regional conflicts.
- 4) Intervening in regional conflict to promote stability where necessary.
- 5) Assisting in post-conflict stabilization when necessary.
- 6) Preventing Nuclear Proliferation.
- 7) Preventing tyranny, oppression, and genocide.

These goals provide direction and guidance to inform DoD and DA Commanders and strategic planners to establish the NDS and plan for strategic mission requirements.

1.2.2.2 National Defense Strategy

The NDS outlines how DoD will support broader U.S. efforts to create conditions conducive to a secure international system as outlined in the President's NDS. The NDS strives to maintain international sovereignty, representative governance, peaceful resolution of regional disputes, and open and competitive markets. Specifically, the NDS and the National Military Strategy, a policy document that supports it, seek to ensure the U.S. focuses its efforts on four strategic objectives. These objectives are:

1) **Secure the U.S. from Direct Attack.** This military objective includes the dissuasion, deterrence, and defeat of organizations and states that seek to harm the U.S. and its citizens directly.

(2) **Secure and Retain Strategic Access for Global Freedom of Action.** Strategic access ensures the U.S. can access key regions of interest, access lines of communication and is able to promote and influence the global security environment and the goals outlined in the NSS for itself and its allies.

(3) **Strengthen Alliances and Partnerships.** A secure international system requires collective action. The U.S. has an interest in broad-based and capable partnerships with like-minded states. This objective seeks to strengthen security relationships with traditional allies and friends, developing new international partnerships, while working to increase the capabilities of our partners to contend with common challenges.

(4) **Establish Favorable Security Conditions.** The objective directs the DoD counter aggression or coercion targeted at U.S. partners and interests. Further, where dangerous political instability, aggression, or extremism threatens fundamental security interests, the U.S. will act with others to strengthen peace. Specifically, the U.S. military will conduct planning to create favorable international conditions and broad, secure, and lasting peace.

1.2.2.3 The Quadrennial Defense Review (2001, 2006)

The QDR sets forth a specific series of recommendations for implementing the goals and objectives of the NSS and NDS. These recommendations are specific capabilities-based recommendations for each service of the DoD that take into account current capabilities and future projected military requirements that will be needed to implement the NSS, NDS, and provide for global security and the nation's strategic interests. The QDR is required by 10 USC 118, which directs the Secretary of Defense to assess defense strategy and force structure every four years on a 20-year planning horizon. Based on this assessment, the DoD reorients its capabilities better to meet national security demands. The QDR in 2001 prescribed recommendations for the Army to transform its forces to become more relevant to shaping the 21st Century global security environment. These recommendations provided a framework for Army units/organizations to become a more transportable, agile, maneuverable force with more firepower, technology, and logistical sustainability than the forces that existed.

The net effect is to Transform the Army into a more joint and expeditionary force. The DoD and DA, informed by experiences in Afghanistan and Iraq, revised the QDR and submitted it to Congress in 2006. The recommendations continue to emphasize the need for Transformation and growth of U.S. ground forces. These recommendations put forth in the QDR follow two major DoD imperatives:

1) Continue to reorient the Department's capabilities and forces to be more agile in current international conflicts while preparing for broader asymmetric threats from unconventional enemies.

2) Implement enterprise-wide changes to ensure that organization structures, processes, and procedures effectively support DoDs strategic direction.

Specific QDR decisions direct DA to accelerate the Transformation of joint ground forces capabilities. QDR decisions and directives that specifically relate to Army growth and restructure include:

- Transform Army units and headquarters to modular designs.
- Continue to standardize brigades through Army Modularity in all three Army components (Active, Reserve, and National Guard).
- Incorporate technology improvements and Future Combat Systems (FCS) improvements through a spiraled development and fielding process to introduce new technologies as they develop.
- Expand joint tactical air/ground operations and double the coverage capability of unmanned aerial vehicles to include the Predator and Global Hawk.
- Further increase the capability, capacity, and numbers of special operations force personnel and increase active duty special forces battalions by one-third.
- Improve intelligence, surveillance, and reconnaissance technologies, information sharing capabilities, and joint command and control.
- Achieve Net-Centricity and information connectivity on the battlefield by improving tactical satellite communications, strengthening network capability, and increasing communications capability and bandwidth.

These decisions and directives establish the strategic national security and defense framework that influence and direct the Army's decision on growth and restructuring. Ultimately, the nation's top defense professionals, its senior military leadership, assess and balance defense policy to manage the growth and restructure of the Army according to these policies.

1.2.2.4 Army Transformation

On 12 October 1999, the Secretary of the Army and the Army Chief of Staff presented a vision for Transformation of the Army to ensure it remained a ready and relevant land-power for the 21st Century. There was a recognized and emergent need to shift from a Cold War focus to meet new and diverse threats to national security. To accomplish this, the Army initiated a 30 year process of Transformation, proceeding in phases from the existing force (Initial Phase), to an interim force (Interim Capability Phase) and ultimately a future force (Objective Phase). This process will pervade and force change in every element of the Army including leadership development, training and doctrine, force structure and stationing, weaponry, and installation infrastructure.

The ACP and the Army's strategy for implementing Transformation directives of the QDR provide a context for understanding why the Army is transforming and the ultimate need for Army growth and restructuring. The ACP serves as the Army's roadmap to implementing the goals and objectives put forth in the QDR and its overarching planning document that guides Army Transformation. The QDR and ACP direct the Army to transform to a highly expeditionary force, or one which is capable of supporting itself in a combat environment without depending on continual supply and logistics support. In addition, the QDR directed the Army to integrate with the U.S. Air Force, Navy, Marine Corps, and Coast Guard capabilities to provide greater inter-operability and communication to enhance defense capability. These recommendations build on previous Transformation actions taken by the Army to convert to standardized, self-sustaining, modular BCT configurations.

To implement decisions made in the QDR, senior Army leadership is responsible for developing and managing the Army's force structure. The process of Army force management is not a static process and force management decision making is an evolving process that is based on changing global conditions and mission requirements. As mission requirements increased, Army leadership has recognized the need to re-evaluate the size and unit composition of the modular force. This evaluation and determination to change the size or structure of the modular force will take mission requirements into account and will build on previous decisions that direct the Army to transform to a modular force.

1.2.2.5 Power Projection and Strategic Deployment

The policies put forth in the NSS, NDS, QDR, and ACP provide directives and explicit guidance for the Army to improve its capacity to project power rapidly to prevent, deter, or defeat the actions of those who would do the nation harm while maintaining stability in key regions of interest. Effective deterrence requires that those who would undermine U.S. security have awareness that U.S. defense forces can credibly act to halt those activities that threaten U.S. national security. Rapid power projection to respond to the wide range of potential contingencies present in an increasingly complex global security environment is a foundational capability needed to support national security. The Army remains committed to its strategic goal of having the capability to deploy a BCT anywhere in the world within a few days of notification. This requires

advance planning to respond to contingencies in key areas of interest and detailed planning based on a units deployment facilities, logistics, and available transportation. Deployment considerations and Combatant Commanders' force requirements assist the Army in selecting stationing locations that can support contingency operations and National Defense Requirements.

1.2.3 Sustaining Force Readiness

The Army has always focused on maintaining an operationally ready force that can respond to emerging threats and potential contingencies that threaten national security. Maintaining operational readiness means providing Soldiers and leaders with dedicated time to train and rehearse on core mission essential tasks, fully employ the capabilities of their equipment in a training environment, and maintain their vehicles, weapons, and other essential combat systems. The Army plan includes a readiness model to manage the force and ensure the ability to support demands for Army forces. This Army readiness model follows a process for Army Force Generation (ARFORGEN). The ARFORGEN process ensures that individual units receive adequate time to prepare for deployment through training and maintenance activities and that manning, equipping, and resourcing can be synchronized with unit deployments. The ARFORGEN force readiness model brings units to a full state of readiness in terms of manning, equipment, and training before they are scheduled to deploy. The ARFORGEN process is designed to reduce Soldier uncertainty with regards to deployments and provide Combatant Commanders of the U.S. Army with a consistent level of ready forces to execute operations abroad. In providing Commanders with "ready" trained, manned, and equipped units the ARFORGEN endstate sets the goal that active duty units will support one operational deployment in a three year period. Reserve Forces would be anticipated to support one deployment every five to six years.

The ARFORGEN process, which was implemented across the Army in February of 2006, categorizes Army units in three readiness states. These readiness states are:

- **Reset/Train:** Units recover from their previous deployment, reconstitute, repair, and replace equipment and assign and train new personnel as required.
- **Ready:** Units conduct mission preparation and rehearse more complex, higher level group training tasks involving greater levels of planning and coordination. Units rehearse with other operational Headquarters for potential upcoming missions. These units are eligible to fill operational surge requirements, if necessary.
- **Available/Deployed:** Units in the available category of the ARFORGEN process are used as necessary to support operational and contingency requirements.

Evolving threats from state- and non-state sponsored sources of terrorism have markedly increased demand for ready and available Army forces to participate in the full spectrum of combat and peace support operations. Since 2003, the Army has been unable to implement optimal deployment cycling for Active or Reserve component Soldiers as defined by ARFORGEN. Since Operation Iraqi Freedom began in 2003, most Active duty units have spent one year or more deployed to one year at home station resetting, equipping, and training. Reserve component forces have also been spending more time deployed than maintaining readiness as prescribed by the ARFORGEN process.

To provide Combatant Commanders with the forces needed for current operations, the Army has been forced to shorten timeframes for preparation and readiness activities. This compression of ARFORGEN cycling has allowed the Army to meet near-term force requirements but has carried forward institutional risk as the Army continues to operate at an accelerated pace. The compression of ARFORGEN can lead to a degradation of force readiness if the high operations tempo and increased frequency of deployment continues across multiple deployment cycles. The Army does not currently have the requisite number of troops to implement optimal deployment cycling as prescribed by ARFORGEN while meeting national security and defense mission requirements.

In February 2007, the Army revised deployment policies to compress further ARFORGEN cycling to meet surge requirements of Operation Iraqi Freedom. New deployment policies allow for 15 months of deployment time with 12 months at home station to conduct readiness activities. While such policies present a short term solution to providing enough additional Soldiers to support deployment requirements they present elevated challenges to sustaining Soldier and unit readiness.

1.2.4 Preserving Soldier and Family Quality of Life and the All-Volunteer Force

Preserving Soldier and Family quality of life and the all-volunteer force are two of the Army's highest priorities and concepts that are inseparably linked. The Army strives to maintain the highest possible quality of life for those who serve by establishing deployment predictability and balancing the timeframes for which Soldiers are deployed away from home station against mission requirements.

Meeting the stationing needs of the Soldiers and their Family members means having access to quality schools, medical facilities, housing, services, and recreation opportunities. In a typical Army Brigade of between 3,500-4,000 Soldiers, approximately 50-55% of Soldiers are married and may be accompanied by more than 2,000 spouses and 1,500 children. Army installations are used not only for military training but are also the communities where Families remain behind and are supported as members of the Army community where they live. The Army is absolutely committed to providing the highest quality of life that can be attained for the Soldiers and their Families who have endured multiple deployments supporting the war on terror. Stationing locations considered for the stationing of new units must have or be able to

build housing and living space, schools, and medical facilities, and support the recreational opportunities for the Soldiers and Families of the new Army units.

The ARFORGEN process assists in providing for increased deployment predictability and is designed to provide Soldiers with adequate time to conduct activities necessary to reconstitute equipment and conduct necessary training activities. The ARFORGEN process is simultaneously designed to provide Soldiers and Families with adequate time together at home station and predictability on when a Soldier is likely to be deployed. The process allows Soldiers and their Families to retain a higher quality of life with less uncertainty concerning possible deployment.

The compression of the ARFORGEN process and increase in deployment cycling times for Army units has diminished Soldier time spent at home station since the wars in Iraq and Afghanistan first began. Increased mission requirements for forces have reduced overall deployment predictability. Because enough Soldiers are not currently available in the U.S. Army to support ongoing mission requirements in a sustainable, long-term fashion, the ability to provide for Soldier and Family quality of life has been degraded. This in turn affects recruitment and the ability of the Army to retain Soldiers and maintain an all-volunteer force. Retaining the all-volunteer force has been defined by the Senior Leadership of the Army as an essential component for sustaining a high quality force capable of implementing the Nation's defense and security needs.

1.2.5 Training Infrastructure.

While at home station, it is critical that Army units retain or develop those skills necessary to deploy and execute their respective mission. Effective training, carried out to a high doctrinal standard, is the cornerstone of operational success. High quality training, which prepares Soldiers for what will be encountered in the operational environment, is essential to ensuring the success of the nation's strategic defense objectives, to national security, and to the safety of those who serve.

A critical element of need for the permanent stationing of units as part of Army Growth is the selection of a location where the unit can attain high levels of training proficiency to prepare for deployment abroad. Training and qualifying Soldiers and units typically requires three types of training facilities in the field: individual and crew weapons qualification ranges, live-fire range complexes that allow units to conduct live-fire training simultaneously as one team, and maneuver areas for units to rehearse and train on the full complement of mission essential tasks required by a units training doctrine. In addition to live training, the Army also augments its leader development and unit training strategies with virtual and battle simulations. This training is necessary for Army units to execute a full array of combat, stability, and peace support operations.

The level of combat readiness of an Army unit is directly related to the availability and capability of its supporting training infrastructure. Since the wars in Iraq and Afghanistan first began, the Army has undergone a process to modernize and transform its training ranges radically to replicate operational conditions more closely. This

Transformation of training range infrastructure is closely aligned with QDR decisions, weapon system development, and conditions encountered in Iraq and Afghanistan. All modular BCTs require a full suite of supporting training infrastructure to meet individual, crew, and collective unit training requirements to be certified for operational deployments. Unit range requirements are fully articulated in Section 2 of this document. Range specifications and standard designs are based on Army Training Circular 25-8 *Army Training Ranges*, which serves as the definitive source document for Army training range requirements. Locations selected for the stationing of new Army units must possess or be able to accommodate the construction of range requirements for the unit so that the unit can adequately train to meet doctrinal training readiness standards.

In addition to adequate firing ranges Army units require significantly greater amounts of maneuver space. Units must be able to execute a full range of combat and peace support operations to ensure mission accomplishments. At all levels, units must have adequate maneuver training land to conduct and rehearse training operations to certify themselves as a deployable unit. Army Training Circular 25-1 *Training Land* serves as the definitive source document for requirements for maneuver land training.

1.2.6 Readiness / Garrison Operations Facilities.

When an Army unit is not deployed for training or supporting mission requirements abroad, Soldiers, vehicles, and equipment require adequate garrison facilities to conduct routine operations and maintenance in order to sustain their equipment. Garrison operations ensure the unit is administratively prepared and functionally equipped to support deployment operations. Stationing of an Army unit requires dedicated administrative office space for its Soldiers, motor pools, vehicle maintenance facilities, weapons armories, and many other administrative facilities needed to ensure successful garrison preparation and maintain operational readiness. The Army Corps of Engineers (USACE) has designed and implemented a program of standard facilities that are required to support Army modular BCTs. These standards are required to provide adequately for the garrison operations and maintenance of the Army units and are described in more detail in Section 2 of this document. Stationing sites selected for the stationing of new units must be able to accommodate new unit garrison operations and construction of necessary support facilities as an essential component of need for the stationing of new units.

1.2.7 Summary of Need

There are three primary areas of need for Army growth and force realignment. They include supporting increased security and defense mission requirements, sustaining force readiness, and preserving Soldier and Family quality of life and the all-volunteer force. Growth of the Army and the redistribution of the Army's current force structure would address those issues being faced by the Army as it continues to meet national security and defense requirements now and into the future.

1.3 Purpose of the Proposed Action

The purpose of the proposed action is to align the Army into an optimally configured force of appropriate sustainable size that is capable of meeting the current and future projected demands and requirements of national security and defense. This force will enable the Army to achieve balance between mission requirements, operational tempo, home station training and Soldier and Family quality of life while supporting the Army's intent to maintain a high quality all-volunteer force.

1.4 Ongoing Army Initiatives (BRAC, GDPR, Modularity)

Initiatives to grow and realign the Army must be accomplished within modularity, BRAC, and GDPR. Each of these initiatives are discussed in greater detail below.

1.4.1 BRAC 2005

The BRAC 2005 realignments and closures were designed to provide the necessary infrastructure to support Army Transformation, including GDPR, the ACP, and conversion to a modular force structure. Through the current 2005 BRAC actions, the Army is transitioning from a force capable of countering Cold War-era threats to one that is responsive to a broad range of contingency threats that represent a range of security threats facing the nation today.

BRAC is inextricably tied to Transformation and Army growth. It directs the closure of 13 active facilities, the realignment of 53 active facilities, and the closure of 211 National Guard and 176 Reserve facilities. BRAC 2005 actions serve as the baseline for which Army growth and restructure stationing decisions will be determined. Objectives of BRAC include optimizing military value, advancing the Army Modular Force (AMF) conversion, accommodating the re-stationing of overseas units, enabling the Transformation of both the active and reserve components, adjusting the force structure, and furthering the Army's ability to conduct joint operations. The BRAC Commission recommended the closure of specific Army installations and also directed the realignment of Army units from one home installation to another. The Army staff and Secretariat have a mandatory duty to implement these actions and they are thus considered part of the existing baseline.

1.4.2 Global Defense Posture Realignment

In the past, the Army has depended on its forward based presence in the Pacific and Europe to project power and undertake military actions overseas. The QDR provided guidance for service Transformation. The Army responded by moving to a joint (multi-service) and expeditionary force to meet the projected future needs for the Department of Defense. Under GDPR, the Army is in the process of relocating 44,500 Soldiers back to the U.S. between 2004 and 2011 and downsizing overseas facilities to support the expeditionary force vision contained within the QDR.

Although the U.S. will retain transformed, forward-positioned forces in Europe and Korea, most Soldiers and their units will be realigned to Army installations in the U.S. This realignment will create a greater demand on training ranges and facilities at these installations. This strategy will enable the Army to restructure in a manner that enhances the efficiency and effectiveness of response to emerging threats. The decisions of the GPR implemented prior to 30 September 2007, are assumed to be part of the baseline environment for alternatives analysis conducted for Army growth and restructuring. Those GPR stationing decisions not implemented by this timeframe are included within the alternatives presented in this PEIS.

1.4.3 Army Modular Force (AMF)

As a part of the overall Army Transformation effort, the Army has decided to transition to a modular or standardized force structure at all levels of its organization. This process of modular standardization has entailed a transition of the Army from an organization operationally focused on conducting operations at the Division-level (10,000-12,000) Soldiers to an organization that focuses its operations at the smaller, self-contained, logistically supportable Brigade Combat Team (BCT) sized units of 3,500-4,000 Soldiers. The units within these BCTs are similar in their equipment and manning. The modular initiative allows for greater levels of planning and organizational efficiency.

There are three primary types of BCTs which are designed to be self-contained, deployable, expeditionary units in nature which can be augmented with other units to support the intent of theater commanders. These include the following:

Infantry BCT (IBCT). The IBCT is a BCT which consists of approximately 3,400-3,500 Soldiers and 950 wheeled vehicles. The unit is designed for rapid deployability, speed and agility, but lacks firepower, protective armaments, and staying power to sustain engaged conflict against an opposing armored force.

Heavy BCT (HBCT). The HBCT is composed of M1 Abrams tanks, M2 Bradley fighting Vehicles and supporting tracked and wheeled vehicles. When fully manned, the HBCT consists of approximately 3,800 Soldiers. This type of unit has considerable firepower and protective armament, but is difficult to deploy and lacks the maneuverability and agility of the IBCT. In addition, the HBCT has substantial logistical requirements to ensure it can sustain military operations.

Stryker BCT. The Stryker BCT provides the Army with capability that offsets the strategic gaps between the capabilities of the HBCT and IBCT. The Stryker BCT consists of approximately 4,000 Soldiers, 320-330 Stryker vehicles, and 500-600 wheeled support vehicles. The Stryker BCT provides levels of deployability, maneuverability, firepower, communications capability, and armament that allow the unit to accomplish a broad range of operations. Its increased mobility and digital communications capability make the unit ideal for conducting urban and small scale contingency operations.

In addition to the BCTs which represent the Army's primary ground combat forces, there are 5 other types of brigades which support the ground operations of the BCT. At a minimum, these supporting brigades consist of a modular standardized headquarters that have fixed manning and equipment requirements. The remaining structure of support brigades, however, is tailorable to the needs of the mission commanders. With the exception of aviation brigades, these units therefore have no set numbers of Soldiers and vehicles, as opposed to the modular IBCT, Stryker BCT, and HBCT.

Fires Brigade. The fires brigade uses mounted and towed artillery to provide close support and precision strikes. The Brigade employs artillery within the unit but also can control and direct the fires of other armed forces or coalition partners.

Aviation Brigade. There are several types of aviation brigades, each with a different function. Aviation Brigades include Combat Aviation Brigades, Medium and Heavy lift Aviation Brigades, and multi-functional Aviation Brigades. Aviation Brigades typically consist of over 100 helicopters and 2,000 to 3,000 Soldiers.

Battlefield Surveillance Brigade (BfSB). The BfSB provides reconnaissance, surveillance, target acquisition, and intelligence support to build the common operational picture and focus the efforts and resources of the Army and its sister services.

Combat Support Brigade (Maneuver Enhancement Brigade - MEB). The MEB enables, enhances, and provides freedom of maneuver and engineering support to an Army, joint, or multinational headquarters. The MEB augments maneuver and support brigades with functional assets to provide combat maneuverability and focused logistics across multiple areas of operation and can provide a headquarters to command and control an assigned area of operations including maneuver forces.

Sustainment Brigade. The Sustainment Brigade consists of a modular headquarters unit of approximately 350 Soldiers and light, medium, and heavy tactical trucks. In addition to this headquarters unit, logistics units are attached in accordance with mission requirements. There is no fixed structure for a Sustainment Brigade, but for the purpose of this analysis we have used 3,500 which is the maximum ceiling of logistics Soldiers in support units going to any installation. The primary mission of the unit is to provide a complete range of logistics support supplies and services to combat BCTs and supporting Brigades. Often this support is in the form of fuel, ammunition, parts, food, and contracting services, to highlight just a few of the many logistical requirements of the BCT.

Each of these Brigades is supported by different military skill sets such as military intelligence, communications, or explosives ordnance to name a few. Each of these skill sets are combined in a precise manner within a BCT or support brigade to provide the right skill sets to meet national security and defense requirements.

1.5 Scope of the Analysis

This PEIS has been developed in accordance with NEPA, the regulations issued by the Council on Environmental Quality (CEQ), 40 CFR Parts 1505-1508 and the Army's implementing procedures published in 32 CFR Part 651 *Environmental Analysis of Army Actions*. The PEIS addresses the proposed Army growth and adjustment of the composition and current stationing locations of the Army's forces. Implementing Army growth includes evaluating stationing actions at locations within the United States in accordance with NEPA regulations. The PEIS will provide to the decision maker important information regarding environmental impacts associated with the proposed action and alternatives before he makes a final decision. The scope of the PEIS will be broad and will encompass activities to support Army Growth and the ACP projected to take place from Fiscal Year (FYs) 2008-2013.

The analysis does not include BRAC realignments and closures, which are part of the baseline for this analysis. The analysis does not include changes at locations outside of the continental U.S., except to the extent that such changes result in changes to locations within the Continental United States (CONUS). The Army chose this scope for this PEIS in order to make it manageable and to make valid comparisons. The Army intends to comply with the requirements of GDPR, which focuses on a joint and expeditionary Army that deploys from the CONUS to locations around the world. Therefore the Army determined installations outside the CONUS fell out of the scope of this PEIS as not meeting the purpose and need for the proposed action.

Installation locations carried forward for analysis in the programmatic EIS are those sites that may receive more than 1,000 new Soldiers from FY 08-13 as part of the initiatives discussed above. The 1,000-Soldier threshold was chosen because it represents a level of growth at a majority of installations at which significant impacts could occur and should be considered at the programmatic level.

This PEIS assesses the environmental capacity of Army installations to accommodate different types and combinations of new units as part of the growth and restructuring. This PEIS conducts a broad, programmatic analysis to examine the potential environmental and socioeconomic impacts associated with increasing the end strength of the Army. Therefore, this document is intended to inform senior Army Leadership at the Headquarters level rather than serving as the NEPA documentation to support local installation-level actions. As the programmatic decision made at Headquarters is implemented, follow-on NEPA documentation will be prepared to evaluate the environmental impacts likely to result from alternative means of carrying out the local stationing actions. These stationing actions could include additional support units, addition of different types of modular BCTs, or combinations of these actions at a given stationing location. This is a top-tier programmatic environmental analysis intended to inform the public and high-level decision makers. Site-specific NEPA analysis will be conducted at the installation level as stationing decisions are implemented. Broad spectrum modeling will be conducted to determine the initial environmental and socioeconomic areas of concern, as well as general capacity and condition issues of

proposed installations. The comparison of current training activities, current environmental and socioeconomic climates, and proposed stationing activities will provide decision makers the appropriate tools and information to effectively execute the ACP and Army growth. Information on these elements is presented in the sections that follow.

This analysis examines installations in their current boundaries. It does not consider possible expansion of land holdings at installations. The process of land acquisition for Federal Agencies is a long one, requiring multiple approvals, a series of environmental and real estate planning studies, and funding of appropriations. Because of these uncertainties, there are no installation expansion actions that are included in the scope of this analysis.

The region of influence for the affected environment will include a geographic area reflecting direct, indirect, and cumulative impacts, as represented in Table 1.5-1.

Table 1.5-1. Region of Influence of Valued Environmental Components (VEC)

VEC	Region of Influence of Resource
Air Quality	Metropolitan area, air shed, global atmosphere
Air Space	Metropolitan area
Cultural	Historic properties or districts/prehistoric areas
Noise	Metropolitan area
Soil Erosion	Cantonment and range areas
Biological Resources	Habitat, ecosystem; including migratory birds – breeding grounds, wintering areas, migratory routes, total range Threatened and Endangered Species (T&E) Species and Vegetation
Wetlands	Watershed-based area
Water Resources	Streams, river basin, estuaries; watershed-based
Socioeconomics	Community, metropolitan area, county or state (U.S. Census)
Energy	Community, county, region, or state
Land Use	Community, county, region, or state
Hazardous Waste	Metropolitan area
Traffic and Transportation	Metropolitan area, county, or region
Facilities	Metropolitan area

Proposed impacts and cumulative effects are documented in the PEIS. Where applicable, detailed follow-on analyses will occur at the site-specific installation level as needed to implement actions associated with Army growth and realignment. These additional analyses would be conducted in accordance with 32 CFR Part 651 (*Environmental Analysis of Army Actions*) and NEPA.

The analysis of impacts analyzed in the PEIS is attributable to four major activity groups. These activity groups are:

- **Garrison Construction.** This activity group involves all types of construction activities including construction and/or modification of buildings and garrison infrastructure. The construction activity group includes new construction, repair and maintenance of existing facilities, and demolition of buildings and facilities.
- **Training Infrastructure Construction.** This activity group involves training infrastructure construction activities needed to support unit training activities. This includes construction of firing ranges, simulations facilities, and training support infrastructure. The training infrastructure construction activity group includes new construction, repair and maintenance of existing facilities, and demolition of buildings and facilities.
- **Live-Fire Training.** This activity group involves achieving and maintaining readiness to perform assigned missions through weapons qualification and coordinated live-fire activities. Live-fire tasks include the use of blanks and training ammunition to simulate a realistic training environment. Army doctrine for individual and collective (unit) training is based on mission-essential task lists. These lists identify all types of training activities that are need by individuals and units to be ready to perform their missions.
- **Maneuver Training.** Units conduct maneuver training in accordance with Army doctrine for individual and collective (unit) training based on mission-essential task lists. Maneuver training allows units to effectively coordinate and integrate force capabilities in a simulated operational environment. This activity group includes the management of the Army's inventory of maneuver areas.

Stationing and growth decisions would occur through various actions, any of which, depending on the circumstances, could result in adverse effects to the environment.

The programmatic approach is designed to allow for early planning, coordination, and flexibility throughout implementation of the Army growth and restructuring process. The PEIS evaluates the proposed action on a broad spectrum and lays the foundation for subsequent analyses and decision making. The PEIS is designed to leverage into multi-year analyses that can assist force managers in making stationing decisions. Additional installation-specific analyses will be conducted and will utilize, as appropriate, analysis put forth as part of this PEIS. At the site specific level, analysis will be conducted to address changes and environmental effects of the implementation of stationing.

1.6 Public Involvement

Under NEPA, the public is afforded the opportunity and is urged to participate in the process at various stages of the project. Public participation provides for open

communication between the Army and interested parties, the identification of important issues of environmental concern, and ideally results in more informed decision making. In accordance with the CEQ (40 CFR Parts 1500-1508) and Army regulations (32 CFR Part 651), the Army provided the following notifications and opportunities for involvement by the public:

- Notice of Intent (NOI) to prepare a PEIS (Published in the Federal Register (*FR*) on May 16, 2007) which announced the Army's intent to prepare this PEIS and desire to receive public comment. In addition, the NOI was published in the *USA Today* newspaper the week of 18 May;
- Public scoping (Announced in the *USA Today* and held from May 16- June 16); and
- Public review of the Draft PEIS occurred from August 24 to October 9, 2007; and
- Notice of Availability for the Final PEIS.

1.7 Army Decision Making Process

The Army's decision maker will consider all significant environmental information and public issues of concern disclosed in this PEIS. In addition, he will consider several non-environmental factors critical to a final force structure decision as discussed below. After thoroughly evaluating this information, the decision maker will document the decision, selecting one of the proposed action alternatives in a Record of Decision (ROD), which will be signed no earlier than 30 days from the publication of the Notice of Availability. The ROD will clearly and definitively articulate the decision made and provide a supporting explanation. It will explain both the significant factors he relied on in making a final decision and why the final alternative best meets the purpose and need. He will also acknowledge the comparative environmental impacts and benefits resulting from his decision particularly if the alternative chosen is not the environmentally preferred alternative. Once the ROD is finalized, the Army will forward a Notice of Availability to the Federal register. The ROD will be available for public review.

1.7.1 Decision to be Made

After completing a deliberative and thorough decision making process, the Army will sign a Record of Decision (ROD) selecting for implementation of one of the three action alternatives described in Section 3.0 to develop and manage the Army force structure into the foreseeable future. The decision will include:

- establishment of a final troop end strength through growth and realignment at one of the levels proposed in the three action alternatives,
- selection of sufficient numbers and types of units to meet the end strength,
- direction to station selected units geographically at various CONUS Army installations identified in this PEIS,
- direction to achieve the desired geographic distribution of units by maintaining existing units in place, deactivation of units, realigning units to other locations, and stationing of new units added to the Army's end strength.

The final force structure and its geographic distribution will be based on the proper balance of sufficient Brigade Combat Teams with the right level of required combat support elements provided by Sustainment Brigades and CS/CSS personnel.

Senior Army leadership will take several factors into account when making a final force size and structure determination. This PEIS will provide the ultimate decision maker with information regarding significant environmental impacts and issues of public concern regarding the physical and natural environment for thorough consideration prior to making a final decision. The Army decision maker will also give serious consideration to many non-environmental factors including the directives set forth in the QDR; the professional judgment of senior military leaders; existing and emerging national defense needs developed by the Army's experience in the wars in Afghanistan and Iraq and other global security situations; the mission needs of Combatant Commanders; the capacity of Army CONUS installations to support additional units; and, the quality of life of Soldiers and their Families. These factors are captured in the description of the need and purpose for the proposed action Section 1.0, and the description of the proposed action in Section 2.0.

Methodology to Support the Programmatic Decision

It is important to understand the relationship in the decision making process among the three action alternatives, the six scenarios, and the seventeen installations chosen for consideration in the PEIS. Consistent with NEPA, the regulations published by the Council on Environmental Quality, and the Army's implementing NEPA procedures (32 CFR Part 651) the Army engaged in a process to develop a full range of reasonable alternatives for thorough consideration, evaluation and comparison in this PEIS. The Army considered an alternative to be reasonable if it were capable of meeting the stated purpose and need for the proposed action to increase the Army's end strength. This PEIS broadly states the need and purpose for increasing the end strength of the Army in Sections 1.2, 1.2, and 3 and explains how the Army developed three separate and distinct alternatives for achieving that need. The three action alternatives provide the decision maker the option of choosing separate courses of action that would result in three different Army force structures in terms of size and unit composition.

The PEIS also identifies those installations that are capable of supporting additional units ranging from CS/CSS units of one thousand (1,000) personnel to multiple additional Infantry, Heavy, and Light Brigade Combat Teams consisting of up to 4,000 Soldiers. While all units have common support needs such as Family housing and support facilities and basic weapons qualification range requirements; they have distinct requirements for equipment and vehicle maintenance facilities and live-fire and maneuver range complexes for larger unit training. This PEIS reviewed all Army installations, and identified the seventeen (17) CONUS Army installations capable of supporting 1,000 or more of the additional Soldiers included in the three action alternatives.

Given three alternate Army end strengths, six scenarios (options) for adding new units to a given stationing location, and the availability of 17 Army installations capable of supporting one or more units, the Army could have developed thousands of different combinations of alternate unit stationing scenarios. Doing so would have been unwieldy and yielded marginal useful information to the ultimate Army decision maker a result inconsistent with the purposes of NEPA. The Army, therefore, developed a different approach to allow for meaningful consideration, evaluation and comparison of programmatic alternatives that would provide the Army decision maker with important information regarding the environmental impacts associated with the selection of each type of unit and its stationing at a particular installation.

This PEIS establishes alternatives to achieve three separate end strengths for the Army. To achieve the end strength under each alternative the Army decision maker has the flexibility to develop a proper size and structure by choosing from six different unit scenarios and 17 potential stationing locations. With respect to each type of unit, Section 2 of the PEIS clearly describes the facility requirements to support Soldiers and their families; facility requirements to store and maintain unit vehicles and equipment; and, the range complexes necessary to support maneuver and live-fire training. Section 4 identifies the primary drivers for environmental impact: (i) facilities construction and use; (ii) range construction; (iii) maneuver training; and, (iv) live-fire training. It also identifies the Valued Environmental Components (VECs) at each of the 17 installations and predicts the probable intensity of environmental impact to each VEC if one or more units were selected for stationing at the particular installation.

Using this approach to evaluation of alternatives, the decision maker is enabled to compare and contrast the differing environmental impacts associated with selecting different type and sized units for stationing at different installations. When he makes a final choice of the right end strength of the Army under one of the alternatives and the proper balance and structure of new units stationed geographically across the seventeen installations to achieve that end strength he will be fully informed as to the programmatic environmental consequences likely to result from the broad programmatic decision. As units are realigned or stationed at the installations identified in the ROD to implement the programmatic decision, the Army will prepare additional NEPA documentation to consider the detailed site-specific impacts of alternative means to accomplishing directed realignment or stationing actions.

2.0 DESCRIPTION OF THE PROPOSED ACTION

2.1 Introduction

This section provides a description of the Proposed Action and those supporting actions the Army would undertake to implement the proposed action. The proposed action addresses the need to grow the Army to meet national security and defense mission requirements. To grow and enhance the configuration of its available forces, the Army would engage in four primary activities to ensure that the proposed action could meet needs set forth in Section 1. Activities the Army would implement that are anticipated to have an environmental or socio-economic impact at stationing locations are garrison construction, training infrastructure construction, live-fire training, and maneuver training. This section describes the Proposed Action and site-specific activities that would be associated with unit stationing actions.

2.2 Proposed Action

The proposed action is to increase the Army's end strength and realign the Army's force structure from FY 2008 through FY 2013 to a size and composition that will meet national security and defense requirements, modifies the force in accordance with Army Transformation, sustains unit equipment and training readiness, and preserves Soldier and Family quality of life. To fully implement the proposed action, new "growth" units must be stationed at locations that will be able to accommodate unit requirements for training, garrison and maintenance activities, and preserve Soldier and Family quality of life. In addition, final stationing locations must support the strategic deployment and mobilization requirements of the nation's Combatant Commanders to ensure they will have the forces necessary to support regional contingency operations and planning requirements.

The proposed action involves the stationing of units in a manner that supports the ACP and Army growth initiatives. The PEIS will address the resulting environmental and socioeconomic effects of the proposed activities beginning in FY08 and extending through FY13.

2.3 Site Specific Actions Required to Implement the Proposed Action

Alternatives to grow the Army will ultimately involve four site-specific activities that must be integrated and synchronized by the Army to support the execution of the Proposed Action. These activities are necessary components of the proposed action for meeting new "growth" unit stationing requirements. The activity groups are separated out in this section and discussed in detail to facilitate an understanding of the primary activities taking place that are projected to result in effects to the human environment and lead to direct, indirect, and cumulative effects. Essential activity groups required to implement the proposed action include garrison construction, training facilities and range

construction, live-fire training, and maneuver training. A brief description of each activity is provided in the following sections.

2.3.1 Garrison Construction

This activity group includes the construction of administrative offices, housing, vehicle parking and maintenance, equipment storage, recreational, shopping, roads, and other infrastructure required to meet the administrative and readiness requirements of new Army units while supporting a high quality of life Soldiers and Families.

The U.S. Army Corps of Engineers (USACE) plans and programs for standard sets of facilities that are needed to support the garrison operations and Families of the Army's modular BCTs. BCTs consist of between 3,500-4,000 Soldiers, 3,000-3,500 family members, 800-1,000 vehicles and all accompanying equipment. Each BCT has a considerable facilities requirement for conducting garrison administrative and maintenance operations. Critical facilities required by Army BCTs and new CS/CSS units would include office space for brigade, battalion and company Headquarters units, barracks space for single enlisted Soldiers, Family housing, dining facilities, maintenance shops, parking for vehicles, and storage space. Because CS/CSS forces are not configured in standardized modular designs (with exception of the Headquarters) there are no standard facilities designs at this time. The specific number of buildings and square footage/yardage of facilities space has been determined by Army facilities planners for modular BCTs and is detailed in the Table 2.1 below.

Table 2-1 Critical BCT Facility Requirements

Garrison Facilities	IBCT	Stryker BCT	HBCT
Vehicle Fuel Storage (gallons)	151,660	199,400	375,840
Brigade Offices (sf)	39,495	39,495	39,495
Battalion Offices (sf)	77,741	80,172	77,741
Company Offices (sf)	366,971	421,482	414,866
Organization Classroom (sf)	12,348	12,348	12,348
Ammunition Storage (sf)	1,715	4,075	4,950
Unit Storage Buildings (sf)	41,600	47,550	48,250
Family Housing (sf)	2,868,750	3,257,550	2,786,000
Barracks Space (sf)	517,158	595,482	558,882
Combat Vehicle Parking (sf)	1,347,696	1,395,252	2,329,398
Unmanned Aerial Vehicle Facility (sf)	22,500	9,000	22,500
Vehicle Maintenance (sf)	75,558	162,690	258,822
Note: Additional requirements for new CS/CSS units would vary for each installation depending on the size and mission/type of CS/CSS unit.			

In addition to garrison operation and maintenance facilities for Army BCTs, the Soldiers and their Families may also require housing, medical facilities, recreation, shopping and other facilities. The exact requirements for these facilities would be based on the type of unit being stationed at a given location and the availability of existing facilities at the

installation. Exact construction requirements for unit stationing actions would be determined at the installation depending on these factors.

2.3.2 Training Facilities and Range Construction

This activity group includes the construction of training ranges and training facilities needed to support the new units at installations selected to gain additional units through Army Growth and realignment. The implementation of Army Transformation, as directed by the QDR has required the Army to overhaul and modernize its training range and training facilities infrastructure. Army Training Circular TC 25-8 *Training Ranges* describes the standard designs and requirements of the Army’s Sustainable Range Program for training modular Army units to standard. A suite of ranges is required to support Army BCTs and ensure that they can meet all pre-deployment training requirements.

In order to meet the needs of the Proposed Action, the permanent stationing location for BCTs must either have or be able to accommodate the construction of the following ranges to support new BCTs and support units as part of Army growth. Table 2-2 lists required range infrastructure that is needed to meet the training requirements and sustain the training readiness of new units. A brief description of each range describes the purpose of the range.

Table 2-2 Required Range Infrastructure for BCTs

Number	Primary Range (current doctrine)	Primary Alternatives	Former Acceptable Alternatives
IBCT Required Ranges			
1	25 meter Zero Range	Qualification Training Range (QTR)	Army Field Fire (AFF)/ Automatic Rifle Fire (ARF)/MRF
1	Modified Record Fire Range (MRF)	QTR	AFF/ARF
1	Combat Pistol Qualification Course (CPQC)	25m Alternate Pistol Course; QTR	
1	Multi-Purpose Machine Gun (MPMG) Range	QTR	
1	Sniper Field Fire (SFF) Range	DMPTR/DMPRC; QTR	MPTR/MPRC/Known Distance (KD)
1	Grenade Launcher Range	None	
1	Mark-19 Range	QTR	
1	Hand Grenade Qualification Range	None	
1	Anti-Armor Tracking Range	Digital Multi-Purpose Training Range	MPTR
1	Mortar Range	None	
1	Infantry Squad Battle Course (ISBC)	IPBC	
1	Infantry Platoon Battle Course (IPBC)	None	

Table 2-2 Required Range Infrastructure for BCTs

Number	Primary Range (current doctrine)	Primary Alternatives	Former Acceptable Alternatives
1	Urban Assault Course (UAC)	None	MOUT Assault Course (MAC)
1	Combined Arms Collective Training Facility (CACTF)	None	MOUT (Military Operations Urban Terrain)
Stryker BCT Required Ranges (All of the Above and the BAX)			
1	Battle Area Complex (BAX)	DMPRC	MPRC/IPBC
HBCT (All Ranges Listed Except the ISBC and IPBC)			
1	Digital Multi-Purpose Training Range (DMPTR)	None	MPTR
1	Digital Multi-Purpose Training Complex (DMPRC)	BAX	MPRC

2.3.2.1 Individual/Crew Qualification Ranges

Qualification Training Range (QTR): This range is a multi-functional range that can meet the weapons qualifications requirements for multiple BCT weapons systems. This range combines the capabilities of the Modified Record Fire Range, Sniper Field Fire Range, Combat Pistol Qualification Course, MK-19 Range, and the Multipurpose Machine Gun Range.

25 Meter Zero Range: This range is used to train Soldiers in basic marksmanship. This range teaches Soldiers techniques to engage stationary targets and sighting adjustment techniques. It can be support M16 or M4 rifle firing as well as that of crew served machine guns.

Modified Record Fire Range (MRF): This range is used to train support unit Soldiers in basic marksmanship tasks. The range teaches Soldiers to quickly aim and engage stationary infantry targets.

Combat Pistol Qualification Course (CPQC): This combat pistol range is used to train Soldiers to identify, engage, and defeat an array of targets using the 9mm, .38 caliber, or .45 caliber pistol.

Multipurpose Machine Gun Range (MPMG): This range is designed to train Soldiers to engage stationary infantry and mobile vehicular targets with the full range of Army machine guns to include the M249, M60, M240, and .50 caliber machine guns.

Sniper Field Fire Range: This range is used to train Soldiers to identify and engage stationary and moving targets with a sniper rifle.

Grenade Launcher Range: This range is used to train Soldiers on targeting and use of grenade launcher systems against stationary infantry and vehicular targets.

Mark-19 Range: This range is used to train Soldiers on the operation and use of the Mark-19 40 mm grenade launcher. In addition, this range can be used to train Soldiers in the stationary targeting of armored vehicles using AT-4 and Javelin antitank weapon systems.

Hand Grenade Qualification Course: This range is used to train Soldiers on techniques for employing hand grenades in close combat.

Anti-Armor Tracking Range: This range complex is designed to meet training requirements for medium and heavy anti-armor weapons systems. This range is used to train Soldiers in identifying, tracking, targeting, engaging, and defeating moving armor targets individually or in tactical array.

Mortar Range: This range is used to train mortar crews on the operation and use of 80 and 120 mm mortar systems. Soldiers learn to acquire and destroy stationary targets using indirect fire mortar techniques.

2.3.2.2 Modular BCT Collective (crew and small unit) Training Range Requirements

Multi-Purpose Training Range (MPTR): This live-fire range is used to test crews and dismounted squads on the skills necessary to detect, engage, and defeat stationary and moving enemy infantry and armor targets. This range trains squads and prepares them for platoon live-fire collective training on the Multi-Purpose Range Complex.

Multipurpose Range Complex (MPRC): This range is used to train and test armor, infantry and aviation crews, sections, squads and platoons on skills necessary to detect, identify, engage and defeat stationary and moving infantry and armor targets in a tactical array. This complex also accommodates training with sub-caliber and/or laser training devices. All targets are fully automated, utilizing event-specific, computer-driven target scenarios during scoring.

Infantry Squad Battle Course (ISBC): The ISBC is a collective squad or crew range designed to train and test infantry squads or crews, either mounted or dismounted, on the skills necessary to conduct tactical movement techniques and detect, identify, engage and defeat stationing and moving infantry and armor targets in tactical array.

Infantry Platoon Battle Course (IPBC): The IPBC is a collective range designed to train and test infantry platoons, either mounted or dismounted, on the skills necessary to conduct tactical movement techniques and detect, identify, engage and defeat stationary and moving infantry and armor targets in a tactical array.

Battle Area Complex (BAX): This range is a Stryker BCT specific range. It provides collective live-fire training capability to all elements of the Stryker BCT. Stryker BCT crews and dismounted Soldiers test their ability to detect, engage, and defeat stationary and moving enemy targets in open and urban terrain. Stryker BCT units may train in the BAX with supporting vehicles in free maneuver.

Urban Assault Course (UAC): This facility is used to train individual Soldiers, squads, and platoons on tasks necessary to operate within a built-up/urban area.

Combined Arms Collective Training Facility (CACTF): This facility teaches the skills and unit cohesiveness necessary to conduct clearing, breaching, offensive and defensive operations in an urban setting. It may be 1.5 km by 1.5 km, depending on design, and replicates an urban environment that is available for combined arms and collective training.

Digital Multipurpose Training Range (DMPTR): This range is used to train and test crews and dismounted infantry squads on the skills necessary to detect, identify, engage, and defeat stationary and moving infantry and armor targets in a tactical array. In addition to live-fire, they can also be used for training with subcaliber and/or laser training devices. They are specifically designed to satisfy the training and qualification requirements for the crews and sections of armor, infantry and aviation units. They also support dismounted infantry squad tactical live-fire operations either independently of, or simultaneously with, supporting vehicles.

Digital Multipurpose Range Complex (DMPRC): This range includes multiple lanes for armored vehicles, numerous targets, obstacles, and battle positions. It is used to train and test armor and infantry platoons (four tanks per platoon) on skills necessary to detect, identify, engage and defeat stationary and moving infantry and armor targets in a tactical array. Combined Arms Live-Fire Exercises (CALFEX) will also be conducted on this facility. It also supports dismounted infantry platoon tactical live-fire operations either independently of, or simultaneously with, supporting vehicles. This is the culminating range for individual crews that have qualified on the Digital Multipurpose Training Range. In the case of the Stryker BCT the range requirement for a DMPRC may also be met by a Battle Area Complex (BAX).

TC-25-8 defines the training range infrastructure required to ensure the BCTs can adequately prepare for operational deployment. Access to the proper training range infrastructure is a critical element of need for the Proposed Action. The permanent stationing location for new units must either have existing ranges or be able to accommodate the construction of new ranges to meet their training requirements.

2.3.3 Live-Fire Training

Live-fire training is an essential component of Army training and of the implementation of the Proposed action. To be operationally effective, Soldiers must have the skills and experience necessary to operate and maintain their weapons. Live-fire involves both

munitions and explosives that would be used in combat and non-explosive training rounds designed to meet Soldiers' training needs. Soldiers must "train as they fight" in order to ensure their safety in combat situations. At a minimum, all Soldiers must qualify on individual and crew/vehicle weapons at least twice per year. In addition, platoons, companies, and battalions of BCTs must conduct collective live-fire training exercises on firing ranges to ensure they have rehearsed and coordinated battle procedures and are prepared to deploy to support wartime operations. Various weapons systems use different types of munitions. Where possible, some weapons systems use inert environmentally friendly training rounds as a substitute for the firing of live rounds.

2.3.4 Maneuver Training

Army units must conduct "combined-arms" training to ensure that all of the units' capabilities can be integrated and synchronized to execute missions under stressful operational conditions. Maneuver training consists of collective training of the constituent units of the BCT working together to integrate their combined capabilities and skills. Modular BCTs must conduct and rehearse maneuver training at every echelon from platoon through brigade level to ensure they can accomplish their mission-critical tasks.

2.3.4.1 Description of Maneuver Training

Maneuver training is a critical component of the unit collective training plan that trains units on how to synchronize the execution of battle tasks and shoot, move, and communicate on the battlefield. Large-scale battalion and brigade maneuver training events are often the capstone training exercise that tests and certifies units for operational deployments abroad. Maneuver training builds on all of the individual skills that Soldiers possess and tests each echelon of command of the BCT. Platoons, companies, and battalions conduct maneuvers to ensure unit proficiency at each successive level of Command within a BCT. Army Training Circular 25-1 *Training Land* (Department of the Army 2004) is the Army's definitive source for defining maneuver training land requirements.

The Army uses a standardized methodology for comparing maneuver impacts of different units. This methodology takes the weights and authorized yearly mileages for unit vehicles and converts them to a unit of measure called the Maneuver Impact Mile (MIM). The MIM is a unit of measure that the Army uses to anticipate maneuver damage and required repair costs for its training areas. To calculate MIMs, the Army converts all unit vehicles into the equivalent of M1 Abrams tanks. The Army applies different physical characteristics of unit vehicles (weight, tire/track pressure etc.) to make the conversion to M1 tank mile equivalents. The Stryker BCT must execute 104,898 tank mile equivalents of maneuver training to carry out its doctrinal maneuver requirements. In comparison the IBCT executes 49,576 MIMs to execute its doctrinal training tasks and the HBCT utilizes approximately 130,089 MIMs to execute its annual doctrinal training requirements. Table 2-3 below generically summarizes the anticipated intensities and impacts of BCT training.

Table 2-3 Summary of Projected Intensities and Impacts of BCT Training

Training Type	Heavy BCT	Stryker BCT	Infantry BCT
Dismounted Maneuver	Low	Medium	Medium
Wheel On-Road Maneuver	Medium	High	Medium
Wheel Off-Road Maneuver	Medium	High	Medium
Track On-Road Maneuver	High	None	None
Track Off-Road Maneuver	High	None	None
Prepare Fighting Positions (DIG)	High	Medium	Medium
Logistics Bases	High	Medium	Medium
Air Operations	Low	Medium	High

To support unit training each platoon, company, battalion, and brigade must conduct maneuver events to ensure the operational capabilities of the BCT. Each platoon and company must train up to 5 weeks per year to meet maneuver training requirements. In addition, each battalion must conduct semi-annual maneuvers lasting approximately 4 to 6 weeks per year to certify its subordinate units and each brigade must conduct maneuvers every 12 to 18 months and in advance of operational deployments, as required Table 2-4, taken from FM 7-1 *Training the Force* (Department of the Army 2002), illustrates the operations that must be rehearsed by Army units in combat maneuver training.

Table 2-4 Training Tasks for BCTs (FM 7-1 Training the Force)

Alert and Deploy the Brigade	
<ul style="list-style-type: none"> ▪ Draw and Upload Basic/Operational Loads ▪ Conduct Soldier Readiness/Administrative/Logistic Preparation for Overseas Movement ▪ Deploy Advance Parties Or Liaison Officers 	<ul style="list-style-type: none"> ▪ Move by Road or Rail to Aerial Port of Embarkation (APOE) or Seaport of Embarkation (SPOE) ▪ Upload Equipment at APOE or SPOE
Conduct Attack	Conduct Defense
<ul style="list-style-type: none"> ▪ Attack a Moving Enemy ▪ Attack a Stationary Enemy ▪ Movement to Contact 	<ul style="list-style-type: none"> ▪ Conduct a Mobile Defense ▪ Conduct an Area Defense
Conduct Support Operations	Conduct Stability Operations
<ul style="list-style-type: none"> ▪ Domestic Support Operations ▪ Foreign Humanitarian Assistance 	<ul style="list-style-type: none"> ▪ Peacekeeping Operations ▪ Combat Terrorism ▪ Support Counter-Drug Operations
Conduct Sustainment Operations	
<ul style="list-style-type: none"> ▪ Provide Medical Treatment and Evacuation (air and ground) ▪ Move by Air/Surface Transportation ▪ Manage Terrain 	<ul style="list-style-type: none"> ▪ Recover and Evacuate Disabled Equipment ▪ Control Reconstitution of Subordinate Units ▪ Conduct Mortuary Affairs Operations

2.3.5 Description of Brigade Combat Team Training

2.3.5.1 Introduction

Training is the Army's number one priority for units, and commanders train their units to be combat ready. "Battle Focus" is a concept used to derive training requirements, and units train according to their Mission Essential Task List (METL). This is derived from; wartime operational plans (why they fight); specific (to unit) combat capabilities (how they fight); the operational environment (where they fight); directed missions (what they must do) and any external guidance. The Army trains Soldiers in individual skills, units on collective tasks, and different levels of units through multi-echelon training. The Army trains as it fights, as a combined arms team.

Training ranges and training lands are the Army's classroom, and "Commanders take every opportunity to move Soldiers out into the field, to fire weapons, maneuver as a combined arms team and incorporate protective measures against enemy actions." (Field Manual (FM) 7-1, Battle Focused Training).

All Soldiers qualify with their individual weapon (rifle or pistol) at least twice annually; crew-served weapons qualification varies by type of unit. This training is usually accomplished at the company level on fixed ranges described in TC 25-8, Training Ranges. Weapons system training (Abrams Tank, Bradley Fighting Vehicle, and Attack Helicopter) consists of a series of "tables" and occurs on large range complexes.

All units train in "fieldcraft", which includes establishing logistical and command and control operations in the installation's maneuver areas. From those maneuver area locations the units will train on their mission essential tasks. The size of the area, and frequency and duration of the training exercises will vary by type of unit.

Units train to maintain proficiency on key tasks as defined by their Mission Essential Task List (METL). Training strategies and events for Army BCTs are described in more detail below.

Heavy BCT (HBCT)

Equipment. The HBCT consists of approximately 3,800 Soldiers and 55 M1 Abrams tanks and 85 Bradley Infantry fighting vehicles. In addition to these armored tracked combat vehicles the HBCT also possesses 16 self propelled 155 howitzers, tracked earthmoving vehicles, recovery vehicles, and an assortment of other tracked vehicles. The HBCT also consists of a large number and variety of wheeled-vehicles, to include light tactical trucks, medium trucks, and large cargo and fuel trucks. All vehicles are capable of on-road and off-road maneuver.

Training. Abrams Tank or Bradley Fighting Vehicle crews in the combined arms battalion practice and qualify on their vehicles on a series of four individual gunnery "tables" once every six months and as sections/platoons once every 12 months. A company will complete a Combined Arms Live-Fire Exercise (CALFEX) once every 12 months on its own or as part of a battalion CALFEX. This training also occurs on large fixed ranges such as the MPTR or MPRC described above. While on the range the

vehicles will maneuver only on designated range/course lanes or roads, cross-country maneuver is limited for safety reasons. In an HBCT all training on maneuver land is collective training, from platoon-level up to the HBCT itself, and involves all or some of the unit's vehicles. The broad categories of an HBCT's training events are Offense (Move to establish contact with the enemy or attack), Defense (Defend from an enemy attack or move to break contact), and Reconnaissance and Security (for moving and stationary assets). All HBCT units may be training the same event (e.g., attack) while in other scenarios different units may have different missions simultaneously (e.g., one company attacks, one company provides security for a critical asset). Except for designated "off-limits" areas the units and vehicles are free to maneuver anywhere on the training land.

The HBCT smaller subordinate units will train on a specific event as many four times per 12 months; the larger units may train as many as twice per 12 months. Smaller units will break a training event down into situational training exercises (STX) or drills that are focused on a specific task and can be repeated until the unit achieves proficiency. When the smaller units train they may not have an opposing force of similar size; larger units almost always will. The training and opposing units will use training simulation devices like that replicate weapons firing and target hits.

Stryker BCT

Equipment. A Stryker BCT has approximately 4,000 Soldiers, 317 Stryker combat vehicles, 588 wheeled support vehicles, 18 155 mm howitzers, and numerous trailers and other pieces of equipment. The Stryker vehicle is an eight wheeled armored combat vehicle. Each Stryker platform is equipped with a crew served weapon, usually a machine gun, or in the case of the mobile gun system (MGS), a direct fire cannon. Each major unit of the Stryker BCT is composed of a number of smaller constituent units, including battalions, companies, platoons, and squads. About half of the 4,000 Soldiers would be assigned to Infantry Battalions within the unit. The rest would be distributed among the other battalions, companies, and platoons that comprise a Stryker BCT.

A Stryker BCT is a rapidly deployable unit designed for early entry into operational scenarios. The Stryker BCT is capable of deploying with all combat gear and equipment loaded on the vehicle so that it can begin supporting military operations immediately upon its arrival. The increased mobility and speed of the Stryker BCT allows the unit to respond quickly, to prevent, contain, stabilize, or resolve small-scale conflicts. A Stryker BCT participates in major wartime operations as a subordinate component within a division or corps, in a variety of possible roles. To deploy rapidly, the Stryker BCT design uses a highly mobile, medium-weight armored combat/combat support platform, which requires a minimum of logistical support so that the Stryker BCT can act as more of an expeditionary type of unit. Preconfigured in ready-to-fight combined arms packages, the entire Stryker BCT is designed to be rapidly deployed anywhere in the world in a few days time. This BCT consists of a large number of eight-wheeled Stryker vehicles, towed artillery, light engineer equipment, HMMWV's and medium/large cargo

trucks. All vehicles are capable of on-road and off-road maneuver, but will more often travel on-road.

Training. Stryker unit training parallels IBCT training, but with the addition of the Stryker vehicles. Individual Soldier weapons training is similar to the IBCT, though the Stryker has more weapons systems and Soldiers. Stryker crews qualify semi-annually on the weapon system mounted on their vehicle: MK-19 grenade launcher or M2 .50 caliber machine gun. Stryker crews with the MGS will qualify semi-annually on a series of 3 different gunnery tables. Stryker vehicle crew and MGS training occurs on fixed ranges as described in TC 25-8, *Training Ranges*. Stryker units, from squad to company also participate in quarterly and semi-annual Live-Fire Exercises (LFX) that includes all weapons systems on a large and more complex range.

The broad categories of Stryker collective (unit) training events are; Intelligence, Reconnaissance and Security (patrolling and security operations), Offense, Defense, and Stability and Support Operations. Like the HBCT and the Infantry BCT's subordinate Stryker units will train on a specific event as many four times per 12 months, the larger units (ex. battalion and BCT) as many as twice per 12 months. Smaller units will break a training event down into situational training exercises (STX) or drills that are focused on a specific task and can be repeated until the unit achieves proficiency. When the smaller units train they may not have an opposing force of similar size; larger units almost always will. The training and opposing units will use training simulation devices that replicate weapons firing and target hits.

The Stryker infantry training differs from the Infantry BCT primarily in the size of the training area required. Stryker units train to move rapidly over larger operational distances in order to bring an effective infantry force to battle. Stryker vehicles can move cross-country, but are more likely to move on hardened surfaces for speed and mobility purposes.

Infantry BCT (IBCT)

Equipment. The IBCT consists of approximately 3,500 Soldiers who are divided primarily into two infantry battalions, a reconnaissance and surveillance battalion, a fires battalion, a support battalion, and a special troops battalion consisting of combat support units. The modular IBCT possesses towed M777 155 mm artillery, light engineer equipment, and light tactical and medium/large cargo trucks. All vehicles are capable of on-road and off-road maneuver.

Training. Infantry training is weapons intensive as individual Soldiers, crews, teams, and squads practice and qualify with a variety of weapons. An example of the weapons in an infantry battalion includes: pistol, rifle, shotgun, sniper rifle, grenade launchers, light-medium-heavy machine guns, anti-tank weapons, grenades, demolitions, and mortars. Qualification is a semi-annual requirement, practice firing is completed as time, ammunition, and other resources permit. This weapons firing occurs on fixed ranges, as described in TC 25-8, *Training Ranges*. Infantry units, from squad to

company also participate in quarterly and semi-annual Live-Fire Exercises that include all weapons systems on a large and more complex range.

The broad categories of Infantry collective (unit) training events include Reconnaissance and Security (patrolling and security operations), Offense, Defense, and Stability and Support Operations. Infantry units can incorporate airborne, airmobile and air assault operations into their training. Like the HBCT, the Infantry BCT's smaller subordinate units will train on a specific event as many four times per 12 months, the larger units such as the battalion may train as many as twice per 12 months. Smaller units will break a training event down into situational training exercises (STX) or drills that are focused on a specific task and can be repeated until the unit achieves proficiency. When the smaller units train they may not have an opposing force of similar size; larger units almost always will. The training and opposing units will use training simulation devices that replicate weapons firing and target hits.

Sustainment Brigade

Equipment. This brigade will have the widest variety of wheeled vehicles, based in part of the types of units it is supporting and the missions it needs to accomplish. This sustainment brigade consists of maintenance vehicles, and light, medium, and heavy cargo trucks of all sizes (ex. 5,000 gallon fuel trucks and Heavy Equipment Transports (HET's)). All wheeled vehicles are capable of on-road and off-road maneuver, but will more often travel on-road. The headquarters of the sustainment brigade is a fixed element consisting of approximately 350 Soldiers. To this element, troops are added to support mission requirements. In analysis carried forward in this document, two thresholds are analyzed for installations receiving combat service support troops. These thresholds were set at approximately 3,500 Soldiers and 1,000-1,200 wheeled vehicles to replicate the stationing of a full sustainment brigade sized element and a smaller unit replicating the stationing of approximately 1,000 Soldiers and 300-400 vehicles to replicate the stationing of a Combat Support battalion at a given installation.

Training. Sustainment brigade units will establish an operating base in the maneuver areas and train on force protection and conducting logistical operations in this environment. The training can include repairing vehicles, providing medical treatment, re-supplying units with petroleum products, rations, and other materials. The operating bases can be large and there is considerable vehicle traffic in and around the base.

Requirements for live-fire training for a sustainment brigade have been recently increased to ensure that all Soldiers have the opportunity to gain maximum proficiency with their weapons. In addition to individual qualification training ranges sustainment brigade Soldiers will conduct "Convoy Live-Fire" Range training. On this range, vehicle crews train on reactions to an ambush or explosive device incident, casualty treatment and evacuation, and continuing operations. The range consists of a driving course with personnel targets, buildings and battlefield clutter, and the crews may engage these targets with blank or live ammunition.

3.0 ALTERNATIVES AND SCREENING CRITERIA

3.1 Introduction

This section discusses the several different alternatives the Army is considering for implementing the Proposed Action. The Purpose and Need described in Section 1 set forth a rational context in which to analyze the viability of alternatives. The Purpose and Need define necessary elements of the Proposed Action and allow consideration of a broad range of alternatives for potential growth and realignment of Army's forces. This Section will provide a discussion of the alternative selection criteria that the Army is using to assess whether an alternative is "reasonable" and will be carried forward for evaluation in the DEIS. The screening criteria were developed based on the purpose and need for the Proposed Action set forth in Section 1.0. In addition, this Section will discuss criteria used to select candidate installations for stationing actions to support Army Growth and realignment of the force.

Three Army-wide alternatives and the "no action" alternative have been analyzed for implementation at as many as 17 viable installation stationing locations. Installations have been included in the PEIS if they are viable stationing locations for new Brigade Combat Teams, or if the installation is likely to receive a substantial number (more than 1,000) additional Combat Support/Combat Service Support (CS/CSS) Soldiers as part of other Army growth or realignment initiatives. In conducting programmatic installation analysis, a baseline assumption was made that the CS/CSS units are logistical sustainment units, and will conduct activities required by these types of units.

3.2 Assumptions Applied To Army Screening Criteria

3.2.1 National Security and Defense Mission Requirements:

The National Security and Defense strategies are carefully deliberated, analyzed, and determined by the executive branch of government with careful consideration and input from senior national defense officials, defense planners, and senior military officers. The size and structure of the Army is modified in accordance with national security and defense policy and balanced with the mission requirements of a changing global security environment and available resources. National security and defense policy falls under the purview and authority of the President of the United States. It is not within the Army's authority or within the scope of this document to discuss a reduction of national security or defense requirements to reduce the number or scope of missions the Army must perform. Reasonable alternatives must provide for a force structure meeting the objectives of the National Security and Defense Strategies.

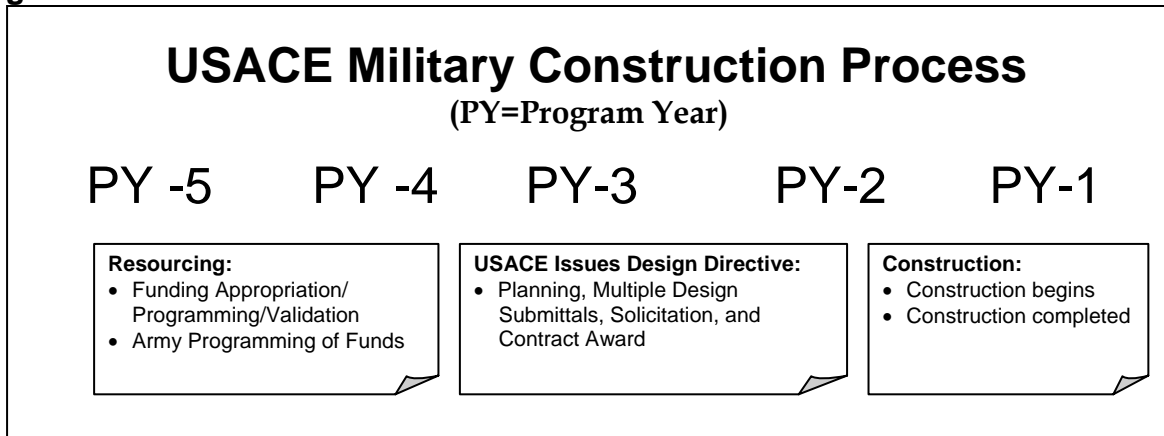
3.2.2 Military Construction (MILCON) Limitations:

Reasonable alternatives must include Army installations that have existing facilities to support the stationing of new Army units or have the ability to construct such facilities in

a timely manner within reasonable cost parameters. This includes facilities for training Army units as discussed previously and providing an acceptable quality of life for both Soldiers and their Families.

Support facilities are critical to supporting the stationing of new Army units. Preceding Sections have discussed the need for specific facilities to support Soldier training, operations, maintenance, and quality of life. The Army military construction process for installation facilities and ranges is executed by the USACE as directed by the Army Chief of Staff for Installation Management (ACSIM). USACE follows a standard construction process for both range infrastructure and garrison construction projects. Funding appropriation and programming must begin more than 5 years before the start of a given construction project. Submitting project requests and subsequent Congressional appropriation, budget validations, and Army programming of funds typically requires 2 years within the MILCON process. The subsequent programming of funds, to plan, design, review, award, and construct military construction projects typically requires another 3 years. The diagram below details the 5-year military construction planning process for Army projects. This timeline is used by USACE for garrison support projects, to include Soldier housing, administrative offices, vehicle maintenance and parking facilities, and training range construction. With early Congressional approval and appropriation of funds, it is possible to expedite the military construction process to 3 years versus 5 if Congressional support is received to support Army growth and realign.

Figure 3.2-1 USACE Construction Process



Facilities for training, garrison operations, and Soldier and Family quality of life are critical for supporting the operations of new units that would be stationed at installations as part of Army Growth and force realignment. Not having the adequate facilities for housing, training, administrative functions, and maintaining an Army unit would not adequately support the needs of the Proposed Action. If facilities do not currently exist at the installation to accommodate new units, facilities construction would be required. The extended time frame of the MILCON process limits the Army’s range of potential alternatives for Growth and realignment of the Force. Currently there are no installation locations in the United States that have enough additional facilities to support the requirements of a new BCT and its 3,500-4,000 Soldiers and their Families. Smaller

scale stationing actions would have to be evaluated on a case by case basis at the installation level to determine if the installation has the necessary facilities on hand to support units, or if additional construction would be required. If Army decision makers select an alternative to grow the number of Army BCTs and funding is approved to do so by Congress, it will take several years before permanent construction would be available to support new BCTs with the infrastructure they require.

3.3 Programmatic Alternatives Carried Forward For Analysis

In addition to the No-Action alternative, three action alternatives have been formulated that take into account the Army's needs for growth and force realignment. Common elements to these alternatives include the growth and restructuring of Army units from the FYs 2008 to 2013. All alternatives consider BRAC directed actions and those stationing actions which have occurred prior to the start of Fiscal Year 2008 (1 October 2007) as part of the baseline condition for analysis. The Army has determined that the alternatives below meet the foregoing criteria and are therefore reasonable. Alternatives carried forward for full analysis are:

3.3.1 Alternative 1- Implement Army Growth, Realignment, and associated activities between FY 2008 and 2013 to support the Army's Modular Transformation and GDPR decisions.

The Army has a number of programs and initiatives that evaluate the existing force composition and its manning and stationing. Major on-going force development initiatives include Total Army Analysis (TAA), Modular Support Forces Analysis (MSFA), and GDPR. Several smaller sub-programs that deal with specific components of the Army, feed into these larger modular force redesign initiatives. These programs have led to recommendations that would result in a realignment and growth of CS/CSS units involving up to approximately 20,000 Active Duty Soldiers between FY 2008- 2013. Installation impact analysis conducted under stationing Scenarios 1 and 2 involve the stationing of CS/CSS units. Impacts would best be approximated by these stationing scenarios depending on the number of Soldiers the installation would receive.

As part of this alternative, most Army installations would experience unit gains through stationing and transfer of units from other installations, and losses through deactivations and transfers of existing units to other installations. These actions would better implement Army Transformation and modular force initiatives and would occur relatively uniformly across most installations depending on the number of units they support and the types of facilities that are available. In some cases these units were programmed to inactivate as their numbers were only temporarily authorized by Congress in 2005; however, under the Proposed Action these units would be retained and some new units would be added.

In addition to the major programs implementing modular reconfiguration of the Army, several smaller sub-programs deal with specific components of the Army. Smaller modularity initiatives include force development actions such as Personnel Services

Delivery Redesign (PSDR), and Command Plans (CP). These programs are designed to tailor the structure and size of Army forces to increase overall operational effectiveness in accordance with Army guidance for Modularity and Transformation. The list of force management programs described below is not an all-inclusive list of programs, but does include the major force development programs driving Army growth and restructuring at the installations between FY 08 and FY 13.

Total Army Analysis: The TAA process is a phased force structure analysis process. The TAA planning process evaluates the structure of Army CS and CSS forces and other tactical and general purpose support forces. The TAA process occurs every two years and puts forth recommendations to reconfigure the Army's combat support forces in accordance with Office of Secretary of Defense and Joint forces planning guidance. The TAA process guides Army force management decisions. This process is described in Army Regulation (AR) 71-11 *Total Army Analysis*.

Modular Support Forces Analysis: MSFA is the process which has been used by the Army to analyze its current force structure and reconfigure it to support the modular "brigade-based" Army. The overall goal of MSFA is to create a force that is more responsive to regional Combatant Commanders' needs and better employs joint capabilities. MSFA recommendations for standard Army unit configurations facilitate logistics planning and rapid deployment while tailoring the structure of Army units to be capable of operating as self-contained units in complex, non-contiguous battle spaces. MSFA stationing actions and reconfigurations are actions which are directly tied to reconfiguring Brigade combat teams and their supporting units into modular designs.

Global Defense Posture Realignment: Transformation and the QDR directives provide guidance to restructure the military for rapid deployment from within the U.S. while reducing the reliance of U.S. forces on foreign nations. The GDPR process began in 2004 and is scheduled to continue through 2011. As a part of the overall Transformation effort, the Army will relocate 44,500 Soldiers back to the U.S. and reduce overseas facilities to support the expeditionary force design concepts envisioned within the QDR. Many GDPR decisions were also re-emphasized and supported by BRAC in 2005.

Personnel Services Delivery Redesign: To better support modular Transformation the Army is reorganizing its personnel services battalions. These battalions are being reconfigured and incorporated into Brigade and Battalion personnel services sections. These sections will be self sufficient and provide human resources functions and personnel support required by modular BCTs.

Command Plans: CP force management initiatives are designed to provide modular forces with critical combat support capabilities. Through analysis and planning as part of this initiative, additional Military Police, Explosive Ordnance units, and other critical support units are being added to the Army's modular force to provide a broader range of skills required for contemporary operations.

A summary of the new units and Soldiers that would be assigned to installations as part of Alternative 1 is shown in table 3-1 below. Every Army installation is experiencing unit reconfiguration, unit gains through stationing, and losses through deactivations. These actions are required to implement Army Transformation and modular force initiatives and are occurring relatively uniformly at every installation depending on the number of units they support.

Installation locations carried forward for analysis in this programmatic EIS are those sites that may receive more than approximately 1,000 new Soldiers from FY 08 - FY 13 as part of the initiatives discussed above. This threshold was chosen because it represents a level of growth at a majority of installations at which significant impacts could occur and should be considered at the programmatic level.

For those installations that are not scheduled to receive personnel in excess of these numbers, the Army has processes in place by which NEPA analysis is conducted for every new unit stationing action, regardless of size. Army stationing packets (AR 5-10 packets) must be completed with the appropriate NEPA analysis before actions required to support that unit may begin.

Table 3-1 Unit Stationing Actions (FY 2008 to 2013 – Not Inclusive of BRAC)

INSTALLATION	ACTIVATION / TRANSFER IN (GAIN)	TRANSFER OUT (LOSS)	INACTIVATION (LOSS)	NET CHANGE
<i>*AK- RICHARDSON</i>	1398	0	149	1249
<i>*AK-WAINWRIGHT</i>	0	143	0	-143
BELVOIR	489	23	137	329
BENNING	1073	170	5	898
BLISS	7559	1205	335	6019
BRAGG	2815	950	1520	345
CAMPBELL	1190	170	632	388
CARSON	1839	340	465	1034
DRUM	1310	673	2	635
EUSTIS	270	170	24	76
GORDON	235	576	467	-808
<i>*HI-SCHOFIELD</i>	373	246	227	-100
<i>*HI-SHAFTER</i>	1093	0	531	562
HOOD	3418	2237	1670	-489
IRWIN	252	0	0	252
KNOX	845	151	1393	-699
LEWIS	3620	647	791	2182
POLK	1101	73	155	873
RILEY	5230	418	104	4708
SAM HOUSTON	1634	80	792	762
SILL	323	0	161	162
STEWART	1362	263	189	910

*NO LOCATIONS OUTSIDE THE CONTINENTAL UNITED STATES HAVE BEEN INCLUDED IN THIS ANALYSIS. STATIONING LOCATIONS IN HAWAII AND ALASKA ARE INCLUDED FOR THE PURPOSES OF FULL TRANSPARENCY OF ARMY PLANNING ACTIVITIES. STATIONING ANALYSIS OF ACTIONS WITH RESPECT TO THESE LOCATIONS WILL BE CONDUCTED SEPARATELY.

3.3.2 Alternative 2- Execute those actions discussed in Alternative 1 and, in addition, add approximately 30,000 Combat Support (CS) and Combat Service Support (CSS) Soldiers to the Active and Reserve Components of the Army to address critical shortfalls in high demand military skills.

Army force structure analysis and evaluation of current and anticipated future operations indicates that certain types of mission essential combat support units need to be added to the Army’s end strength to carry out sustained operations now and into the projected future. Under this alternative, in addition to the growth in Alternative 1 (approximately 20,000 Soldiers), a realigning of the Army force structure would add approximately 20,000 additional Active Duty and approximately 9,200 Reserve Component Soldiers to areas of high demand and critical need. These Reserve Component Soldiers would consist of approximately 8,200 National Guard and 1,000 Army Reserve Soldiers. Active Duty combat support Soldiers added to the Army would consist primarily of additional Explosive Ordnance, Military Police, Military Intelligence, Engineers, and other CS and CSS capabilities. Installation impact analysis for this alternative correlates to stationing Scenarios 1 and 2 involving the stationing of CS/CSS units. Impacts would best be approximated by these stationing scenarios depending on the number of Soldiers the installation would receive.

Table 3-2 provides a summary of the number of Active Duty Soldiers that would be assigned to each installation as part of Army efforts to grow and realign combat support and combat service support units. A listing of unit stationing actions taking place as part of Alternatives 1 and 2 is provided in Appendix V and W. Projected National Guard and Reserve component growth is provided in Appendix X.

Table 3-2 below does not incorporate the modular growth and Soldier realignments discussed in Alternative 1. All Army installations that are currently stationing locations for Brigade Combat Teams (BCT) for large troop units would experience unit gains through stationing as part of this alternative. New unit stationing actions for CS/CSS realignment and growth are based upon installation assessments of existing units.

This alternative could include stationing of Sustainment Brigades that are discussed in Section 2.3.5.2.

Table 3-2 Alternative 2. Distribution Army CS/CSS Growth and Realignment excluding Modular Growth and Realignment in Alternative 1.

INSTALLATION	CS/CSS GROWTH	MAJOR UNITS
*AK-RICHARDSON	610	Military Police (MP), Engineer (ENG)
*AK-WAINWRIGHT	186	MP, ENG, Stryker BCT Maintenance (MAINT)

Table 3-2 Alternative 2. Distribution Army CS/CSS Growth and Realignment excluding Modular Growth and Realignment in Alternative 1.

INSTALLATION	CS/CSS GROWTH	MAJOR UNITS
BENNING	215	MP, Medical (MED), Explosive Ordnance Disposal (EOD)
BLISS	3221	Field Artillery (FA), EOD, MP, Air Defense Artillery (ADA)
BRAGG	1218	FA, EOD, MISC. CSS
CAMPBELL	618	MP, EOD, MED
CARSON	1609	ENG, EOD, Military Intelligence (MI)
DRUM	867	MP, ENG, Quartermaster (QM), Transportation (TC)
EDGEWOOD	231	20 th Support Command (20 th SPT CMD)
EUSTIS	540	TC
GORDON	7	Signal (SIG)
<i>*HI-SCHOFIELD & WHEELER AAF</i>	822	ENG, MP, EOD
<i>*HI-SHAFTER</i>	154	Training Support Center (TSC) BUY BACK
HOOD	2621	ENG, EOD, MI
IRWIN	245	EOD, MP, LINGUISTS
KNOX	34	EOD
LEE	182	QM, TC
LEONARD WOOD	769	Combat Support Battalion, Headquarters (CSB HQS), ENG
LEWIS	1638	ENG, MI, Stryker BCT MAINT

Table 3-2 Alternative 2. Distribution Army CS/CSS Growth and Realignment excluding Modular Growth and Realignment in Alternative 1.

INSTALLATION	CS/CSS GROWTH	MAJOR UNITS
POLK	277	EOD, MED, LINGUISTS
RILEY	1301	ENG, EOD, UAS
SAM HOUSTON	6	MED
SILL	634	EOD, PATRIOT
STEWART	687	EOD, MP, QM

*NO LOCATIONS OUTSIDE THE CONTINENTAL UNITED STATES HAVE BEEN INCLUDED IN THIS ANALYSIS. STATIONING LOCATIONS IN HAWAII AND ALASKA ARE INCLUDED FOR THE PURPOSES OF FULL TRANSPARENCY OF ARMY PLANNING ACTIVITIES. STATIONING ANALYSIS OF ACTIONS WITH RESPECT TO THESE LOCATIONS WILL BE CONDUCTED SEPARATELY.

Alternative 2 does not include an increase in the number of BCTs. The number of BCTs would remain fixed at 42 Active Duty BCTs and 28 Reserve Component BCTs. Additional CS/CSS Soldiers would be added to the Army’s force structure under Alternative 2 to allow these high demand units to achieve higher levels of training and operational readiness while increasing Soldier and Family quality of life by providing more time at the home station. Specific construction requirements for garrison facilities (office buildings, maintenance facilities) and training ranges would need to be evaluated on a case by case basis.

Installation locations carried forward for analysis in the programmatic EIS are those sites which would receive more than 1,000 new Soldiers from FY 08-13 as part of Alternatives 1 and 2 discussed above. For those installations that are not scheduled to receive personnel in excess of these numbers, the Army has processes in place by which NEPA analysis is conducted for every new unit stationing action. Army stationing packets (Army Regulation 5-10 packets) must be completed with the appropriate NEPA analysis before stationing actions, such as construction or unit movements may begin. Table 3-3 depicts the projected number of Soldiers that would be stationed at each installation under Alternative 2 when including growth in Alternative 1.

Table 3-3 Total Growth Under Alternatives 1 & 2 (Combined)

INSTALLATION	Modular and GDP Growth (Alternative 1)	New CS/CSS Growth (Under Alt 2)	Total Growth Under Alternative 1 and 2
*AK- RICHARDSON	1249	610	1859
*AK-WAINWRIGHT	-143	186	43
BELVOIR	329	0	329

INSTALLATION	Modular and GDPR Growth (Alternative 1)	New CS/CSS Growth (Under Alt 2)	Total Growth Under Alternative 1 and 2
BENNING	898	215	1113
BLISS	6019	3221	9240
BRAGG	345	1218	1563
CAMPBELL	388	618	1006
CARSON	1034	1609	2643
DRUM	635	867	1502
EUSTIS	76	540	616
GORDON	-808	7	-801
<i>*HI-SCHOFIELD & WHEELER AAR</i>	-100	822	722
<i>*HI-SHAFTER</i>	562	154	716
HOOD	-489	2621	2132
IRWIN	252	245	497
KNOX	-699	34	-665
LEONARD WOOD	0	769	769
LEWIS	2182	1638	3820
POLK	873	277	1150
RILEY	4708	1301	6009
SAM HOUSTON	762	6	768
SILL	162	634	796
STEWART	910	687	1597

*NO LOCATIONS OUTSIDE THE CONTINENTAL UNITED STATES HAVE BEEN INCLUDED IN THIS ANALYSIS. STATIONING LOCATIONS IN HAWAII AND ALASKA ARE INCLUDED FOR THE PURPOSES OF FULL TRANSPARENCY OF ARMY PLANNING ACTIVITIES. STATIONING ANALYSIS OF ACTIONS WITH RESPECT TO THESE LOCATIONS WILL BE CONDUCTED SEPARATELY.

3.3.3 Alternative 3 (Preferred Alternative): Execute those actions proposed in Alternatives 1 and 2 and, in addition, grow the Army by up to 6 Active Duty Brigade Combat Teams (BCTs).

Alternative 3 includes actions outlined in Alternatives 1 and 2 and in addition adds up to 6 additional BCTs to the Active Army's operational combat forces. This alternative would allow the Active Army grow from its current authorization of 42 BCTs up to a total possible end strength of 48 BCTs, resulting in the growth of the Army by up to 24,000 Soldiers to establish new BCTs. In addition, this alternative would include the growth and realignment of forces discussed in Table 3-3 and the addition of 8,200 National Guard Soldiers and 1,000 Army Reserve Soldiers as discussed in Alternative 2. The implementation of this Alternative would increase the Army's end strength to a total of 547,400 Soldiers.

As part of this alternative, facilities to support active duty BCTs and CS/CSS units would be planned and constructed between 2008 and 2013. Alternative 3 includes 2 sub-alternatives for executing the stationing of up to 6 new BCTs. Sub-alternatives are required because of the constraints on providing units with the necessary facilities they require and the length of time required to fund, plan, and complete military construction (see section 3.1). Facilities requirements for garrison and training support for BCTs are discussed in detail in section 2.3 for each type of BCT. At this time sub-alternatives do not stipulate which type of BCT (HBCT, IBCT or Stryker BCT) would be added to the Army's force structure to implement Alternative 3. Sub-alternatives are:

Alternative 3.1: As part of this alternative, facilities to support active duty BCTs would be planned and constructed at existing Army training installations within the Continental United States from 2008-2013. BCTs would be able to utilize existing infrastructure at these installations to support requirements for Soldiers and their Families with regards to training infrastructure, office space, and housing and other quality of life facilities.

Alternative 3.2: As in Alternative 3.1, facilities to support active duty BCTs would be planned and constructed within the United States from 2008-2013. Some BCTs would be stationed at the Army's major Active Duty training installations. One or more new sites within the United States, however, would be selected for the construction of permanent party facilities where permanent party operational forces are not currently stationed. The Army would select these new sites at locations where it currently owns land to support BCTs but does not have the built infrastructure to support garrison or other operations. This alternative would require construction of a set of garrison support facilities at a location where a fully operational garrison does not currently exist in the Continental United States. Army sites that would be considered for construction of new infrastructure to support growth BCTs include Army Test Command Installations, large Reserve Component installations with extra stationing capacity, and maneuver training sites. Table 3-4 below provides a list of installations being considered for the stationing of new BCTs as part of Alternative 3.

Table 3-4 Army Installations Considered For BCT Stationing

Fort Benning	Fort Drum	Fort Lewis	Yakima Training Center
Fort Bliss	Fort Hood	Fort Polk	Yuma Proving Ground
Fort Bragg	Fort Hunter Liggett	Fort Riley	
Fort Campbell	Fort Irwin	Fort Stewart	
Fort Carson	Fort Knox	White Sands Missile Range	

3.3.4 No-Action Alternative

The No Action Alternative is to retain the Army at a permanent force level of 512,400 Active Duty Soldiers, 350,000 Army National Guard Soldiers, and 205,000 Reserve Soldiers as is currently authorized. The No-Action alternative assumes that units will remain stationed where they are currently stationed at the end of Fiscal Year 2007, or where they are directed to be stationed pursuant to BRAC law.

Under the No-Action alternative, stationing moves, unit activations, unit conversions, and deactivations required to implement Army Growth and Realignment beyond 2007 authorizations and BRAC Law would not occur as described in Alternatives 1, 2, and 3. No additional CS/CSS Soldiers would be added to the Army to balance the composition of Army skill sets to match current and projected future mission requirements. Furthermore, no new Brigade Combat Teams would be added to the Army to slow the tempo of deployments for existing units, increase operational readiness, and elevate Soldier and Family quality of life.

3.4 Screening Criteria Used To Identify a Range Of Potential Installation Stationing Locations

The Army used the need criteria of the proposed action, defined in section 1, in conjunction with other external limiting factors to narrow the field of installations to those capable of supporting the requirements of new unit stationing actions required by Army growth. This section describes the Army’s decision making process for selecting and analyzing viable stationing locations that could meet the Purpose and Need for the stationing of Army Growth units. The screening criteria include: supporting the NSS, NDS, and ACP, possessing the capability to provide the necessary training infrastructure for new units, the ability to provide quality of life and garrison support infrastructure, and cost considerations. These screening criteria were applied to the full range of reasonable potential stationing locations capable of supporting Army growth. Specific criteria in this analysis used to screen the above alternatives include:

- 1. Support National Security and Defense policy, decisions made within the Quadrennial Defense Review (QDR), and support Army Transformation:**
Alternative stationing locations carried forward for analysis must promote,

support, or be consistent with National Security and Defense policy, Army mission requirements, and the requirements of the QDR and Army Transformation. Stationing locations must allow the Army to effectively carry out operations and deploy units to support current and future operations to shape the national security environment in an effective manner.

2. **Training.** The installation's current acreage within the fenceline is considered, as well as current and future maneuver land acreage. This includes providing sufficient land for training and maneuver areas for existing and realigned units, and constructing, upgrading, and operating live-fire and qualification ranges. Quality and quantity of training land, ranges, and existing training facilities are all considered. Alternatives that are not capable of supporting the training land and infrastructure requirements of the ACP have not been carried forward in this document.
3. **Quality of Life and Garrison Support Infrastructure.** The current capability for the installation to support Soldiers, Families, and civilians (e.g., Soldier/family medical clinics, child and youth development centers, and school systems) is considered. The presence of adequate housing and available infrastructure to support Soldiers and their Families must also be available to support new units stationed at the installation as part of Army growth. Installations without excess housing capacity in the surrounding community or buildable space to accommodate the garrison requirements of additional units have not been carried forward for analysis.
4. **Costs.** The alternative must be achievable within a reasonable cost as compared to the proposed action and other alternatives. Alternatives that are considerably more expensive to implement without increased benefit commensurate with the additional cost would be eliminated from detailed evaluation.

3.5 Application of Screening Criteria to Potential Installation Stationing Locations

The Army initially included all of its installations as potential stationing locations to support Army growth and realignment initiatives. The following section describes the screening process that was utilized to arrive at installations that are being carried forward for analysis in this document. Installations have been carried forward for analysis if they are capable of supporting an additional BCT under Alternative 3, or if they are projected to receive more than 1,000 additional combat support Soldiers to support modularity and CS/CSS growth initiatives (Alternatives 1 & 2). The following screening criteria were used to determine if a site is suitable for implementing the Proposed Action.

1) Support of National Security and Defense policy, decisions made within the Quadrennial Defense Review (QDR), and support Army Transformation- Under these screening criteria, alternatives carried forward to support restructuring and Growth

of the Army must ensure that units can readily access unit deployment facilities to support operations abroad, as required. Additionally, the QDR directs the return of units to the United States to operate from installation "Power Projection Platforms". These power projection platforms will provide units with training and deployment facilities to ensure troops are well trained and can be employed quickly and effectively to shape the national security environment. QDR recommendations are closely aligned with GDPR decisions and Transformation directives put forth in the ACP. For these reasons, locations outside of the Continental United States are not considered for permanent stationing locations for new growth BCTs.

2) Training- The ability of the installation to support the training of newly assigned units is an essential element of need for the Proposed Action. As part of the Transformation process, the Army has conducted an ambitious modernization program for its training ranges and infrastructure. To maintain training proficiency, the installations receiving new active duty units should either possess existing modernized ranges and digital training facilities or the space to construct them to maintain its required training proficiency. Because of resource limitations, the Army has only been able to fully conduct range modernization at the major Active Duty training installations. In addition to major existing active duty training sites, the Army could establish training infrastructure at locations with enough training space to accommodate unit maneuver training requirements. Such installations include Army installations that currently have a testing mission such as White Sands Missile Range (WSMR) and Yuma Proving Ground (YPG), maneuver training sites such as Yakima Training Center (YTC), and select Reserve Component training facilities such as Fort Hunter Liggett (FHL).

In general, National Guard and Army Reserve installations are not large enough to accommodate large unit maneuvers. Additionally, few of these installations have completed significant range modernization activities required to test the combat capabilities of the Active duty units. National Guard and Reserve installations that have undergone a significant level of modernization, such as Fort Dix, New Jersey and Camp Shelby, Mississippi, are fully engaged with missions to mobilize, train, and deploy National Guard and Reserve Soldiers. These installations do not have the capacity to accept a BCT while carrying out their primary installation missions to train and mobilize National Guard and Reserve Soldiers.

Those installations that do not possess adequate training space to support growth units are screened from further consideration for analysis. In addition, those installations that have not undergone significant training and range modernization activities or that do not have the space to accommodate their construction have been eliminated as potential stationing alternatives.

Utilizing training as a screening factor for installation stationing actions eliminates a majority of reserve component facilities, administrative installations, and industrial production facilities. In addition, not all Army installations carried forward for analysis can support the training space requirements for all three types of BCTs. Some installations that can support the smaller training area requirements of the IBCT cannot support the extensive maneuver training requirements of the HBCT or even larger

maneuver requirements of the Stryker BCT. Installations capable of supporting the training space requirements of an IBCT have been carried forward for consideration.

3) Quality of Life and Garrison Support- Installations carried forward for analysis must have either existing facilities capacity to support unit garrison operations or there must be space to construct the garrison support facilities and Soldier and Family quality of life facilities needed to support proposed unit stationing actions under Alternatives 1, 2 or 3.

4) Cost- Cost considerations are always a factor given that the Army budget is finite and the organizations have a multitude of funding priorities. Sites that do not currently possess the infrastructure to house, train, and accommodate permanent party active duty units would cost considerably more to establish than sites that have existing utilities. Efficiencies in facilities usage could be leveraged to reduce costs at existing Army training sites.

Subsequent sections of this document will analyze the potential impacts resulting from implementing Army Growth and modular restructuring initiatives discussed as part of Alternatives 1, 2, and 3. As discussed earlier in this section, the site selection of the stationing actions described in Alternatives 1 and 2 are not discretionary in nature. These stationing actions are based on the number and types of existing units at a given stationing location. Installations that would receive 1,000 or more Soldiers as part of Alternatives 1 and 2 are carried forward for programmatic analysis of stationing impacts. The stationing of new growth BCTs, however, is discretionary in nature. Based on need criteria and analysis presented in this document, the Army does have flexibility in deciding the stationing locations of new growth BCTs if Alternative 3 is selected.

Alternatives Eliminated from Further Review:

Permanently Station New BCTs at an Overseas Location: As part of this alternative, new BCTs would be stationed at overseas locations in Germany or Korea which were vacated by units returning to the United States through GDPR initiatives. This alternative would allow the Army to take advantage of additional overseas infrastructure capacity, but it would not adhere to national defense policy or decisions and recommendations put forward in the QDR. Despite the short term construction cost saving to be gained through such an alternative, the Army is engaged in the process of GDPR to bring units back from overseas locations. This process is aligned with Department of Defense strategies to project power abroad from within the United States where Soldiers have increased levels of force protection and access to training resources.

Execute Modular Transformation Activities presented in Alternative 1 and Combat Support growth Initiatives in Alternative 2 at Installations other than those Stationing Locations Currently Listed: This alternative would implement the stationing of units in Alternatives 1 and 2 at installations other than those listed for each stationing action. Each of these stationing actions in Alternative 1 is required to ensure that the force package designs present at that installation conform to the modular forces

standardized designs and that CS/CSS units are collocated with those units they must training to support. Stationing units in Alternative 1 and 2 at other installations than those listed would prevent the Army from implementing modular force design concepts recommended in the QDR and would prevent support units and combat units from conducting and rehearsing integrated training exercises.

Station New Growth BCTs at a Large Reserve Component Mobilization Site: As part of this Alternative, units would be stationed at a Reserve Component Mobilization Site such as Camp Shelby or Fort Dix. While these installations do possess some of the range infrastructure required to support an Active Duty BCT, the installations' primary mission is to focus on training National Guard and Reserve Component Soldiers on Mission Critical Tasks to prepare them for deployment to support on-going missions. These installations are currently fully engaged in their training mobilization missions and do not have the garrison or training infrastructure or training land to support additional Active Duty BCTs.

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Introduction

The following section consolidates the baseline information (the affected environment) and the environmental and socioeconomic impacts (environmental consequences) from the proposed action. Subsections divide analyses for potential installation stationing locations. The baseline for the proposed action is considered the installation's current condition through FY07 and includes Congressionally-mandated BRAC 2005 actions.

Methodology

This Programmatic EIS presents a top-tier perspective that provides decision makers, regulatory agencies, and the public with information on the potential environmental and socioeconomic effects resulting from the implementation of Army growth and restructuring through different types of unit stationing scenarios. This information will allow decision makers to review the proposed alternatives and environmental and socioeconomic impacts for implementing Army growth initiatives, enabling them to make informed decisions when determining installation stationing locations.

Through a detailed screening process, 17 installations within the United States have been identified as potential stationing locations for the proposed Army growth and realignment initiatives. Because of ongoing planning, budgeting, and strategic operational efforts, the exact design and structure of the proposed growth and realignment of the Army is yet to be determined. Six unit stationing scenarios were developed that best capture the essence of the proposed Army growth initiatives. They include CS/CSS, Full Sustainment Brigade, Infantry BCT, Heavy BCT, Stryker BCT¹ and Multiple BCTs. The CS/CSS unit scenario includes smaller support units (i.e., military police) totaling no more than 1,000 Soldiers. The Full Sustainment Brigade and the remaining BCT unit scenarios are based on the Army Modular Force organization which focuses its operations at the smaller, self-contained, logistically supportable BCT-sized units of 3,000-4,000 Soldiers. The units within these BCTs are similar in their equipment and manning. A Multiple BCT scenario assumes a combination of two BCTs, totaling 7,000 Soldiers.

This PEIS adopts an analytic methodology similar to that used in the Army's *Programmatic Environmental Impact Statement for Army Transformation* (March 2002). The Army Transformation PEIS identified several types of activities, referred to as "activity groups" that were likely to produce impacts. The activity groups served as the evaluation elements for use as a planning and decision making tool. In this Programmatic EIS, four of those activities groups were adopted and updated for application in the environmental impact analysis process for the six unit stationing scenarios. The four activity groups include garrison construction, training infrastructure construction, live-fire training, and maneuver training. These activity groups were coupled with the requirements of each of the six unit scenarios and applied to valued

¹ Due to specific training requirements, the Stryker BCT is only considered at 5 of the 18 proposed installations.

environmental components (VECs) for each of the 17 installations. A general description of these VECs is found in Appendix V of this document. Through coordination with installation staff at each location, VEC ratings were identified, tabulated, and described further in this section. They are the basis from which the impact assessment was formulated. VEC ratings rank from “very low” to “very high” and are presented in a table at the beginning of each subsection. A comparison of these ratings for each of the 17 installations is offered in the Tables 4-1 to 4-6 below. The following is the basic description of each VEC rating category:

- **Very Low** – No impact or minimal impacts are anticipated.
- **Low** – Minor impact anticipated.
- **Medium** – Moderate impact anticipated (less than significant).
- **High** – Significant impact anticipated (likely mitigable to less than significant).
- **Very High** – Significant adverse impact anticipated.

Additional installation-specific analyses will be conducted which utilizes, as appropriate, analysis put forth as part of this PEIS for Army growth and restructuring from an organization-wide perspective. At the site specific level, analysis will be conducted to address changes and environmental effects of stationing based on ACP and Army growth requirements.

A consolidated table of significant impacts is illustrated in Tables 4-1 to 4-6 below; and are grouped by stationing scenario (CS/CSS, Full Sustainment Brigade, Infantry BCT, Heavy BCT, Stryker BCT, Multiple BCTs). These tables provide the reader a comparison of all of the anticipated effects from each of the six stationing scenarios across each of the relevant installation locations.

Table 4-1. Comparison of anticipated impacts to VECs at each potential stationing site for the CS/CSS Scenario

CS/CSS Units (1,000 Soldiers)																		
VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	*Maneuver Training Site (Units Stationed at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality	⊗	⊙	⊙	⊙	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊗	⊗	⊗
Airspace	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Cultural	⊙	⊙	⊙	⊗	⊙	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊗
Noise	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊗	⊙	⊙	⊙	⊙	⊗	⊙
Soil Erosion Impacts	⊙	⊗	⊗	⊗	⊗	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Biological Resources	⊗	⊙	⊗	⊗	⊗	⊗	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊗	⊙	⊗	⊗
Wetlands	⊗	⊙	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊗	⊙	⊙	⊙
Water Resources	⊗	⊗	⊗	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊗	⊙	⊗
Facilities	⊗	⊙	●	⊙	⊗	⊙	⊗	⊙	⊙	⊙	⊙	⊗	⊙	⊗	⊗	⊙	⊗	⊗
Socioeconomics	⊗	⊗	⊗	⊗	⊙	N/A	⊙	⊙	⊙	⊙	⊙	⊗	⊗	⊙	⊙	⊙	⊙	⊗
Energy Demand/ Generation	⊗	⊙	⊗	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊗	⊙	⊙	⊙	⊙	⊙	⊙
Land Use Conflict/ Compatibility	⊙	⊙	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊗	⊙	⊙	⊙	⊙	⊗	⊙
Hazardous Materials/ Hazardous Waste	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Traffic and Transportation	⊗	⊗	⊗	⊗	⊗	⊙	⊙	⊙	⊙	⊙	⊗	⊙	⊙	⊙	⊗	⊙	⊙	⊗

* The Pinon Canyon Maneuver Training Site is not being considered as a stationing location; however, VEC impacts were evaluated for this location due to the training requirements this site fulfills for units stationed at Fort Carson.

Table 4-2. Comparison of anticipated impacts to VECs at each potential stationing site for the Full Sustainment BDE Scenario

Full Sustainment BDE (3,000-3,500 Soldiers)																		
VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	*Maneuver Training Site (Units Stationed at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality	⊖	⊕	⊖	⊖	●	⊕	⊕	⊕	⊕	⊖	⊕	⊕	⊕	⊕	⊕	⊖	⊖	⊖
Airspace	⊕	⊖	⊕	⊕	⊖	⊕	⊕	⊕	⊖	⊖	⊕	⊕	⊕	⊕	⊕	⊕	⊖	⊕
Cultural	⊕	⊕	⊕	⊖	⊕	⊖	⊕	⊖	⊕	⊖	⊖	⊖	⊕	⊕	⊕	⊕ ⊗	⊕	⊗
Noise	⊖	⊕	⊕	⊕	⊕	⊕	⊕	⊖	⊕	⊖	⊕	⊖	⊕	⊕	⊕	⊕	⊕ ⊖	⊕
Soil Erosion Impacts	⊖	⊗	⊗	⊗	⊖	⊖	⊕	⊕	⊕	⊖	⊕	⊕	⊕	⊕	⊖	⊖	⊖	⊖
Biological Resources	⊖	⊕	⊖	⊖	⊖	⊖	⊖	⊕	⊖	⊖	⊕	⊕	⊕	⊕	⊖	⊕	⊗	⊖
Wetlands	⊖	⊖	⊖	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊖	⊕	⊖	⊕
Water Resources	⊖	⊖	⊖	⊗	⊖	⊕	⊖	⊕	⊕	⊖	⊕	⊕	⊕	⊕	⊕	⊖	⊖	⊗
Facilities	⊗	⊖	●	⊗	⊗	⊖	⊖	⊖	⊕	⊕	⊖	⊗	⊖	⊗	⊖	⊕	⊖	⊖
Socioeconomics	⊖	⊗	⊖	⊗	⊖	N/A	⊖	⊖	⊖	⊕	⊖	⊗	⊖	⊗	⊖	⊕	⊗, +	⊗
Energy Demand/ Generation	⊗	⊕	⊖	⊗	⊖	⊕	⊖	⊕	⊕	⊕	⊖	⊖	⊕	⊕	⊕	⊕	⊖	⊖
Land Use Conflict/ Compatibility	⊖	⊕	⊖	⊗	⊕	⊕	⊖	⊕	⊕	⊕	⊕	⊖	⊕	⊕	⊖	⊕	⊖	⊕
Hazardous Materials/ Hazardous Waste	⊕	⊕	⊕	⊖	⊕	⊕	⊖	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊖	⊖	⊕
Traffic and Transportation	⊖	⊗	⊗	⊗	⊖	⊖	⊖	⊕	⊕	⊕	⊗	⊖	⊕	⊖	⊖	⊕	⊖	⊗

* The Pinon Canyon Maneuver Training Site is not being considered as a stationing location; however, VEC impacts were evaluated for this location due to the training requirements this site fulfills for units stationed at Fort Carson.

Table 4-3. Comparison of anticipated impacts to VECs at each potential stationing site for the IBCT Scenario

IBCT (3,500 Soldiers)																		
VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	*Maneuver Training Site (Units Stationed at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality	⊖	⊖	⊖	⊖	●	⊖	⊕	⊕	⊖	⊗	⊕	⊕	⊕	⊕	⊕	⊖	⊖	⊖
Airspace	⊕	⊖	⊖	⊖	⊖	⊕	⊖	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
Cultural	⊖	⊖	⊕	⊖	⊖	⊖	⊕	⊖	⊖	⊕	⊖	⊖	⊕	⊕	⊕	⊗	⊖	⊗
Noise	⊖	⊖	⊕	⊕	⊖	⊕	⊖	⊕	⊖	⊕	⊕	⊗	⊖	⊕	⊕	⊕	⊕	⊕
Soil Erosion Impacts	⊕	⊗	⊗	⊗	⊖	⊖	⊕	⊖	⊖	⊕	⊕	⊕	⊖	⊕	⊖	⊖	⊖	⊖
Biological Resources	⊖	⊕	⊗	⊖	⊖	⊖	⊖	⊖	⊖	⊕	⊕	⊖	⊕	⊕	⊖	⊕	⊗	⊗
Wetlands	⊖	⊕	⊖	⊕	⊖	⊕	⊕	⊕	⊖	⊕	⊕	⊖	⊕	⊕	⊖	⊕	⊖	⊕
Water Resources	⊖	⊖	⊖	⊗	⊖	⊕	⊖	⊕	⊕	⊖	⊕	⊕	⊖	⊕	⊕	⊖	⊕	⊗
Facilities	⊗	⊕	●	⊗	⊗	⊖	⊖	⊖	⊕	⊕	⊖	⊗	⊖	⊗	⊖	⊕	⊖	⊗
Socioeconomics	⊖	⊗	⊖	⊗	⊖	N/A	⊖	⊕	⊖	⊕	⊖	⊗	⊖	⊗	⊖	⊕	⊗, +	⊗
Energy Demand/ Generation	⊗	⊕	⊖	⊗	⊖	⊕	⊖	⊕	⊕	⊕	⊖	⊖	⊕	⊕	⊕	⊕	⊖	⊖
Land Use Conflict/ Compatibility	⊖	⊕	⊖	⊗	⊖	⊕	⊖	⊕	⊖	⊕	⊕	⊖	⊕	⊖	⊖	⊖	⊖	⊖
Hazardous Materials/ Hazardous Waste	⊕	⊕	⊕	⊖	⊖	⊕	⊖	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊖	⊖	⊖	⊕
Traffic and Transportation	⊖	⊗	⊗	⊗	⊖	⊖	⊖	⊕	⊖	⊖	⊗	⊖	⊕	⊖	⊖	⊕	⊖	⊗

* The Pinon Canyon Maneuver Training Site is not being considered as a stationing location; however, VEC impacts were evaluated for this location due to the training requirements this site fulfills for units stationed at Fort Carson.

Table 4-4. Comparison of anticipated impacts to VECs at each potential stationing site for the HBCT Scenario

HBCT (3,800-4,000 Soldiers)																		
VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	*Maneuver Training Site (Units Stationed at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality	⊗	⊖	⊖	⊖	●	⊖	⊖	⊖	⊖	⊗	⊖	⊗	⊖	⊖	⊖	⊖	⊖	⊖
Airspace	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Cultural	⊗	⊖	⊖	⊗	⊖	⊗	⊖	⊖	⊖	⊖	⊖	⊗	⊖	⊖	⊖	⊗	⊖	⊗
Noise	⊗	⊗	⊖	⊖	⊖	⊖	⊗	⊖	⊖	⊖	⊖	⊗	⊖	⊖	⊗	⊖	⊖	⊖
Soil Erosion Impacts	⊗	⊗	⊗	⊗	⊗	⊗	⊖	⊗	⊗	⊖	⊖	⊖	⊗	⊖	⊗	⊖	⊗	⊗
Biological Resources	⊗	⊖	⊗	⊖	⊖	⊖	⊖	⊖	⊗	⊖	⊖	⊖	⊖	⊖	⊗	⊖	⊗	⊗
Wetlands	⊗	⊖	⊗	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊗	⊖	⊖	⊖
Water Resources	⊗	⊖	⊗	⊗	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊗	⊗	⊗
Facilities	⊗	⊖	●	⊗	⊗	⊖	⊖	⊖	⊖	⊖	⊖	⊗	⊗	⊗	⊖	⊖	⊖	⊗
Socioeconomics	⊖	⊗	⊖	⊗	⊖	N/A	⊖	⊖	⊖	⊖	⊖	⊗	⊖	⊗	⊖	⊖	⊗, +	⊗
Energy Demand/ Generation	⊗	⊖	⊖	⊗	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Land Use Conflict/ Compatibility	⊗	⊖	⊗	⊗	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊗	⊖	⊖	⊖	⊖	⊖
Hazardous Materials/ Hazardous Waste	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
Traffic and Transportation	⊗	⊗	⊗	⊗	⊖	⊖	⊖	⊖	⊖	⊖	⊗	⊖	⊖	⊖	⊖	⊖	⊖	⊗

* The Pinon Canyon Maneuver Training Site is not being considered as a stationing location; however, VEC impacts were evaluated for this location due to the training requirements this site fulfills for units stationed at Fort Carson.

Table 4-5. Comparison of anticipated impacts to VECs at each potential stationing site for the Stryker BCT Scenario

Stryker BCT (4,000 Soldiers)						
VEC	Fort Bliss	Fort Carson	*Maneuver Training Site (Units Stationed at Fort Carson)	Fort Lewis	White Sands Missile Range	Yakima Training Center
Air Quality	⊖	●	⊗	⊗	⊖	⊖
Airspace	⊖	⊖	⊙	⊙	⊙	⊙
Cultural	⊖	⊖	⊗	⊗	⊙ ⊖	⊖
Noise	⊖	⊖	⊖	⊗	⊙	⊖
Soil Erosion Impacts	⊗	⊗	⊗	⊗	⊖	⊗
Biological Resources	⊖	⊖	⊗	⊖	⊙	⊗
Wetlands	⊙	⊖	⊙	⊖	⊙	⊖
Water Resources	⊖	⊖	⊖	⊙	⊗	⊗ ⊖
Facilities	⊙	⊗	⊖	⊗	⊙	⊖
Socioeconomics	⊗	⊖	N/A	⊗	⊙	⊗, +
Energy Demand/ Generation	⊙	⊖	⊖	⊖	⊙	⊖
Land Use Conflict/ Compatibility	⊙	⊖	⊙	⊖	⊖	⊖
Hazardous Materials/ Hazardous Waste	⊙	⊖	⊖	⊙	⊖	⊖
Traffic and Transportation	⊗	⊖	⊗	⊖	⊙	⊖

* The Pinon Canyon Maneuver Training Site is not being considered as a stationing location; however, VEC impacts were evaluated for this location due to the training requirements this site fulfills for units stationed at Fort Carson.

Table 4-6. Comparison of anticipated impacts to VECs at each potential stationing site for the multiple BCT Scenario

Multiple BCTs (7,000 Soldiers)																		
VEC	Fort Benning	Fort Bliss	Fort Bragg	Fort Campbell	Fort Carson	*Maneuver Training Site (Units Stationed at Fort Carson)	Fort Drum	Fort Hood	Fort Hunter Liggett	Fort Irwin	Fort Knox	Fort Lewis	Fort Polk	Fort Riley	Fort Stewart	White Sands Missile Range	Yakima Training Center	Yuma Proving Grounds
Air Quality	⊗	⊗	⊗	⊗	●	⊗	⊙	⊙	⊗	⊗	⊙	⊗	⊗	⊙	⊗	⊗	⊗	⊗
Airspace	⊙	⊗	⊗	⊗	⊗	⊙	⊗	⊙	⊙	⊙	⊙	⊗	⊙	⊙	⊙	⊗	⊙	⊙
Cultural	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊙	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Noise	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊙	⊗	⊙	⊙	⊗	⊗	⊗	⊗	⊙	⊗	⊗
Soil Erosion Impacts	⊗	⊗	●	●	⊗	⊗	⊗	⊗	⊗	⊙	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Biological Resources	⊗	⊗	●	⊗	⊗	⊗	⊗	⊗	⊗	⊙	⊙	⊗	⊗	⊗	⊗	⊙	⊗	⊗
Wetlands	⊗	⊙	●	⊙	⊗	⊙	⊗	⊙	⊗	⊙	⊙	⊗	⊗	⊙	⊗	⊙	⊗	⊙
Water Resources	⊗	⊗	●	●	⊗	⊗	⊗	⊙	⊗	⊙	⊙	⊙	⊗	⊙	⊙	⊗	⊗	⊗
Facilities	⊗	⊙	●	●	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊙	⊗	⊗
Socioeconomics	⊗	⊗	⊗	⊗	⊗	N/A	⊗	⊙	⊗	⊙	⊗	⊗	⊗	⊗	⊗	⊙	⊗, +	⊗
Energy Demand/ Generation	⊗	⊙	⊗	⊗	⊗	⊗	⊗	⊙	⊙	⊙	⊗	⊗	⊗	⊙	⊙	⊙	⊗	⊗
Land Use Conflict/ Compatibility	⊗	⊙	●	●	⊗	⊗	⊗	⊙	⊗	⊙	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Hazardous Materials/ Hazardous Waste	⊗	⊙	⊗	⊗	⊗	⊗	⊗	⊙	⊙	⊙	⊗	⊙	⊙	⊙	⊗	⊗	⊗	⊙
Traffic and Transportation	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊙	⊗	⊗	⊙	⊗	⊗

* The Pinon Canyon Maneuver Training Site is not being considered as a stationing location; however, VEC impacts were evaluated for this location due to the training requirements this site fulfills for units stationed at Fort Carson.

4.1 FORT BENNING, GEORGIA

4.1.1 Introduction

Fort Benning is located in southwest Georgia, and has approximately 135,000 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.1-1). There are several areas identified as “drop zones” that are used exclusively for personnel and equipment parachute training.



Figure 4.1-1 Fort Benning

Fort Benning's major units are the 3rd Brigade of the 3rd Infantry Division and the 75th Ranger Regiment. Fort Benning is home to the Infantry School, which conducts infantry officer and non-commissioned officer training, infantry Soldier Basic Combat and Advanced Individual Training, airborne (parachute) training, and Ranger Training. Fort Benning is also expecting to gain the Maneuver Center of Excellence.

Fort Benning has a robust and highly used range infrastructure with several unique ranges supporting Special Operations Command (SOCOM) units. The impending conversion of Fort Benning to a Maneuver Center of Excellence would increase the already high demand for existing ranges and maneuver land, and would likely require considerable range construction. Fort Benning is facing challenges of growing adjacent

urbanization and from specific Threatened and Endangered Species (TES) (e.g., Red-Cockaded Woodpecker).

Table 4.1-1 contains the Fort Benning VEC ratings for each of the various stationing action Scenarios.

Table 4.1-1. Fort Benning VEC Ratings

Fort Benning					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment Brigade (BDE) (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Medium	Medium	Medium	High	High
Airspace	Low	Low	Low	Low	Low
Cultural Resources	Low	Medium	Medium	High	High
Noise	Low	Medium	Medium	High	High
Soil Erosion Impacts	Low	Medium	Low	High	High
Biological Resources	Medium	Medium	Medium	High	High
Wetlands	Medium	Medium	Medium	High	High
Water Resources	Medium	Medium	Medium	High	High
Facilities	High	High	High	High	High
Socioeconomics	Medium	Medium	Medium	Medium	High
Energy Demand/ Generation	Medium	High	High	High	High
Land Use Conflict/ Compatibility	Low	Medium	Medium	High	High
Haz Mat/ Haz Waste	Low	Low	Low	Medium	High
Traffic and Transportation	Medium	Medium	Medium	High	High

4.1.2 Air Quality

4.1.2.1 Affected Environment

Air emissions sources at Fort Benning include areas within the counties of Chattahoochee and Muscogee, Georgia; and Russell, Alabama. The Installation’s cantonment area, training areas, and maneuver corridors are also included in the project area. This region is presently designated by the EPA as in attainment for all required standards for criteria pollutants. An issue of increasing concern is PM_{2.5}.

PM_{2.5} (particulate matter with a diameter of less than or equal to 2.5 microns) is a National Ambient Air Quality Standard (NAAQS) pollutant that is subject to an air conformity review. At this time, the region is considered to be in attainment for PM_{2.5}. Monitoring data indicate that ambient concentrations of PM_{2.5} are increasing, with levels exceeding the standard documented at a monitoring location in Phenix City, Alabama and at a monitoring location in Muscogee County. Because of this growing concern, efforts at the state and local level, including reduction planning, may be required to reverse the trend ahead of the EPA's data analysis for designating PM_{2.5} nonattainment. Fort Benning would be required to assess actions for general conformity should the area be designated nonattainment for PM_{2.5}. Nonattainment designation may come as early as December, 2007. General conformity would be required one year after nonattainment designation. However, the area that would be covered in the nonattainment designation has not been determined. At this time, only the Muscogee County GA and the Russell County AL sections of Fort Benning will be in the nonattainment area. If the Columbus area is designated as nonattainment for PM_{2.5}, emissions would need to be reevaluated and a general conformity analysis may be needed to cover activities beyond 2007.

4.1.2.2 Environmental Consequences

Fort Benning is categorized as a major source of criteria pollutant emissions. The "major source" designation triggers the provisions of 40 CFR 52.21, *Prevention of Significant Deterioration (PSD)*. The PSD provisions require Fort Benning to assess all new emission units to determine if their operation constitutes a major modification. The major source designation also requires Fort Benning to maintain a Title V Operating Permit. New construction activities have the potential to exceed 250 tons for criteria pollutants, however, these activities are not stationary sources, and the emissions significance threshold does not apply. However, these construction activities could exceed the 20 percent opacity rule for fugitive dust, depending on the particular onsite controls used and local meteorological conditions.

The background for PM 2.5 is 12ppm. The threshold for the annual level at this time for exceedance is 15ppm. The Georgia Environmental Protection Division, Alabama Department of Environmental Management, and U.S. EPA Region IV are in agreement that it takes very little emissions from any source to load the airshed and then have exceedances to the threshold.

CS/CSS, Full Sustainment Brigade (BDE). There would be an anticipated moderate-level (medium) of environmental adverse impacts on the Installation and surrounding communities under the re-stationing of a CS/CSS unit scenario, including the project increase of 1,000 to 3,500 Soldiers. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality. Long-term impacts from increased operations and maintenance

activities would be minimal and would not adversely impact regional air quality or Class I PSD areas.

IBCT. Long-term moderate (medium) adverse impacts would be expected on the Installation and surrounding communities due to the restationing of an IBCT and 3,500 additional Soldiers at Fort Benning. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training. It is also anticipated that the Installation would see increases in emissions from equipment required to support the Installation, such as fuel storage, dispensing, and boiler operations. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails.

HBCT. Long-term significant (high) adverse impacts would be expected on the Installation and surrounding communities due to the restationing of a HBCT and its 4,000 Soldiers. Combustion emissions from stationary sources would significantly increase due to the plus up in infrastructure required to support the influx of new Soldiers and their Families. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to installation boundaries that visible emissions leave the Installation.

Multiple BCTs. Long-term significant (high) adverse impacts would be expected on the Installation and surrounding communities. As stated above, the expected environmental impact on the Installation and surrounding communities due to the restationing of multiple BCTs, including the addition of approximately 7,000 Soldiers, is expected to have major long-term impacts on air quality, only to a greater degree of significance. Combustion emissions from stationary sources would increase due to the increased infrastructure required to support the influx of new Soldiers and their Families.

4.1.3 Airspace

4.1.3.1 Affected Environment

Fort Benning has 277 square miles of Federal Aviation Administration (FAA)-designated special use airspace, up to 25,000 feet. The Installation has access to this airspace from 1100 to 0700 daily, with intermittent use, and is controlled by the FAA of Atlanta, Georgia. (US Army Corps of Engineers, 2002). Fort Benning manages its own airspace.

4.1.3.2 Environmental Consequences

CS/CSS. Minimal (low) adverse impacts to Airspace use are expected. It is anticipated that the activities associated with an increase of 1,000 Soldiers would moderately increase activities within the cantonment and range areas, and would not impact or require changes in current Airspace configurations.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Minor (low) adverse impacts to Airspace use are expected. While an increased Soldier strength of 3,000 to 3,500 would increase activity within the training and range areas, Airspace is not expected to change from its current use. Use of airspace would continue to be managed through scheduling and balancing UAV and requirements with airspace availability. All BCTs will have unmanned aerial vehicles, resulting in a minimal impact to airspace (Brown, Fort Benning Installation Questionnaire, 2007).

4.1.4 Cultural Resources

4.1.4.1 Affected Environment

Located in southwest Georgia, Fort Benning is located near the Fall Line city of Columbus. There are federally-recognized tribes with interests in the area. Fort Benning and the surrounding area are known in the State of Georgia as being rich in Native American and European history, both on and off the installation boundary.

4.1.4.2 Environmental Consequences

CS/CSS. Minor (low) adverse short- and long-term impacts are expected on archaeological resources. Additional training and Soldier foot traffic near archaeological sites within the training and range areas would increase potential impacts to those resources. No impacts are expected on historic resources. Activities within the cantonment area would be expected to occur within existing facilities or would follow requirements under the Historic Preservation Act, including coordination with the State Historic Preservation Office (SHPO).

Full Sustainment BDE, IBCT. Moderate (medium) short- and long-term adverse impacts are expected to occur on archaeological and historic properties. The increase in 3,000 to 3,500 Soldiers and the additional equipment supporting these scenarios could be detrimental to existing cultural resources at Fort Benning. Archaeological resources, especially in the upland areas, could be in danger from intentional and inadvertent foot traffic. The increase in personnel and their associated Families could potentially impact existing historic buildings and structures within the cantonment area through modifications due construction and renovations needed to support the increase in personnel.

HBCT, Multiple BCTs. Significant (high) short- and long-term impacts would be expected on the Installation's cultural resources due to the addition of 3,800 to 7,000 Soldiers and the related heavy equipment. Adverse impacts to historic buildings due to expanding office and housing needs would be expected. Construction on previously undisturbed land would require additional archaeological studies and coordination with the SHPO. Vehicular impacts in a HBCT pose a major threat to previously undiscovered archaeological resources. Increased Soldier presence within training areas increases the likelihood of disturbance of archaeological resources.

4.1.5 Noise

4.1.5.1 Affected Environment

The greatest amount of noise disturbance from Fort Benning is generated from large caliber weapons firing mainly from tank and Bradley Fighting Vehicles. Noise is also generated from fixed- and rotary-winded aircraft maneuver, artillery, various pyrotechnic devices and specialized combat vehicles. Currently, an incompatible noise zone (Zone III) extends into Marion County, where rural residences and communities are located on the northern and eastern areas of the Installation. In 2003, the Army installed noise monitors in these areas to verify noise levels when complaints have been generated. Fort Benning has eight noise monitors installed around the Installation boundaries shared with local communities in Georgia. At this time, Department of Transportation (DOT) is not asking the Environmental Management Division for noise monitoring information. Data from these monitors can help the Installation plan, schedule, and effectively adjust military training exercises to reduce impacts to the local public and other noise sensitive receptors. Additionally, the Installation's public affairs office submits notices to Benning residents and the public when training noise is expected to be more obtrusive than ambient levels (Fort Benning, 2004).

Noise, however, does not currently have any adverse impacts to the Installation's large Red-cockaded Woodpecker (RCW) population (CERL, 2000). The RCW and other threatened and endangered species thrive on the Installation, even during periods of heavy training.

4.1.5.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Minor (low) adverse short- and long-term noise impacts are expected. Short-term noise impacts are expected from construction or modification activities (if necessary) on the Installation. Impacts from these activities would dissipate after construction is complete. Noise generated from maneuvers associated with growth of 1,000 to 3,500 Soldiers is not expected to result in deviations from current noise contours. In addition, noise from associated with the CS/CSS activities is not expected to extend off the Installation boundary. As the number of Soldiers and their associated activities increase, as with the Full Sustainment BDE and IBCT, the growing population at the Installation's northern and northeastern boundaries would likely experience some increased levels of noise.

HBCT, Multiple BCTs. Significant (high) adverse impacts are expected with the addition of a heavy brigade. Activities associated with an increase of 3,800 to 7,000 Soldiers would likely have a high resultant noise impact to the natural environment and to the public at the northern and northeastern boundaries of the Installation. Large caliber weapons fire that accompanies the heavy brigade would create higher short- and long-term disturbance levels for the RCW population. Fort Benning's Installation Operational Noise Management Plan (IONMP) would likely need updating. Further mitigations would need to be considered where Noise Zones II and III extend beyond the Installation boundary.

4.1.6 Soil Erosion

4.1.6.1 Affected Environment

Fort Benning topography varies from flat areas along the Chattahoochee River to steeper slopes farther inland. Elevation ranges from 170 feet to 750 feet.

Soils found at Fort Benning are highly weathered Ultisols of Coastal Plain origin. There are six soil associations at Fort Benning. All soils in the north have a sandy surface and loamy subsoil, and are highly permeable and droughty. The soils in the southwestern part of the Installation have a higher water holding capacity, and are loamy sand and clay loam sands. Many soils also have a clayey subsoil. The majority of Fort Benning soils have been identified as highly erodible.

All new construction involving land disturbance over one acre will require a stormwater construction permit which would entail preparation of Best Management Practices (BMP) to reduce/minimize impacts associated with stormwater runoff, erosion, sedimentation and pollutants during and after construction. Other projects less than one acre will fall under construction BMPs required under the NPDES Municipal Separate Storm Sewer System (MS4) permit.

4.1.6.2 Environmental Consequences

CS/CSS. There would be a minor (low) adverse impact from the wheeled vehicles in these units. Off-road movement could have an impact on vegetation and soil surfaces, leading to the conditions for erosion.

Full Sustainment BDE, IBCT. There would be a moderate (medium) adverse impact from the large number of wheeled vehicles in the Sustainment Brigade. The condition of existing (unimproved) range roads and their ability to support heavy truck traffic would have to be evaluated. These roads could be prone to water erosion, therefore, road construction, hardening and maintenance practices would have to be reviewed and modified. The dismounted training associated with the IBCT could have a greater effect in small selected areas.

HBCT, Multiple BCTs. Fort Benning expects significant (high) adverse impacts on roads and off-road areas due to the number of tracked vehicles in a HBCT and the weight and mobility characteristics of the tracked vehicles. The terrain would show the impact from the vehicle maneuvers, turns and traction. These areas could then be highly prone to soil erosion. If multiple BCTs were stationed at Fort Benning the sheer number, size, variety and impact of wheeled and tracked vehicles would increase to levels above just the HBCT. The road network would deteriorate rapidly leading to trafficability and erosion problems. Off-road traffic and maneuvers would increase, which will have a major negative impact on vegetation and the soils.

4.1.7 Biological Resources (Vegetation and Wildlife/Threatened and

Endangered Species)

4.1.7.1 Affected Environment

Four threatened and endangered species are known to occur at Fort Benning. One high priority species at risk (SAR), the American alligator (*Alligator mississippiensis*) has also been known to occur on site. Fort Benning is currently in formal consultation with the U.S. Fish and Wildlife Service (USFWS) regarding BRAC 2005 /Transformation EIS actions in which the Army's preferred alternative if implemented would result in 32 RCW "takes," an unprecedented number. The BO will be rendered by the end of August 2007.

Construction activities and or tree/vegetation removal from a 25 foot buffer of any "State Waters" will require specific BMPs and Stream Buffer Variances.

4.1.7.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, and IBCT. Short- and long-term minor (low) adverse impacts are expected. It is anticipated that implementation of any of these levels of Soldier strength would result in minor adverse impacts on the four listed species and SAR. The threatened and endangered species recorded on the Installation would continue to be managed in accordance with the Installation Integrated Natural Resources Management Plan (INRMP) and Endangered Species Management Plan (ESMP); and with the terms and conditions are identified within Biological Opinion(s) issued by the USFWS and any conservation measures identified in Endangered Species Act (ESA), Section 7 consultation documents. However, since implementation of any of these actions may affect any of the recorded listed species, the Installation would be required to consult with the USFWS either informally or formally, depending on whether an incidental take is anticipated to occur. The installation may have to consider more "takes" at the BCT level, which may be unfeasible.

HBCT and Multiple BCTs. Short- and long-term significant (high) adverse impacts are expected. It is anticipated that implementation of either of these levels of Soldier strength would have a high and fairly major impact on the four listed species. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the Installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of either of these actions would most likely adversely affect one or more of the recorded listed species, the installation would be required to consult with the USFWS informally and formally to address and assess the impacts of the action. If the proposed BRAC action was implemented (BRAC2005) the installation would have an unprecedented amount of "takes". If this level of growth occurs at Fort Benning the installation would likely need to consider more "takes" which would not be feasible.

4.1.8 Wetlands

4.1.8.1 Affected Environment

Fort Benning contains approximately 16,926 acres of wetlands (Army Environmental Database-Environmental Quality, n.d). Wetlands include cypress-tupelo, wood stream swamps, and gum-oak dominated wetlands (INRMP, US Army, 2007). Currently, all training activities on Fort Benning avoid wetlands, to the degree possible, by training in established training areas.

4.1.8.2 Environmental Consequences

CS/CSS. Short- and long-term minor (low) adverse impacts on the Installation wetlands are expected. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands by using the Installation's wetland planning level surveys/ GIS database. The stationing of an additional 1,000 Soldiers could increase impacts to wetlands due to current training restrictions.

Full Sustainment BDE. Short- and long-term minor (low) adverse impacts on the Installation wetlands are expected. There would be a medium level environmental effect on the Installation wetlands within the cantonment and training areas as a result of the restationing of 3,000 to 3,500 Soldiers to Fort Benning. Training activities would be limited to established training areas. For activities within the cantonment and training areas, efforts would be made to avoid any impacts on wetlands by using the Installations wetland planning level surveys/ GIS database to site activities. Current training restrictions in regards to wetlands should provide a low impact to wetlands.

IBCT. As with the Full Sustainment BDE scenario, short- and long-term minor (low) adverse impacts on the Installation wetlands are expected. There would be a medium level environmental effect on the Installation wetlands as a result of the addition of 3,500 Soldiers to Fort Benning. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands by using the Installation's wetlands planning level surveys and GIS database. Hardened crossings can be utilized if needed to reduce secondary impacts due to siltation.

HBCT. Short- and long-term significant (high) adverse impacts are expected due to the equipment configurations under a HBCT. Maneuvers and training support activities (i.e., digging and trenching) with a HBCT could result in a major impact to threatened and endangered species on the Installation. To the degree possible, training would be limited to established training areas. If additional training area is required it is expected that, through the installation specific environmental planning process, locations would be selected that would, when possible, avoid or minimize wetland impacts. If wetlands are to be impacted, Clean Water Act Section 404 permits would be required as well as coordination with the regional USACE district. Mitigation, which may be costly, would be required as part of the Section 404 permit.

Multiple BCTs. Short- and long-term significant (high) adverse impacts are expected due to the equipment configurations under a HBCT and the addition of another BCT of lesser or equivalent configuration. There would be a major environmental impact on the

Installation wetlands due to the presence of 7,000 additional Soldiers. To the degree possible, training would be limited to established training areas. If additional training areas are required, locations will be selected through the NEPA process that will, avoid wetland impacts when possible.

4.1.9 Water Resources

4.1.9.1 Affected Environment

Groundwater

Fort Benning is in the Coastal Plain hydrogeologic province of Georgia and Alabama, whose principal groundwater source is the Cretaceous aquifer system. Aquifers in this area typically have the capacity to yield about 50 gallons of water per minute (gpm) near the Fall Line, but yields increase to approximately 700 gpm near the southern Installation boundary.

Water Supply

Fort Benning receives the majority of its potable water supply from surface water sources. With the increased maneuver training resulting from the Armor School moving to Fort Benning, the installation expects a greater amount of sedimentation to surface water than current conditions. The Installation's surface water system was privatized in September 2004. There are also seven water supply wells on Fort Benning proper.

Wastewater

There are two wastewater treatment plants (WWTP) that serve the entire Installation with a combined capacity of 16 million gallons per day (mgd). Fort Benning's wastewater system was privatized in September 2004; however, the Installation retains ownership of the underlying lands. The ownership, operation, and maintenance of the buildings, systems, and associated water and wastewater facilities are the responsibility of the non-Federal entity.

Stormwater

Stormwater discharge in the Main Post districts of Fort Benning, GA, drains directly into the Chattahoochee River through a storm drain system. Other stormwater on the Installation drains via culverts, ditches, swales, and natural seepage and overland flow. Stormwater from the satellite cantonment areas of Harmony Church, Kelley Hill and Sand Hill, as well as the training compartments, drain directly or indirectly into nearby surface water bodies.

Industrial activities, including such transportation-related activities as vehicle maintenance, fueling, and washing, are currently permitted under the NPDES Industrial Activities permit program. All new construction involving land disturbance over one acre would require a stormwater construction permit which would entail preparation of an Erosion Sediment Pollution Control Plan and identification and implementation of BMPs to reduce/minimize impacts associated with stormwater runoff, erosion, sedimentation and pollutants into waterways during and after construction. Other projects less than one acre would fall under construction BMPs required under the NPDES MS4 permit.

As required, Stream Buffer Variances may be required for construction activities and or tree/vegetation removal within a 25 foot buffer of “State Waters”.

4.1.9.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Minor (low) adverse long-term impacts are expected. The addition of 1,000 to 3,500 Soldiers would not have a substantial impact to the watershed, water demand, and associated treatment systems. As a result, upgrades to the private water and wastewater treatment systems may be required. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

HBCT, Multiple BCTs. Long-term significant (high) adverse impacts to water resources are expected. Motorpool activities and washing of field-driven heavy-tracked vehicles would produce a major increase on water demand and associated treatment. Such an increase would require upgrades to the Installation’s private water and wastewater treatment systems. Under the HBCT scenario, the Installation may require construction of new washing systems to manage heavy-tracked vehicles. Additionally, growth of up to 7,000 Soldiers as with the Multiple BCT scenario may require the installation to revisit their Storm Water Pollution Prevention Plan (SWP3) to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

4.1.10 Facilities

4.1.10.1 Affected Environment

The cantonment area at Fort Benning has been developed into a wide variety of land uses that comprise the elements necessary for a complete urban-style community. The main cantonment includes the Installation Post Exchange, commissary, housing and family support services, medical, and mission-support facilities.

4.1.10.2 Environmental Consequences

CS/CSS. Short- and long-term significant (high) adverse impacts are expected. It is anticipated that the activities associated with an increase of 1,000 Soldiers would greatly increase activities within the cantonment and training areas. Activities within the training and range areas would be limited to existing firing ranges and roadways. These activities would have to be scheduled to coordinate with existing mission activities.

Currently, Fort Benning has sufficient housing to support a CS/CSS. However, training support is a concern due to a lack of available space in the training areas and ranges. Fort Benning is constructing additional training areas for 2005 BRAC actions that should

support the ACP. Due to a lack of available space, construction of new facilities west of the Chattahoochee River would be considered. This new construction would be a considerable distance from the training areas. (Brown, Installation Questionnaire, 2007)

Full Sustainment BDE. Short- and long-term significant (high) adverse impacts to facilities are expected. Increased Soldier strength of 3,000 to 3,500 would be reflected through increased facility usage within the cantonment area and within the training areas. The lack of additional space for training at Fort Benning would also be an issue for fielding a Full Sustainment BDE. Increased activities within the training and range areas would be expected to cause long-term impacts due to increased human presence, as well as construction and training activities within the range and training areas.

IBCT, HBCT. Short- and long-term significant (high) impacts to facilities are expected under a HBCT scenario. The addition of a BCT would likely result in extensive use of existing facilities within the cantonment area, including housing, and training areas, and require additional construction or renovation of structures. The establishment of a BCT, in addition to current ongoing mission activities at Fort Benning, may result in the exceedance of the capacity of the training areas, resulting in a decrease in available training space for all mission activities. The Installation RPMP and other pertinent planning documents would need to be re-evaluated to determine if a BCT can be supported. Additional construction west of the Chattahoochee River, beyond what is currently proposed, may be required. If identified by the Installation, additional coordination and consultation with state and/or federal agencies may be necessary for activities associated with a BCT.

Multiple BCTs. The establishment of multiple BCTs at Fort Benning would also result in short- and long-term significant (high) impacts to facilities. Currently, there is a lack of available building space on the Installation (Brown, Installation Questionnaire, 2007). Under the multiple BCT scenarios, there is a high probability that facilities use would increase beyond the carrying capacity of the current Installation infrastructure. In order to alleviate impacts to the current facilities, extensive construction beyond the Chattahoochee River and at an increasing distance from the main cantonment and training areas may be required to sustain multiple BCTs. It is highly unlikely that the current Installation RPMP could accommodate a scenario of this intensity without input from additional studies.

4.1.11 Energy Demand/Generation

4.1.11.1 Affected Environment

Fort Benning's energy needs are currently met by a combination of electric power and natural gas, both of which are provided by private utilities.

Electricity. Electric power is supplied to Fort Benning from a single substation. Transmission lines leave the substation and supply power to cantonment areas, family

housing, and other developed areas of the Installation. Low-capacity electrical service is supplied to ranges and training areas in more remote sections of the Installation.

Natural Gas. Natural gas supplies the majority of non-mobile fuel requirements at the Installation. Propane is the main energy source for the training areas, and is used as backup to the natural gas supply. Two main distribution lines leave the Main Post metering station and serve the Main Post and other family housing area. The Energy Policy Act of 2005 (EPACT) states that each Federal facility has to reduce energy consumption by 2% each year. It is going to be difficult to reduce consumption as more Soldiers are added with accompanying infrastructure support. Fort Benning is committed to comply with the EPACT.

4.1.11.2 Environmental Consequences

CS/CSS. Long-term minor (low) adverse impacts are expected on energy demand with the addition of 1,000 Soldiers under a CS/CSS unit scenario. The relatively small number of additional Soldiers and support activities associated with this action is expected to remain within the current capacity of the Installation.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. significant (high) adverse impacts are expected on energy demand and usage with the addition of 3,000 to 7,000 Soldiers and their Families. The increase in personnel and equipment would require expansion of existing utilities. Construction or expansion of these facilities would present short-term impacts throughout the cantonment area as additional substations may need to be created, along with additional fuel lines and connections. Long-term significant impacts would come from the additional demand on resources and the need for infrastructure to support additional generation. Multiple BCTs would have an almost two-fold increase on energy demand/generation than from the other scenarios.

4.1.12 Land Use Conflicts/Compatibility

4.1.12.1 Affected Environment

Fort Benning covers 181,275 acres in portions of Muscogee, Chattahoochee, and Russell counties. Approximately 80 percent of Chattahoochee County is within the boundaries of Fort Benning. At a current 8,850 acres, the Main Post is the largest and most developed of the cantonment areas. It includes the Post Headquarters, Infantry School, Cuartels barracks complex, Martin Army Community Hospital, Post Exchange, Commissary, and various family housing areas. Lawson Army Airfield (AAF) is located in the southernmost portion of the Main Post. The areas of the Main Post adjacent to the Chattahoochee River and Upatoi Creek are largely green space. Family housing and outdoor recreation dominate the northern portion of the Main Post. The densely developed core of the Main Post includes unaccompanied personnel housing, community facilities, training facilities, supply and storage, maintenance, industrial, and medical land uses.

There are three additional distinct cantonment areas on Fort Benning as discussed below:

Harmony Church: The Harmony Church cantonment area lies 5 miles southeast of Main Post and south of U.S. Highway 27. The existing 775-acre Harmony Church cantonment area supports a diverse assortment of low density facilities including unaccompanied housing, maintenance, training, administration, and outdoor recreation land uses.

Kelley Hill: The 400-acre Kelley Hill cantonment area is located 3 miles east of Main Post. Current land use, which is fairly concentrated, includes unaccompanied personnel housing, community, and maintenance facilities.

Sand Hill: The 2,510-acre Sand Hill cantonment area is located 4 miles northeast of Main Post. Land use in this cantonment area includes family housing, unaccompanied personnel housing, training, and community facilities. (U.S. Department of the Army, 2007).

4.1.12.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Moderate (medium) short and long-term environmental impacts on installation land use are expected due to the increase of an additional 1,000 to 3,500 Soldiers. The Installation has land available to either build the facilities needed for this unit, and/or would have sufficient vacant space in buildings that would be suitable for the units' mission. However, if new building were to be constructed, the only available space is west of the Chattahoochee River. Additionally, the land, or existing facilities are located such that surrounding facilities are compatible with the additional units. The facilities for this unit may not be contiguous, if build in the main cantonment area, but would be within a maximum distance of one-half mile. However, the facilities required for a CS/CSS would likely be located within a single contiguous land unit.

HBCT. Significant (high) adverse impacts on installation land use are expected due to the addition of 3,800 to 4,000 Soldiers and their Families at the Installation. The Installation currently does not have the land capacity to support the addition of a HBCT. In addition, the Installation does not have existing sufficient land areas that would be compatible with tactical unit requirements or any additional land areas available within the fence line on which to build facilities necessary to support a HBCT. Building new facilities for a HBCT would require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. Construction of new facilities west of the Chattahoochee River would need to be considered. This, in turn, would cause a measurable decrease of the Installation's capacity to train Soldiers. New or existing facilities would not be contiguous, and at a greater distance (e.g., greater than one-half mile) from Soldier support facilities and training and maneuver ranges. Building new facilities for a HBCT may also require construction on, or immediately

adjacent to, environmentally sensitive areas, requiring extensive, and/or expensive mitigation actions.

Multiple BCTs. As with the HBCT scenario, significant (high) adverse impacts on installation land use are expected, but to a greater degree and intensity, due to the addition of 7,000 Soldiers and their Families assigned to the Installation. For the same reasons described in the HBCT scenario, the Installation would not have enough existing facilities, located in areas with comparable land uses to accommodate multiple BCTs. The facilities required for multiple BCTs would not be contiguous and spread over a distance greater than 0.67 mile. Building new facilities for a multiple BCT scenario may also require construction on, or immediately adjacent to, environmentally sensitive areas, requiring extensive, and/or expensive mitigation actions.

4.1.13 Hazardous Materials/Hazardous Waste

4.1.13.1 Affected Environment

At Fort Benning, hazardous materials and hazardous waste generated include excess materials, substances, or items that are subject to Resource Conservation and Recovery Act (RCRA) regulations. This includes the use, storage, transport, and disposal of hazardous materials and wastes. Through the combined efforts of the Safety Office, the Environmental Management Division (EMD), and the Directorate of Logistics (DOL), programs have been established at Fort Benning to control the entry of hazardous substances to the Installation; to safely manage their handling and transportation within the Installation, to inform military and civilian employees of their dangers; to minimize the risk of human exposure and release to the environment associated with these substances; and to dispose of these substances in an environmentally sound manner when they are no longer useful. (US Army Corps of Engineers, April, 2007)

Routine operations on Fort Benning require the use of a variety of hazardous materials, including petroleum products, solvents, cleaning agents, paints, adhesives, and other products necessary to perform vehicle and equipment maintenance, military training activities, installation upkeep, and administrative and housing functions. Toxic substances commonly occurring on Army installations include asbestos, lead-based paint, PCBs, and radon. Routine operations across the Installation generate a variety of hazardous wastes, including various solvents; paints; antifreeze; aerosols; contaminated filters, rags and absorbents; weapon cleaning patches and sludges; and some items managed as universal wastes, such as used batteries and fluorescent light tubes (US Army Corps of Engineers, April, 2007).

Fort Benning has several plans in place to help manage hazardous materials and waste including an Installation Spill Contingency Plan; Spill Prevention, Control, and Countermeasures Plan; Stormwater Pollution Prevention Plan; and Hazardous Waste Management Plan.

4.1.13.2 Environmental Consequences

CS/CSS. Minor (low) adverse impacts would be expected. It is anticipated that Fort Benning would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and activities under this scenario would be absorbed into the current waste management programs.

Full Sustainment BDE. Minor (low) adverse impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 3,500 personnel. The Full Sustainment BDE scenario would include an increase in the use of hazardous chemicals in the cantonment, and training and range areas. Demolition, renovation, and construction would mostly likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as in increase in the use of pesticides due to the addition of family housing and other facilities. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. The hazardous waste disposal facilities would be adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed.

IBCT. Minor (low) adverse impacts from hazardous materials and waste activities would be expected. As with a Full IBCT, materials used, stored, and handled would increase; however, existing procedures, regulations, and facilities would be able to meet storage, use, and handling requirements.

HBCT. Moderate (medium) adverse impacts are expected from generation of additional hazardous materials and wastes. The volume of hazardous waste would be slightly higher than the IBCT scenario, and existing management plans would need to be updated to reflect the increase in mission requirements under the HBCT scenario.

Multiple BCTs. Significant (high) adverse impacts are expected from generation of additional hazardous materials and wastes at an intensity and increase of almost two-fold from the HBCT scenario. Generation and management of hazardous materials and waste, including pesticides, petroleum storage tanks, ordnance and explosives would increase substantially compared to other BCT scenarios. Waste management plans would need to be updated to reflect the change in mission requirements.

4.1.14 Traffic and Transportation

4.1.14.1 Affected Environment

Fort Benning is located in the southwestern part of Georgia, adjacent to Alabama. The project area includes Fort Benning, and several neighboring counties, including Muscogee and Chattahoochee Counties in Georgia and Lee and Russell Counties in Alabama. Local communities include Bibb City and Columbus, Georgia and Phenix City, Alabama. Major road routes in the region include I-185, and US Routes 27, 280, and 431, and Georgia State Routes 1 and 26.

4.1.14.2 Environmental Consequences

CS/CSS. Moderate (medium) short and long-term adverse impacts are expected on traffic and transportation systems on the Installation due to the presence of an additional 1,000 Soldiers and their family members. Spread across the project area, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the Installation, and is not expected to reduce the level of service (LOS) on the Installation's road network. There may be a slight increase in traffic volume during peak morning and evening hours. The population increase may have a minor to moderate increase of risk to the safety of pedestrians and bicyclists.

Full Sustainment BDE. Moderate (medium) short and long-term adverse impacts are expected on traffic and transportation systems on the Installation due to the presence of an additional 3,000 to 3,500 Soldiers and their family members. The increase in off-post traffic would have a minimal impact on traffic in the community overall and could contribute to a decrease in the LOS in the road network leading to the Installation, particularly during peak morning and afternoon travel periods. This level of increase in population would also have a moderate impact on the traffic volume on the Installation, and could cause a minor decrease in LOS on some of the Installation's arterial routes. The increased traffic volume in both the neighboring community and on the Installation could pose an increased level of risk to the safety of pedestrians and bicyclists.

IBCT. As with the Full Sustainment BDE scenario, moderate (medium) short and long-term adverse impacts are expected on traffic and transportation systems on the Installation due to the presence of an additional 3,000 to 3,500 Soldiers and their family members. Both on the Installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would be slightly greater than that caused by the presence of the Full Sustainment BDE. Similarly, the safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

HBCT. Significant (high) adverse impacts are expected on traffic and transportation systems on the Installation due to the presence of an additional 3,800 to 4,000 Soldiers and their family members. Both on the Installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would have a major impact on the traffic volume and have a major impact on the LOS on the road network on the Installation and in neighboring communities.

Multiple BCTs. Significant (high) adverse impacts are expected on traffic and transportation systems on the Installation due to the presence of an additional 7,000 Soldiers and their family members. The impact on the traffic congestion in the local communities from this increased population level would likely cause a decrease in LOS in the community's road network, and would likely cause a major decrease in the LOS on the road network leading to the Installation. This increase in both Soldier and

Family-member population would cause a major impact on the installation's road network.

4.1.15 Cumulative Effects

Cumulative Effects at Fort Benning include Army mission-related activities with activities in the surrounding community. Past (including recently completed actions), present, and reasonably foreseeable future actions include:

Past and Recently Completed Actions:

- Privatization of the installation's water and wastewater treatment system in FY2004 for the purposes of connecting the existing on-post facilities to the new owner's off-post facilities;
- Construction of a Communications Tower in FY2004;
- Installation of Anti-Terrorism/Force Protection Measures in FY2003 to include construction of an enhanced physical security perimeter and other structure, and drainage for perimeter roads to include erosion control measures;
- Construction of a new barracks complex across from two existing ranges and demolition of six existing buildings in FY2003; and
- Columbus and Fort Benning conducted a land exchange, swapping two parcels of land, of which Columbus is currently developing the 2,470 acre parcel located adjacent to Fort Benning's northwestern boundary (for industrial and recreational use). The tract of land Fort Benning received is a 2,536 acre parcel located at the southernmost end of the installation currently used for training and land management (reforestation and habitat restoration).

Current and Ongoing Projects:

- Residential Communities Initiative (FY2005 – 2015); housing privatization initiative of which the installation has transferred responsibility for providing housing and ancillary support facilities to the Fort Benning Family Communities LLC, conveying 3,945 family housing units of which 754 will be renovated (482 non-historic, 272 historic) and 2,930 will be demolished; 3,185 units will be constructed to an end total of 4,200 housing units;
- Construction of a new Post Exchange Army and Air Force Exchange Service (AAFES) on the main post. The old AAFES building will be reutilized (began FY2006);
- Ongoing improvements and Training Ranges and other Training Areas to include minor range construction and target maintenance, began FY2006;
- Construction of an Infantry Platoon Battle Course (IPBC) in FY2006 which includes tree-cutting, grading, and construction of a range and target firing area, support facilities, roads and trails (project area approximately 1,000 acres);
- Construction of a Digital Multi-Purpose Range Complex (DMPRC) to provide advanced gunnery exercises in a more realistic training environment. construction includes support facilities adjacent to the range; roughly 22 water crossings and removal of about 1,500 acres of vegetation. The construction area is approximately 1,800 acres;

- Barracks replacement project in Kelley Hill, which includes demolition of existing buildings and construction of new facilities. This project began in FY2005;
- Conversion of an existing Fort Benning Range to an Infantry Squad Battle Course (ISBC) (began FY2004) and support facilities on approximately 180 to 190 acres;
- Construction of a new National Infantry Museum (began FY2004) along roads of the installation's border with the City of Columbus. The existing Museum would not be demolished, but would be reutilized;
- Improvements, including some construction, on the Uchee Creek Campground Expansion found in Russell County, adjacent to the Chattahoochee River (Began in FY2007);
- Stationing actions that include activation of the 362nd Multi-Role Bridge Company, 92nd Military Police Battalion, 2nd Battalion, 1st Cavalry, 24th Ammunition Heavy Lift Platoons; and deactivations include the 756th Medical Detachment, 1/30 Infantry Battalion 3 ID (Unit of Action), and the 36th Engineer Company.

Recently Completed and Ongoing Projects Outside of Fort Benning:

- Forest Industry divestment of timberlands. Much of the land surrounding the northeastern, eastern, and southern boundaries of the installation are formally held by timber companies, which in recent years have been selling the land. Some of the companies have retained land currently owned in fee and some are leased;
- Safety improvements to the Highway Interchange at I-185/US Highway 27/280 in the City of Columbus to the north of Fort Benning.

Reasonably Foreseeable Future Projects within the ROI:

- National Guard Pre-Ranger Complex Expansion;
- Expansion and upgrades to a Digital Multi-Purpose Training Range (DMPTR) at Hastings Range;
- Expansion of the existing Central Issue Facility on the main post.
- Transformation-related future projects are found in Table 4.1.15-1 below (from the Draft Environmental Impact Statement for BRAC2005 and Transformation Actions at Fort Benning, GA (April 2007)².

Table 4.1-2. Transformation and BRAC-related projects at Fort Benning, GA

Geographic Area	Project Title	Total Potential Area of Disturbance (in acres)
Sand Hill	Blood Donor Center	32
	Shopette with Class Six/Gas/Food/Car Wash	
	Recreation Center Addition	
	Physical Fitness Center Addition	
Harmony Church	Consolidated Maintenance Facility	70
	Mini-Mall with Food/Barber/Laundry/etc.	

² <https://www.benning.army.mil/emd/program/legal/index.htm#11>

	Range Control and Maintenance Complex	
	Consolidated Maneuver Center Battle Lab Complex	
	Garrison Support Facilities	
Kelley Hill	Expand Shopping Center	18
	Central Issue Facility	
	Troop Issue Subsistence Activity Building	
	598 th DS Maintenance Facility (36 th ENG Group)	
Main Post	Organizational Storage Building (36 th ENG Group)	296
	Tactical Equipment Shop (36 th ENG Group)	
	Vehicle Maintenance Facility and Shop (36 th ENG Group)	
	Multi-Role Bridge Company Maintenance Complex	
	36 th ENG Group Headquarters	
	Veterinary Facility	
	Army Lodging	
	Centralized Catering/Golf Clubhouse Facility	
	Lodging and Dining Facilities	
CIDC Group/BDE Headquarters Building		
North of U.S. Highway 27/280 Ranges	3 Forward Operations Bases (FOBs)	1,413
	Engineer Assault Range	
	3 IPBCs	
	MPTR	
	Hand Grenade Complex	
	2 MRFs	
	2 Convoy Live-Fire Exercises (CLFXs)	
1 Fire and Movement Range		
South of U.S. Highway 27/280 Ranges	Anti-Armor Tracking and Live-fire Range Complex	275
	Multi-Purpose Machine Gun Range	
	2 Urban Assault Courses	

Projects outside the installation boundary:

- (Oxbow Project) Development in Columbus, GA or the Oxbow Meadows Environmental Learning Center, and the proposed development of a hotel and conference center;
- Phenix City Riverwalk Phase II (Phenix City, AL) project consisting of construction of a hiking and biking trail between the 13th and 14th Street bridges in the city;
- Alternative Transportation System in Columbus, GA, which could consist of construction of a hiking and biking trail;
- Improvements (including widening) to Buena Vista Road in Columbus, GA. Work would consist of widening and reconstructing 1.15 miles of an existing 2 and 4 lane road to a 4 lane road with turn lanes and medians;
- Improvements (including widening) to St. Mary's Road in Columbus, GA to involve widening an 1 mile stretch and reconstruction of a 1.25 mile stretch;
- Chattahoochee River Restoration, which would consist of breaching the Eagle-Phenix Dam and the City Mills Dam along the Chattahoochee River to restore the historic and natural course of water along this portion of the river and increase Fall Line shoal fish habitat and recreation;
- Active ongoing discussions between the states of Florida, Georgia, and Alabama (lasting for more than a decade) over tri-state water disputes regarding the

withdrawal and use of water from the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa River basins;

- Construction of the Kia Automotive Assembly and Manufacturing Plant which is located in West Point, GA about 30 miles north of the Columbus/Phenix City area. Construction began in early 2007; vehicle production will begin in 2009 and is expected to produce 300,000 vehicles per year; which will result in an expected employment of about 3,000 people and an additional 2,000 employees are expected to be hired at five supplier facilities in Georgia;
- Aflac Corporation is expanding (based in Columbus, GA) to accommodate 2,000 new administrative professional employees in the next 4-7 years. The corporation is one of the largest employers in Columbus. Additional construction of a 340,000 square foot office will occur in Columbus;
- 14th Amendment Highway Corridor; which is a Department of Transportation Study of two new highways; one linking Augusta, GA, Macon, GA, Columbus, GA, Montgomery, AL and Natchez, MS. The other highway will link Savannah, GA, Augusta, GA, and Knoxville, TN (also known as the 3rd Infantry Division Highway);
- ACUB initiatives on the Fort Benning perimeter to add buffer areas around active training and testing areas;
- Expansion of a Hospitality market which added roughly 350 hotel rooms or suites by the end of 2006, and will add an additional 200 rooms in 2007;
- Columbus Metropolitan Airport Growth to include an parking lot expansion, relocating a taxiway, and extending a runway, to accommodate more business;
- General urban growth; which includes several small housing and strip mall development projects, and rehabilitating existing structures to support expanding surrounding communities.

The cumulative impacts from these actions listed above are currently being analyzed in the Army's Draft Environmental Impact Statement for BRAC2005 and Transformation Actions at Fort Benning, GA (April 2007). Cumulative effects from actions being considered in this PEIS for Army Growth and Force Structure Realignment are expected to have a medium positive effect to socioeconomic growth, however, the action would continue to crowd schools, highways, and other facilities causing the need for increased construction and improvements. Environmental effects would result in continuing impacts to wetlands, soils and soil erosion, biological receptors, and noise. Cumulative effects to air quality are anticipated to be from prescribed fire activities, training activities that generate dust, and increased vehicular use especially diesel engines as in construction vehicles which has a great potential to exceed thresholds. Fugitive dust when mixed with smoke rarely remains a local issue. (Conversation with Fort Benning Personnel, July 2007)

4.2 FORT BLISS, TEXAS

4.2.1 Introduction (including VECs eliminated from further review)

Fort Bliss, located in southern New Mexico and far west Texas, has approximately 687,000 acres of maneuver area suited for vehicular and non-vehicular military training. The Fort Bliss Training Complex offers a variety of terrain and environments for off-road vehicle maneuver, and supports force-on-force maneuver-to-contact exercises at the battalion level (Figure 4.2-1).



Fort Bliss- Installation Location

Figure 4.2-1 Fort Bliss

Since the early 1990's Fort Bliss been home of the Air Defense Artillery (ADA) School and ADA units ranging from Soldier transported systems to Patriot Missile units. A major joint and combined air defense training exercise called "Roving Sands" occurs annually on Fort Bliss.

Fort Bliss is currently undergoing a major expansion of range and cantonment facilities to support its new mission. However, most of its range complexes are located a long distance from the cantonment area, increasing the cost and time required for live-fire training.

Table 4.2-1 contains the Fort Bliss VEC ratings for each of the various stationing action scenarios.

Table 4.2-1. Fort Bliss VEC Ratings

Fort Bliss						
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Stryker BCT (4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low	Medium	Medium	Medium	Medium
Airspace	Very Low	Very Low	Medium	Medium	Medium	Medium
Cultural Resources	Low	Low	Medium	Medium	Medium	Medium
Noise	Low	Low	Medium	High	Medium	High
Soil Erosion Impacts	Medium	High	High	High	High	High
Biological Resources	Low	Low	Low	Medium	Medium	Medium
Wetlands	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Water Resources	Medium (Wastewater Treatment/ H2O Demand) Low (Water Quality)	Medium (H2O demand) Low (Surface H2O)	Medium (H2O demand) Low (Surface H2O)	Medium (H2O demand) Low (Surface H2O)	Medium (H2O demand) Low (Surface H2O)	Medium (H2O demand) Low (Surface H2O)
Facilities	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Socioeconomics	High	High	High	High	High	High
Energy Demand/ Generation	Low	Low	Low	Low	Low	Low
Land Use Conflict/ Compatibility	Low	Low	Low	Low	Low	Low
Haz Mat/ Haz Waste	Low	Low	Low	Low	Low	Low
Traffic and Transportation	High	High	High	High	High	High

4.2.2 Air Quality
4.2.2.1 Affected Environment

At Fort Bliss, the region of influence (ROI) for air quality includes Doña Ana and Otero Counties in New Mexico and El Paso County in Texas. El Paso County, including Fort Bliss, is classified as being in attainment for all criteria pollutants. The exception to this is the City of El Paso which has been designated as “moderate” nonattainment for

carbon monoxide and PM₁₀. Otero and Doña Ana Counties are designated as being in attainment for all criteria pollutants though Doña Ana County has had sporadic violations of the PM₁₀ standard. These routinely occur in the western part of the county and are usually the result of high winds lifting dust into the air (i.e., dust storms). Fort Bliss is a party to the Natural Events Action Plan that addresses violations of the PM₁₀ caused by natural events by exempting the PM₁₀ exceedances during wind storms or other “naturally occurring” events.

Since Fort Bliss is located in attainment areas in both Texas and New Mexico, there is no requirement to conduct a conformity analysis. The closest “Prevention of Significant Deterioration – Class I Area” is 45 miles to the southeast and is not expected to be affected by the installations activities so the facility has no requirements under this provision. Texas issued a federal operating permit to Fort Bliss in January 2007. Emissions of NO_x are the key pollutant triggering the installation as a major source. Fort Bliss is not considered a major source on the New Mexico side of the installation so there is no requirement for an air quality permit.

4.2.2.2 Environmental Consequences

CS/CSS. Minimal (low) adverse short- and long-term adverse impacts are expected on air quality within the installation and surrounding communities due to the restationing of a CS/CSS unit and influx of approximately 1,000 Soldiers. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality.

Full Sustainment BDE. Minimal (low) adverse short- and long-term adverse impacts are expected on air quality within the installation and surrounding communities due to the influx of approximately 3,000 Soldiers under the Full Sustainment BDE scenario. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations. However, these are not anticipated to have a major impact on regional air quality. Combustion emissions resulting from training would primarily result from mobile sources and be widely distributed both spatially and temporally. Fugitive dust emissions remain a localized issue and are recommended to be addressed further as an opacity issue if activities are close enough to installation boundaries that visible emissions transfer off of the installation. Given the wide distribution of emissions, it is not anticipated that regional air quality would be result in significant impacts.

IBCT. Moderate (medium) short- and long-term adverse impacts are expected on air quality within the installation and surrounding communities due to the influx of approximately 3,500 Soldiers under the IBCT scenario. As with the Full Sustainment BDE, it is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training. It is anticipated that there would be

increased emissions from equipment required to support the installation (i.e., fuel storage and dispensing, boiler, and possible electric peak-shaving generators). Additionally, it is anticipated that more training and operations would occur off of established roads and tank trails.

Stryker BCT. Moderate (medium) short- and long-term adverse impacts on air quality are expected under a Stryker BCT scenario. The addition of a Stryker BCT would likely result in an increase in cantonment area maneuver activity on existing road networks. This would result in increases in air emissions from mobile sources. In addition, regional air quality is expected to be moderate because the air emissions resulting from training activities are expected to be localized and limited.

HBCT, Multiple BCTs. Moderate (medium) short- and long-term adverse impacts are expected on air quality within the installation and surrounding communities due to the influx of approximately 4,000 Soldiers under the HBCT scenario. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these will tend to remain localized and produce no major impact to regional air quality. Construction and changes to facility operations to support multiple brigades result in a rapid increase in emissions initially, but is not expected to result in a sustained adverse impact to regional air quality.

4.2.3 Airspace

4.2.3.1 Affected Environment

Fort Bliss has 1,260 square miles of FAA-designated Special use airspace, with no limit in altitude. The installation has access to this airspace continuously, and is controlled by the FAA of Albuquerque, NM. (US Army Corps of Engineers, 2002)

Aviation activities occur at Biggs Army Airfield (BAAF) and military training activities on McGregor Range and Doña Ana Range–North Training Areas. BAAF mission activities occur within the airspace terminal area under the control of the FAA-operated El Paso Approach Control facility at El Paso International Airport. The Approach Control Area contains elements of controlled airspace, uncontrolled airspace, Restricted Area Special Use Airspace (SUA), and Military Training Routes (MTRs) that are used for military operations by the Army and other DoD services. There are several public use and private airports in the project area as well. (Fort Bliss, 2007)

4.2.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Minimal (very low) adverse impacts to the airspace are expected. Growth would increase activities within the cantonment and training and range areas; however current use of airspace is not expected to change. Use of this airspace would continue to be managed through scheduling and balancing training requirements with airspace availability.

IBCT, HBCT, Stryker BCT Multiple BCTs. Moderate (medium) long-term adverse impacts to airspace are expected under the IBCT scenario. UAV and activities associated with the BCTs may require increased use of existing, or result in the need for, additional airspace. Where existing airspace is insufficient, or already saturated with military activity, the installation would have to seek additional special use airspace designations from the FAA. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource (US Army Corps of Engineers, 2002). Fielding of new tactical unmanned aerial vehicles is not expected to affect airspace use or management (Fort Bliss, 2007). The need or requirement to construct or modify airfields and training and maneuver areas to support multiple BCTS would result in changes to existing airspace use. Airspace use would be most affected by the brief intense activities of deployment exercises and by routine training exercises of varying intensities.

4.2.4 Cultural Resources

4.2.4.1 Affected Environment

There are two National Register eligible historic districts on Fort Bliss. The installation contains 405 historic buildings and 12 historic landscapes. Over 695,000 acres have undergone archaeological survey. Fort Bliss proposes to survey an additional 10,000 acres per year through at least 2010. There are over 17,000 recorded archaeological sites on Fort Bliss property. The largest curatorial facility in the region is located on Fort Bliss and is capable of housing 35,000 cubic feet of materials. Due to the history and desert environment of the area, there is a higher incidence of readily visible surface finds than in the eastern United States. Historic buildings, both pre 1956 and Cold War era, have been identified and evaluated for National Register eligibility.

4.2.4.2 Environmental Consequences

Growth in the Army coupled with the current BRAC 2005 activities will increase both the Soldier and civilian presence on the installation. In general, some historic buildings may be impacted by the additional work space required for the increase in personnel. It is possible that the additional foot traffic of Soldiers and civilians will adversely impact archaeological sites.

CS/CSS and Full Sustainment BDE. A minor (low) adverse impact is expected to cultural resources under the CS/CSS and Full Sustainment BDE scenarios. For both of these units' types, it is anticipated that there would be little off-road training reducing the likelihood of disturbance to surface archaeological sites. While the Full Sustainment BDE contains a greater number of Soldiers and equipment, their activities would not likely include exposure to archaeological resources. In addition, no impact is expected to historic buildings within the cantonment area because these areas would be afforded protection under National Historic Preservation Act.

IBCT, HBCT, Stryker BCT, Multiple BCTs. Moderate (medium) short- and long-term adverse impacts are expected under these scenarios. The intensity and type of training

activity associated with 3,500 to 7,000 Soldiers would result in the increased potential for disturbance of archeological resources. Increased Soldier presence and the maneuver activities of both these units have a higher potential to disturb undiscovered archaeological resources. Activities in the cantonment area would result in no impact to historic structures because these areas would be afforded protection under National Historic Preservation Act.

4.2.5 Noise

4.2.5.1 Affected Environment

Fort Bliss has approximately 1.12 million acres of land. While much of training areas are located in New Mexico, the cantonment area resides adjacent to El Paso, TX. El Paso is located to the southwest of the installation, and Las Cruces is located to the west of Fort Bliss. Other small towns and municipalities adjacent to the installation's borders include Chaparrel, Lord's Ranch, and Soldad Estates, including individual residences. U.S. Highway 54 runs through the installation, separating McGregor Range area from the installation's Dona Ana Training Complex.

Noise Zone (NZ) III at Fort Bliss does not extend beyond the installation boundary for large caliber live-fire activities. At Dona Ana Range Complex, NZ II does extend beyond the installation boundary in three locations. The LUPZ also extends off the installation from large caliber weapons firing. NZ III does not extend beyond the installation boundary at Biggs Army Airfield; however, a small portion of the NZ II does extend off-post to the west of the installation. The LUPZ extends west and south over the main cantonment area into the City of El Paso, where there is extensive residential development and Soldier housing exists.

Small arms weapons firing occurs away from the installation boundary at the Dona Ana Range Complex and does not currently present any significant impacts to off-post residential areas or sensitive noise receptors. Large caliber weapons firing consists of grenades, mortars, artillery and tank fire, anti-tank rockets and guided missiles. These activities occur at either the Dona Ana Range Complex or at McGregor Range; demolitions however occur at the Meyer Range area. Additional noise sources include over 55 M1 Tanks and 85 Bradley Fighting Vehicles, 40 High Mobility Multipurpose Wheeled Vehicles (HMMWV), 14 120 mm mortar carriers, and 16 155 mm Self-Propelled Howitzers (tracked). The Organ Mountains, on the west side of Doña Ana Range supply a natural noise barrier effectively containing noise in that part of the range.

Any new construction needed on Fort Bliss includes mitigation measures for noise exposure (increased insulation, greater wall thickness, and improved openings including doors and windows), where appropriate. Recent land trends along the Interstate 10 corridor traveling towards the City of Las Cruces have the potential for future residential growth. Fort Bliss is continuing to monitor this area and work with Dona Ana County officials to curb large scale development, and also introduce real-estate disclosure to individual residential home sites.

Fort Bliss also has the largest contiguous tract of virtually unrestricted airspace in the Continental United States at 1,500 square miles. BAAF is responsible for the air mission of the Army and Army National Guard for training at the installation, supporting fixed- and rotary-winged operations. The runway is 13,554 feet long by 150 feet wide and is capable of handling traffic from C-5 Galazys and B-52s. There is also 1,000 feet of asphalt overrun at the north end, and more than 7 miles of taxiways. As stated earlier, NZ III, even at BAAF, is contained entirely within the installation. NZ II only extends beyond a portion of the installation boundary running north, and is essentially a flight track, where aircraft using BAAF are still gaining altitude. The LUPZ and NZ II at BAAF does extend over portions of the cantonment area and main post, into family housing areas. Noise from operations at the El Paso International Airport does extend onto Fort Bliss and has the potential to have consequences to planned residential and Soldier housing development to the east of Biggs Army Airfield (Fort Bliss Operational Noise Management Plan, 2007).

4.2.5.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Minor (low) long-term adverse impacts are expected from an increase of 1,000 to 3,500 Soldiers. There would likely be a minor increase in small arms weapons training, which would not generate any new noise contours on the installation, nor is it expected to be heard at off-post locations. This increase is likely to have only a short-term impact to wildlife adjacent to small arms ranges.

IBCT, Stryker BCT. Short- and long-term moderate (medium) adverse impacts from noise are expected. Maneuver impacts are expected to be contained mainly to roadways. Noise from artillery (e.g., 105mm howitzer) may have an impact to residential areas during periods of heavy training in a variety of locations. Training in northern end of McGregor Range and northern and western areas of Doña Ana would not result in elevated noise levels off-post. Maneuver is expected to be dismounted, mainly, for the IBCT, and would likely stay to roads and hardened surfaces for the Stryker BCT.

HBCT, Multiple BCTs. Significant (high) short- and long-term adverse noise impacts from noise are expected. Residential communities located south of Dona Ana Range and at the southern end of McGregor Range would experience an increase of noise from large caliber weapons fire. Current noise contours could change and may result in the requirement for changes to installation land use. Over time, residential areas near the installation is expected to experience increased ambient noise levels. Additional firing ranges would be required. Short-term impacts are expected from construction in the cantonment area and in range areas where the greatest impacts are expected to have no long-term effects to wildlife. By 2011, Fort Bliss is expecting to triple in size of Soldier numbers, family, and additional civilian personnel (Fort Bliss Web Site, n.d., 2007). If the proposed action were implemented at Fort Bliss, site-specific analysis would need to be conducted, and the operational noise plan would likely need updating.

4.2.6 Soil Erosion

4.2.6.1 Affected Environment

Fort Bliss ranges in elevation from 3,800 feet to more than 8,000 feet and is located within the physiographic boundary of the Basin and Range Province (U.S. Department of the Army, 1995). Fort Bliss can be divided into three topographic zones. In general, soils on Fort Bliss are well drained to excessively drained with depth to bedrock ranging from shallow to very deep.

Soil characteristics such as susceptibility to erosion and the suitability for roads, building construction, and use by military vehicles are a function of many physical and chemical properties of each soil, in combination with the climate, topography, and vegetation. Most soils on the North and South Training Areas are highly susceptible to wind erosion, while McGregor Range contains soils that are highly susceptible to both water and wind erosion.

Both direct and indirect effects on soils can be expected as a result of surface-disturbing activities like off-road vehicle maneuvers at the Fort Bliss Training Complex, as well as from construction of buildings, roads, firing ranges, and other facilities. The significance of the effects on soils is related to the areal extent of the impacts and the length of time necessary for the soils to recover following surface disturbance.

Tularosa Valley. A broad relatively flat desert basin with the surface of the intermontane basin characterized by 1-to-12 foot high semi-stabilized coppice sand dune moderately covered with mesquite.

Otero Mesa. An area of low to moderate relief characterized by a broad, relatively flat grass-covered surface sloping gently to the east and a sharp, west-facing escarpment rising steeply from the desert floor.

Organ, Hueco and Sacramento Mountains. These form the high, rugged mountainous areas on the installation. The Sacramento Mountains (northeast) have a pronounced west-southwest facing escarpment rising abruptly out of the desert floor. The Hueco Mountains (southeast) consist of relatively low sub rounded hills. The Organ Mountains (west) are the steepest, with an elevation of 8,600 feet.

There is considerable variability in parent material, development, texture, age and suitability of the soils on the installation. The soils are mostly calcareous and alkaline, have moderate permeability and are moderately well-drained with the exception of soils having imperious caliches layers or bedrock near the surface.

Soils within the mountainous areas vary from extremely shallow on limestone hills to deep within the draws. Soils on the eastern third of the Tularosa basin have developed from alluvial fan material and have high potential for sheet and gully erosion. Soils of the central and western portions of the basin have formed in eolian sand deposits and the wind-blown sands form into dunes up to two feet high. Large areas of deep

undulating sands partially stabilized by vegetation occur within the dune areas. Both dunal areas and undulating sand sheets are prone to wind erosion if the stabilizing vegetative cover is removed or the soil surface crust is broken.

Since the PEIS, a new soil survey was completed for all of Fort Bliss except approximately 19,160 acres within Lincoln National Forest. The Fort Bliss Soil Survey database provides updated soils information in a single data source, including physical, chemical, and engineering properties, as well as limitations for military uses and ecological site descriptions and classifications. The new soil survey data characterize current conditions of soils, vegetation, and overall ecology, which provide a baseline for comparison of the effects of planned future construction and training activities.

4.2.6.2 Environmental Consequences

CS/CSS. Short- and long-term moderate (medium) adverse impacts are expected due to the increase in wheeled vehicle traffic on training and range areas. The existing range roads are old and not designed for heavy truck traffic, and could deteriorate after repeated use. Areas along the roads can be prone to wind erosion. Off-road movement increases the potential for impacts on vegetation and soil surfaces, leading to conditions for wind and water erosion.

Full Sustainment BDE , IBCT, HBCT, Stryker BCT, Multiple BCTs. Long-term significant (high) adverse impacts to soils are expected. Dismounted training would not have a major effect on the basin and flat areas. However, the vehicular element of the IBCT could have a minor effect in small selected areas. Monitoring soil disturbing activities (i.e., digging to establish fighting positions) would need to be monitored. In addition, impact on the plains areas and soils with erosion potential would be greatly influenced by the moisture content of the soils and temperature at the time of maneuver. While the Stryker remains on-road for vehicle maneuver training, the poor conditions of the roadways result in major impacts to adjacent soils. These poor conditions, coupled with, the weight and mobility characteristics' of the Stryker vehicle, result in soil erosion. Impact on the plains areas and soils with erosion potential would be greatly influenced by the moisture content of the soils and temperature at the time of maneuver. Activities associated with the HBCT require on- and off-road maneuvers with tracked vehicles. The weight and mobility characteristics' of the tracked vehicles results in slightly different (and, in some instances, lesser) impacts than that of a Stryker vehicle because the tracked vehicle compresses the soil and disperses the vehicle weight over a larger area. Flat to relatively flat areas (vegetation and surface) are prone to impacts from the tracked vehicle maneuvers, turns, and traction. In turn, these areas would be prone to soil damage and erosion. In a multiple BCT scenario, the number, size, variety and impact of wheeled and tracked vehicle maneuver would increase. The existing installation road network would deteriorate resulting in increased soil impacts and erosion problems. Off-road traffic and maneuvers would increase, which would have significant adverse impacts to erosion potential.

4.2.7 Biological Resources (Vegetation and Wildlife/Threatened and

Endangered Species)

4.2.7.1 Affected Environment

There are 61 sensitive species of flora and fauna known to occur, or having the potential to occur, on Fort Bliss. However, Fort Bliss records only four threatened and endangered species occurring on the installation. More information on these species can be found in Appendix T.

4.2.7.2 Environmental Consequences

CS/CSS , Full Sustainment BDE, and IBCT. Minor (low) adverse impacts to wildlife or vegetation are expected. It is not anticipated that implementation of any of these levels of increased Soldier activity on the installation would have an adverse impact on the four listed species or their habitats. The threatened and endangered species recorded on the installation are managed and protected in accordance with the installation's INRMP and ESMPs.

HBCT, Stryker BCT, Multiple BCTs. Short- and long-term moderate (medium) adverse impacts are expected. Range construction associated with the growth or addition of a Heavy BCT, Stryker BCT, or associated with 7,000 Soldiers and their equipment as with the Multiple BCT scenario would have short-term noise, vegetation and soil impacts that could be mitigated by the installation's Integrated Training Area Management (ITAM) program. It is not anticipated that implementation of any of these levels of increased Soldier activity on the installation would have an adverse impact on the four listed species. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMPs, and the terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents.

4.2.8 Wetlands

4.2.8.1 Affected Environment

Fort Bliss contains approximately 1,172 miles of drainage. The majority of these drainages are found in the northeast, central, and southeast portions of the McGregor Range. The vast majority of arroyo-riparian drainages on Fort Bliss do not qualify as jurisdictional wetlands by the U.S. Corps of Engineers (U.S. Army Corps of Engineers, 2007, March).

4.2.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Minimal (very low) impact is expected to wetlands. Because of the lack of jurisdictional wetlands and in place restrictions to training activities in riparian areas, additional training activities associated with these scenarios would have little to no impact on wetlands. Activities associated with the increase in Soldiers and their Families within the

cantonment area would also have no impact to wetlands. Construction of new training areas or modification of existing training areas would result in minimal impact on existing wetlands.

4.2.9 Water Resources

4.2.9.1 Affected Environment

Water Supply

The Fort Bliss Main Post Water Distribution System supplies water to the Main Post proper, the lower, middle, and upper Beaumont areas, the William Beaumont Army Medical Center (WBAMC), and the Logan Heights area. The Main Post can also supply Biggs Army Airfield (AAF). However, this line is normally closed and Biggs AAF produces its own water. The Main Post receives its water from two primary sources: The Tobin Well Field and the Pike Well Field, with a peak production of 15.8 MGD (Million Gallons per Day). Emergency interconnection with the City of El Paso Water Utility (EPWU) is also available.

Biggs AAF Water Distribution System supplies water to the Biggs AAF proper, East Biggs and Aero Vista Housing. Water is supplied by two wells with a combined maximum capacity of 2.8 MGD. Emergency interconnection with the EPWU is also available. The East Biggs area currently receives water off of the Biggs AAF Grid, but this areas primary potable water system source will be from the EPWU, once the East Biggs Water Distribution System is completed (Estimated 5.0 MGD maximum water usage).

Municipal water for the EPWU is supplied from groundwater from the Hueco and Mesilla Bolsons and surface water from the Rio Grande. EPWU drastically reduced its reliance on the pumping of the Hueco Bolson, utilizing wells in the Mesilla Bolson (41 mgd) and reliance on surface water plants which have a combined capacity of 100 mgd. Under normal river flow conditions, the surface water plants operate seven months (mid March – mid October) during the year. Current total demand is about 120,000 AF/yr. Per capita demand has been reduced from about 225 gallons per person per day in the 1970s to about 153 gallons per person per day in 2002. The strategies implemented in the 1980s and 1990s outlined above have resulted in reduced Hueco Bolson pumping. However, due to the continued concern regarding brackish groundwater intrusion into wellfield areas. In order to manage this intrusion EPWU is constructing a desalination plant which should be online by August 2007, this plant will withdrawal 34,000 afy (30.5 MGD) of brackish water from the Hueco Bolson and produce a projected output of 31,000 afy (27.5 MGD) of potable water. EPWU has stated they will provide Fort Bliss any additional water supply they would require in support of their projected growth.

McGregor Range Camp receives potable water from the City of El Paso; water from the grid also supplies the Meyer. According to the McGregor Range Land Withdrawal the water line from EPWU has a water supply capacity of 2,115 gpm or 3.046 MGD. Doña Ana Range Camp water is supplied by two on-site wells, with a combined maximum capacity of 700 gpm. Water for the Oro Grande Range Camp is produced by the White

Sands Missile Range Current max pumping capacity is ~1,000 gpm. Water from the Oro Grande Range Camp is trucked to the SHORAD and Red Eye Sites on the North McGregor Range. Hueco Range Camp is supplied one well that has a capacity of approximately 250 gallons per minute. Site Monitor is supplied by one well that has a capacity of about 130 gpm, and an emergency interconnection with the EPWU is also available (Fort Bliss Environmental Staff, 2007)

Wastewater

Wastewater generated at the main cantonment area flows through five connections to the City of El Paso's sewer system. This wastewater is treated by a privatized system before receiving additional treatment at the Haskell Street Wastewater Treatment Plant (WWTP) operated by the City of El Paso. The Haskell Street WWTP has a treatment capacity of 27.7 MGD. Fort Bliss typically uses approximately 10.5 percent of the plant's treatment capacity.

Wastewater generated at training areas is either treated in lagoons or collected in septic tanks that flow to drain fields or dry wells.

Stormwater

Most of the stormwater runoff from the main cantonment area flows through a series of storm drainage channels, pipes, and stormwater pump stations to various stormwater retention ponds. Water collected in these ponds is lost through evaporation and infiltration; none is discharged to surface waters. There are several small connections with the City of El Paso's stormwater collection system at the post boundary, mainly along access roads to the post. These discharges are currently covered by the City of El Paso's municipal separate storm sewer system permit, but are anticipated to be covered in the near future by a new permit issued to Fort Bliss.

4.2.9.2 Environmental Consequences,

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Long-term moderate (medium) adverse impacts to surface water resources are expected. The addition of 1,000 to 7,000 Soldiers would likely require the installation to revisit their SWP3 to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Significant (high) adverse impacts to water resources are expected. Any growth at Fort Bliss would likely increase pressures put on the regional water demand. There is a limited water supply and limited capacity for wastewater treatment for the region/installation. The Fort Bliss Mission and Master Plan Supplemental Environmental Impact Statement (SEIS) (March 2007) states there is an expected increase in on-post population of approximately 18,768, and a daily population of

approximately 21,791 due to BRAC and Transformation, leading to an expected increase in potable water demand by 4.3 MGD. Though water conservation measures are currently being incorporated, the garrison would need to upgrade the pipelines from EPWU connections to meet increased flow. Additionally, as a result of Transformation, the wastewater load at Fort Bliss is expected to increase by approximately 3.4 MGD above current levels, equating to roughly 46 percent of the excess capacity of the Haskell street plant, and off-post levels are expected to increase by roughly 17.2 MGD. The increase in demand in potable water sources as a result of Army growth would be more significant than identified in Fort Bliss's Mission and Master Plan SEIS (March 2007); which under the current conditions, population growth in the City of El Paso is estimated to consume 97 percent of the El Paso Water Utilities (EPWU) available resources by 2015.

4.2.10 Facilities

4.2.10.1 Affected Environment

The Main Cantonment Area is the urbanized portion of Fort Bliss, and has been developed into a wide variety of land uses that comprise the elements necessary for a complete community. This includes the installation Post Exchange, commissary, housing and family support services, medical, and mission-support facilities.

Infrastructure within the Fort Bliss Training Complex is composed of ground transportation, utilities, energy, and communication systems. The ROI for these systems consists of the South Training Areas, Doña Ana Range – North Training Areas, and McGregor Range (USACE Fort Worth, 2007). According to the Fort Bliss Mission and Master Plan Final Supplemental Programmatic Environmental Impact Statement (Fort Bliss, March 2007), facilities (including wastewater treatment) at both Dona Ana and McGregor ranges already require expansion and upgrading to increase size and capacity. As part of BRAC (and the baseline for this PEIS) solid waste generation is expected to increase as well.

The region of influence (ROI) for assessing utility and communication systems is made up of the service areas of each service purveyor serving the facilities operated by Fort Bliss in the Main Cantonment Area and the surrounding area. El Paso, TX is located to the southwest of the installation, and Las Cruces is located to the west. Other small towns and municipalities adjacent to the installation's borders include Chaparrel, Lord's Ranch, and Soldad Estates, including individual residences.

4.2.10.2 Environmental Consequences

The impacts of the Proposed Action on utilities, energy, and communications are primarily related to projected increases in population on- and off-post. These were analyzed by estimating per unit consumption on generation rates using the most recently available data, and then estimating how total consumption or generation rates would change with the changed population. The increased consumption and generation were then compared with the ability of existing infrastructure to handle those changes.

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Short-term minimal (very low) impacts to facilities are expected. It is anticipated that the activities associated with an increase of 1,000 to 7,000 Soldiers would increase facilities usage within the cantonment and training and range areas. However, the availability of buildable space and proper short- and long-term planning would allow the installation to accommodate this level of growth. Expansion and upgrades to existing facilities are already expected and have already been addressed as part of the baseline of this PEIS in Fort Bliss's Supplemental PEIS (March 2007).

4.2.11 Energy Demand/Generation

4.2.11.1 Affected Environment

In the Main Cantonment Area, the energy services include the El Paso Electric Company (EPEC) and the El Paso Gas Company (EPGC). The line supplying electrical power to this area from EPEC has a load capacity of 150 megavolt amperes (MVA). Currently, the Main Cantonment Area has a peak electrical demand of 30 MVA. This area consumes approximately one percent of power available from EPEC. Natural Gas is the main heating fuel in this area supplied by EPGC.

4.2.11.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Short-term minor (low) adverse impacts to energy demand/generation are expected. Fort Bliss is currently well within its energy production capacity to accommodate current and future needs. The increased Soldier and equipment strength would increase energy usage and demand, but Fort Bliss is currently well within its energy production capacity. Fort Bliss SEIS (2007) expects an increase in power consumption from Transformation and BRAC by 22 percent of the total excess power capacity; and a 45.7 percent. The addition of 1,000 to 7,000 Soldiers and their Families and civilian support would continue to increase energy demand. Under the proposed action, the increase in peak electrical demand could be as great as 12 percent of the current excess in the Main Cantonment Area and would represent 22 percent of current excess power available from EPEC. Power may need to be routed to new construction areas and may require the addition of a substation. Potential increases in natural gas demand could create the need for additional connections to new construction and increased feeder line sizes (Fort Bliss Staff, 2007).

4.2.12 Land Use Conflicts/Compatibility

4.2.12.1 Affected Environment

Fort Bliss is approximately 70 miles in length and varies from 30 to 50 miles in width. New Mexico contains 994,176 acres of the installation; 125,295 acres lie in Texas. The Dona Ana Firing Ranges lie on the westernmost portion of the fort. McGregor Missile Firing Range and Meyer Small Arms Range are located in the central and southern portions of the installation. McGregor Range is co-managed by Fort Bliss and Bureau

of Land Management (BLM) under a Congressional withdrawal for military use. McGregor Range includes the Culp Canyon Wilderness Study Area and the McGregor Black Grama Grassland Area of Critical Environmental Concern. The 800,000-acre restricted area in the northeastern corner is managed by the BLM as grazing unit areas. BLM manages cattle grazing leases for those portions of McGregor Range that are not Army fee owned. Grazing in most cases is very compatible with the military mission. Within the 800,000-acre restricted area, 18,004 acres are managed as National Forest land under the jurisdiction of the Department of Agriculture, used by the Army under a Memorandum of Understanding (MOU) (U.S. Department of the Army, 1995).

The Military mission can affect non military uses, activities, and infrastructure including cattle operations, recreation and right of ways. Issues of development and encroachment, both on and off the installation, as a result of increased numbers of military personnel should be considered. Potential for land use changes on McGregor Range may be in conflict with BLM plans for the range. Sensitive visual resources may be adversely affected by proposed development and training activities.

4.2.12.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Minor (low) short and long-term adverse impacts are expected on installation land use due to the presence of an additional 1,000 Soldiers and their family members. The installation has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings that would be suitable for the units' mission. Though there are some compatibility issues with grazing and recreation at McGregor Range, the proposed action is not likely to significantly impact land use in those areas.

4.2.13 Hazardous Materials/Hazardous Waste

4.2.13.1 Affected Environment

Hazardous chemicals used by the installation include acids, corrosives, caustics, glycols, compressed gases, aerosols, batteries, hydraulic fluids, solvents, paints, cleaning agents, pesticides, herbicides, lubricants, fire retardants, photographic chemicals, alcohols, insecticides, sealants, and ordnance. (Fort Bliss, 2007) An Installation Hazardous Waste Management Plan provides detailed information on training; hazardous waste management roles and responsibilities, and hazardous waste identification, storage, transportation, and spill control. Fort Bliss is categorized as a Large Quantity generator of hazardous waste as defined by 44 CFR Parts 262 and 264 and is permitted by Texas Commission on Environmental Quality to operate as a Hazardous Waste Storage Facility (HWSF) (permit #50296). The operating permit was renewed on March 11, 2002 and is valid for 10 years. The permit allows Fort Bliss to store hazardous waste at the HWSF for up to one year. (Fort Bliss, 2007)

Training exercises and testing activities at Fort Bliss expend a variety of ordnance. The Fort Bliss explosives ordnance disposal (EOD) unit eliminates explosives hazards on ranges by detonation in place, or, if safe to do so, by removing the hazard to the EOD

range and detonating there. (Fort Bliss, 2007) Other items of special concern include medical and bio-hazardous waste, radioactive waste, asbestos, lead-based paint, pesticides, polychlorinated biphenyls (PCBs), and petroleum storage tanks. Programs used to manage hazardous waste and materials at Fort Bliss include their Installation Restoration Program (IRP), Military Munitions Response Program (MMRP), Compliance-Related Cleanup (CC), and Pollution Prevention (P2).

4.2.13.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Minor (low) adverse impacts are expected to occur at Fort Bliss from the increased generation of hazardous materials and waste associated with growth of 1,000 to 7,000 Soldiers. It is anticipated that Fort Bliss would only need to minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue. As the number of Soldiers increase, the installation can expect an increase in the use of hazardous chemicals in the cantonment and training and range areas. Demolition, renovation, and construction would mostly likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as an increase in the use of pesticides due to the addition of family housing and other facilities. Waste management plans may need to be updated to incorporate the increases in mission activities associated with these scenarios. With the Multiple BCT scenario, generation and management of hazardous materials and waste, pesticides, petroleum storage tanks, ordnance and explosives would all be higher than with the other activities, but would present no significant impacts to the installation.

4.2.14 Traffic and Transportation

4.2.14.1 Affected Environment

Fort Bliss is located in the southwestern part of Texas, adjacent to the City of El Paso. The ROI of the affected environment for traffic and transportation aspects of the proposed action include Fort Bliss, and the City and County of El Paso, Texas. Major road routes in the area include I-10 and US Route 54. I-10 is an east-west interstate highway, which passes about a mile from the cantonment area, and through the City of El Paso. US Route 54 leads from El Paso to points north.

4.2.14.2 Environmental Consequences

CS/CSS. Significant (high) adverse impacts are expected to Fort Bliss traffic and transportation systems due to the presence of an additional 1,000 Soldiers and their family members. A large percentage of the unit's married population and unmarried soldiers in the grade of E-6 (Staff Sergeant) and higher, would likely reside in off-post housing. Spread across the ROI, this population would have *de minimis* impact on the overall traffic congestion in the neighboring communities. However, the additional off-post population would contribute to increased traffic congestion, and a decrease of the

LOS, on the road network leading to the installation's cantonment area, particularly during peak morning and evening hours. The increased population would have a major effect on traffic congestion on the installation.

Full Sustainment BDE. IBCT, HBCT, Stryker BCT, Multiple BCTs. Significant (high) adverse impacts are expected on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 7,000 Soldiers and their family members. The increase in off-post traffic would have a considerable impact on traffic in the community overall and could contribute a notable decrease in the LOS in the road network leading to the installation, particularly during peak morning and afternoon travel periods. This level of increase in population would also have a major impact on the traffic volume on the installation, and contribute to a decrease in LOS on a higher percentage of the installation's road network. The LOS at US 54 between Van Buren and Fred Wilson Avenues would continue to be seriously degraded beyond what the installation is expecting from Transformation and BRAC. Other transportation route segments expected to be impacted are of the I-10 and Loop 375 of Fred Wilson Avenue and Airport Road. Additional transportation planning would be necessary for the main cantonment area.

4.2.15 Cumulative Effects

Fort Bliss is receiving a net increase of 20k Soldiers, as analyzed in the Mission and Master Plan SEIS of March 2007. The same document analyzed an additional two HBCTs and 1 Combat Air Brigade (CAB) (including cumulative effects), therefore cumulative effects analysis of the existing BRAC/IGPBS gain at Bliss with this potential gain is unnecessary. However, Holloman Air Force Base, which is located near both Fort Bliss and WSMR, will begin training with F-22s, which is expected to have cumulative effects to airspace.

The City of El Paso is aggressively pursuing economic development, which would mean considerable growth to schools; and direct and indirect impacts to the current transportation system. Encroachment would likely be of more significance as regional development continues.

Fort Bliss and WSMR are very close, and growth in either has an impact to both installations and their surrounding communities. The Fort Bliss SEIS did not anticipate growth at WSMR, so even absent additional stationing at Fort Bliss, cumulative effects analysis will still need to be performed between newly stationed Soldiers and units at WSMR and existing BRAC/IGPBS stationing at Fort Bliss. Section 4.16.15 of this document identifies potential cumulative impacts from Army growth at WSMR, and is summarized below.

The City of Las Cruces recently approved construction of a large development -- too large to be a result of known growth at Fort Bliss. Additional development outside of the installation boundary includes construction of a spaceport near Las Cruces, which may

be driving some of that growth. (E-mail from Walter Christensen, Fort Bliss Personnel, 28 June 2007)

Cumulative issues impacting both Fort Bliss and WSMR include an expected increase in water demand from a growing on- and off-post population. Regional growth would also likely have a socioeconomic impact that needs to be addressed as the schools become overcrowded. The City of Las Cruces currently has schools that are at or over capacity. (Conversation with David Scruggs, WSMR, 2007)

4.3 FORT BRAGG, NORTH CAROLINA

4.3.1 Introduction

Fort Bragg, located in south-central North Carolina has approximately 144,872 acres of range and training maneuver area suited for firing ranges and training areas as well as approximately 33,000 acres used non-maneuver impact areas (Figure 4.3-1). There are several areas identified as “drop zones” and are used exclusively for personnel and equipment parachute training.

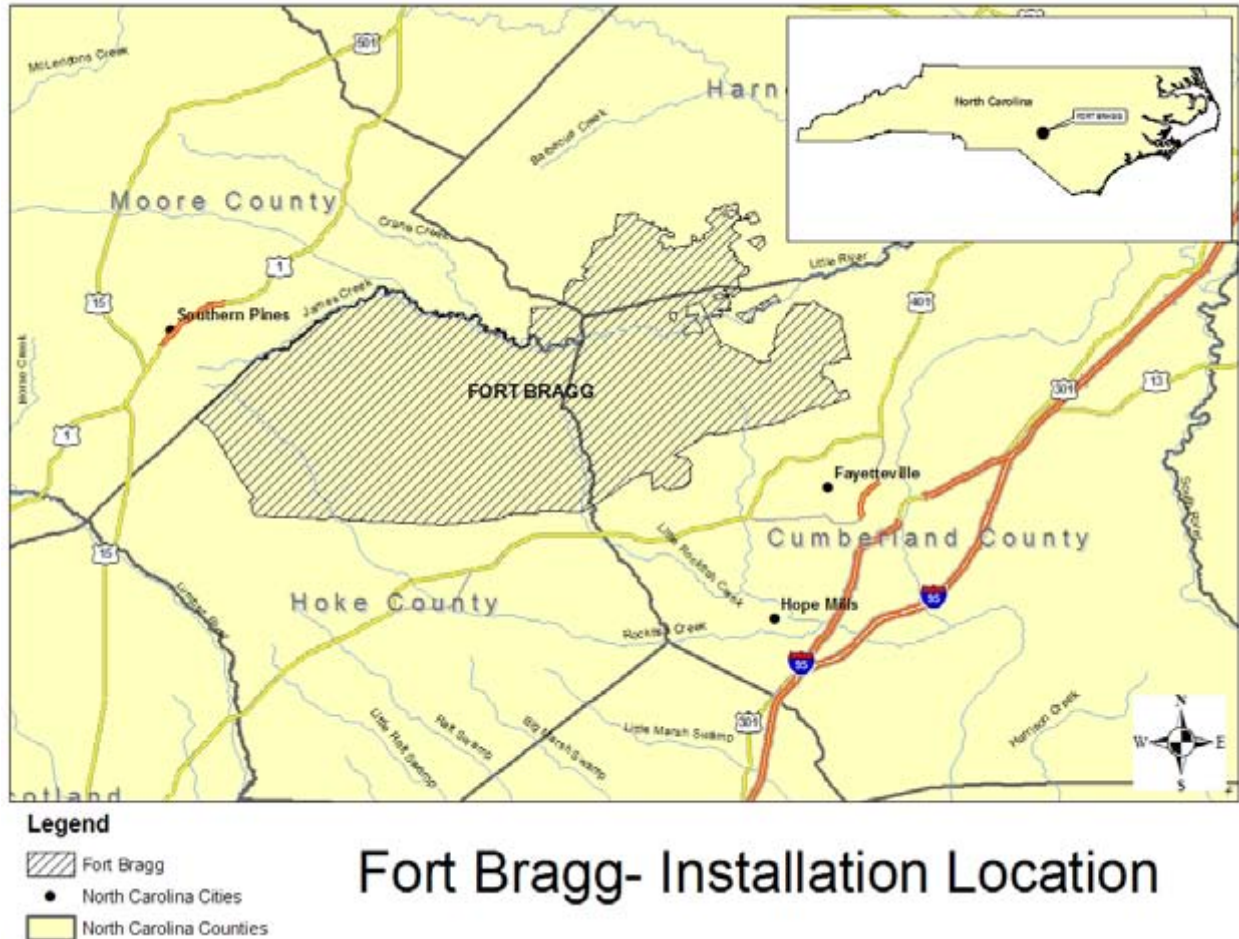


Figure 4.3-1 Fort Bragg

Fort Bragg’s major unit is the XVIII Airborne Corps and its primary subordinate unit, the 82nd Airborne Division. The Special Operations Command (SOCOM) (Joint and Army) also has schools, units and training facilities on Fort Bragg.

Fort Bragg has a robust range infrastructure with several unique ranges supporting SOCOM units. Fort Bragg has and is facing challenges of growing adjacent urbanization and from specific Threatened and Endangered Species (TES) (e.g. Red-Cockaded Woodpecker).

Table 4.3-1 contains the Fort Bragg VEC ratings for each of the various stationing action scenarios.

Table 4.3-1. Fort Bragg VEC Ratings

Fort Bragg					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Medium	Medium	Medium	High
Airspace	Low	Low	Medium	Medium	Medium
Cultural Resources	Low	Low	Low	Medium	Medium
Noise	Low	Low	Low	Medium	High
Soil Erosion Impacts	Medium	High	High	High	Very high
Biological Resources	Medium	Medium	High	High	Very high
Wetlands	Medium	Medium	Medium	High	Very high
Water Resources	Medium	Medium	Medium	High	Very high
Facilities	Very high	Very high	Very high	Very high	Very high
Socioeconomics	Medium	Medium	Medium	Medium	High
Energy Demand/ Generation	Medium	Medium	Medium	Medium	High
Land Use Conflict/ Compatibility	Medium	Medium	Medium	High	Very high
Haz Mat/ Haz Waste	Low	Low	Low	Medium	High
Traffic and Transportation	High	High	High	High	High

4.3.2 Air Quality

4.3.2.1 Affected Environment

The project area includes Hoke and Cumberland counties, North Carolina. In 2003 Cumberland County, which includes all of Fayetteville and large portions of Fort Bragg, was recommended for nonattainment designation for 8-hour ozone standards. The State of North Carolina, Cumberland County and the US EPA entered into an Early Action Compact (EAC) to avoid the official “nonattainment” designation. The purpose of the EAC is to develop and implement an Early Action Plan that will reduce ground-level ozone concentrations in the Fayetteville Metropolitan Statistical Area (MSA) to comply with the 8-hour ozone standard by 31 December 2007. Since the precursors of ozone are NO_x and VOCs, any increase in these emissions from sources at Fort Bragg will potentially affect regional planning. Since Fort Bragg is categorized as a major source

of air pollutants, if the area were designated as nonattainment, the Army would have to conduct a conformity analysis to determine if a conformity determination would then be required.

The "major source" designation triggers the provisions of 40 CFR 52.21, *Prevention of Significant Deterioration (PSD)*. The PSD provisions require Fort Bragg to assess all new emission units to determine if their operation constitutes a major modification. The major source designation also requires Fort Bragg to maintain a Title V Operating Permit. New construction activities have the potential to exceed 250 tons for criteria pollutants, however, these activities are not stationary sources, and the emissions significance threshold does not apply.

Sources of air contaminants at Fort Bragg include heating plants, incinerators, surface coating equipment and painting operations, aerospace ground equipment engines, fuel evaporation sources, and land vehicle and aircraft exhaust. Stationary emissions sources are regulated by the facility's Title V Air Quality Operating Permit (#04379T26). In addition to permitted sources, air quality impacts in the form of dust are generated by vehicular movement, helicopter rotor wash, weapons firing, and ordnance impacts on the unpaved areas of the installation. Controlled burns associated with forest management and endangered species programs also generate smoke, which contributes to the generation of particulate matter.

4.3.2.2 Environmental Consequences

CS/CSS. Minor (low) to no impact to air quality is expected for areas on the installation and surrounding communities under a CS/CSS scenario. In general, combustion and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality. Long-term impacts from increased operations and maintenance activities would be minimal and would not adversely impact regional air quality or Class I PSD areas.

Full Sustainment BDE, IBCT, HBCT. Moderate (medium) adverse impacts to air quality are expected to areas on the installation and surrounding communities under these growth scenarios. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training. It is anticipated that the installation would see increases in emissions from equipment required to support the installation such as fuel storage and dispensing, boiler and incinerator operations and possible electric peak-shaving generators. NO_x and VOC increases resulting from the increase in combustion sources and maintenance/facility operations could affect the regional EAC planning.

HBCT. Short- and long-term moderate (medium) adverse impacts to air quality are expected to areas on the installation and surrounding communities under the HBCT scenario. Combustion emissions from stationary sources would increase due to the plus up in infrastructure required to support the influx of new Soldiers and their Families.

NO_x and VOC increases resulting from the increase in combustion sources and maintenance/facility operations could affect the regional EAC planning. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails with the HBCT. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to installation boundaries that visible emissions leave the installation. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

Multiple BCTs. Significant (high) short- and long-term adverse impacts are expected to air quality in areas on the installation and surrounding communities under a Multiple BCT scenario. Combustion emissions from stationary sources would increase due to the increase in infrastructure required to support the influx of new Soldiers and their Families. Since NO_x and VOC increases resulting from the increase in combustion sources and maintenance/facility operations could affect the regional EAC planning.

4.3.3 Airspace

4.3.3.1 Affected Environment

Fort Bragg has 1,075 feet of FAA-designated Special use airspace, up to 29,000 feet. The installation has access to this airspace continuously, with restrictions, and is controlled by the FAA of Washington, DC. (US Army Corps of Engineers, 2002)

The Aviation Division coordinates and controls airspace in cooperation with Pope Air Force Base (AFB) and the FAA, and operates Simmons Army Airfield and Camp Mackall Army Airfield. The division's mission includes coordinating Fort Bragg airspace, flight simulation training, air traffic control, aircraft refueling operations, flight planning, flight following services, and aviation weather forecasting. (US Army, Fort Bragg, January 2006)

4.3.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Minor (low) adverse impacts to the Airspace are expected. While it is anticipated that the activities associated with these two scenarios would moderately increase activities within the cantonment and training and range areas, current use of Airspace is not expected to change.

IBCT and HBCT. Long-term moderate (medium) adverse impacts are expected to occur to Airspace use under these two scenarios. UAV activities associated with the IBCT and HBCT would require increased use of existing airspace or use of additional airspace. Where existing airspace is insufficient, or already saturated with military activity, installation commanders would have to seek additional special use airspace designations from the FAA. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource. (US Army Corps of Engineers, 2002) The addition of 12 to 16 unmanned aerial vehicles would cause conflicts with existing mission requirements, where competition would exist with the Drop Zones. (Gillin, Installation Questionnaire, 2007)

Multiple BCTs. Long-term moderate (medium) adverse impacts of increased intensity are expected to occur to Airspace use under a multiple BCT scenario. Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use. The addition of UAVs would cause conflicts with existing mission requirements, where competition would exist with the Drop Zones. (Gillin, Installation Questionnaire, 2007)

4.3.4 Cultural Resources

4.3.4.1 Affected Environment

Fort Bragg is located just outside Fayetteville, North Carolina. The installation has an extensive cultural resources team that includes architectural historians and archaeologists. The cultural resources staff is integrated with the Fort Bragg training and range managers to coordinate efforts relating to actions that could cause potential impacts on historic and archaeological resources. Fort Bragg manages its cultural resources through its Cultural Resources Management Program in accordance with the Fort Bragg Integrated Cultural Resources Management Plan (ICRMP; 2001) and relevant federal legislation such as the National Historic Preservation Act (NHPA), the Archeological Resources Protection Act (ARPA), and the Native American Graves Protection and Restoration Act (NAGPRA). The Army regulation used to manage these cultural resources is Army Regulation (AR) 200-4, *Historic Preservation (Fort Bragg EPAS and the Integrated Cultural Resources Management Plan (ICRMP))*.

Fort Bragg currently manages 362 historic buildings, structures, and landscapes that are listed or considered eligible for listing in the NRHP. These resources are included in three NRHP-eligible districts (the Old Post Historic District, the John F. Kennedy Special Warfare College Historic District, and the Overhills Historic District), and nine NRHP-eligible individual historic resources. One historic building from the antebellum period – the Long Street Presbyterian Church – is listed on the NRHP. In addition, Fort Bragg has identified and manages 27 historic cemeteries.

A total of 4,525 archaeological sites have been identified at Fort Bragg. The 3,900 pre-contact sites include Paleo-Indian and Archaic period temporary hunting camps and stone tool workshops, Woodland period temporary upland camps, and general habitation and activity sites. The 530 historic sites represent American Indian, European-American, African-American, and non-military industrial occupations (Fort Bragg, 2001a). More than 295 archaeological evaluations to determine NRHP eligibility have been conducted and 90 archaeological sites are considered eligible for listing on the NRHP. Another 205 archaeological sites are presently protected pending evaluation for NRHP eligibility (Fort Bragg CRMP 2007).

4.3.4.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, and IBCT. A Minor (low) impact to cultural resources is expected. Established protocols exist at the installation that include coordination and

input from training and range staff and installation cultural resources staff. Efforts are employed to avoid, minimize, or reduce impacts to installation cultural resources. Fort Bragg would consult with the NC SHPO in accordance with 36CFR800 to avoid, minimize, or mitigate any adverse effects resulting from these projects.

HBCT, Multiple BCTs. Moderate (medium) adverse long-term impacts are expected. Increased Soldier foot traffic and use of heavy equipment increases the probability of cultural resources impacts. Currently, efforts are employed to avoid, minimize, or reduce impacts to installation cultural resources. Fort Bragg would consult with the NC SHPO in accordance with 36CFR800 to avoid, minimize, or mitigate any adverse effects resulting from these projects.

4.3.5 Noise

4.3.5.1 Affected Environment

There are four major sources of noise at Fort Bragg: vehicles, aircraft, artillery fire/explosions, and small arms firing. Vehicular noise is created by vehicle movement, but it is sometimes exacerbated by large troop movements in wheeled or tracked vehicles. These noises are dampened by terrain, woodlands, and distance from receptors, such as on-base and off-base residential areas. The impact created by vehicle noise is rarely considered significant. Aircraft noise is generated by fixed- and rotary-wing aircraft from Pope AFB, Simmons AAF, and Mackall AAF. These are intermittent noises that are most intense during takeoff; however, the points of origin are well within the confines of the post. The most noticeable noise levels are associated with low-level flight during takeoff and landing.

Pope AFB and Simmons AAF have greater noise impacts than Mackall AAF due to the density of residential development near the east end of the installation and the greater number of operations. Artillery fire/explosion noise is created by firing large-caliber weapons, such as the 105mm howitzer, and explosions. Small arms noise is created by small arms being fired on the ranges.

The majority of noise complaints received at Fort Bragg fall into two general categories; aircraft and artillery. Aircraft overflights account for noise disturbance above the Deerfield residential subdivision, and the northwestern portion of Spring Lake. Artillery live-fire is the greater cause of noise disturbance off the installation. However, according to the Fort Bragg Final EIS to Determine the Level of Training on the Overhills Tract (January 2006) recent public meetings did not cite noise from artillery live-fire or aircraft overflights as a significant concern to residential areas surrounding the installation. A 1998 Joint Land Use Study, which included Fort Bragg, Pope AFB, nine surrounding counties, and nineteen municipalities, was conducted to help ensure long-term sustainable training on Fort Bragg. Land use recommendations that were developed from that study are currently being implemented. As with Fort Benning, existing noise does not significantly impact the Red-cockaded Woodpecker population, or other threatened and endangered species at Fort Bragg.

4.3.5.2 Environmental Consequences

CS/CSS. Minor (low) adverse impacts are expected from noise generated under the CS/CSS scenario at Fort Bragg. Noise impacts to wildlife populations may necessitate the review and update of the installation's INRMP and ESMP to ensure best practices are considered for additional training requirements. The installation's existing noise contours would not change. Noise from this action is not expected to be heard outside the installation boundary.

Full Sustainment BDE. Minor (low) adverse long-term impacts resulting from additional noise generation are expected. The impacts are likely to be similar to those seen from an additional CS/CSS unit. Land use areas would not change, however the increase of Soldiers on maneuver space would likely require Fort Bragg to amend their INRMP.

IBCT. Minor (low) long-term adverse impacts resulting from additional noise generation are expected. Impacts would be relatively similar in maneuver areas to those from a Full Sustainment BDE. Interaction with threatened and endangered species is expected to be the same as that experienced during current training events. Additional artillery fire is expected and would likely result in the initial increase in flushing RCW from their nesting places, however, the impacts would be short-term. Increased artillery live-fire may be heard off-post, but would not exceed current peak noise levels.

HBCT. Moderate or medium short- and long-term adverse impacts from additional noise generated by an HBCT are expected. Additional heavy artillery and large caliber fire could elevate noise levels in off-post residential areas nearby the installation. Noise contours would likely change, but not to levels that would produce significant impacts.

Multiple BCTs. Significant (high) adverse impacts are expected as a result of increased noise levels under the Multiple BCT scenario. Noise zones would possibly change and the current environmental noise management plan would need to be updated, with additional studies conducted on potential impacts to current noise contours. Residential areas adjacent to the installation would experience elevated noise levels that likely exceed current peak noise thresholds.

4.3.6 Soil Erosion

4.3.6.1 Affected Environment

Fort Bragg is located in the Sandhills physiographic province of North Carolina and the soils are of Coastal Plain origin dominated by the Gilead-Blanney-Lakeland soil mapping unit. The surface of Fort Bragg is predominantly mantled by sandy soils whose composition ranges from loose sands to silty and clayey sands in some subsoils. Most of these soils are well-drained or even excessively well-drained. Poorly drained soils are primarily limited to flood plain and some terrace deposits that tend to be silty sands of usually high organic content.

Each of the soil types found at the Installation has particular engineering limitations (i.e., limits as to what may be constructed on them). These soil types and their limitations are discussed in detail in the U.S. Geologic Service (USGS) soil surveys for the region. Soil conservation is a high priority in any area of Fort Bragg that has insufficient ground cover. This is due primarily to the sandy and easily eroded nature of most soils in the region. A combination of vegetative and drainage system maintenance is necessary to address these concerns.

4.3.6.2 Environmental Consequences

CS/CSS. The impacts on the training areas of Fort Bragg as a result of a Combat Service Support are expected to be medium or moderate. The additional vehicles along with the added training requirements would put more stress on the training requirements and already heavily trafficked range maneuver areas and put them at a higher erosive risk, regardless that CS/CSS are expected to remain in the maneuver footprint of existing training activities. Any additional stationing action involving more facilities, Soldiers and equipment would likely have medium to very high impacts to soil erosion. The affected environment of soils in the Sandhills Region is highly susceptible to severe soil erosion due to the physical, geological, topographical and chemical nature of these soils. The action of adding Soldiers to various degrees (each of these growth scenarios to include BCTs) through direct, indirect and cumulative impacts from permanent infrastructure (i.e., UA Headquarters) to combat maneuver capabilities from various battalions and companies would present impacts to vegetation and soils.

The construction of permanent facilities to support a CS/CSS would also be medium. Simmons Army Airfield and the future Pope Army Airfield would support the potential aviation requirements (TUAV). Construction projects for any temporary facilities and ultimately the required permanent facilities have the potential to impact Fort Bragg as it pertains to soil erosion and storm water management. Fort Bragg, State, and Federal erosion control and storm water management requirements during and after construction would minimize any affects from this activity.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. The impacts on the training areas of Fort Bragg as a result of a Full Sustainment BDE would be of high significance. The large numbers of additional vehicles with the added training requirements would put more stress on Fort Bragg's already taxed training areas. The Blaney-Gilead-Lakeland soil mapping unit present on Fort Bragg is highly susceptible to erosion when put under the stress of a high frequency of vehicular traffic. The weight and mobility of the tracked vehicles associated with the HBCT would induce a great level of land disturbance while in operation, to the soils at Fort Bragg. Multiple BCTs would have a very high or significant adverse impact to soils. The number, size, and impact of wheeled and tracked vehicles would rapidly deteriorate the road network and lead to increased trafficability and erosion problems. The construction of permanent facilities to support any of these scenarios would also be of high significance. The facilities needed to house the personal and store the vehicles for such a large unit would add a large

amount of construction to the already heavily constructed cantonment area of Fort Bragg. Mitigation to minimize the impacts of this construction as it pertains to soil erosion and storm water management would require thorough design and costly construction

4.3.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.3.7.1 Affected Environment

Fort Bragg supports a plethora of natural resources, therefore, falls under jurisdiction of the Sikes Act. Its diversity of habitats provides the necessary resources for a variety of fish, wildlife and plant species. Wildlife species, both common and endangered, are important for present and future military missions at the installation. In general, the health (i.e., population viability) of fish and wildlife populations is an indicator of a healthy ecosystem. A high quality aquatic, faunal and floral component equates to a high quality training environment. Both short-term and long-term it is in interest of the Army to continue supporting a sustainable environment and natural resources to sustain a military readiness training environment.

Various biological inventories indicate there are 197 birds, 39 mammals, 51 reptiles, 44 amphibians, and 50 fish species found on FB. An additional 111 vertebrate species are suspected to live or migrate through the Installation (FB Public Works Business Center (PWBC), 2001). Since the military mission, military readiness training and natural resource management actions affect fish and wildlife habitat, activities, programs have been designed and integrated to create and enhance habitat that are consistent with the installation's military mission (FB PWBC, 2001). Appendix T of this document provides information on the listed species found at Fort Bragg.

Throughout this ecosystem on FB a variety of natural plant community types can be found. Overall, there are total of 33 natural plant communities and variants, consisting of 23 different vegetative communities, identified on Fort Bragg and Camp Mackall, which are described in Appendix 6.7.4 of the INRMP (Griffin Social Technologies, 2001)

4.3.7.2 Environmental Consequences

CS/CSS. Short- and long-term moderate (medium) adverse impacts are expected for each of these scenarios. Impacts for the CS/CSS scenario would have a medium to moderate impact on resources. Increased training levels for CS/CSS would not likely have an adverse affect for all five federal listed species on the installation. Since this action would likely impact any one or more of the five listed species, informal consultation with the USFWS would occur in accordance with the ESA section 7.

Full Sustainment BDE, IBCT. At the proposed Full Sustainment BDE and IBCT levels, potential impacts would be increased from moderate (medium) to significant (high). Increases in facility construction and subsequent levels of training activities on the installation for the Full Sustainment BDE and IBCT would likely have an adverse affect

on the RCW population at the installation. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of any of these actions may affect any of the recorded listed species, the installation would be required to conduct a formal Section 7 consultation with the USFWS.

HBCT, Multiple BCTs. Significant (high to very high) short- and long-term adverse impacts are expected to occur for the HBCT and Multiple BCT scenarios. It is anticipated that implementation of either of these scenarios would result in a significant impact on the five listed species. It is possible at the HBCT and Multiple BCT levels that a "take" may occur for the RCW which would trigger formal consultation stemming from an adverse affect. The incidental take would likely be from direct loss of cavity trees(s) or from forage habitat loss within a managed forage partition that would fall below the minimum forage Recovery Standard requirement within the 0.5 mile area. Further RCW takes, such as that expected from this level of growth, could drop the current population of RCW below the recently achieved recovery target for the North Carolina Sandhills East Primary Core population. This Formal section 7 consultation would likely result in a USFWS Biological Opinion that would likely require Reasonable and Prudent Measures and conservation measures to reduce or nullify impacts below a significant threshold that would facilitate a non jeopardy opinion and not cause a jeopardy opinion.

The environmental consequences for vegetation and wildlife concerning all 5 training scenarios would not be significant. Minimal adverse impacts are expected from direct habitat removal and indirect impacts to demographics and dispersal. In general, vegetation would receive minimal adverse impacts from trampling, compaction and scarification. Wildlife species would be displaced or lost from construction and combat maneuver activities.

4.3.8 Wetlands

4.3.8.1 Affected Environment

Fort Bragg contains approximately 9,600 acres of potential wetlands (US Army, February, 2007). Palustrine wetlands have unique and important biological functions. They provide critical habitat for many wildlife species, absorb/abate floodwaters, improve water quality by removing pollutants, represent important wildlife travel corridors, enhance aesthetics, and provide recreational, scientific, and educational values. Wetlands are important in several natural processes, including groundwater discharge and recharge, flood flow attenuation, sediment stabilization, nutrient removal or Transformation, stormwater abatement, and as fish and wildlife habitat.

Any disturbance to the soil or substrate (bottom material) of a wetland or waterbody, including a stream bed, is an impact and may adversely affect the hydrology of an area. Discharges of fill material generally include, without limitation: placement of fill material that is necessary for the construction of any structure, or impoundment requiring rock,

sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for intake and outfall pipes and sub-aqueous utility lines; fill associated with the creation of ponds; and any other work involving the discharge of fill or dredged material. A Corps permit is required whether the work is permanent or temporary.

4.3.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Moderate (medium) short- and long-term adverse impacts to wetlands are expected due to the abundance of wetlands and streams within the Cantonment Area. Currently, most of the unrestricted developable upland areas have been development; therefore remaining areas within the Cantonment are less desirable and in closer proximity to low-lying wetland areas or streams. In many parts of the Cantonment Area, the potential developable areas have reached its capacity. Almost all of the developable uplands have been developed, as such; any large facility requirements to support UA headquarters, Battalions, and companies, within the cantonment Area, would likely provide unavoidable impacts to wetlands or streams. However, due to the minor increase of additional Soldiers this is not expected.

HBCT and Multiple BCTs. Significant (high) adverse impacts to wetland areas are expected with the stationing actions of the HBCT and Multiple BCT scenarios. The presence of an additional 3,800 to 7,000 Soldiers and the related facility construction, equipment staging, training, and maneuver activities have the potential to impact existing wetland areas, directly or indirectly. Impact minimization strategies would likely not be able to support unavoidable impacts. Wetland impacts would likely be within the CWA section 404 regulatory Nationwide permitting process threshold. Some of the impacts would likely require compensatory wetland mitigation measures. Stationing actions for the HBCT and Multiple BCTs, in the Cantonment Area, would likely be high to very high impacts. Within the main cantonment Area, unavoidable impacts to wetlands and streams from large facility requirements would likely go beyond the 0.5 acre impact threshold and require an Individual Permit with associated compensatory mitigation costs, in accordance with the CWA section 404 regulatory permit requirements terms and conditions. Impacts to wetlands would be very high but not reach a significant impact due to offsetting mitigation measures. Direct impacts from discharge of fill material into wetland and or streams is expected from construction of facilities (i.e., grading, utilities, and roads) and from major military training combat maneuver activities.

4.3.9 Water Resources

4.3.9.1 Affected Environment

Water Supply

The Fort Bragg Water Treatment Plant (WTP) was privatized in October 2006. It is operated by a contractor until such time as the potable water lines from Fayetteville

PWC and Harnett County can be constructed. At that time the water treatment plant will cease operations and Fort Bragg will purchase water from the two contractors (2009/10). Fort Bragg currently still owns, operates, and maintains the water distribution system serving Fort Bragg and Pope AFB. It includes, distribution lines, and storage. Plans are underway for the system to be privatized in FY 2008/09. Source water for the cantonment area and Pope AFB is withdrawn from the Little River, which is part of the Cape Fear River Basin system, while the training area is supplied as needed by groundwater wells. The minimum flow in the Little River at the two Fort Bragg intakes is approximately 20 million gallons per day (mgd), which is available to Fort Bragg under any condition. Additional water is available from two impoundments, McKellars Lake and McArthur Lake, which have 37,500 acre-feet of combined storage. Water would be released from these two impoundments to the Little River with supply withdrawn at the existing intake structures under emergency conditions. Their use as sources of water supply has never been necessary.

The Cantonment's water storage system consists of six elevated storage tanks, one standpipe and two ground storage tanks. The total storage volume of potable water is approximately 3,650,000 gallons, with an additional 575,000 gallons reserved for fire protection at Simmons AAF. Using the method that storage must be equal to 50 percent of daily domestic consumption plus industrial requirements, currently 3,184,000 gallons, storage is adequate for the current population (Fort Bragg, 2004). In general, the placement of the water storage facilities is adequate unless new development occurs in the area of Gruber Road between Reilly Street and Bragg Boulevard. Should this occur, small-to-moderately sized, elevated storage may be required. With the exception of the Tank Hill reservoir, the water storage tanks are in good to excellent condition (Fort Bragg, 2004).

Wastewater

Fort Bragg privatized its waste water treatment plant in October 2006. It is currently operated by a contractor until such time a sewer line can be constructed to the Harnett County Waste Water Treatment Plant. At that time Fort Bragg will connect to the line and all of the waste water will be conveyed to the Harnett County Plant. The Fort Bragg plant will cease operation. Currently Fort Bragg still operates collection system (sewer lines), and lift station. Portable toilets and individual septic tanks serve firing ranges, drop zones, bivouac grounds, outlying permanent structures and other outlying areas. Portable toilets are located as needed to serve training requirements (Fort Bragg, 2004). The wastewater treatment plant was constructed in 1941, but since has been upgraded and was rebuilt in 1991. The plant has a design capacity of 8 mgd with a maximum hydraulic capacity of 13 mgd. Approximately 3 mgd of flow has been documented during dry weather; however, wet weather flows approaching 12 mgd have been recorded. These high, wet weather flows likely are short duration or instantaneous flow rates. The treatment plant has been able to meet effluent discharge requirements even at these higher flows. In 2002, Yearly Average Daily Flow was 4.67 mgd for an effective population of 50,937, yielding a daily per capita flow of 93 gallons. A more recent assessment indicated an average daily domestic flow of 5.5 mgd (Fort Bragg, 2005d). Problems with the collection system have caused numerous sewage

spills and floods. In some areas, 25-inch pipes empty into 14-inch pipes, causing failure under high pressure and flow. Overall, however, the sanitary sewer collection system reportedly provides adequate service, but public works personnel know rain-induced infiltration at manholes is a major problem. On one occasion, a wastewater flow of 13.2 mgd was recorded during a rainfall of 3.25 inches (Fort Bragg, 2004). Large sewer mains (gravity and/or force mains) run through all of the areas under evaluation, however the age and condition of the sanitary collection system generally suggests that existing sewers will need to be carefully evaluated at each site and that new sewers and extensions are likely to be needed to support new development.

Fort Bragg also operates a Central Vehicle Wash Facility. Facility management practices have been effective in meeting the conditions of the permit. Additionally, the installation operates the Lamont West Borrow Pit that meets all permit conditions.

4.3.9.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Moderate (medium) adverse impacts to water resources are expected. Given the existing population of Fort Bragg, the addition of a CS/CSS would not have a significant impact to the watershed, water demand, and associated treatment systems. Any new construction/land disturbance over one acre would require a stormwater construction permit.

HBCT. Long-term significant (high) adverse impacts to water resources are expected. Motorpool activities and washing of field-driven heavy-tracked vehicles would produce an increase on water demand and associated treatment. The existing wastewater treatment plant is almost at maximum capacity. Fort Bragg may need to construct new washing systems to manage heavy-tracked vehicles. The installation would also need to revisit their Stormwater Pollution Prevention Plan (SWP3) to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

Multiple BCTs. High significant (very high) adverse impacts to water resources are expected under a Multiple BCT scenario. The influx of an additional 7,000 Soldiers and their Families, as well as the increases in equipment use and maintenance would result in a substantial increase in water demand and wastewater treatment requirements (e.g., motorpool activities and washing of heavy-tracked vehicles). The existing wastewater treatment plant is almost at maximum capacity. Upgrades or modifications may be necessary to accommodate the increased demand under this scenario. Construction of new washing systems to manage heavy-tracked vehicles may be necessary. The installation would also need to revisit their Stormwater Pollution Prevention Plan (SWP3) to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of

mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

4.3.10 Facilities

4.3.10.1 Affected Environment

Fort Bragg currently supports a combined military and civilian population of about 65,000. The bulk of the installation's acreage is dedicated to operational areas for field maneuvers, exercises, firing ranges, impact areas, and parachute drop zones. The primary mission is the training of airborne Soldiers. In broad terms, continuing operations at Fort Bragg include general maintenance and repair, land management, utility systems operation and commercial activities.

Approximately 8,300 acres of Fort Bragg comprise the cantonment area, located in the eastern part of the installation, and includes approximately 5,168 buildings. Nearly all military maintenance and commercial facilities, supply facilities, operation and training facilities, various community facilities, and family and Soldier housing areas are located in the cantonment area. (US Army IMA Southeast Division, 2006)

Fort Bragg's current land use pattern is described in detail in the 2004 *Fort Bragg Master Plan Long Range Component*. Fort Bragg covers a land area that stretches approximately 27 miles from east to west and 16 miles from north to south at its most extreme points. According to current real estate records, Fort Bragg proper encompasses 152,843 acres with a total land area of 160,760 acres (251 square miles). (US Army, February 2006). Generally, the Installation is divided into three broad categories of land use; Cantonment, Green Belt, and range and training areas. Fort Bragg's Cantonment is the urbanized portion of the installation, which has been developed into a wide variety of land uses that comprise the elements necessary for a complete community. (US Army, January 2006)

The Cantonment Area is severely constrained and fully developed. Fort Bragg is currently at a deficit of approx. 1.5 million sq ft short in company operations facilities and approx. 1 million sq ft in vehicle maintenance shop facilities. An addition of BCTs would significantly impact already strained space requirements. Additional facilities from the Army Growth project would significantly impact the following areas: facilities, personnel, equipment, services, common levels of support and training lands.

4.3.10.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Significant adverse (Very High) impacts to facilities are expected. It is anticipated an increase of 1,000 Soldiers would increase activities within the cantonment area including associated schools, housing and Family-use centers, including but not limited to, increased usage of the Post Exchange, commissary, and medical and family support facilities. Activities within the training and range areas would be limited to existing firing ranges and

roadways. However, these activities would have to be scheduled to coordinate with existing mission activities.

As the number of Soldiers increase with the scenarios listed, the impacts may become even more exaggerated to varying degrees. Increased activities (by 3,000 to 7,000 Soldiers and heavier equipment in the training areas would cause significant adverse long-term effects. The installation real property management plan (RPMP) may require modification. Currently, Fort Bragg has no buildable space available for new construction. The BRAC movement from Pope Air Force Base in FY07 has not been included for consideration. Any construction at Fort Bragg is resource intensive. The current facilities cannot be readily expanded to accommodate an increase in Soldier levels or training activity due to a lack of buildable space. Plans for future construction have included using the former Ammunition Storage Point (ASP) as buildable space once a new ASP is constructed. However, without an ASP to build on, no substantial growth can be supported. Force Protection security concerns continue to be an issue at Fort Bragg (Gillin, Installation Questionnaire, 2007). The use of the Sustainable Installations Regional Resource Assessment (SIRRA) may prove beneficial in determining the extent of impacts on facilities (Canter et al, 2007).

4.3.11 Energy Demand/Generation

4.3.11.1 Affected Environment

Fort Bragg's energy needs are currently met by a combination of natural gas and electric power, both of which are provided by private utilities.

Electricity. Progress Energy provides electric power to Fort Bragg via a 230-kilovolt (kV) line into a 50,000 kilovolt-amperes (kVA) main substation in Main Post Area. Pope AFB receives its power from the Fort Bragg system. Power lines are aerial and installed with telephone and cable distribution systems on common poles. Sandhills Utility Services, LLC, operates and maintains the conductor, poles, transformers and streetlights. Power demand has reportedly increased steadily; however, Progress Energy has been able to meet this load growth. Future decreases in energy consumption and cost are projected as a result of greater energy efficiency and real-time pricing task orders (Fort Bragg, 2004).

Natural Gas. Fort Bragg has nine medium to large, central heating systems, which include a variety of field-erected and packaged equipment units. There are also six central cooling systems and numerous individual cooling systems on Fort Bragg. Many operational buildings and virtually all family housing units are heated by self-contained, decentralized units. Natural gas-fired central boilers and circulating hot water systems serve major building complexes. Either oil- or gas-fired, hot air furnaces or heat pumps serve smaller buildings, duplexes and single family units. Natural gas is supplied by pipeline from Piedmont Natural Gas. The ability of the natural gas supplier to meet an increase in future demands, if necessary, is unknown. The ability of the distribution system to meet increases in demand also is unclear due to insufficient data. No study of the capability of the gas supplier to meet any increases in future load requirements

has been performed. Current capabilities appear to be adequate based on operating experience of public works personnel (Fort Bragg, 2004).

4.3.11.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT. Long-term moderate (medium) adverse impacts are expected. The addition of 1,000 to 7,000 Soldiers represents a small fraction of the overall mission activity at Fort Bragg. The expected impact on energy demand/generation from this action is not significant. Some new electrical and natural gas infrastructure may need to be constructed to supply energy to additional personnel. Apart from the initial expansion of the energy infrastructure to accommodate the new unit (barracks, motor pools, miscellaneous facilities, etc.) there is no limiting factor present to suggest a potential impact to any varying degree, however, one could expect minor incremental increases in capital investment in energy upgrades between the Full Sustainment BDE, IBCT, and HBCT.

Multiple BCTs. Significant (high) long-term adverse impacts to energy demand/generation are expected. The addition of multiple BCTs, with an estimated increase of 7,000 Soldiers, is anticipated to result in significant energy demand/generation at the installation. New electrical and natural gas infrastructure would likely need to be constructed in order to accommodate the increase in usage, thus equating to the significant impacts to energy demand.

4.3.12 Land Use Conflicts/Compatibility

4.3.12.1 Affected Environment

Fort Bragg is situated in the Sandhills of North Carolina, and consists of 160,760 acres (250 square 27 miles). Fort Bragg is the home of the 18th Airborne Corps and the U.S. Army Special Operations Command. With some 45,000 military personnel and approximately 8,000 civilian employees, the installation is one of North Carolina's largest employers.

Fort Bragg proper includes a cantonment area, the Weapons Range and Training Area, Pope Air Force Base (AFB) (leased from the Army by the Air Force), and Simmons Army Airfield (AAF). Fort Bragg also includes two satellite areas, including Camp Mackall, a 7,919-acre subinstallation located 6.6 miles to the southwest, and the Richmond (Hoffman) tract, a 100-acre parcel located southwest of Fort Bragg in Richmond County, which is used for training

Fort Bragg proper is irregularly shaped, stretching approximately 27 miles east/west and 16 miles north/south at its most distant points. The cantonment area is located in the southeastern end of the installation in Cumberland County; the Weapons Range and Training Area is primarily located in the central and western portions of the installation in Hoke, Cumberland, Harnett, and Moore Counties.

The cantonment area, which occupies approximately 8,300 acres, is situated in

the southeastern portion of the installation and includes a mix of administrative, operational, recreational, and community facilities, as well as vehicle maintenance and related facilities. Pope AFB is on the northwest end and contains approximately 2,000 acres. Simmons AAF (579 acres) is located in the southeast corner of the cantonment area. The major community facilities (e.g., hospitals, schools, housing) are located in the middle of the cantonment area. As of October 17, 2002, the cantonment area consisted of 4,196 buildings making up approximately 27,662 square feet of building space (US Army Corps of Engineers, 2003).

4.3.12.2 Environmental Consequences

CS/CSS. There would be moderate (medium) long-term environmental impacts on installation land use due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. The installation does not have sufficient land available to either build the facilities needed for this unit, and/or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional CS/CSS unit. The facilities for this unit would not be contiguous, but would be within a distance of one-half mile.

Full Sustainment BDE, IBCT. There would be moderate (medium) long-term environmental impacts on installation land use due to the presence of an additional 3,000 to 3,500 Soldiers and their family members assigned to the installation. The installation would not have enough existing facilities, located in areas with comparable land uses to accommodate a Sustainment BDE. The installation would not have sufficient land compatible with tactical unit requirements on which to build facilities necessary for this unit. New or existing facilities would roughly require 150 acres, and there are noncontiguous parcels of land that size available for development on the cantonment area. Building new facilities would require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. This, in turn, would cause a measurable decrease of the installation's capacity to train Soldiers. Building new facilities could also require construction on, or immediately adjacent to, environmentally sensitive areas, such as wetlands, requiring extensive, and/or expensive mitigation actions.

HBCT. There would be significant (high) long-term environmental impacts on installation land use due to the presence of an additional 3,800 to 4,000 Soldiers and their Families assigned to the installation. The impacts would be similar to, but incrementally greater than that of a Sustainment BDE or IBCT, due to the make-up of a heavy BCT. Tracked vehicles are particularly damaging to the easily-erodible soils found on the installation. The training lands are currently maintained for airborne and light infantry operations and armored elements would be incompatible with the present training land use and level of maintenance required for the management of threatened and endangered species.

Multiple BCTs. There would be significant adverse (very high) adverse long-term environmental impacts on installation land use due to the presence of an additional 7,000, or more Soldiers and their Families assigned to the installation. The installation would not have enough existing facilities, located in areas with comparable land uses to accommodate multiple BCTs. New or existing facilities would not be contiguous, and distant from Soldier support facilities and training and maneuver ranges. Building new facilities for multiple BCTs could require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. This, in turn, would cause a measurable decrease of the installation's capacity to train Soldiers. Building new facilities could also require construction on, or immediately adjacent to, environmentally sensitive areas such as wetlands, requiring extensive, and/or expensive mitigation actions.

4.3.13 Hazardous Materials/Hazardous Waste

4.3.13.1 Affected Environment

Hazardous materials are used in most facilities at Fort Bragg, ranging from small quantities of cleaners and printing supplies to larger quantities of fuels, oils, and chemicals. Executive Order 13423 states that all appropriate organizational levels including appropriate facilities, organizations, and acquisition activities, shall develop written goals and support actions to identify and reduce the release and use of toxic and hazardous chemicals and materials, including toxic chemicals, hazardous substances, ozone depleting substances (ODSs), and other pollutants that may result in significant harm to human health or the environment. The Fort Bragg Hazardous Waste Management Plan (HWMP) FB 200-2 states that it is the Army's goal to continuously reduce hazardous waste generation by seeking non-hazardous substitution of hazardous materials, finding and developing markets for waste as a recyclable material, and promoting the total use of hazardous materials (Fort Bragg, HWMP 2006).

Hazardous wastes are generated at Fort Bragg from various operations and facilities. The installation generates more than 1,000 kilograms (2,200 pounds) of hazardous waste per month and maintains a large quantity generator status under RCRA. Currently Fort Bragg operates under a RCRA Hazardous Waste Storage permit, EPA Permit ID Number NC 8210020121 (200-2), which authorizes storage of hazardous waste for a period of 90 days and Universal Waste for a period of one year in containers in Building 3-1240. In addition to Department of Public Work's (DPW) storage facility, there are two 90-day storage facilities on Fort Bragg, located at the Womack Army Medical Center (Building 4-2817) and the Defense Reutilization and Marketing Office (DRMO) 90 day site.

Typical wastes routinely generated by on-going operations at Fort Bragg include universal waste, hazardous medical waste, weapons cleaning materials, chemical identification kits and mask filters, paint and paint-related products, pesticides, adhesives and sealants, solvents, battery acid, photographic developer and fixer solutions, fuel filters, contaminated fuel, and spent parts washer filters (Fort Bragg,

HWMP 2006). A large amount of waste solvent is generated by leased part washers and government-owned part washers. The waste solvent generated by the leased machines is taken off site for recycling. The waste solvent from the government-owned machines are collected in drums, taken to the DPW-ECB 90 day accumulation site for recycling or to be processed for disposal thru DRMO 90 day site. In 2005, Fort Bragg generated 158.6 tons of hazardous waste, of which 63 tons was spent solvents from parts washers (Fort Bragg Hazardous Waste and Recycling Office (HWRO), 2006). In addition to hazardous waste, some regulated medical waste is generated through activities at the medical center, clinics, and field training exercises. This waste is collected in disposable red biohazard bags which are then placed in lined boxes. Medical waste is managed by contractors who take the waste off-site for incineration (Fort Bragg, 2004). Some medical waste may be radioactive (e.g., by products of therapy/treatments and diagnostic medical imaging). The procedures and practices for handling of radioactive medical waste are licensed under the Nuclear Regulatory Commission and the Department of the Army Radioactive Materials Authorization. Waste with a short half-life is stored in a secure locker at the Womack Army Medical Center, and waste with a long half-life is stored in the Preventive Medicine Bunker. All radioactive wastes are stored for ten half-lives and then disposed of by an approved contractor (Fort Bragg 2004).

4.3.13.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, and IBCT. Long-term minor (low) adverse impacts are expected to hazardous materials and waste for each of these scenarios. It is anticipated that Fort Bragg would increase its storage and use of hazardous chemicals during training exercises and installation maintenance with the increase of Soldiers and increased training activities. Demolition, modification, and construction of new facilities would mostly likely generate slightly higher levels of solid and municipal wastes. This is expected to have a negligible effect on the landfill that receives the waste. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. The hazardous waste disposal facilities would be adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed.

HBCT. There would be moderate (medium) long-term adverse environmental impacts from hazardous materials and wastes. The volume of hazardous waste would be slightly higher than what is expected for an IBCT, and this would require an additional on-site investigation with the addition of an HBCT. (Gillin, Installation Questionnaire, 2007) Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at Fort Bragg and expanded training activities.

Multiple BCTs. The establishment of multiple BCTs at Fort Bragg would result in significant (high) adverse long-term environmental impacts from hazardous materials and waste. Generation and management of hazardous materials and waste would be higher than with the other actions, and would require an additional on-site investigation

with the addition of multiple BCTs. (Gillin, Installation Questionnaire, 2007) Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at Fort Bragg and expanded training activities.

4.3.14 Traffic and Transportation

4.3.14.1 Affected Environment

Fort Bragg is located between Spring Lake and Fayetteville, North Carolina. Currently Fort Bragg is accessible through the I-95 and US-NC highway system. Interstate 95 is located about 12 miles east of the post and is accessible through local arterial roads. The Fayetteville Outer Loop (I-295) is planned to connect to Fort Bragg through a limited access highway. The expected completion of this project is 2012.

¶ Off Post Roadways Connecting Fort Bragg

The main roads that provide access to Fort Bragg are the All American Freeway, NC87(Bragg Blvd.) and NC87-210 (Murchison Rd.) All American Freeway is a four lane divided roadway that is the main access connector into Fort Bragg. All visitors are directed to use this gate for entry.

Bragg Blvd. is a four lane road that runs in a north -south direction and is part of the regional road network running through Fort Bragg. Fort Bragg has requested for security reasons that the section of Bragg Blvd that runs through the post for closure to off post traffic in the near future. The Bragg Blvd. civilian traffic will be diverted to Murchison Rd.

North Carolina Department of Transportation is planning to expand the section of Murchison Rd. parallel to the section of Bragg Blvd. that will be closed to six lanes to accommodate the future traffic. This Project has a letting date of 2008. The Fort Bragg road system that connects to the North Carolina Department of Transportation (NCDOT) roads is already experiencing capacity level failure. At this time Fort Bragg has not had the capacity to develop roadway projects to offset the existing traffic congestion. Additional troop increases will contribute to an additional decrease in capacity levels on the Fort Bragg road system. The increased traffic volumes will create congestion which increases accident problems for motorist and pedestrians on the post.

Access Control Points (ACP)

There are sixteen ACPs or gates that control entry into Fort Bragg. The gates are located throughout the perimeter of the Cantonment area. At each manned gate, security guards check vehicles before allowing access into the installation. Initially all these gates were manned full time. Budget limitations have forced the base to limit operation and close some of these ACPs. Additional troop increases will compound the problem of daily access to the base for the troops and civilian employees.

Parking

There are two distinct areas at Fort Bragg where parking availability presents different conditions. The Womack Army Medical Center, the PX and commissary locations were

observed to have adequate parking capacity. However, the Historic District, Soldier Support Center, most training centers have inadequate parking capacity. This makes illegal parking an ongoing occurrence. The problem is compounded with the planned FORSCOM facility project. Additional parking demands associated with this project have not been resolved. Most Soldiers that live or commute to the base have at least one vehicle. The base is reviewing options such as satellite parking, shuttle system and parking decks. These plans will have to be incorporated into the off post regional transportation network for optimum efficiency. Additional troop increases without solving this problem increases stress on the troops and civilian employees.

Housing

Available housing on the base is scarce. It is unlikely that current and future base facilities will be able to accommodate the increase of troop levels already planned. Currently Fort Bragg is completing an off post site off NC87 called the Northern Training Area (NTA). The NTA has the capacity to accommodate 2500 homes. Private developers are also developing land adjacent to NTA with the capacity to accommodate 10,000 homes. This development is planned to address the existing growth to Fort Bragg. The traffic generation potential for 12,500 residences is 125,000 vehicle trips per day. A large percentage of this volume will be commuting to Fort Bragg. The existing road system on Fort Bragg cannot service this amount of traffic much less additional troop increases.

4.3.14.2 Environmental Consequences

CS/CSS. There would be significant (high) adverse short- and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. A large percentage of the unit's married population, and unmarried soldiers in the grade of E-6 (Staff Sergeant) and higher, would likely reside in off-post housing. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. However, the additional off-post population would contribute to increased traffic congestion, and a decrease of the LOS, on the road network leading to the installation's cantonment area, particularly during peak morning and evening hours. The increased population would have a significant effect on traffic congestion on the installation, contribute to a reduction in the LOS on the installation's road network, and pose an increased risk to the safety of pedestrians and bicyclists.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be significant (high) adverse short- and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 7,000 Soldiers and their family members assigned to the installation. The increase in off-post traffic would have a significant impact on traffic in the community overall and could contribute a notable decrease in the LOS in the road network leading to the installation, particularly during peak morning and afternoon travel periods. This level of increase in population would also have a significant impact on the traffic volume on the installation, and contribute to a decrease in LOS on a higher percentage of the installation's road

network. The increased traffic volume in both the neighboring community and on the installation would pose an increased level of risk to the safety of pedestrians and bicyclists.

4.3.15 Cumulative Effects

Past and Present Actions

Past and present actions at Fort Bragg include those that were completed prior to and those that were in progress. These include past actions at Fort Bragg as well as past actions in the Fort Bragg ROI. These actions include, but are not limited to:

- Training activities conducted at Fort Bragg and Pope AFB
- Construction, alteration, repair, rehabilitation and maintenance of buildings, structures, site improvements, and utility systems as required ensuring that assets are capable of meeting the facility requirements of changing training standards, mission requirements, educational initiatives and programs, administrative organizations, and weapons systems. Construction activities included in the consideration of past and present actions include the existing facilities at Fort Bragg, construction projects currently in progress, and those funded for construction;
- Grounds maintenance at Fort Bragg as necessary to ensure the long-term viability of plant growth, reduce pest and insect infestations, reduce the potential for inadvertent power outages caused by trees and tree limbs falling onto power lines, and to maintain a professional, military appearance;
- Natural and cultural resources management programs including the continued adherence to Fort Bragg's management plans that have been designed to protect the existing diverse fish, wildlife and plant habitats present on the Installation. The Installation would continue coordination with the SHPO and the ACHP concerning management of cultural resources. Natural and cultural resources management policies and actions at Fort Bragg include the continuation of programs to reduce and eliminate damage to the environment such as the INRMP, ESMP, and ICRMP, as well as ESA Section 7 Consultation with the USFWS when applicable;
- Continued MWR activities at Fort Bragg;
- Operation of Pope Air Force Base proximate to Fort Bragg, including airfield operations, other military missions, and the maintenance, repair and operation of facilities and infrastructure; and
- Past development and land use patterns within the Fort Bragg region that comprise the affected environment as described in this EA and are considered as part of the environmental baseline conditions. Land use adjacent to Fort Bragg is characterized primarily as rural residential with urban encroachment occurring in the eastern area.
- Current resource management programs, land use activities and development projects that are being implemented by other governmental agencies and the private sector (where they can be identified) within the cumulative impact analysis areas. In most cases, the characteristics and results of these past and present actions are described in the Affected Environment sections under each of the resource categories covered in this EA

Reasonably Foreseeable Future Actions

There are a number of reasonably foreseeable projects that may occur simultaneously with construction activities for the Proposed Action. The projects included in the proposed action are those BRAC, BRAC Discretionary and other Transformation projects considered ripe for development at the time this EA was prepared. Other BRAC, BRAC Discretionary and other Transformation projects not ripe for analysis were considered under the cumulative impacts analysis, along with other past, present and reasonably foreseeable projects. These projects, which will help Fort Bragg, continue to fulfill its mission requirements, include both those occurring off-post and those occurring on-post. A sample list of reasonably foreseeable projects to be undertaken at Fort Bragg as well as in the region includes:

- PN 53555, Barracks Complex Third BCT, Phase III
- PN 54911, Child Development Center, Northern Training Area (NTA)
- PN 55121, Digital Multipurpose Range Complex
- PN 57317, Barracks Complex Third BCT, Phase IV
- PN 57791, Engineer Assault Course
- PN 58489, Whole Barracks Renewal/Butner Road, Phase V
- PN 58491, Whole Barracks Renewal, Phase V
- PN 59616, Whole Barracks Renewal/DIVARTY
- PN 62467, Ammunition Supply Point
- PN64379, Pope Air Force Base Fire Station/Control Tower
- PN 64426, Multifunctional Aviation Brigade Complex
- PN 64914, 1st BCT Vehicle Maintenance Facility
- PN 64915, 2nd BCT Vehicle Maintenance Facility
- Relocate the 440th Airlift Wing's operations and maintenance Expeditionary Combat Support (ECS) manpower from General Mitchell Air Reserve Station (ARS), Wisconsin to Pope AFB (BRAC Action)
- Relocate eight C-130H aircraft from 911th Airlift Wing (AFRC) at Pittsburgh International Airport (IAP)
- Air Reserve Station (ARS), Pennsylvania to Pope AFB, NC (BRAC Action)
- Relocate eight C-130H aircraft from Yeager Airport Air Guard Station (AGS) to Pope AFB, NC (BRAC Action)
- Relocate the HQ FORSCOM VIP Explosive Ordnance Support from Fort Gillem, GA, to Pope AFB, NC (BRAC Action)
- Clear 5 acres of pine forest in the SOTF area, north of the FARP
- Realign Pope AFB, NC and transfer real property accountability to the Army at Fort Bragg, NC (BRAC Action)
- Utilize and expand current Fort Bragg ammunition supply point
- Ammunition Supply Point at Pope AFB
- Northern Training Area – Housing
- Three Fort Bragg road improvements (Widen Gruber Road intersection at Zabitosky, widen Gruber Road intersection at Reilly Road and widen/resurface Vass Road to Morrison Bridge)
- Closure of Bragg Blvd to civilian through trips.

- Murchison Road Expansion.
- Preliminary design of intersections and/or potential interchange ramps is not complete yet. However, the design needs to include traffic increase due to the implementation of the action (and cumulative effects) and the placement of the ACPs to Fort Bragg. Need to check queuing at ACPs, intersections and highway ramps.
- Randolph Street Expansion.
- Opening of the Manchester Road ACP to Pope AFB.
- Projects from the 2004-2010 Metropolitan Transportation Improvement Program (MTIP). Includes the construction of the Fayetteville Outer Loop (I-295).
- Widen I-95 from county line to county line, total 12 lanes (FAMPO Highway Plan).
- Continued development pressure around the Fort Bragg/Pope AFB perimeter, particularly in Cumberland, Harnett, Moore, and Hoke Counties

Fort Bragg expects cumulative impacts from ongoing training activities in conjunction with Army growth stemming from short-term and long-term repeated combat maneuvers throughout all seasonal conditions. Additionally, the action of adding Soldiers to various degrees (each of these growth scenarios to include BCTs) through direct, indirect and cumulative impacts from permanent infrastructure (i.e., UA Headquarters) to combat maneuver capabilities from various battalions and companies will present mission impacts to vegetation and soils.

A cumulative impact is defined as “the impact on the environment which results 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 undertakes such other action” (40 CFR 1508.7). The section goes on to note that “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 are the incremental impacts of the Realignment actions when added to the actions of other past, present, or reasonably foreseeable future actions (US Army Corps of Engineers, Mobile District, 2005)³.

³ The installation has identified other past, present, and reasonably foreseeable future projects that may present cumulative impacts as a result of growth at Fort Bragg. This information will be updated in the next iteration of this document.

4.4 FORT CAMPBELL, KENTUCKY
4.4.1 Introduction

Fort Campbell is an Army installation located on 104,400 acres in Montgomery and Stewart counties, Tennessee, and Trigg and Christian counties, Kentucky (Figure 4.4-1). About 12 percent of the installation is developed, while about 88 percent is undeveloped rear area maintained for military training. In the rear area, forests, streams, fields, and other natural settings are maintained to provide a realistic context for training activities. The rear area contains about 26,002 acres of ranges and impact areas, 65,800 acres of light maneuver area, and the 2,602-acre former Clarksville Base. Except for roads, cleared areas, and structures associated with training ranges, heliports, storage, and support facilities, most of the rear area consists of natural habitat including forests, old fields, fields leased for agriculture, lakes, streams and wetlands.

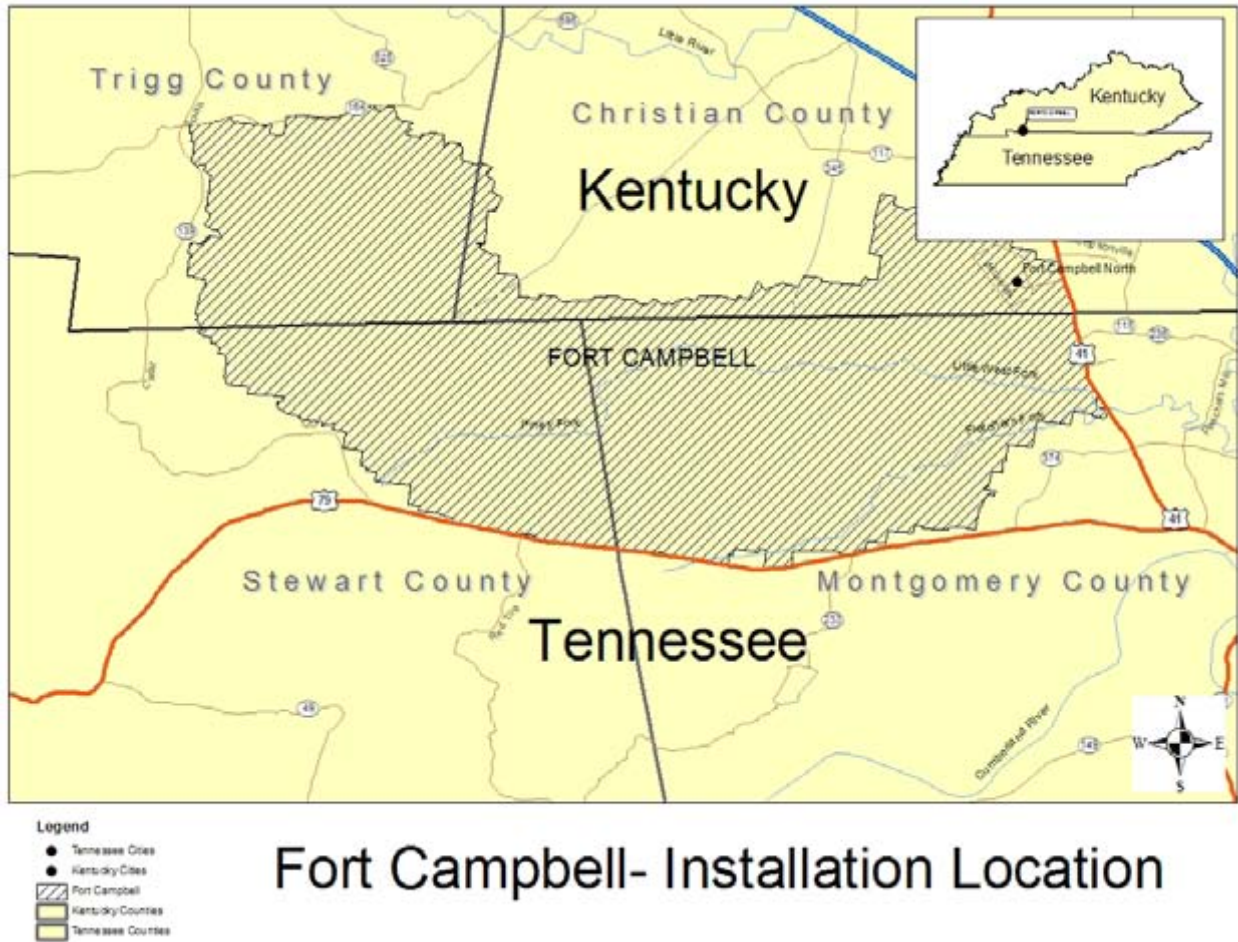


Figure 4.4-1 Fort Campbell

While wildlife and natural habitat exist within the impact areas, these areas are off-limits to personnel due to hazards associated with unexploded ordnance. Aerial photography is used to evaluate habitat conditions with the impact areas. However, those areas cannot be actively inventoried, managed, or monitored using surveys in the field.

Management activities and objectives described in this Plan do not involve the impact areas.

Fort Campbell has several areas identified as “drop zones” and “landing zones” used primarily for parachute training and air assault (helicopter operations) training.

Approximately 9,276 acres of the installation is cantonment area, which includes the main post, as well as the Campbell Army Airfield (CAAF). Vegetation in the cantonment area is primarily ornamental lawns, shrubs, and trees cultivated for aesthetic purposes; there are no natural terrestrial or aquatic communities in the cantonment area. Only limited natural resources management activities (e.g., pest management and urban forest management which is conducted in the cantonment area) is within the scope of this document.

Fort Campbell supports the third largest military population in the Army and the seventh largest in the Department of Defense (DoD). Fort Campbell is the home of the Screaming Eagles of the 101st Airborne Division (Air Assault) and tenant units totaling approximately 30,000 active duty personnel. The major command is the 18th Airborne Corps and United States Army Forces Command (FORSCOM). Fort Campbell also is home to the 159th Combat Aviation Brigade, 5th Special Forces Group (ABN), 160th Special Operations Aviation Regiment (SOAR), 31st Military Police Detachment, 58th Aviation Regiment, 1st Battalion, 2nd Battalion, 61st Engineer Battalion, 95th Maintenance Company, 101st Support Group (Corps), 249th Engineer Battalion, and 902nd Military Intelligence Group. The Air Force has two units at Campbell Army Airfield: 19th Air Support Operation Squadron and 621st Air Mobility Operations Group.

The mission of the 101st Airborne Division (Air Assault) is to deploy in 18 hours worldwide, to destroy enemy armed forces and to control land area, including populations and resources by employing the unique capabilities of the air assault division. The air assault capabilities and aviation assets greatly enhance the division’s world-wide mission. Primary weapon systems are the Air Assault qualified infantry Soldier, Apache helicopter, Hellfire Missile System, Mark 19 Grenade Launcher, 105-mm Howitzer Avenger.

Fort Campbell's primary mission is to advance the combat readiness of the 101st Airborne Division (Air Assault) and the non-divisional units, including the 2nd BCT and 159th CAB, posted at the installation through training, mobilization, and deployment. Deployment capabilities include combat equipped Soldiers, tactical vehicles, weapons and ammunition, and logistical equipment to sustain thousands of Soldiers in a tactical environment for an extended period of time. The installation serves as a Premier Power Projection Platform for the Division and for major Special Operations Command units.

Table 4.4-1 contains the Fort Campbell VEC ratings for each of the various stationing action scenarios.

Table 4.4-1. Fort Campbell VEC Ratings

Fort Campbell					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Medium	Medium	Medium	High
Airspace	Low	Low	Medium	Medium	Medium
Cultural	Medium	Medium	Medium	High	High
Noise	Low	Low	Low	Medium	Medium
Soil Erosion Impacts	Medium	High	High	High	Very High
Biological Resources	Medium	Medium	Medium	Medium	High
Wetlands	Low	Low	Low	Low	Low
Water Resources	Medium	High	High	High	Very High
Facilities	Low	High	High	High	Very High
Socioeconomics	Medium	High	High	High	High
Energy Demand/ Generation	Medium	High	High	High	High
Land Use Conflict/ Compatibility	Low	High	High	High	Very High
Haz Mat/ Haz Waste	Low	Medium	Medium	Medium	High
Traffic and Transportation	High	High	High	High	High

4.4.2 Air Quality

4.4.2.1 Affected Environment

The project area includes Christian and Trigg Counties, Kentucky and Stewart and Montgomery Counties, Tennessee. Fort Campbell is designated as a major source for criteria air pollutants (cap) and hazardous air pollutants (HAP). The portions of Fort Campbell in Christian and Montgomery Counties are currently designated as maintenance areas for the attainment of the ozone National Ambient Air Quality Standards (NAAQS). Accordingly, new activity which emits ozone precursors (NO_x and VOCs) is subject to being affected by of the requirements of at least Subpart B of 40 CFR 93, *Determining Conformity of Federal Actions to State and Federal Implementation Plans* and as incorporated in the Kentucky and Tennessee State Implementation Plans (SIPs). Fort Campbell is required to have Title V operating permits from the states of Kentucky and Tennessee.

In order to preclude the possibility of triggering *New Source Review* (NSR) requirements [both nonattainment NSR and *Prevention of Significant Deterioration* (PSD)], Fort Campbell has agreed as part of the Title V operating permits to installation wide (both Kentucky and Tennessee portions) limits on all CAP emissions except carbon monoxide (CO) and lead (Pb). Accordingly, an analysis of potential increases of those CAPs would have to be conducted to determine if the “agreed to limits” would require negotiations for revised (higher) limits.

Traditional sources of stationary air contaminants at Fort Campbell include institutional boiler plants (permitted) and other fossil fueled indirect heating equipment such as furnaces and hot water heaters; a small classified document incinerator; tactical vehicle, aircraft and other equipment repair surface coating operations (permitted); a perchloroethylene dry cleaning facility (permitted); stationary diesel fuel fired emergency electric generators; JP-8, No. 2 fuel oil, and gasoline handling facilities; solvent metal cleaning units (using non-halogenated organic compounds); and jet engine test cells. Most of the over 3,000 stationary air contaminant sources are classified as insignificant activities, not requiring operation permits; however, the operations must be in compliance with applicable SIP standards.

There is also a measurable impact on air quality resulting from the operation of mobile sources such as tactical ground vehicles, aircraft, personally owned vehicles (installation personnel and contractors), construction equipment, school buses, and other government owned/leased vehicles. Informal investigations indicate that mobile sources in the area are contribute to the majority of the emissions of ozone precursors, fine particles (PM_{2.5}) and inhalable coarse particles (PM₁₀), and greenhouse gases.

In addition, fugitive emissions of airborne particulate matter are generated by mobile source travel and training exercises over paved and unpaved roadways, trails and other training areas. Fugitive emissions also result from prescribed land management burns.

4.4.2.2 Environmental Consequences

The most significant impact on air quality would result from fossil fuel sources based on the results of an analysis of effects of force Transformation at Fort Campbell. The Transformation does not require a Guaranteed Capacity Rate (GCR) analysis since no temporary or permanent ozone precursors are necessary, a Record of Non-applicability was issued. Installation/use of additional fossil fuel emitters would increase CAP and HAP emissions. The significance of the increased emissions because of Transformation is not amenable to analysis at this point. The environmental consequences of assigning new units to Fort Campbell are based on the conclusions found in the RONA mentioned above. Weapon’s training was not considered in the RONA. Additional unit assignments would increase the mass and duration of fugitive airborne particulate.

CS/CSS. It is estimated that there would be minor (low) short- and long-term adverse impacts to the ambient air quality on the installation and surrounding communities resulting from restationing a CS/CSS unit and its 1,000 Soldiers. The installation does

not anticipate a major amount of construction to accommodate this level of growth; therefore short-term air quality impacts may be expected.

Full Sustainment BDE, IBCT, HBCT. It is estimated that there would be moderate (medium) short- and long-term adverse impacts to the ambient air quality on the installation and surrounding communities resulting from the restationing of a BCT of up to 3,800 Soldiers. Additionally, Fort Campbell expects any increase of approximately 3,500 Soldiers or more would result in an increase of approximately 6,000 POVs on the installation, contributing to the air quality issues.

Multiple BCTs. It is estimated that there would be significant (high) short- and long-term adverse impacts to the ambient air quality on the installation and surrounding communities under the Multiple BCT scenario, which would increase the active duty military population by approximately 7,000 Soldiers. The estimated high adverse impact also takes in consideration the additional infrastructure required to support an anticipated substantial increase in dependents population utilizing Fort Campbell facilities.

4.4.3 Airspace

4.4.3.1 Affected Environment

Fort Campbell has 128 square miles of FAA-designated Special use airspace, up to 27,000 feet. 4 BCTs reside at Campbell, plus 2 CABs and also 5th Special Forces and the 160th Special Operations Aviation Regiment, which is the same size as a CAB. Area R3702 accommodates artillery, rockets, mortars, and other ordnance. Also within this area Army aviation conducts brigade and battalion-level training. Generally, if one of the four existing BCTs is operating in the rear training area they are supported by one of the CABs.

Each of the four BCTs has unmanned aerial vehicles. Each BCT has 4 RQ-7B Shadow UAV and approximately 18 RQ-11A Raven UAV. The Shadow is 14 x 9 feet UAV and the Raven is a 6 x 4 UAV. The Shadow is a 350K model that works well due to its advanced systems. The Raven is a 50 - 60K UAV that does not work well in the tree environment at Fort Campbell.

Additional special use airspace totals 540 square miles which can be used by aviation, but not ground forces performing live-fire exercises. Fort Campbell has authorization to fly the Shadow outside of the restricted area airspace, with a chase aircraft, and into the 540 square miles of additional special use airspace. The 12 Warriors, the 58 x 29 feet UAV schedule for Fort Campbell in FY09, will be flown in the restricted area or utilize a chase aircraft to fly outside of it.

4.4.3.2 Environmental Consequences

CS/CSS and Full Sustainment BDE. There would be minor (low) short- and long-term adverse impacts to airspace under these two scenarios. It is anticipated that the

activities associated with an increase of 1,000 to 3,500 Soldiers would increase activities within the cantonment and training and range areas; however, there would be no expected effects to airspace use. These activities would have to be scheduled to coordinate with existing mission activities.

IBCT and HBCT. There would be minor (low) short- and long-term adverse impacts to airspace use. UAV associated with an IBCT or HBCT would require increased use of existing airspace or use of additional airspace. Where existing airspace is insufficient, or already saturated with military activity, installation commanders would have to seek additional special use airspace designations from the FAA. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource. (US Army Corps of Engineers, 2002)

Multiple BCTs. Minor (low) short- and long-term adverse impacts to airspace use are expected. As with the IBCT and HBCT scenarios, UAV activities associated with a multiple BCTs would require increased use of existing airspace or use of additional airspace. Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use.

4.4.4 Cultural Resources

4.4.4.1 Affected Environment

The affected environment for Fort Campbell is the 105,000 acre footprint of the installation. Additionally, the installation straddles two states, Tennessee and Kentucky, with two counties in each state containing portions of the installation. This means that all federal undertakings that could potentially impact historic and/or archaeological resources must be coordinated with the corresponding SHPO.

The APE at Fort Campbell for purposes of compliance with Section 106 of the NHPA includes the entire area within the military reservation for Fort Campbell, over 105,000 acres. The inventory of cultural resources at Fort Campbell includes over 1,400 archaeological sites, 320 of which are considered eligible or potentially eligible for the National Register of Historic Places. There are over 2,000 buildings considered eligible, most of which are World War II temporary structures or Capehart/ Wherry era family housing units.

The former Clarksville Base is a 2,600 acre historic district and Cold War property with over 200 contributing structures and features. It is considered eligible for its associations with the storage and maintenance of nuclear weapons in the earlier phases of the Cold War.

There are six prehistoric archaeological sites that have in the past yielded human remains and funerary items. These sites are considered highly significant by federally recognized Indian tribes whose lands once included in area of Fort Campbell. One of the known burial sites is within the bounds of the Clarksville Base Historic District in close proximity to lands most likely to be needed for new facilities in support of a BCT

under all alternatives. The inventory of archaeological sites includes 123 historic era cemeteries left in place during the original establishment of Camp Campbell in 1942.

Most of the training lands at Fort Campbell outside of the impact areas have received at least an initial survey for archaeological sites. Unfortunately, several earlier archaeological surveys have been documented to be sub-standard and the initial surveys were not designed to locate deeply buried sites in alluvial and colluvial soils. Some of the alternatives under consideration would increase the risk of damage to deeply buried sites and may trigger a need to re-examine the possibility of archaeological sites in the deeper settings.

The general management of cultural resources at Fort Campbell is guided by an Integrated Cultural Resources Management Plan adopted in 2002, and by the terms of a Programmatic Agreement among Fort Campbell, the Tennessee Historical Commission, and the Kentucky Heritage Council, renewed in 2003. The current military training activities at Fort Campbell avoid damaging cultural resources by limiting mechanically assisted digging to areas approved by ITAM permits. Routine passage of troops and vehicles in the training areas is prohibited in the historic era cemeteries. The existing dig permits process reduces impacts to cultural resources. The process is run by the ITAM program and is very effective. Eligible sites are recorded as no dig areas on GIS within the training areas.

4.4.4.2 Environmental Consequences

CS/CSS. Minor (low) short- and long-term impacts on cultural resources in the maneuver training areas are expected. Impacts are anticipated to result from the increased frequency and intensity of training activities throughout the maneuver training areas, increasing the likelihood of incidental and inadvertent damage to archaeological sites. Under these alternatives, wheeled vehicles would continue to make routine passage over varied terrain in several different training activities.

Full Sustainment BDE, IBCT. Moderate (medium) impacts are expected. New facilities in support of all three BCT types would likely be located within the Clarksville Base Historic District if Fort Campbell is selected for the proposed action. This would cause an adverse effect to the integrity of this Cold War property. Fort Campbell would need SHPO coordination and resolution of adverse effects through adoption of an MOA with specified mitigations measures. The consultations with the SHPO may be protracted and the costs of mitigation substantial. Since one of the known prehistoric burial sites is in relatively close proximity to lands likely to be needed for new BCT facilities, several Indian tribes may be concerned about adequate protection of the burial area from disturbance and looting. Increased disturbances would introduce a risk of damage to archaeological sites that is not present in the current array of training impacts. These increased impacts could require re-opening consultations regarding terms of the ICRMP and Programmatic Agreement stipulating which training actions may regularly take place without further SHPO consultation.

HBCT. Significant (high) impacts to cultural resources are expected both from increased frequency of the use of maneuver training areas as is true for the other alternatives, but also because the use of the heavier vehicle types and tracked vehicles would introduce different kinds of impact to the terrain. The use of heavier equipment in the maneuver training areas would introduce a much greater degree of threat to archaeological sites due to erosion in upland areas and much deeper incidental disturbances of ground in alluvial and colluvial settings. These additional impacts would probably trigger a need to terminate and replace Fort Campbell's Programmatic Agreement with two State Historic Preservation Offices in order to adequately deal with this new range of impacts from the training activities at Fort Campbell.

Multiple BCTs. Significant (high) impacts to cultural resources are expected. Under a Multiple BCT scenario impacts would be similar but increasingly more intense than for an HBCT. These would include more adverse effects to Clarksville Base historic district, and greater, more frequent impacts to archaeological sites and cemeteries in the maneuver training areas.

4.4.5 Noise

4.4.5.1 Affected Environment

Noise Zone II (normally incompatible with noise sensitive land uses) and Zone III (incompatible) from range firing extend off the installation in several locations. The LUPZ Noise Zone contours contain some incompatible land uses. Furthermore, future residential development adjacent to the installation threatens to encroach on Fort Campbell by establishing additional incompatible land use zones.

Fort Campbell is made up of three general use areas, maneuver, impact areas, and the built-up area or cantonment area which includes Campbell Army Airfield and Sabre Army heliport. Noise from training persists year-round as the installation is responsible for training more than 45,000 Soldiers annually. Military operations supported include Airborne and Air Assault, Air Defense including a high amount of artillery, a variety of small and large caliber fire, and maneuver. Artillery, mortar, and tank gun fire does occur after 2300 hours, or 11:00 PM. Normal operational hours for aviation training are from 1600 to 0200, or 4:00 PM to 2:00 AM. Fort Campbell publishes a weekly training schedule to keep the public informed, especially in advance of heavy training periods.

4.4.5.2 Environmental Consequences

CS/CSS. Minor (low) major impacts are expected. Any air power supporting these Soldiers would not significantly add to- or degrade the operational capabilities of the installation or the noise generated from everyday activities.

Full Sustainment BDE. Minor (low) adverse noise impacts are expected from the addition of up to 3,500 Soldiers. Maneuver areas would see a general increase in traffic which would stay mainly on range course trails or hardened surfaces, effectively minimizing any impacts to noise contours, and thus to wildlife in the area of the

maneuver ranges. The noise zones impacted from air traffic (general purpose and attack helicopters) is already heavily trafficked and would not see a major increase in use or operations.

IBCT. Only minor (low) short-term adverse impacts are expected from fielding an IBCT to Fort Campbell. The installation and surrounding areas would experience approximately the same impacts as with a Full Sustainment BDE; however, a general small increase in large caliber artillery fire could be expected. Artillery fire associated with an IBCT would be relatively minor when compared to the large caliber fire already occurring at the installation.

HBCT. There would be an overall moderate (medium) long-term adverse impact expected to wildlife including T&E species, and to residential areas adjacent to the installation. A heavy brigade would increase the amount of noise generated from large caliber weapons fire on the installation, but would likely not elevate noise to levels that exceed current peak noise thresholds. Residential communities would have an overall medium impact, but noise contours would likely not change. Noise would increase in natural areas. The installation may need to review its INRMP and ESMP, especially for evening and nighttime operations when their endangered species are most active.

Multiple BCTs. Only a moderate (medium) long-term noise impact is expected. As with an HBCT, multiple BCTs would elevate current noise levels, but would not likely exceed current peak noise thresholds. The installation already has mitigations in place to help reduce current noise. Noise contours might change and LUPZs might need to be reviewed for further changes. Fort Campbell would need to update their IENMP.

4.4.6 Soil Erosion

4.4.6.1 Affected Environment

Fort Campbell topography includes gently rolling hills with steep dissected hilly land along the western boundary. Elevation ranges from 400 feet to 700 feet.

Fort Campbell is located in the Western Highland Rim of the Lexington Plain (KY) and the Highland Rim Plateau (TN). There are 30 soil mapping units and half of these have moderate to severe potential for erosion. Erosion is influenced by the soil composition, slope, fires, and annual rainfall. At one time Fort Campbell used a firebreak system which impacted soil erosion. The installation has closed the firebreak system through obliteration of breaks by land smoothing and reseeding. Some of the breaks were upgraded to gravel forest access roads.

Stream crossings too have been closed and revegetated as well. The installation was notified of a 401D Violation in regards to the sediment in the streams exceeding the Clean Water Act standards. None of the bridges or culverts on the installation are rated to support a tank. Only a few are rated as capable of supporting Bradley Fighting Vehicles. Most of the wheeled vehicle traffic on the installation is on gravel secondary roads and range access roads.

4.4.6.2 Environmental Consequences

CS/CSS. There would be a moderate-level (medium) impact from the wheeled vehicles in these units. However, CS/CSS activities occur at designated locations that are monitored through the ITAM program. Although erosion occurs, it is contained and repaired. The condition of existing (unimproved) range roads and their ability to support for heavy truck traffic would have to be evaluated.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be (high) significant (long-term) adverse impacts on soils. Though the Full Sustainment BDE is expected to stay on roads and hardened surfaces, some off-road training may occur, which given the current soil conditions, would result in significant soil impacts. Dismounted training associated with the vehicles of the IBCT could have a greater effect in small selected areas on ranges. The addition of any BCT would have increased the number of BCTs to five utilizing the training area. The HBCT would have a significant impact on roads and off-road areas. The terrain would likely show the impact from the vehicle maneuvers, turns and traction, digging, and deep ruts. These areas could then be more prone to water erosion, and due to the number of tracked vehicles in an HBCT and the weight and mobility characteristics of the tracked vehicles. Training opportunities for the HBCT could be limited by current vegetation patterns on the installation. An overall long-term, significant adverse (very high) impact would result from stationing multiple BCTs at Fort Campbell, given that the number, size, variety and impact of wheeled and tracked vehicles that accompany this level of growth. The road network would likely require a considerable amount of maintenance, over-and-above the installation's current level, as the roads may deteriorate rapidly leading to trafficability and erosion problems.

4.4.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.4.7.1 Affected Environment

The terrestrial environment of Fort Campbell consists primarily of hardwood forests, pine plantations, grasslands or barrens, and some agricultural lands (Figure 3-11). Before the federal government obtained the land in 1941, most of the area had been cleared for cultivation. Woodlands currently occupy more than 50,000 acres on Fort Campbell, nearly half of the installation's total area. Hardwood forests dominate the natural landscape in both physiographic subsections. Oak and oak-hickory associations occur most frequently, though more mesophytic community types occur on some slopes and ravines, including the western form of the mixed mesophytic forest in a few rare cases (Chester and Ellis, 1989).

The barrens of Fort Campbell occupy 3,500 to 4,500 acres and are predominantly composed of moderate to tall perennial native warm season grasses, many of which are also found in tallgrass prairies of the Midwest. Some of the more prevalent grass species include big bluestem (*Andropogon gerardii*), broomsedge (*Andropogon*

virginicus), two-edged panic grass (*Panicum anceps*), little bluestem (*Schizachyrium scoparium*), and Indian grass (*Sorghastrum nutans*). The forest matrix surrounding these grasslands is dominated by oak (*Quercus* spp) and pine (*Pinus* spp.) plantations. To place this ecosystem in a regional context, the barrens found on Fort Campbell are part of a once-much-larger area referred to as the Big Barrens of Kentucky or Kentucky Meadows. The Big Barrens encompass a crescent-shaped area that extends from the Ohio River, approximately 56 kilometers west of Louisville, southward into Tennessee, and westward almost reaching the Cumberland River (Chester, 1988). The southernmost part of the ecoregion extends into the northwestern Highland Rim section of Tennessee; barrens are found mostly in northern Montgomery and Robertson Counties and northeastern Stewart County. Those barrens are closely associated with karst topography underlain by cavernous Mississippian limestone.

The vegetation significance of the barrens in eastern North America include factors such as high rates of endemism, endangered species, and species at or near the limit of their range (Chester, 1988). However, most of the barrens have now been destroyed or disturbed to such an extent that few representatives of the original flora remain. Major causes of the prairie loss include cultivation, a lack of fire, invasive species, or development. It is quite likely that Fort Campbell harbors the largest remaining remnant barrens east of the Mississippi River (Jones, personal communication, 1998b).

Fort Campbell has conducted various surveys to inventory mammals, birds, fish, amphibians, reptiles, and insects on the installation. Fort Campbell wildlife biologists routinely survey game mammals, bird, and fish to monitor population trends. In 2004, Fort Campbell initiated a Biodiversity Initiative, designed to inventory the seldom sampled aquatic environments of the installation; surveys for adult aquatic insects and fish have been implemented, and surveys for crayfish, aquatic snails, and terrestrial insects are planned. Annual surveys conducted by the Natural Resource Programs since 1992 are a primary source of information about the presence and distribution of non-game wildlife on Fort Campbell. Other project- or area-specific studies have also been conducted.

Forty species of mammals have been recorded and/or documented on Fort Campbell. Nearly 200 species of birds have been recorded on Fort Campbell. The installation supports diverse groups of songbirds, waterfowl, wading birds, and raptors. The only federally listed species of bird observed on Fort Campbell is the bald eagle (*Haliaeetus leucocephalus*)⁴. Results of herpetofaunal surveys identified five species of turtles, four species of lizards, 16 species of snakes (including two venomous species), 13 species of salamander, and 12 species of frogs and toads. Surveys for fish conducted in Fort Campbell streams and lakes between 1994 and 2004 indicate approximately 60 fish species are present on the installation.

⁴ As of 8 August 07, the Bald Eagle is no longer afforded protection under the Endangered Species Act (ESA). However, it is protected under the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act. The Eagle Act is the primary law protecting eagles and protection is very similar to the ESA.

Fort Campbell is home to two federally listed endangered species, 21 wildlife species listed as threatened or endangered by Kentucky and/or Tennessee, and 23 species considered special concern, in need of management, rare, or declining by one or both states. More information on these species can be found in Appendix T.

4.4.7.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, and HBCT. Short- and long-term minor (low) impacts are expected. It is anticipated that implementation of any of these scenarios of increased activity may have an impact on the two listed species and SAR. Increased Soldier training at any level would likely affect endangered species found on Fort Campbell. Increased training would likely promote increased sedimentation into installation streams as Fort Campbell is located in a highly erodible area. This has negative effects on the macroinvertebrates inhabiting the stream bottom, which are a major forage source for endangered bats found on the installation. Upon implementation of a proposed action, the threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, and by the terms and conditions identified within biological opinion(s) issued by the USFWS and including any previously implemented conservation measures identified in ESA, Section 7 consultation documents. However, since each of the proposed actions may affect any of the recorded listed species, the installation would be required to consult with the USFWS either informally or formally, depending on whether the proposed action would result in a "take" to accommodate training requirements.

Multiple BCTs. Short- and long-term minor (low) impacts are expected. It is anticipated that implementation of this level of Soldier strength may have a greater impact than the other four proposed scenario increases. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since this action may affect any of the recorded listed species, the installation would be required to consult with the USFWS either informally or formally, depending on whether take is anticipated to occur. The need for formal consultation may be more likely needed than for the other proposed actions.

4.4.8 Wetlands

4.4.8.1 Affected Environment

Fort Campbell contains approximately 2,612 acres of wetlands (INRMP, Fort Campbell, 2005). In 2000, all wetlands on Fort Campbell were delineated. Of the identified 2,612 acres, 792 acres were found to be jurisdictional by the USACE (Fort Campbell GIS, 2007). Most wetlands on the installation are palustrine. A 36-acre mitigation site was established on the installation to offset past construction activities.

4.4.8.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT, HBCT, and Multiple BCTs. Minor (low) impacts to installation wetlands are expected as a result of the restationing of units to Fort Campbell. Wetlands are designated as non-training areas. Minimal impacts have occurred in the past and no major impacts are expected with the increase in troop strength. Fort Campbell proactively monitors wetland areas and enforces ensures that training would be assigned to established training areas.

4.4.9 Water Resources

4.4.9.1 Affected Environment

Fort Campbell's major water usages are for water supply, recreation, training, and aquatic habitat. Vehicular traffic is limited to crossings at bridges and hardened stream crossings within these areas. The majority of streams are impaired by on-going military and non-military activities.

Surface Water and Watersheds

Fort Campbell has 422 stream miles and four man-made lakes. All streams are impaired (including from sediment transport) and listed as state priority waterways for total maximum daily load (TMDL) development.

The Little West Fork, Saline Creek, and Casey Creek make up Fort Campbell's three subwatersheds, all of which drain into the Cumberland River. The Little West Fork Watershed has 297 stream miles and supports Fort Campbell's water supply system. The Saline Creek Watershed (79 stream miles) drains approximately 19 miles of the installation's western portion. Installation training exercises and dredging for gravel are known to cause erosion along this watershed. The 49 stream miles of the Casey Creek Watershed drain a small portion of the northwestern edge of the installation.

Lake Kyle is a 75.3-acre lake located in the southwestern portion of the installation. Water pumping, helicopters lowering personnel into the lake, and battalion-sized elements camping adjacent to the lake are a few of the training activities that occur in and around Lake Kyle. Lake Taal, a 25.2-acre lake, is located south of Clarksville Base. Approximately 25 percent of the lake has been filled with sediments.

Water Supply

Boiling Spring is Fort Campbell's primary source of drinking water. It receives groundwater from the Boiling Spring groundwater basin that is approximately 50 square miles. Fort Campbell's drinking water system is a privatized system with a 7.6 MGD capacity.

Wastewater

Fort Campbell's privatized wastewater treatment plant services the cantonment area, Campbell AAF, and Sabre Heliport. The 4 MGD facility provides both primary and secondary treatment and meets all applicable water quality standards. Additional

generations of solid wastes are within the capacity of local and regional waste disposal facilities.

Stormwater

The most important problem at Fort Campbell is related to sediment and erosion controls at construction locations. The installation and the US Army Corps of Engineers (USACE) are working with construction contractors to ensure that proper storm water controls are implemented, operated, and maintained at construction sites. The ability of the installation and USACE to properly enforce these requirements has been limited in the past, but is improving. Other activities that may be contributing to the sediment and erosion problems include runoff from agricultural operations, military training, vehicle fluid spillage, pesticides, fertilizers, and animal waste.

4.4.9.2 Environmental Consequences

CS/CSS. Long-term moderate (medium) adverse impacts to water resources are expected. The addition of a CS/CSS would increase water demand for consumption. There would also be an impact on watersheds as all streams are listed as state priority waterways for TMDL development. Currently, Fort Campbell has issues with sediment and erosion control. The installation would also need to revisit their Stormwater Pollution Prevention Plan to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

Full Sustainment BDE, IBCT, HBCT. Long-term significant (high) adverse impacts to water resources are expected. The increase in water consumption could require upgrades to the private water and wastewater treatment systems, even with the Full Sustainment BDE and the IBCT with their 3,000 to 3,500 Soldiers. Water demand is expected to increase with a higher amount of Soldiers stationed at the installation as with the 3,800 to 4,000 Soldiers associated with the HBCT. Motorpool activities and washing of field-driven heavy-tracked vehicles associated with the HBCT would produce a considerable increase on water demand and associated treatment. Currently, Fort Campbell has issues with sediment and erosion control. Fort Campbell may need to construct new washing systems to manage heavy-tracked vehicles. There would also be an impact on watersheds as all streams are listed as state priority waterways for TMDL development. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

Multiple BCTs. Significant (very high) adverse impacts to water resources are expected. Water demand would significantly increase with 7,000 Soldiers and their Families. Motorpool activities and washing of field-driven vehicles would produce a substantial increase on water demand and associated treatment. Such an increase

would require upgrades to the installation's private water and wastewater treatment system. There would be an expected impact on watersheds as all streams are listed as state priority waterways for TMDL development. Fort Campbell would likely need to construct new washing systems to manage the additional vehicles. The installation would also need to revisit their Storm Water Pollution Prevention Plan to incorporate best management practices for any new training activities.

4.4.10 Facilities

4.4.10.1 Affected Environment

Fort Campbell is located approximately 17 miles south of Hopkinsville, Kentucky and 8 miles north of Clarksville, Tennessee. The post straddles the Kentucky-Tennessee border; approximately 70,000 acres (two-thirds of the total area) of the installation are located in Tennessee (*Fort Campbell Ranges and Training Land Program (RTLTP) Development Plan*, US Army, 2004).

Built-up areas include the cantonment area, the former Clarksville Base, the Montgomery County Landfill, and several small solid waste management units. A variety of small land uses are located in the built-up areas including administration, operational training and maintenance, landing strips for fixed-wing aircraft and helicopters, motor pools, supply and storage, maintenance, commercial and medical services, industrial, community facilities, Soldier and family housing, recreation, open space, and two small lakes.

Fort Campbell has facility and real estate issues. The Master Plan prepared in fall 2006 included the Clarksville Base area. Accepting additional Soldiers could invalidate the current BCT plan that the installation has in place. A housing market analysis is currently being undertaken. Fort Campbell is similar to Fort Bragg in that there is no buildable space available except within the training lands (Zirkle, Installation Questionnaire, 2007). Fort Campbell needs additional land to support the training requirements of assigned units that train on the installation. Fort Campbell has only 39 percent of the total maneuver area needed to train the 101st Division's platoon, company, and battalion mission essential tasks. The shortage of maneuver area is even greater when adding the maneuver area requirements of the 5th Special Forces Group (SFG) (A). This project has a Headquarters, Department of the Army- Training Integration Support Group (HQDA TISG) categorization of revitalization (R). This training shortfall is expected to persist with an additional BCT. Fort Campbell does however have sufficient range throughput capability to support an additional BCT.

4.4.10.2 Environmental Consequences

CS/CSS. Short- and long-term minor (low) adverse impacts are expected. It is anticipated an increase of 1,000 Soldiers would increase activities within the cantonment, including but not limited to, increased usage of the Post Exchange, commissary, medical, and family support facilities. There is a current lack of buildable space at Fort Campbell.

Full Sustainment BDE, IBCT, HBCT. Significant (high) impacts are expected to facilities. As with the CS/CSS, increased Soldier strength of 3,000 to 4,000 would be reflected through increased usage throughout the Cantonment Area. The lack of available buildable space on Fort Campbell poses a challenge to implementation of the ACP at this level. The installation real property management plan (RPMP) would require modifications to allow for implementation of the ACP. A study using SIRRA would also be beneficial. An excess aggregate demand on facilities and infrastructure required by a HBCT could lead to an overall degradation of facilities quality.

Multiple BCTs. Significant (very high) impacts are expected to facilities. There is a high probability that multiple BCTs and 7,000 Soldiers would increase congestion beyond the carrying capacity of the cantonment infrastructure. The lack of available building space would contribute to this. It is highly unlikely that the installation RPMP could accommodate this iteration of proposed action. The level of construction required at this level is resource intensive and potentially beyond the ability of Fort Campbell to sustain. The excess aggregate demand on cantonment facilities and infrastructure required by multiple BCTs may lead to system degradation or non-compliant regulatory issues.

4.4.11 Energy Demand/Generation

4.4.11.1 Affected Environment

Fort Campbell's energy needs are currently met by a combination of electric power and natural gas. Electric power is provided by the Tennessee Valley Authority, and natural gas is supplied primarily by the Clarksville Gas and water department.

Electricity. Electric power is supplied to Fort Campbell through a single substation. Transmission lines serving the installation from the substation currently have the capacity to serve the installation during peak demand.

Natural Gas. Natural gas is supplied by a gas distribution system which runs throughout the cantonment area.

4.4.11.2 Environmental Consequences

CS/CSS. Long-term minor (low) adverse impacts are expected. The addition of a CS/CSS unit represents a small part of the overall mission activity at Fort Campbell. Some new electrical and natural gas infrastructure may need to be constructed to supply energy to additional personnel.

Full Sustainment BDE and IBCT. Significant (high) impacts on energy demand/generation at Fort Campbell are expected. A Full Sustainment BDE or IBCT, with nearly 3,500 Soldiers, would have an incrementally larger impact than the CS/CSS just in terms of the number of additional Soldiers and activities associated with this

scenario. New electrical and natural gas infrastructure would need to be constructed in order to accommodate the increase in usage.

HBCT. Significant (high) impacts on energy demand/generation are expected. Impacts are similar to the IBCT scenario, with just a slight increase in the number of Soldiers and activities associated with the unit. The addition of an HBCT would also have a major impact on energy demand at Fort Campbell, with the need for new infrastructure to be put in place to accommodate the electrical and natural gas demand from increase in personnel.

Multiple BCTs. Significant (high) impacts are expected. The addition of multiple BCTs, with an estimated increase of 7,000 Soldiers, is anticipated result in a considerable impact on energy demand/generation at the installation. New electrical and natural gas infrastructure would need to be constructed in order to accommodate the increase in usage, including new substations to transfer the electricity, and new connections and lines to transport natural gas.

4.4.12 Land Use Conflicts/Compatibility

4.4.12.1 Affected Environment

Fort Campbell consists of approximately 105,347 acres. The installation is composed of three general use areas including maneuver areas, range and impact areas, and built-up areas. The largest portion of Fort Campbell is used as training and maneuver areas. Approximately 70,000 acres or two-thirds of the installation is set aside as maneuver area. The training and maneuver areas are generally located west of Range Road and the former Clarksville Base. The second largest portion of the installation is set aside for range and impact areas. The range and impact areas are also located west of Range Road and are surrounded by training and maneuver areas. Approximately 20,700 acres, or about one-fifth of the installation, is designated for range and impact areas. The built-up areas account for the remaining, approximately 14,000 acres, of the installation land area. Fort Campbell is currently using 2,602 acres from the Clarksville Base to support training. Additional facilities are being planned for construction in that area and would likely substantially reduce the impacts to facilities on Fort Campbell upon completion.

The built-up area includes the main Cantonment area (5,213 acres), Campbell Army Airfield (3,385 acres) and Sabre Heliport (110 acres). The built-up areas contain a mixture of smaller land uses including administration, operational training, operational maintenance, supply and storage, post maintenance, commercial services, community facilities, Soldier housing, family housing, recreation, open space and lakes. The majority of the smaller land use development is located in the Cantonment area south of Campbell Army Airfield and north of former Clarksville Base. The Cantonment area south of the Tennessee-Kentucky state line is included as part of the City of Clarksville for statistical purposes only. Off-post light sources, including from the City of Clarksville, encroach upon the nighttime training activities and operations in Fort Campbell's training areas, and would likely worsen if nighttime training activities are

pushed closer to the installation boundary. Encroachment from commercial development nearby installation boundaries will continue to impact the Army mission at Fort Campbell.

4.4.12.2 Environmental Consequences

CS/CSS. There would be minor (low) short- and long-term environmental impacts on installation land use due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. The installation has sufficient land available to either build the facilities needed for this unit, and/or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional SCS/CSS unit. The facilities for this unit would not be contiguous, but would be within a distance of one-half mile.

Full Sustainment BDE, IBCT, HBCT. Significant (high) impacts are expected on installation land use due to the presence of an additional 3,000 to 3,500 Soldiers and their family members assigned to the installation. The installation would not have enough existing facilities, located in areas with comparable land uses to accommodate a Full Sustainment BDE. The installation would not have sufficient land compatible with tactical unit requirements on which to build facilities necessary for a unit. New or existing facilities would not be contiguous, and distant from Soldier support facilities and training and maneuver ranges. Building new facilities would require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. This, in turn, would cause a measurable decrease of the installation's capacity to train Soldiers. Building new facilities could also require construction on, or immediately adjacent to, environmentally sensitive areas, such as wetlands, requiring extensive, and/or expensive mitigation actions.

Multiple BCTs. There would be high-significant (very high) short- and long-term environmental impacts on installation land use due to the presence of an additional 7,000, or more Soldiers and their Families assigned to the installation. The installation would not have enough existing facilities, located in areas with comparable land uses to accommodate multiple BCTs. New or existing facilities would not be contiguous, and distant from Soldier support facilities and training and maneuver ranges. Building new facilities for multiple BCTs could require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. This, in turn, would cause a measurable decrease of the installation's capacity to train Soldiers. Building new facilities could also require construction on, or immediately adjacent to, environmentally sensitive areas such as wetlands, requiring extensive, and/or expensive mitigation actions.

4.4.13 Hazardous Materials/Hazardous Waste

4.4.13.1 Affected Environment

Hazardous materials and waste are from underground storage tanks (USTs) and aboveground storage tanks; pesticides; lead-based paint (LBP); asbestos; polychlorinated biphenyls (PCBs); radon; and unexploded ordnance (UXO). Each installation operates under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and non-hazardous materials for toxic and hazardous ones; ensure compliance with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste. (US Army Corps of Engineers, February, 2002)

4.4.13.2 Environmental Consequences

CS/CSS. There would be minor (low) long-term environmental impacts from hazardous materials and waste. It is anticipated that Fort Campbell would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BDE. Minor (low) short- and long-term environmental impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 3,500. Direct beneficial and adverse impacts would be expected. Direct beneficial impacts include activities associated with land transactions where the Army would continue to operate under its Installation Restoration Program (IRP) to return contaminated lands to fully usable status. Direct adverse impacts include increased facility construction and modification. (US Army Corps of Engineers, February, 2002) The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations.

IBCT. There would be minor (low) short- and long-term environmental impacts from hazardous materials and waste associated with the addition of an IBCT. Materials used, stored, and handled would increase; however, existing procedures, regulations, and facilities would be able to meet storage, use, and handling requirements. No adverse impacts would be anticipated. The hazardous waste disposal facilities would be adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed.

HBCT. There would be significant (high) short- and long-term environmental impacts from hazardous materials and wastes. With the addition of 3800 to 4,000 Soldiers, substantial urban and semi-urban settings to support training and future mission requirements would be needed. Many projects involve the use, generation, and storage of hazardous materials and wastes during facility demolition, renovation, or construction. The demand for additional storage and disposal capacity would have to

be met at the local level at the installation. Army policies, regulations, and guidelines that manage the use, storage, and disposal of materials and wastes would need to be updated to reflect the change in mission at Fort Campbell and expanded training activities.

Multiple BCTs. The establishment of multiple BCTs at Fort Campbell would result in significant (high) short- and long-term environmental impacts from hazardous materials and waste. Generation and management of hazardous materials and waste, pesticides, petroleum storage tanks, ordnance and explosives would all be higher than with the other actions, and waste management plans would need to be updated to reflect the change in mission and expanded training activities. The addition of multiple BCTs may require an additional on-site investigation.

4.4.14 Traffic and Transportation

4.4.14.1 Affected Environment

Fort Campbell straddles the border between Kentucky and Tennessee, with the installation cantonment area in Kentucky; approximately 15 miles south of Hopkinsville, KY and approximately 10 miles north of Clarksville, TN. The region of influence (ROI) for this proposed action includes Fort Campbell, Christian and Todd Counties in Kentucky, and Montgomery and Stewart Counties in Tennessee. Other communities adjacent to Fort Campbell include Big Rock, Bumpus Mills, and Woodlawn in Tennessee and LaFayette, Oak Grove and Roaring Springs in Kentucky (Robert and Company, 1996). Fort Campbell is expecting an increase of 6,000 POVs with an incoming IBCT (Fort Campbell, 2007). There are no waterways or maritime shipping at this installation. Due to recent community development projects on or near the installation, the Regional Planning Commission concluded a likely increase in traffic levels at Fort Campbell would exceed the current threshold and warrant further analysis and growth master planning.

4.4.14.2 Environmental Consequences

CS/CSS. There would be significant (high) short and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. A large percentage of the unit's married population, and unmarried soldiers in the grade of E-6 (Staff Sergeant) and higher, would likely reside in off-post housing. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. However, the additional off-post population would contribute to increased traffic congestion, and a decrease of the LOS, on the road network leading to the installation's cantonment area, particularly during peak morning and evening hours. The increased population would greatly effect on traffic congestion on the installation, contribute to a reduction in the LOS on the installation's road network, and pose increased risks to the safety of pedestrians and bicyclists.

Full Sustainment BDE. There would be significant (high) short and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 3,500 Soldiers and their family members assigned to the installation. This level of increase in population would also have a major impact on the traffic volume on the installation, and contribute to a decrease in LOS on a higher percentage of the installation's road network. The increased traffic volume in both the neighboring community and on the installation would pose an increased level of risk to the safety of pedestrians and bicyclists.

IBCT. There would be significant (high) short- and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 3,500 Soldiers and their family members. The increase in traffic congestion, accompanying decrease in LOS, and increased safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

HBCT. There would be significant (high) short- and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 3,800 to 4,000 Soldiers and their family members. The increase in traffic congestion, accompanying decrease in LOS, and increased safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

Multiple BCTs. There would be significant (high) short- and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 7,000 Soldiers, or more, and their family members. The impact on the traffic congestion in the local communities from this increased population level would be significant and would likely cause a decrease in LOS in the community's road network, and would likely cause a decrease in the LOS on the road network leading to the installation. This increase in both Soldier and Family-member population would cause a major impact on the LOS of the installation's road network and pose an increased risk to the safety of pedestrians and bicyclists.

4.4.15 Cumulative Effects

Soil erosion is considered to have the most significant amount of cumulative impacts to Fort Campbell. Any increase in Soldier strength at the combat brigade level will continue to deteriorate the roads and trails of the installation and increase sedimentation. Fort Campbell has already received a 401D Clean Water Act violation for water quality due to excessive sedimentation in streams at or around range areas. Further deterioration of water quality from sedimentation will likely have a negative indirect impact to the Indiana Bat and Gray Bat populations, which utilize Fort Campbell's streams for foraging. The decrease in water quality would reduce the Bat's food source (insects) number and availability. Stream impacts could also directly affect the installation's efforts to improve the Red River watershed, of which many of the streams are already impaired due to siltation. Fort Campbell is within the headwaters of this watershed.

The potential increase in Soldier strength would potentially lead to new developments outside the installation boundary to accommodate this level of growth, resulting in a greater degree of encroachment above which the installation is already experiencing. Further encroachment is expected to result in training restrictions due to safety and noise issues.

4.5 FORT CARSON, COLORADO

4.5.1 Introduction

Fort Carson, located in central Colorado, has approximately 90,000 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.5-1). It has long supported armored/mechanized unit training and dismounted infantry unit training.

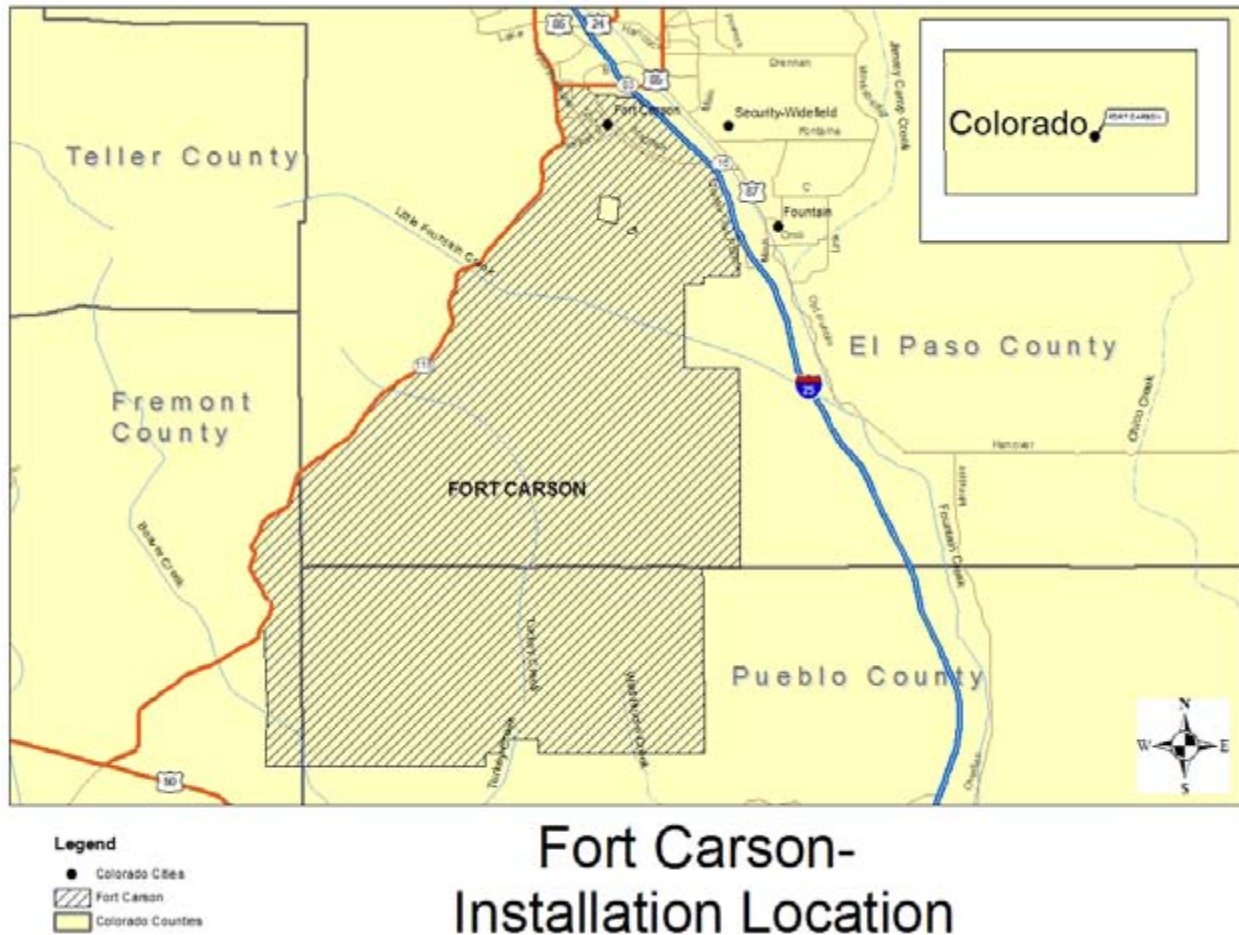


Figure 4.5-1 Fort Carson

Currently, the major units stationed at Fort Carson include the Division West, First Army Command Group; the 4th Infantry Division (all units not yet present); the 2nd Brigade, 2nd Infantry Division; the 43rd Area Support Group, the 10th Special Forces Group (Airborne); and the 71st Explosive Ordnance Detachment Group. Fort Carson possesses robust range infrastructure capabilities designed to support both conventional Army and Special Forces units. Piñon Canyon Maneuver Site (PCMS) is a satellite maneuver training area which is primarily used to meet the training requirements of units stationed at Fort Carson. Potential impacts to resources at PCMS resulting from training of newly stationed units at Fort Carson are evaluated in this section along with the projected impacts to Fort Carson.

Table 4.5-1 and 4.5-2 contains the Fort Carson VEC ratings for each of the various stationing action scenarios.

Table 4.5-1. Fort Carson VEC Ratings

Fort Carson						
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment Brigade (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800-4,000 Soldiers)	Stryker BCT (4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	High	Very High	Very High	Very High	Very High	Very High
Airspace	Low	Medium	Medium	Medium	Medium	Medium
Cultural Resources	Low	Low	Medium	Medium	Medium	Medium
Noise	Low	Low	Medium	Medium	Medium	High
Soil Erosion Impacts	Medium	Medium	Medium	High	High	High
Biological Resources	Medium	Medium	Medium	Medium	Medium	High
Wetlands	Low	Low	Medium	Medium	Medium	Medium
Water Resources	Low	Medium	Medium	Medium	Medium	High
Facilities	Medium	High	High	High	High	High
Socioeconomics	Low	Medium	Medium	Medium	Medium	High
Energy Demand/ Generation	Low	Medium	Medium	Medium	Medium	High
Land Use Compatibility	Low	Low	Medium	Medium	Medium	High
Haz Mat/ Haz Waste	Low	Low	Medium	Medium	Medium	Medium
Traffic and Transportation	Medium	Medium	Medium	Medium	Medium	High

Table 4.5-2. Fort Carson – Pinon Canyon Maneuver Training Site VEC Ratings

Maneuver Training Site (Carson Units Training)						
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment Brigade (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800-4,000 Soldiers))	Stryker BCT (4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low	Medium	Medium	High	High
Airspace	Low	Low	Low	Low	Low	Low
Cultural Resources	Medium	Medium	Medium	High	High	High
Noise	Low	Low	Low	Medium	Medium	Medium
Soil Erosion	Medium	Medium	Medium	High	High	High
Biological Resources	Medium	Medium	Medium	Medium	High	High
Wetlands	Low	Low	Low	Low	Low	Low
Water Resources	Low	Low	Low	Low	Medium	Medium
Facilities	Low	Medium	Medium	Medium	Medium	Medium
Socioeconomics	High	High	High	High	High	High
Energy Demand/ Generation	Low	Low	Low	Medium	Medium	Medium
Land Use Compatibility	Low	Low	Low	Medium	Medium	Medium
Haz Mat/ Haz Waste	Low	Low	Low	Low	Medium	Medium
Traffic and Transportation	Low	Medium	Medium	Medium	High	High

4.5.2 Air Quality

4.5.2.1 Affected Environment

Fort Carson

Fort Carson is within the air quality control areas of El Paso, Fremont, and Pueblo Counties, including the City of Colorado Springs. El Paso County is in attainment for all pollutants except CO. The Colorado Springs area is in attainment for all Clean Air Act criteria pollutants, and achieved attainment status for carbon monoxide (CO) on October 25, 1999. As a part of the redesignation, the Colorado Springs area is under a CO Maintenance Plan until 2015 to demonstrate compliance with the NAAQS.

Air pollutant emissions at Fort Carson are generated mainly through the combustion of fossil fuels in equipment such as boilers and motorized vehicles. Combustion products

include mainly CO, nitrogen oxide (NO_x), sulfur dioxide (SO₂), and particulate matter (PM) both as PM₁₀ and PM_{2.5}. There are no NO₂ or SO₂ monitoring stations within the Colorado Springs area. Mobile source emissions (i.e., cars, trucks, and other motor vehicles) are elevated during heavy travel times (e.g., open and close of business times). Traffic congestion typically raises the amount of CO exhaust emissions on the installation through an increase in the number of vehicles operating within a given area and longer idling times.

Tank and other military vehicle maneuvers on unpaved roads contribute to emission of PM. Painting and coating activities, fuel storage, fuel operations, and chemical usage contribute to emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). To a lesser extent, landfill-related emissions, military training activities, and fire training activities emit VOCs and various HAPs.

Prescribed burns, a source of CO, are initiated at Fort Carson through a detailed set of procedures outlined in a Prescribed Burn Planning Document. Constant monitoring occurs during the prescribed fire to ensure that air quality and safety are not compromised. Implementation of the Prescribed Burn Plan includes obtaining the required state and county permits. Prescribed burning is a process that targets areas that are vulnerable to spontaneous fires due to range operations, and in areas with heavy fuel buildups (Final Environmental Impact Statement (FEIS), 2007).

Fort Carson is considered a Title V major source because it is designated as one of the 28 specially listed source categories described by EPA and has the potential to emit more than 100 tons of pollutants per year. Emissions would be emitted from stationary equipment such as boilers, generators, paint booths, and parts cleaners. Any net increase of criteria pollutants that would result in a "major modification" would subject Fort Carson to the prevention of significant deterioration review requirements (40 CFR 52.21). The Colorado Air Quality Control Commission (AQCC) regulates the emissions of PM, smoke, CO, nitrogen oxides (NO_x), and sulfur oxides (SO_x) by implementing opacity and emission limits. Opacity limits are set to keep areas free of haze and to ensure that visibility long-term is not adversely affected. Obscurants include smoke and other visibility-reducing products used for military training. Facilities that are considered major stationary sources of pollutant emissions are a part of the Air Pollution Control District (APCD)-administered Title V Operating Permit Program. The Title V Operating Permits include listings of all air pollution regulatory requirements applicable to the source. Fort Carson's Title V Operating Permit also limits the use of smoke munitions and the generation of fog oil smoke for training exercises.

The *Fugitive Dust Control Plan* (Directorate of Environmental Compliance and Management (DECAM), 2004a) was established as a part of the state enforceable best management practice at Fort Carson to minimize dust impacts to air quality. The plan was approved by the Colorado Department of Public Health and Environment in August 2005. Additionally, site-specific land disturbance permits and dust suppression regulations and procedures are applicable and are implemented at Fort Carson.

Pinon Canyon Maneuver Training Site

At the Maneuver Training Site, the Region of Influence (ROI) for air quality includes the facility and Las Animas County, Colorado. The EPA regional air pollutant emission summary for Las Animas County includes emissions from industrial-source fuel combustion, petroleum-related industries, other industrial processes, use of solvents, storage and transport services, waste disposal, recycling, highway vehicles, off-highway vehicles, agricultural activities, and miscellaneous fugitive dust sources. Vehicle exhaust is the major source for VOCs, NO_x, and SO₂. Combustion from wildfires is the major source for CO, and fugitive dust from unpaved roads is the major source for PM¹⁰.

Las Animas County and the surrounding air quality region are classified as being in attainment for all criteria pollutants. Currently, there is no requirement for Prevention of Significant Deterioration analysis for Maneuver Training Site because it is located in an attainment area and it is not a major source of air pollutants under the provisions of the Clean Air Act (CAA).

4.5.2.2 Environmental Consequences

Fort Carson

Short- and long-term significant adverse impacts to air quality are expected from construction and operation activities resulting in increases in fugitive dust and exhaust emissions. Short-term impacts are associated with construction activities. Long-term operational impacts result from increases in emission sources related to general population increases (such as the use of heating units and additional mobile sources); and increases in land use and training requirements.

Air emissions are evaluated in accordance with federal and state air pollution laws and regulations. The air quality analysis evaluates whether the action:

- has the potential to contribute to a violation of the NAAQS, and
- does or does not comply with the General Conformity rule.

CS/CSS. Potentially significant (high) adverse impacts to air quality are possible from this stationing scenario. The introduction of an additional 1,000 Soldiers and their Families under the CS/CSS unit scenario would result in increased stationary and mobile source emissions. Under this unit scenario, increased traffic congestion (and resulting mobile source emissions) are not expected to cross thresholds established in the *Fort Carson Comprehensive Transportation Study* (FEIS, 2007). Personnel increases for the stationing of a CS/CSS unit are less than those analyzed in the study. In addition, the increase in off-post traffic and resulting mobile source emissions under the CS/CSS unit scenario are not expected to exceed regulatory thresholds.

Long-term significant (high) adverse impacts are anticipated from the increased use of tactical mobile sources, as resulting from increased training exercises. Tactical mobile sources and the associated training activities have the potential to result in impacts to

air quality from increased emissions of fugitive dust (PM) and vehicle exhaust. An increase in training exercises may not require an increase in the use of obscurants for training in excess of existing permit limits (FEIS, 2007). Increases in criteria pollutants have the potential to violate the NAAQS.

Full Sustainment BDE, IBCT, HBCT, Stryker BCT, and Multiple BCTs. Short- and long-term significant (very high) adverse impacts to air quality would be anticipated under this stationing scenario. Stationing of units ranging from a Full Sustainment BDE (3000-3500 Soldiers) to BCT scenarios that include a Stryker BCT (4,000 Soldiers) and Multiple BCTs (7,000 Soldiers) are expected to result in significant impacts to air quality on the installation and the surrounding community. Mobile source emissions are expected to increase on the installation and the surrounding area due to the influx of Soldiers and their Families. Vehicles traversing Interstate 25, located on the eastern edge of the installation, are also a contributor to mobile source emissions in surrounding area. Infrastructure upgrades required to support the influx of Soldiers and their Families are expected to result in a major increase of combustion emissions from stationary sources.

Fugitive dust emissions remain a concern and any increased emissions add to the very large mitigation burden already facing the installation. Opacity regulations must also be considered if activities are close enough to installation boundaries that visible emissions travel beyond installation boundaries.

Pinon Canyon Maneuver Training Site

CS/CSS and Full Sustainment Brigade. Long-term minor (low) adverse impacts to air quality are expected for training activities under these two unit scenarios. Stationing a CS/CSS unit or Full Sustainment Brigade at Fort Carson that would train at the Maneuver Training Site would not considerably increase off-road activity at PCMS since these units are expected to mainly stay on roads and hardened surfaces while conducting operations in support of BCTs. Under the evaluation conducted for the *PCMS Transformation EIS*, emissions from off-road training activities and off-post transportation were analyzed and compared with national threshold levels. The PCMS evaluation indicates that impacts from increases in off-road vehicle emissions would be far below applicable thresholds and would not violate the NAAQS or visibility standards. Convoy travel between Fort Carson and the Maneuver Training Site was also evaluated in the *PCMS Transformation EIS* (FEIS, 2007). It was determined that emissions from increased convoy travel would not result in impacts to air quality.

IBCT or HBCT. Long-term moderate (medium) adverse impacts to air quality are expected at the Maneuver Training Site under these two unit scenarios. Combustion emissions from stationary sources would increase due to new construction, or modifications to existing infrastructure, necessary to support the influx of new Soldiers and related training activities. Fugitive dust emissions are already an issue at the Maneuver Training Site during training exercises. Opacity regulations must also be

considered if activities are close enough to site boundaries that visible emissions are transferred off of the Maneuver Training Site.

Stryker BCT or Multiple BCTs. Long-term significant (high) adverse impacts to air quality are expected at Maneuver Training Site under these two unit scenarios. As with the IBCT and HBCT scenarios, combustion emissions from stationary sources would significantly increase due to the construction or modification in infrastructure required to support the influx of new Soldiers and related training activities. Increased intensity of training area use, including additional maneuver activities and requirements, under these two scenarios result in the highest level of impact to air quality within the Maneuver Training Site. Fugitive dust emissions and opacity regulations must also be considered if training activities occur close to the site boundary, particularly if emissions beyond the threshold have the potential to travel off-site.

4.5.3 Airspace

4.5.3.1 Affected Environment

Fort Carson

Fort Carson has 152 square miles of FAA-designated Permanent restricted use and Special use airspace, with no limit in altitude. The installation has access to this airspace continuously, and is controlled by the FAA of Denver, CO. (US Army Corps of Engineers, 2002)

Fort Carson airspace includes helicopter, rotary- and fixed-wing, and transient aircraft flights. The U.S. Air Force and Air National Guard use the reservation's airspace. FAA and Fort Carson established permanent restricted airspace over the installation to prevent flights from unauthorized aircraft. Civilian aircraft are restricted and military aircraft are permitted under controlled conditions while firing, including artillery, mortar, and missile projectiles, is in process. Airspace adjacent to Fort Carson is used by commercial and military institutions (US Army Corps of Engineers, 1995).

Air operation ranges on Fort Carson consist of the Air Burst Range and Butts Army Airfield.

Pinon Canyon Maneuver Training Site

Airspace at the Maneuver Training Site is used for tactical high-speed flight training for fighter or bomber aircraft. This military operations area extends from 100 feet above ground level to an altitude of 10,000 feet. Federal airways pass over and surround the Maneuver Training Site. Two instrument routes exist in these airways, and military aircraft use them for tactical maneuvers (US Army Corps of Engineers, 1995). There are no restricted designations for military or civilian use of airspace over the Maneuver Training Site.

4.5.3.2 Environmental Consequences

Fort Carson

CS/CSS. Long-term minor (low) adverse impacts to air space use are expected. It is anticipated that the activities associated with an increase of 1,000 Soldiers would moderately increase activities within the cantonment and training and range areas. Activities within the training and range areas may be limited to existing firing ranges and roadways. These activities may have to be scheduled to coordinate with existing mission activities.

Full Sustainment Brigade. Short- and long-term moderate (medium) adverse impacts to air space use are expected. An increase of Soldier strength by 3,000 to 3,500 would be reflected within the cantonment and increased usage of the training and range areas which could limit air space availability during training. Activities requiring airspace, such as unmanned aerial vehicle training, would be coordinated with existing mission activities.

IBCT, HBCT, Stryker BCT, and Multiple BCTs. Short- and long-term moderate (medium) adverse impacts to air space use are expected. Training activities associated with these units would require increased use of existing airspace or use of additional airspace. Where existing airspace is insufficient, installation commanders may have to seek additional special use airspace designations from the FAA. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource (US Army Corps of Engineers, 2002). The additional of new BCTs and their airspace requirements for tactical unmanned aerial vehicles and joint training are not anticipated to generate significant impacts.

Pinon Canyon Maneuver Training Site

CS/CSS, Full Sustainment Brigade, IBCT, HBCT, Stryker BCT, and Multiple BCTs. Long-term minor (low) adverse impacts to air space use are expected as a result of units stationed at Carson training at the Maneuver Training Site. Activities within the training and range areas would be limited to existing firing ranges and roadways. In the larger BCT unit scenarios, intensity of use of air space may increase; however this increase is yet to be determined as UAVs are not currently training at the Maneuver Training Site.

4.5.4 Cultural Resources

4.5.4.1 Affected Environment

Fort Carson

Cultural resources management on Fort Carson encompasses conservation of resources of significance to the history or prehistory of the United States and of traditional, religious, and cultural importance to Native Americans. Archeological and historical studies have been conducted on the land encompassed by Fort Carson for the

past 60 years. To date, 1,693 archeological sites have been recorded on Fort Carson, of which 131 have been determined to be eligible for the National Register of Historic Places (National Register). Prehistoric sites predominate on Fort Carson, encompassing approximately 82 percent of the total number of sites recorded to date. Both prehistoric and historic rock art is found on Fort Carson, with prehistoric elements predominating.

The Turkey Creek Rock Art District, designated as eligible for the National Register in 1976, contains at least 31 archaeological sites, 5 of which are known to contain rock art (FEIS, 2007). Three National Register-eligible Historic Districts are also located on Fort Carson: the Old Hospital Complex, the Wastewater Treatment Plant and Incinerator Complex, and the Turkey Creek Recreation Area. In all, 68 buildings are contributing properties of these Historic Districts.

Paleontological resources (fossil remains) are located on Fort Carson but are not classified as cultural resources. While fossils are important scientific resources, they do not have the same federal mandates for identification and protection as cultural resources at Fort Carson (or at other Army installations). The Army, however, avoids impacting paleontological resources as part of its management of Fort Carson. Three paleontological studies have been conducted at Fort Carson, and 53 localities of deposits have been documented, 15 of which were determined to be of high paleontological significance based on presence of rare taxa, unique or unusual geologic setting, presence of many different taxa, presence of vertebrate fossils, and presence of a new taxon (FEIS, 2007).

Eleven federally recognized Indian tribes have expressed a cultural affiliation with land at Fort Carson. Fort Carson has inventoried its collection and completed repatriation of all human remains and culturally identified artifacts in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA) and associated regulations (43 CFR 10) (USACE, 1997). A Comprehensive Agreement (CA) between Fort Carson and the 11 tribes for tribal access, privacy, and inadvertent discovery of human remains and other cultural items was finalized and signed in 2005 and 2006. Traditional cultural properties and sacred sites have also been identified on Fort Carson.

Pinon Canyon Maneuver Training Site

Cultural resources management on the Maneuver Training Site encompasses conservation of resources of significance to the history or prehistory of the United States and of traditional, religious, and cultural importance to Native Americans. Although archaeologists identified sites in the area prior to 1980, large-scale archaeological investigations of the region did not occur until the early 1980s in preparation for the opening of the PCMS. To date, 5,113 archaeological sites have been recorded on the PCMS, of which 488 have been determined eligible for inclusion in the National Register of Historic Places (National Register). Prehistoric sites predominate on the Maneuver Training Site, encompassing approximately 77 percent of the total number of sites

recorded. Both prehistoric and historic rock art is found on the Maneuver Training Site, with prehistoric elements predominating. Most rock art is located on and along the Hogback formation and in the canyon areas, but other isolated panels and sites exist in open prairie settings.

The only intact architectural properties on the Maneuver Training Site with construction predating Army acquisition are homesteads. These were all abandoned by 1983, many having been unoccupied since the 1920s. The varying condition of these properties resulted in their treatment as both archaeological sites and historic architectural properties. There 11 Historic District-eligible properties on the PCMS, most with contributing and non-contributing properties.

Paleontological resources (fossil remains) are located on the Maneuver Training Site and throughout the surrounding area, but they are not classified as cultural resources. While fossils are important scientific resources, they do not have the same federal mandates for identification and protection as cultural resources at the Maneuver Training Site (or at other Army facilities). The Army, however, avoids impacts to paleontological resources as part of its management of the Maneuver Training Site. The Purgatoire River valley and its tributaries and side canyons contain abundant and diverse paleontological resources, including trace, plant, and invertebrate fossils spanning Permian through Cretaceous geological periods. Two paleontological studies have been conducted on the Maneuver Training Site, and 13 localities of deposits have been documented. Four of these localities were determined to be of high paleontological significance based on the presence of rare taxa, the diversity of plant and animal fossils, and the abundance of fossils in a stratigraphic unit (FEIS, 2007).

Eleven federally recognized Indian tribes have expressed a cultural affiliation with land at the Maneuver Training Site. Fort Carson has inventoried its collection and completed repatriation of all human remains and culturally identified artifacts in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA) and associated regulations (43 CFR 10) (USACE, 1997). A Comprehensive Agreement (CA) between Fort Carson and the 11 tribes for tribal access, privacy, and inadvertent discovery of human remains and other cultural items was finalized and signed in 2005 and 2006. On the Maneuver Training Site, 5 sacred sites, 3 Traditional Cultural Properties (TCPs), and 2 sites of concern have been identified. The Hogback Traditional Site was identified as a TCP by the Jicarilla Apache Nation in a 2005 Memorandum of Understanding with Fort Carson.

4.5.4.1 Environmental Consequences

Fort Carson

The consequences of the various stationing actions have the potential to impact nearly all available land within the boundaries of Fort Carson, and all forms of military activities have the potential to adversely affect cultural resources. Fort Carson's Cultural Resources Manager (CRM) evaluates all activities to identify resources that may be

affected, determine effects, and initiate the Section 106 consultation process as mandated by the National Historic Preservation Act (NHPA), prior to the initiation of ground-disturbing activities.

The Cantonment at Fort Carson has been completely surveyed for cultural resources and is devoid of known prehistoric sites. The inventory and evaluation of historic properties through the Cold War era is ongoing, and it is not anticipated that activities associated with this action on the Cantonment may have an adverse impact to these cultural resources. In addition, there should be no adverse impact to the two Historic District-eligible locations within the Cantonment. Should future construction projects pose an adverse impact to identified historic properties in the Cantonment, Section 106 consultation procedures would be followed.

CS/CSS and Full Sustainment Brigade. Minimal adverse impacts to cultural resources are expected for activities within Fort Carson under this stationing scenario.

IBCT, HBCT, Stryker BCT, and Multiple BCTs. Short- and long-term moderate (medium) adverse impacts to cultural resources are expected for activities within Fort Carson. The increased number of Soldiers and their Families under these scenarios presents a higher potential for impacts to cultural resources on Fort Carson than those under the CS/CSS and Full Sustainment BDE scenarios.

The types of equipment, training, and construction activities associated with the numbers of Soldiers and their families identified for each of these unit scenarios have the potential to affect cultural resources. As such, the following would apply in accordance with Section 106 of the NHPA and the stipulations of all agreement and management documents in force for Fort Carson, unless a project-specific agreement has been developed through the consultation process (FEIS, 2007):

- Areas that have been inventoried for cultural resources and which contain no historic properties eligible for inclusion in the National Register would be open for unrestricted use because there is no potential for adverse impacts to significant resources.
- Areas that have been inventoried for cultural resources and which contain known historic properties eligible for inclusion in the National Register may be used for dismounted training only, with no vehicle traffic or construction, until the proposed use area had been evaluated to determine that cultural resources could be protected against adverse impacts. If impacts could not be avoided, further consultation with the Colorado SHPO and/or Native American Tribes, if applicable, regarding mitigation would occur prior to ground-disturbing activities.
- Areas that have not been inventoried for cultural resources would not be used for activities other than dismounted training, with no vehicle traffic or construction, until an archaeological investigation had been conducted and cultural resources determined eligible for the National Register evaluated

against potential adverse impacts. If impacts could not be avoided, further consultation with the Colorado SHPO and/or Native American Tribes, if applicable, regarding mitigation would occur prior to ground-disturbing activities.

Environmental awareness training would be held for Soldiers on the identification, avoidance, and protection of cultural resources. In the event cultural materials and/or human remains were uncovered in the course of ground-disturbing activities, Fort Carson's "Inadvertent Discovery of Archaeological Resources or Burials" Standard Operating Procedure (SOP) and the "NAGPRA" SOP would be applied and enforced (FEIS, 2007).

Pinon Canyon Maneuver Training Site

The consequences of the various stationing actions have the potential to adversely affect cultural resources within the PCMS boundaries. Fort Carson's Cultural Resources Manager (CRM) evaluates all activities to identify resources that may be affected, determine effects, and initiate the Section 106 consultation process as mandated by the National Historic Preservation Act (NHPA), prior to the initiation of ground-disturbing activities. The Cantonment at the Maneuver Training Site has been completely surveyed for cultural resources and is devoid of known prehistoric sites.

CS/CSS, Full Sustainment BDE, and IBCT. For reasons stated in the previous paragraphs, short- and long-term moderate (medium) adverse impacts to cultural resources are expected for activities within the Maneuver Training Site.

HBCT, Stryker BCT, and Multiple BCTs. Short- and long-term significant (high) adverse impacts to cultural resources are expected for activities within the Maneuver Training Site. The increased number of Soldiers and the related training activity requirements under these scenarios presents a higher potential for impacts to cultural resources at the Maneuver Training Site than those under the CS/CSS and Full Sustainment BDE scenarios.

The type of equipment, training, and construction activities associated with the number of Soldiers identified for these units has the potential to affect cultural resources. As such, the following would apply in accordance with Section 106 of the NHPA and the stipulations of all agreement and management documents in force for Fort Carson and the Maneuver Training Site, unless a project-specific agreement has been developed through the consultation process (FEIS, 2007):

- Areas that have been inventoried for cultural resources and which contain no historic properties eligible for inclusion in the National Register would be open for unrestricted use because there is no potential for adverse impacts to resources.
- Areas that have been inventoried for cultural resources and which contain known historic properties eligible for inclusion in the National Register may be

used for dismounted training only, with no vehicle traffic or construction, until the proposed use area had been evaluated to determine that cultural resources could be protected against adverse impacts. If impacts could not be avoided, further consultation with the Colorado SHPO and/or Native American Tribes, if applicable, regarding mitigation would occur prior to ground-disturbing activities.

- Areas that have not been inventoried for cultural resources would not be used for activities other than dismounted training, with no vehicle traffic or construction, until an archaeological investigation had been conducted and cultural resources determined eligible for the National Register evaluated against potential adverse impacts. If impacts could not be avoided, further consultation with the Colorado SHPO and/or Native American Tribes, if applicable, regarding mitigation would occur prior to ground-disturbing activities.

Environmental awareness training would be held for Soldiers on the identification, avoidance, and protection of cultural resources. In the event cultural materials and/or human remains were uncovered in the course of ground-disturbing activities, Fort Carson's "Inadvertent Discovery of Archaeological Resources or Burials" Standard Operating Procedure (SOP) and the "NAGPRA" SOP would be applied and enforced (FEIS, 2007).

4.5.5 Noise

4.5.5.1 Affected Environment

Fort Carson

Noise-sensitive areas adjacent to Fort Carson include Cheyenne Mountain State Park and the communities of Colorado Springs, Security, Widefield, and Fountain to the north. Other noise-sensitive areas include Turkey Canyon Ranch and Red Rock Valley Estates along the western boundary, and El Rancho and Midway Ranch along the eastern boundary. Noise-sensitive locations adjacent to the southern boundary of Fort Carson include the communities of Penrose and Pueblo West, which are located to the southwest and southeast, respectively. Noise-sensitive areas within Fort Carson are limited to the cantonment area.

Sources of noise associated with Fort Carson include aircraft and traffic as well as large- and small-caliber weapons. The primary sources of noise are the firing of weapons, specifically large-caliber weapons such as artillery and tank main guns, as well as the operation of military aircraft at BAAF. Secondary sources of noise include motor vehicle traffic, consisting of cars, trucks, and tracked vehicles (FEIS, 2007).

Noise extends beyond the installation boundary at Butts Army Airfield. Airburst Range 123 has flight tracts that are relatively dispersed, and do not generate any substantial noise. Large caliber weapons firing ranges have zones that are normally incompatible (Noise Zone II) and incompatible (Noise Zone III) which extend beyond the installation boundary to the south-southwest of Fountain, and to the east and west. High rates of

development in these areas threaten to exacerbate incompatibility issues and encroach on the military mission of Fort Carson (CHPPM, January 2006).

Pinon Canyon Maneuver Training Site

There are limited noise receptors at the Maneuver Training Site due to the character and nature of land surrounding the installation (i.e., ranch land). Although the population within the project area is increasing, the human presence within the project area remains low. Noise-sensitive locations adjacent to the Maneuver Training Site consist of a limited number of residences around the installation periphery. No other noise-sensitive areas are located adjacent to the Maneuver Training Site.

The primary sources of noise at the Maneuver Training Site originate from short-term military training exercises at the small-caliber weapons ranges and from military aircraft operations at the combat assault landing strip (CAL) by C-130 aircraft. Live-fire weapons larger than .50 caliber machine guns are currently not used at the Maneuver Training Site (Renn, 2006). Weapons fired on small arms ranges located on the PCMS produce a low level of noise that does not register off-post. Noise is also generated during maneuver training, including brigade-level large-scale force-on-force maneuvers, and dismounted Soldier training (CHPPM, January 2006). Baseline environmental noise conditions at the Maneuver Training Site are approximately 48 dB, increasing by about 10 dB during periods of training (Fort Carson, 2005). Current noise levels at the PCMS are not significant. During all training operations at the Maneuver Training Site, units undergo resource protection and stewardship training, including procedures that alleviate their noise impacts, such as aviation rules (CHPPM, 2006).

4.5.5.2 Environmental Consequences

Fort Carson

CS/CSS and Full Sustainment Brigades. Short-term minor (low) adverse impacts to sensitive noise receptors are expected. Activities related to an increase of 1,000 Soldiers and their Families would have minor noise impacts within the installation. It is expected that wildlife on the installation would adjust quickly to the increased human presence. Noise contours would not likely change under these unit scenarios.

IBCT, HBCT, and Stryker BCT. Short- and long-term moderate (medium) adverse impacts to sensitive noise receptors are expected. An increase in artillery fire associated with the proposed action may further extend periods of training noise to off-post locations. Currently, those areas are not significantly impacted; however encroachment from residential zones adjacent to the installation may cause Fort Carson to adjust training schedules in the future. Under these unit scenarios, current noise contours are not likely to change. Encroachment of residential communities adjacent to the installation border may continue. An increase in the intensity of use of the impact area, and noise generated from both the impact area and the firing point may require Fort Carson to re-evaluate noise contours and adjust training schedules accordingly.

Multiple BCTs. Short- and long-term significant (high) adverse impacts to sensitive noise receptors are expected. Noise levels are expected to increase to levels above the current conditions under this unit scenario. Due to encroachment concerns, additional site-specific noise analyses and an update of its Noise Management Plan may be needed. Noise generation from an increase in large caliber weapons firing in NZ II and NZ III threaten to aggravate incompatibility issues with those communities continuing to encroach on the military mission at Fort Carson.

Pinon Canyon Maneuver Training Site

CS/CSS, Full Sustainment BDE, IBCT. Short- and long-term minor (low) adverse impacts to noise receptors are expected. Under these unit scenarios, noise generated from training activities (i.e., small arms ranges; increased human presence and vehicular traffic) is not expected to be measurable beyond the maneuver site boundary. Although the population within the project area is increasing and would result in increased noise receptors, increased impacts are not expected because noise levels at the Maneuver Training Site are not expected to be measurable beyond the site boundary.

HBCT, Stryker BCT and Multiple BCTs. Short- and long-term moderate (medium) adverse impacts to noise receptors are expected at the Maneuver Training Site. Under the Stryker BCT unit scenario, increased maneuver activities and increased human presence would increase noise emissions on the Maneuver Training Site. Due to maneuver space requirements of the Stryker, noise emissions are expected to increase beyond the existing maneuver areas and may increase to levels that would be measurable beyond the installation boundary. In addition, activities occurring under the HBCT and Multiple BCT scenarios are expected to generate noise levels at a rate higher than those for the IBCT scenario. Current noise zones may need to be updated to include additional maneuver areas and to verify compatibility. As a result, a separate Noise Management Plan for the PCMS may need to be developed.

4.5.6 Soil Erosion

4.5.6.1 Affected Environment

Fort Carson

Soil types commonly occurring in the region are aridisol (dry, desert-like soils) and entisol (soils that do not show any profile development and which are largely unaltered from their parent rock) soils (USACE, 2002a). These soil types are characterized by moderate-to-severe erodibility, landslides, and unstable clay formation movement due to variations in moisture content and temperature (USACE, 2002a).

Thirty-four soil categories and 65 soil associations have been recognized on Fort Carson. Predominant soil associations identified are the Penrose-Minnequa Complex, Penrose-Rock Complex, Schamber-Razor Complex, and Razor-Midway Complex

(DECAM, 2002a). The Penrose-Minnequa and Penrose-Rock complexes occur in the southern portion of Fort Carson, in Pueblo and Fremont counties (FEIS, 2007).

The Cantonment, located in the northern portion of Fort Carson, is the most highly developed area on the installation and contains post housing, administration, recreational, and other support facilities. Native soils and vegetation occur throughout the Cantonment, primarily in the southern portion, and are broken up by local areas of disturbed soils.

BAAF, located on the eastern side of the post adjacent to and south of Wilderness Road, is semi-developed. The airfield contains a landing strip, paved areas, and support facilities. The land surrounding BAAF contains native soils and vegetation that are broken up by local areas of disturbance. The least-disturbed soils at BAAF occur in the southwestern portion of the airfield.

The downrange area on Fort Carson covers the majority of land on post, is relatively undeveloped, and supports the greatest area of native undisturbed soils. The western portion of the downrange area has a high degree of wind erosion associated with disturbed soils (areas that have been cleared for training operations, including berms).

Soil erosion is a problem at Fort Carson. Soils of greatest concern for erosion are clays, silty clays, and clay loams. In particular, the eastern portion of Fort Carson, located within the Fountain Creek Watershed, contains soils that have been identified as being moderately to highly susceptible to erosion (DECAM, 2002a).

Pinon Canyon Maneuver Training Site

The Maneuver Training Site is distinguished by topographic features such as mesas, cuestas, dissected plateaus, deep canyons, and volcanic formations. Soil types commonly occurring are aridisol and entisol soils. These soil types are characterized by moderate to severe soil erodability, landslides, and unstable clay formation movement attributable to variations in moisture content and temperature (FEIS, 2007). Soil conditions vary on the Maneuver Training Site and special foundations are required from roads and bridges at some locations. Extensive overgrazing (prior to 1983), vegetation removal and soil compaction from mechanized training have contributed to erosion and erosion potential.

4.5.6.2 Environmental Consequences

Fort Carson

CS/CSS, Full Sustainment Brigade, and IBCT. There would be moderate (medium) short- and long-term adverse impacts due to the large number of wheeled vehicles in the Sustainment Brigade. The condition of existing (unimproved) range roads and their ability to support heavy truck traffic would have to be evaluated. These roads could be prone to water erosion, so road construction, hardening and maintenance practices

would have to be reviewed and modified. Off-road movement may impact soil erodibility based on disturbance to vegetation and soil surfaces, and moisture content and temperatures. The training could directly cause erosion on the mountains or set the conditions for wind and water erosion. Dismounted training is not expected to have a significant effect on the basin and flat areas.

HBCT, Stryker BCT, and Multiple BCTs. Significant (high) impacts are expected. The HBCT and multiple BCTs may have a major impact on roads and off-road areas due to the number of tracked vehicles in these units and the weight and mobility characteristics of the tracked vehicles. Mountainous areas or other areas with a slope of greater than 30% would not be affected by the tracked vehicles. Flat to relatively flat areas (vegetation and surface crust) would show the impact from the vehicle maneuvers, turns and traction. These areas could then be prone to wind and water erosion.

The Stryker BCT may have a significant impact on roads and off-road areas due to the number of Strykers and the weight and mobility characteristics of the Stryker vehicle. Mountainous areas or other areas with a slope of greater than 30% would not be affected by the Stryker. Flat to relatively flat areas (vegetation and surface crust) would show the impact from the Stryker's maneuvers, turns and traction. These areas could then be prone to wind and water erosion.

An overall significant impact would result from Multiple BCTs, given that the number, size, variety and impact of wheeled and tracked vehicles would increase as well. The road network would deteriorate rapidly leading to trafficability and erosion problems. Off-road traffic and maneuvers would increase, which would have a major negative impact on surface vegetation and surface crust. Conditions for potential wind and water erosion would increase.

Pinon Canyon Maneuver Training Site

CS/CSS, Full Sustainment Brigade, IBCT. There may be a moderate (medium) impact from the wheeled vehicles in these units. Off-road movement could have an impact on vegetation and soil surfaces, leading to the conditions for erosion. The condition of existing (unimproved) range roads and their ability to support for heavy truck traffic would have to be evaluated. These roads could be prone to erosion, so road construction, hardening and maintenance practices would have to be reviewed and modified. Off-road movement would impact soil erodibility based on disturbance to vegetation and soil surfaces.

HBCT, Stryker BCT, Multiple BCTs. These units are anticipated to result in potentially significant (high) impacts to off-road areas due to the number of tracked and wheeled vehicles, as well as their weight and mobility characteristics. Flat and rolling areas (vegetation and surface crust) would show the impact from the vehicle maneuvers, turns and traction. These areas could then be prone to erosion. Given that the number, size, variety and impacts of wheeled and tracked vehicles, off-road traffic and maneuvers

would increase. Conditions for potential erosion would increase in areas with increased traffic.

4.5.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.5.7.1 Affected Environment

Fort Carson

Ten animal and two plant species that are on the USFWS list of endangered, threatened and candidate species are found in El Paso, Pueblo, and Fremont counties. No critical habitat for these species has been designated or proposed for designation in these counties (USFWS, 2005; Linner, 2006). No federally listed threatened or endangered plant species or candidates for federal listing are known to occur on Fort Carson, and no portion of Fort Carson has been designated or proposed for designation as critical habitat for listed plant species (USACE, 2005; Linner, 2006). Fort Carson has also been excluded from critical habitat for the Mexican Spotted Owl (MSO) based on the installation's INRMP providing a benefit to the species. The following three federally listed wildlife species are known to use Fort Carson: Mexican Spotted Owl, Greenback Cutthroat Trout, and Arkansas Darter. Threatened and endangered wildlife species are protected by Colorado state law, but species of concern are identified for planning purposes only (FEIS, 2007). More information on federally listed species is found in Appendix T of this document.

Pinon Canyon Maneuver Training Site

The Maneuver Training Site is located within the Central Shortgrass Prairie Ecoregion, which includes all the plains of Colorado east of the Rocky Mountains and an approximately equal area in adjacent Great Plains states and Texas. The ecoregion is characterized by rolling to undulating plains and tablelands of low relief and occasional canyons, buttes, badlands, and isolated mountains. Shortgrass prairie, mixed-grass prairie, and sandsage prairie community types dominate the Central Shortgrass Prairie Ecoregion. Other community types, such as pinyon pine-juniper woodlands and deciduous riparian forests, occur less frequently (FEIS, 2007).

Bald eagles primarily use the southwestern grassland section of the Maneuver Training Site (DECAM, 2002a). No evidence of bald eagles nesting on PCMS has been found (DECAM, 2002a and USACE, 2005). Since the composition of this document, Bald Eagles have been removed from the Threatened and Endangered Species list by the USFWS.

No plant species appear on the USFWS lists of federally listed endangered, threatened, and candidate species for Las Animas or Otero counties, and no critical habitat for these species has been designated or proposed for designation in Las Animas County or any adjoining county (USFWS, 2005 and Linner, 2006). No federally listed threatened or endangered plant species or candidate for federal listing is known to occur at PCMS.

4.5.7.2 Environmental Consequences

Fort Carson

CS/CSS, Full Sustainment Brigade, IBCT, HBCT, and Stryker BCT. Minimal adverse impacts are expected. One species currently recorded as contiguous has been recorded on the installation in the past. The installation would continue to manage its natural resources and potential habitat for the endangered species in accordance with the installation INRMP and any conservation measures identified in any ESA, Section 7 consultation documents.

Multiple BCTs. Significant adverse impacts are possible under this stationing scenario. Similar to the other levels of Soldier strength, there is a potential that this action could impact listed species currently recorded as contiguous to the installation. There is a greater likelihood that formal consultation would be required for implementation of this action. Activities associated with this action may affect the installation's ability to implement the management and conservation measures identified in the installation's INRMP that were/are essential for their exclusion from Mexican Spotted Owl critical habitat designation. This action may significantly impact the candidate species that occurs onsite. The Mexican Spotted Owl currently exists at numerous locations which are widely distributed, and the USFWS considers this species fairly stable.

Under this stationing scenario, the installation's vegetative communities could be potentially degraded, and the prevalence of invasive or noxious weed species would likely increase from training disturbance and higher rates of unnatural wildfire caused by increased live-fire training.

Pinon Canyon Maneuver Training Site

CS/CSS, Full Sustainment BDE, IBCT, HBCT. Under stationing scenarios for a new BCT (any type), short- and long-term moderate (medium) adverse impacts are expected on wildlife (there are no listed species known to occur on the Maneuver Training Site) species recorded on the installation. The only federally-listed threatened wildlife species known to use the Maneuver Training Site is the bald eagle (which was de-listed by the USFWS in July 2007), which is a late fall-through-winter resident and migrant. Bald eagles primarily use the southwestern grassland section of the installation. No evidence of bald eagles nesting on the Maneuver Training Site has been found (US Army Corps of Engineers, PCMS FEIS, 2007). Implementation of any of these levels of Soldier strength could have an impact on this species, especially if the species nests on the Maneuver Training Site in the future.

Bald Eagles are still protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, even though the Endangered Species Act (ESA) no longer applies. The Maneuver Training Site would continue to manage its natural resources in accordance with the Fort Carson INRMP and any conservation measures identified in another documents implementing applicable laws and regulations. A number of the

special status species occurring on the Maneuver Training Site are priority Army species at risk (SAR). Conservation efforts would need to be implemented to ensure populations are not significantly impacted to the point that a listing action may be warranted.

Stryker BCT, Multiple BCTs. Short- and long-term significant (high) adverse impacts to wildlife are expected at PCMS under these unit growth scenarios. It is anticipated that implementation of these stationing scenarios would have potentially significant impact on wildlife and vegetation. Management and conservation of the species and habitat would continue to be implemented in accordance with the Fort Carson INRMP, however, increased soil disturbance and wild fire events caused by training would be projected to impact PCMS wildlife and vegetation. Impacts could affect special status plant species such as Dwarf Milkweed (*Asclepias uncialis*), which occur at PCMS.

4.5.8 Wetlands

4.5.8.1 Affected Environment

Fort Carson

Fort Carson contains approximately 1,076 acres of wetlands (US Army, December, 2005). Wetlands generally occur as riparian or channel wetlands along drainages or are small and isolated. The majority (70 percent) of wetlands on Fort Carson are palustrine emergent wetlands (USFWS, 1991). Most of these are less than one acre in area. In the downrange training area of Fort Carson, isolated wetlands can occur where a dam has been built for erosion control or water storage, and most are only one to two acres in size. The largest downrange wetland area, totaling approximately 100 acres, is on the upper Reaches of Teller Reservoir. Where six very small springs occur on Fort Carson, each has a small associated wetland area. Wetland areas are also distributed throughout the cantonment area, typically in natural or stormwater runoff drainages and in an area south of BAAF (DECAM, 2002a).

In 2002, USACE issued a regional permit to Fort Carson (USACE, 2002b). This permit authorizes Fort Carson to conduct erosion control activities on post that may result in minimal individual and cumulative impacts to wetlands from dredge and fill activities. Typical erosion control measures include erosion control, bank sloping of erosion courses, check dams, rock armor, hardened crossings, culverts and bridges, erosion control terraces and water diversions, water turnouts, and other erosion control activities approved by USACE. As described in the INRMP (DECAM, 2002a), the wetland and riparian area buffers are generally protected from vehicular and mechanized training due to the surrounding topography, which makes these areas unsuitable for this type of training. Due to the avoidance and minimization efforts the Army currently implements as part of its INRMP and ITAM procedures, direct effects to wetlands do not normally occur.

Pinon Canyon Maneuver Training Site

Aquatic Habitat on PCMS are very limited and consist of wetlands, riparian corridors, and open water. Wetlands, in the form of seasonal waters, make up a very small part of the Maneuver Site (Fort Carson DECAM, 2007).

4.5.8.2 Environmental Consequences

Fort Carson and Pinon Canon Maneuver Site

CS/CSS and Full Sustainment Brigade. No impact is expected to wetlands as a result of the growth of a CS/CSS or Full Sustainment Brigade to Fort Carson. Training activities would be limited to established training areas and should pose no impact on wetlands as training would avoid these areas.

IBCT, HBCT, Stryker BCT, Multiple BCTs. Minimal (low) impacts are expected on the installation wetlands due to the presence of an additional 3,500 – 7,000 Soldier (and their Families) presence at Fort Carson due to the limited and confined presence of wetlands. Necessary measures to site training away from wetlands or construct other mitigations would be taken to ensure wetlands impacts would be minimized

4.5.9 Water Resources

4.5.9.1 Affected Environment

Fort Carson

Wastewater

The installation operates and maintains a sanitary sewage treatment plant that services the cantonment area, the family housing area, Butts Army Airfield, and the Range Control complex. This system also services Cheyenne Mountain Air Station under an Inter-Service Support Agreement.

The installation operates a well-managed central vehicle washrack for effective heavy equipment cleaning and individual washracks at the various nearby motorpools. Fort Carson's industrial waste treatment facility (IWTF), uncommon in the Army, allows for the centralized treatment of washrack wastewater. The IWTF was designed to treat petroleum-contaminated water from the motor pools in the cantonment area. Treated IWTF water is added to the sanitary sewage water going into the sewage plant. All motor pool washrack water and some floor drain effluent are connected to the IWTF.

Butts Army Airfield, Colorado Army National Guard Centennial Training Site and 10th SFG Complex (all south of the cantonment area) are not connected to the IWTF. Currently, industrial wastewater from these facilities is containerized and treated at the IWTF when necessary. The industrial line at Butts Army Airfield is combined with the sanitary line and both are pumped back to the sewage treatment plant. The installation has determined that all new sources of industrial waste be conveyed to the IWTF in a separate industrial collection system.

Stormwater

The climate and topography of the Fort Carson area affect stormwater. Fort Carson watersheds drain to Fountain Creek and eventually to the Arkansas River to the east and southeast and directly to the Arkansas River to the south. There are many drainages that traverse Fort Carson, some of which are main tributaries to the Arkansas River Basin.

Once these tributaries enter Fort Carson cantonment area, they flow into one of three main ditches that drain the northern portion of the installation and the Cantonment: "B" Ditch, "I" Ditch, and "U" Ditch, which are all tributaries to Fountain Creek. Stormwater drainage in the downrange area is generally via natural drainages with some modifications, particularly near roads and downrange area facilities (DECAM, 2002a). Turkey Creek flows through/adjacent to the installation and enters the Arkansas River to the south. The southwestern part of the installation is drained by Red Creek and the south-central portion of Fort Carson is drained by Little Turkey Creek and Turkey Creek. Fountain and Turkey Creeks are all tributaries of the Arkansas River (USACE, 2005).

Fort Carson has facilities that are covered under a Multi-Sector General Permit (MSGP) for stormwater discharged from industrial activities. Construction activities disturbing more than one acre require coverage under EPA's construction general permit. Fort Carson is a Municipal Separate Storm Sewer System (MS4) permit holder, which requires additional management for the cantonment area.

In December 2005, the Army completed an evaluation of Fort Carson's storm sewer capacity (USAEC, 2005). The study indicated that the existing Fort Carson storm sewer system is at or near capacity, based on growth projections at this time. Increased development of Fort Carson's Cantonment would result in increased stormwater runoff. The increased runoff could contribute to flooding, high peak flows that cause erosion, and degradation of water quality. The study recommended that Fort Carson implement additional BMPs for new and existing development to control and properly treat stormwater flows.

Water Supply

Potable water is purchased by Fort Carson from Colorado Springs Utilities for domestic, industrial, and irrigation use in the Cantonment. A portion of the water purchased by Fort Carson is also supplied to the Cheyenne Mountain Air Force Station. The maximum historical daily water demand on Fort Carson is 5.5 million gallons per day (mgd), and the total capacity of the two supply lines is 14 mgd (Guthrie, 2005). The potable water storage system at Fort Carson consists of four water storage tanks that provide capacity during emergency conditions. Fort Carson's Teller Reservoir, which has been dry since 2002, has a potential water capacity of 31.8 million gallons (FEIS, 2007).

Water Rights

Fort Carson retains surface and subsurface water rights as specified by the Colorado Division of Water Resources. Of the surface water rights, several are surface diversion

ditches and others are reservoir storage rights. The subsurface water rights also include wells that are currently installed and areas with wells that are classified as future wells, which would not be installed until required. Decreed use categories include irrigation, recreation, fish maintenance, fire fighting, military, livestock, domestic, and industrial. Potable water for consumption during training activities in the downrange area is trucked from the Cantonment, while at the multi-purpose range complex, potable water is piped from the Cantonment (Benford, 2006).

Pinon Canyon Maneuver Training Site

Potable Water

PCMS purchases treated potable water from the City of Trinidad for use in the Cantonment (DECAM, 2002a; and Fort Carson, 2005). After the water is delivered to the Maneuver Training Site, it is stored in a 500,000-gallon tank. The potable water system is adequate to support a maximum of approximately 5,000 personnel based on a water consumption rate of 35 gallons per person per day and other installation-related support activities (such as dust control and emergency fire suppression) (Fort Carson, 2005). The water tank and potable water distribution system in the Cantonment is currently operating within capacity.

Wastewater

PCMS discharges wastewater to its evaporative lagoons. The Cantonment primarily uses evaporative, nondischarging treatment/ oxidation ponds, constructed in 1985 for sanitary wastewater and stormwater treatment (DECAM, 2005a). The combined treatment facility is located in the southwestern corner of the Cantonment. The treatment/ oxidation ponds are currently operating at levels below their capacity (Fort Carson, 2005).

Stormwater

At Maneuver Training Site, a portion of the stormwater runoff generated in the Cantonment is collected into the wastewater system and directed to the treatment/oxidation ponds. The majority of runoff is allowed to flow directly offsite.

Groundwater

Training activities would not pump or use any groundwater or release any water that could percolate into aquifers at the Maneuver Training Site. Therefore, there would be no direct impact to groundwater at Maneuver Training Site.

Increased training would increase the use of fuels, solvents, and other hazardous and toxic substances which could result in an indirect effect to groundwater if released in an area where infiltration to groundwater could occur.

Lead deposition at the small-arms live-fire ranges could increase as a result of increased use of lead-based ammunition during training activities. The lead could result in indirect impacts to groundwater quality if it were to leach into groundwater. Because lead binds tightly to soil particles, the potential for and extent of lead leaching into groundwater or being transported by groundwater are expected to be minor. In

addition, minimal rainfall at PCMS would minimize the leaching of lead into groundwater (DECAM, 2005b).

Floodplains

Floodplains have not been mapped at Maneuver Training Site. However, personnel and equipment could be affected by floodwaters when training in flood-prone areas, especially during flash floods. The safety of troops and equipment is a priority during training, and training procedures direct that troops relocate away from flood-prone areas when conditions are favorable for sudden storms and flash flooding.

4.5.9.2 Environmental Consequences

Fort Carson

CS/CSS. An addition of a CS/CSS is anticipated to have a minor (low) impact to Fort Carson. Given the existing population of Fort Carson the addition of a CS/CSS may not have a significant impact to the watershed, water demand, and associated treatment systems. Any new construction/land disturbance over one acre would require a stormwater construction permit.

Full Sustainment Brigade, IBCT, HBCT, and Stryker BCT. Addition of these units is anticipated to have a moderate (medium) impact to Fort Carson. Any new construction/land disturbance would require coordination with the stormwater program manager for identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction. Motorpool activities and washing of field-driven heavy-tracked vehicles would produce an increase on water demand and associated treatment. The installation has capability to wash heavy equipment through its centralized wash rack; however the system could require an upgrade depending on the level of additional heavy equipment training.

Multiple BCTs. Addition of multiple BCTs may have a significant (high) impact to Fort Carson. Motorpool activities and washing of field-driven heavy-tracked vehicles would increase water demand and associated treatment. The installation's centralized wash rack could require upgrades depending on the level of additional heavy equipment training.

Pinon Canyon Maneuver Training Site

CS/CSS, Full Sustainment Brigade, IBCT, HBCT. These units are expected to have a minor (low) impact to Maneuver Training Site if they are stationed at Fort Carson. The Maneuver Site would need to review the Storm Water Pollution Prevention Plan to incorporate best management practices for any new training activities at the Maneuver Training Site.

Stryker BCT, Multiple BCTs. A moderate (medium) impact to water resources is expected from the Stryker BCT or multiple BCTs training at the Maneuver Training Site.

Vehicle maintenance activities and washing of field-driven heavy-tracked vehicles would most likely increase water demand and associated treatment. Fort Carson may have to construct new washing systems at the Maneuver Training Site to manage heavy-tracked vehicles.

4.5.10 Facilities

4.5.10.1 Affected Environment

Fort Carson

Fort Carson is an active military training facility for both weapons qualification and field training. Principal industrial operations have been the repair and maintenance of vehicles and aircraft. The cantonment area contains most of the facilities on Fort Carson such as Soldier and family housing, administrative, maintenance, community support, recreation, and supply and storage facilities, utilities, and classroom and simulation training facilities. For the most part, industrial operations take place at the east side of the cantonment area, the north end of the cantonment area, and at Butts Army Airfield. Limited facilities are located downrange. Over the past decade facilities construction has taken place (or planned for the near future) south of the cantonment, including the 10th Special Forces Group complex, Range Control Complex, the Colorado Army National Guard Centennial Training Site, mock villages for urban warfare training and range construction and upgrades. Utilities upgrades are planned to support the new facilities, including sewer, water, electric and communications (US Army, 27 June 2005).

Pinon Canyon Maneuver Training Site

The Maneuver Training Site occupies 235,597 acres approximately 150 miles southeast of Fort Carson within Las Animas County, Colorado. The 1,670-acre cantonment area is located at the west central edge of PCMS. The cantonment area contains administrative buildings and support facilities that are used during training exercises.

4.5.10.2 Environmental Consequences

CS/CSS. Minor (low) short- and long-term adverse impacts are expected as part of this stationing scenario for an additional 1,000 CS/CSS Soldiers. Fort Carson would be able to handle the fielding of a CS/CSS unit at this time.

Full Sustainment Brigade, IBCT, HBCT, Stryker BCT, and Multiple BCTs.

Significant (high) impacts and conflicts are anticipated for facilities availability and usage. Increased Soldier strength of 3,000 to 7,000 Soldiers and their Families would be reflected through increased facilities usage within the cantonment and training areas. BRAC decisions have resulted in considerable construction to provide the necessary facilities for an additional 8,500 Soldiers. Fort Carson facilities would be heavily utilized in accommodating several thousand additional Soldiers.

Pinon Canyon Maneuver Training Site

CS/CSS. There is expected to be minimal impacts to facilities. It is anticipated that the activities associated with an increase of 1,000 Soldiers would increase activities within the cantonment and training and range areas. Additional construction of support infrastructure may be required. Activities within the training and range areas would be limited to existing firing ranges and roadways. However, these activities would have to be scheduled to coordinate with existing training activities.

Full Sustainment Brigade, IBCT, HBCT, Stryker BCT, and Multiple BCTs. There is anticipated to be moderate (medium) term impacts to facilities. Increased Soldier strength from these units would be reflected through increased facilities usage within the cantonment and increased usage of the training and range areas. Training activities and construction would be expected to cause long-term impacts due to increased human presence. If identified by the Maneuver Training Site support staff, additional coordination and consultation may be necessary for activities associated with an HBCT.

4.5.11 Energy Demand/Generation

4.5.11.1 Affected Environment

Fort Carson

Fort Carson's energy needs are currently met by a combination of electrical power and natural gas, both of which are provided by private utilities. Fort Carson is constructing a 2 megawatt solar array.

Electricity. Power is supplied to Fort Carson from two power substations in the cantonment area. The peak historical electrical demand is 24,000 kilowatts. The total capacity of transmission lines available to Fort Carson is 48,800 kilowatts, and the total capacity of transformers is 32,200 kilowatts. Difficulties meeting summer electrical demand at the installation have been reported. Electrical supply lines to BAAF were upgraded in 1986. During maneuvers, targets are locally powered by battery or generator (FEIS, 2007).

Natural Gas. Fort Carson receives natural gas from Colorado Springs Utilities via two feeds at the north end of the installation, near Gate 4. The peak historical daily consumption of natural gas at Fort Carson 8,600 million cubic feet (mcf), and the peak historical monthly consumption is 186,000 mcf. The estimated daily capacity from the supplier is 10,650 mcf. This leaves Fort Carson with about 20 percent excess natural gas capacity. The natural gas is metered and piped through a series of gas mains and distribution lines to Fort Carson's four central heating plants, BAAF, and the Family Housing Area. The existing gas line servicing BAAF does not have the capacity to accommodate additional gas service to the downrange area or Training Support Complex, located at the far west end of Wilderness Road. Colorado Springs Utilities is in the planning stages for a gas feed to Gate 1 area, in support of the new Cheyenne Mountain State Park west of this gate (DECAM, 2005d).

Pinon Canyon Maneuver Training Site

The Maneuver Training Site's energy needs are currently met by electric power provided by a public utility service. The electricity is delivered via high voltage overhead power lines.

4.5.11.2 Environmental Consequences

Fort Carson

CS/CSS. Minor (low) impacts are expected. The addition of a CS/CSS unit, with 1,000 Soldiers, represents a small fraction of the overall mission activity at Fort Carson. This fact, combined with a fair excess of energy resources available, means that this basing scenario is likely to have a minimal impact to the local community and natural environment.

Full Sustainment Brigade, IBCT, HBCT, and Stryker BCT. These units are expected to have a moderate (medium) impact on energy demand/generation at Fort Carson. New electrical and natural gas infrastructure plans may need to be considered in order to accommodate the increase in usage. Similar actions may also need to be taken in order to accommodate the increase in energy usage.

Multiple BCTs. The addition of multiple BCTs, with an estimated increase of 7,000 Soldiers, is anticipated to have a significant (high) impact on energy demand/generation at the installation. New electrical and natural gas infrastructure may need to be constructed in order to accommodate the increase in usage, including new substations to transfer the electricity, and new connections and lines to transport natural gas.

Pinon Canyon Maneuver Training Site

CS/CSS, Full Sustainment Brigade, IBCT. These scenarios, combined with fair excess of energy resources available, means that growth is likely to have a minor (low) impact on energy demand/generation at this range. Although a full Sustainment Brigade and IBCT, with nearly 3,500 Soldiers maximum would have a larger impact than the CS/CSS in terms of the number of additional Soldiers and activities associated with this scenario, it is anticipated that these actions may also have a minimal impact on energy demand/generation at the Maneuver Training Site.

HBCT, Stryker BCT, Multiple BCTs. The addition of the HBCT, Stryker BCT, or multiple BCTs, with an estimated increase of 3,800 to 7,000 Soldiers, is anticipated to have a moderate (medium) impact on energy demand/generation at the Maneuver Training Site. New electrical and natural gas infrastructure may need to be constructed in order to accommodate the increase in usage, including new substations to transfer the electricity.

4.5.12 Land Use Conflicts/Compatibility

4.5.12.1 Affected Environment

Fort Carson

Fort Carson occupies approximately 137,403 acres of land. The land uses consist of three categories: Improved lands, semi-improved lands, and unimproved lands. The installation is divided into 56 training areas, 3 impact areas, the cantonment area, and areas from which training is restricted. The main divisions of the installation improved lands include the cantonment area (5,752 acres), Butts Army Airfield (570 acres), and Camp Red Devil (1,166 acres). The cantonment is located in the northern portion of the base. Buildable areas exist in the southern part of this area. Butts AAF lies 6 miles south of the cantonment area, near the eastern boundary of the installation. Unimproved or open operations lands at the installation occupy 97,201 acres and are used for live-fire artillery, small arms practice, maneuver operations, and bivouac training. Parts of this land are also used as buffer zones for impact areas. Approximately 90 percent of the installation is unimproved land. The Rod and Gun Club and Turkey Creek Recreation Area constitute 1,853 acres of semi-improved lands (U.S. Department of the Army, 1995).

Pinon Canyon Maneuver Training Site

Land use at PCMS has been divided into two primary categories, the Cantonment and the training areas. The cantonment area consists of 1,660 acres of developed land; the training areas consist of open land. The cantonment area provides limited, austere Soldier and support facilities; military training is restricted in this area. The training areas consist of approximately 230,000 acres of unimproved or open lands that is used for military training maneuvers and small-arms live-fire activities. The terrain at the Maneuver Training Site varies widely from open, rolling prairies to semi-arid, basaltic hills. To a large degree, the terrain defines the suitability of training activities that occur within the training areas. The four main training land use types within the training areas include maneuver training, dismounted training, small-arms live-fire ranges, and restricted areas. Maneuver training areas comprise the majority of training land available at the Maneuver Training Site. (PCMS FEIS, 2007)

Restricted areas protect lands that support wildlife, ecosystems, soils, facilities, and cultural resources. Varying degrees of training use are allowed in restricted areas. For example, in areas with known occurrences of buried cultural resources, digging is not permitted. (PCMS FEIS, 2007)

Some areas within the PCMS are accessible to the public for recreational use when training activities do not occur. Currently, the recreational uses on the Maneuver Training Site include hunting and camping (hunters only). Recreational uses are allowed in the training areas and occur at a dedicated campground near the intersection of Military Supply Routes (MSRs) 1 and 3 (DECAM, 2002a). (PCMS FEIS, 2007)

4.5.12.2 Environmental Consequences

Fort Carson

CS/CSS and Full Sustainment Brigade. There would be an expected minor (low) short and long-term environmental impact on installation land use due to the presence of an additional 1,000 – 3,500 Soldiers and their Families assigned to the installation. The installation has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional units.

IBCT, HBCT, and Stryker BCT. There may be moderate (medium) short- and long-term environmental impacts on installation land use due to the presence of an additional 3,500 – 4,000 Soldiers and their Families. The installation may not have sufficient land available to either build the facilities needed for this unit, or would not have sufficient vacant space in buildings suitable for the units' mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges.

Multiple BCTs. There would significant (high) short- and long-term environmental impacts on installation land use due to the presence of an additional 7,000, or more Soldiers and their families assigned to the installation. The installation may not have enough existing facilities, located in areas with comparable land uses to accommodate multiple BCTs. The installation does not have sufficient land compatible with tactical unit requirements on which to build facilities necessary for multiple BCTs. New or existing facilities would not be contiguous, distant from Soldier support facilities and training and maneuver ranges. Building new facilities for multiple BCTs could require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. This, in turn, would cause a measurable decrease of the installation's capacity to train Soldiers. Building new facilities for multiple BCTs could also require construction on, or immediately adjacent to, environmentally sensitive areas, requiring extensive, and/or expensive mitigation actions. The installation has limited training space and sustainable ranges. Currently, the installation's training facilities are at maximum capacity with training and maneuver space because of the current three HBCTs and one IBCT.

Pinon Canyon Maneuver Training Site

CS/CSS, Full Sustainment Brigade, IBCT. There is expected to be minor (low) short and long-term environmental impacts on the Maneuver Training Site land use due to the presence of an additional 1,000 – 3,500 Soldiers and their associated missions training at the Maneuver Site. The Maneuver Training Site has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings

that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional units.

HBCT, Stryker BCT, Multiple BCTs. There would moderate (medium) short- and long-term environmental impacts on installation land use required to conduct training for an HBCT, SBCT or multiple BCTs and their associated missions training at PCMS. Building of new facilities may be required at PCMS to support additional unit training. This limited new construction could require the re-designation of existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units.

4.5.13 Hazardous Materials/Hazardous Waste

4.5.13.1 Affected Environment

Fort Carson

Fort Carson has a comprehensive program to address management, use, and storage of hazardous waste and toxic substances, as well as a systematic program to investigate and remediate, if necessary, known or suspected contaminated sites across the installation. Hazardous and toxic materials used at Fort Carson include gasoline, batteries, paint, diesel fuel, oil and lubricants, chemical agents, explosives, JP-8 jet fuel, pyrotechnic devices used in military training operations, radiological materials at medical facilities, radioactive materials, pesticides, and toxic or hazardous chemicals used in industrial operations (USACE, 2006b).

Both Fort Carson and PCMS operate under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and nonhazardous materials for toxic and hazardous ones; ensure compliance with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste (US Army Corps of Engineers, February, 2002).

Pinon Canyon Maneuver Training Site

Hazardous materials used at the Maneuver Training Site include gasoline, diesel fuel, oil, and lubricants used during routine maintenance; pesticides; chemical agents; and explosive and pyrotechnic devices used in military training operations. Residual hazardous materials including diesel fuel, oil, lubricants, solvents and batteries generated during routine maintenance are recovered for reuse or recycling. Other hazardous materials such as pesticides; chemical agents; and explosive and pyrotechnic devices used in military training operations are consumed in the use. Other hazardous materials brought to the Maneuver Training Site by units are recovered as

material and taken to their home station for further use, or classification and turned-in for reissue or proper disposal (FEIS, 2007).

4.5.13.2 Environmental Consequences

Fort Carson

CS/CSS, Full Sustainment Brigade. There may be minor (low) long-term impacts from hazardous materials and waste. It is anticipated that Fort Carson would not considerably increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 – 3,500 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue. Direct beneficial and adverse impacts would be expected. Direct beneficial impacts include activities associated with land transactions where the Army would continue to operate under its IRP to return contaminated lands to fully usable status. Direct adverse impacts include increased facility construction and modification (US Army Corps of Engineers, February, 2002). The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations.

IBCT, HBCT, Stryker BCT, Multiple BCTs. There is an anticipated significant (high) short- and long-term impacts from hazardous materials and waste associated with the addition of these units. Materials used, stored, and handled would increase; however, existing procedures, regulations, and facilities would be able to meet storage, use, and handling requirements. No adverse impacts would be anticipated. Waste management programs may be updated as needed. With the addition of up to 7,000 additional Soldiers, substantial urban and semi-urban settings to support training and future mission requirements would be needed. Many projects involve the use, generation, and storage of hazardous materials and wastes during facility demolition, renovation, or construction. The demand for additional storage and disposal capacity would have to be met at the local level at the installation. Army policies, regulations, and guidelines that manage the use, storage, and disposal of materials and wastes would need to be updated to reflect the change in mission at Fort Carson and expanded training activities.

Pinon Canyon Maneuver Training Site

CS/CSS, Full Sustainment Brigade, IBCT, HBCT. There may be minor (low) long-term environmental impacts from hazardous materials and waste. It is anticipated that the Maneuver Training Site would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 – 4,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue. Direct beneficial and adverse impacts would be expected. Direct adverse impacts include increased facility construction and modification (US Army Corps of Engineers, February, 2002). The increase in these wastes would result in no adverse impacts

because the wastes would be managed in accordance with current standards and regulations.

Stryker BCT, Multiple BCTs. Training of the Stryker BCT or multiple BCTs at the Maneuver Training Site would result in moderate (medium) short- and long-term environmental effects from hazardous materials and waste. Generation and management of hazardous materials and waste, pesticides, petroleum, oil, and lubricants would all be higher than with the other actions, and waste management plans would need to be updated to reflect the change in mission and expanded training activities.

4.5.14 Traffic and Transportation

4.5.14.1 Affected Environment

Fort Carson

Fort Carson is located in central Colorado, approximately 65 miles south of Denver, and adjacent to the city of Colorado Springs. The ROI of the affected environment for traffic and transportation aspects of the proposed action include Fort Carson and the western portion of El Paso County, to include the communities of Colorado Springs, Stratmoor, Snowy, Cimarron Hills, Fountain, Widefield, and Security. Major roads that border Fort Carson are I-25 to the east, SH 115 to the west, and Academy Boulevard to the north. Other major routes in the area include US 24, SH 85, SH 16, and Powers Boulevard.

The Colorado Department of Transportation is currently preparing an Environmental Assessment to analyze potential transportation improvements for the SH 16 and I-25 interchange. The study is evaluating solutions, including capacity improvements on SH 16 and the reconstruction of the SH 16 and I-25 interchange, to alleviate the substantial congestion that occurs along SH 16 near Gate 20 during the morning peak period (DPW, 2005). Although the existing average daily traffic on SH 16 results in an acceptable daily level of service (LOS), the second highest morning peak hour traffic demand at Fort Carson's access points occurs at Gate 20, resulting in an unacceptable peak hour LOS (FEIS, 2007).

Pinon Canyon Maneuver Training Site

The Maneuver Training Site is set in rural Colorado near the state's southern border with New Mexico, with the nearest town being Trinidad Colorado, located approximately 30 miles west, southwest of the maneuver site. The ROI of the affected environment for traffic and transportation aspects of the proposed action include Piñon Canyon and the Maneuver Site, and the surrounding network of rural roads leading to the installation and the town of Trinidad, Colorado. Major roads in the area include I-25 a north-south interstate highway that passes through the town of Trinidad, as well as US Route 350 that connects the Maneuver Training Site to Trinidad.

4.5.14.2 Environmental Consequences

Fort Carson

CS/CSS, Full Sustainment Brigade, IBCT, HBCT, Stryker BCT. There may be moderate (medium) short and long-term effects on traffic and transportation systems on the installation due to the presence of an additional 1,000 – 4,000 Soldiers and their Families members assigned to Fort Carson. Spread across the ROI, this population is anticipated to have limited impact on the overall traffic congestion in the neighboring communities. The increase in off-post traffic would have a moderate impact on traffic in the community overall and could contribute to a decrease in the Level of Service in the road network leading to the installation, particularly during peak morning and afternoon travel periods. This level of increase in population could also have a moderate impact on the traffic volume on the installation, and could cause a minor decrease in LOS on some of the installation's arterial routes. The increased traffic volume in both the neighboring communities and on the installation could pose a moderate increased level of risk to the safety of pedestrians and bicyclists.

Multiple BCTs. There is expected to be significant (high) short- and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 7,000 Soldiers, and their family members. This would likely cause a major decrease in the LOS on the road network leading to the installation. The increase in both Soldier and Family-member population would cause a major impact on the LOS of the installation's road network and pose an increased risk to the safety of pedestrians and bicyclists.

Pinon Canyon Maneuver Training Site

CS/CSS. Minimal adverse environmental impacts on traffic and transportation systems are expected on the Maneuver Training Site due to the presence of an additional 1,000 Soldiers training there. This additional training population may contribute nominally to traffic volume on the PCMS, and is not expected to reduce the level of service (LOS) on the Maneuver Training Site's road network.

Full Sustainment BDE, IBCT, HBCT. Short- and long-term moderate (medium) adverse environmental impacts on traffic and transportation systems are expected on the Maneuver Training Site due to the presence of an additional 3,000 to 4,000 Soldiers. This level of increase in training could have a moderate impact on the traffic volume on the Maneuver Training Site, and could cause a minor decrease in LOS on some of the Maneuver Training Site's arterial routes.

A single BCT training rotation comprises the greatest number of vehicles and personnel and is representative of the highest single traffic volume increase that would result from training deployments. Currently, only one BCT training rotation or two battalion training rotations can occur simultaneously at the Maneuver Training Site. This traffic volume

increase would result in a slight decrease in roadway capacity along the deployment route.

During a full HBCT rotation, as many as 1,500 additional vehicles would use the road network. The volume of traffic on a given section of road, with the exception of the main entrance road into the Maneuver Training Site, will be variable because it is contingent on the nature of the maneuver training and variations of training mission requirements (PCMS FEIS, 2007).

Stryker BCT, Multiple BCTs. Short- and long-term significant (high) adverse environmental impacts on traffic and transportation systems are expected on the Maneuver Training Site due to the presence of an additional 4,000 - 7,000 Soldiers training there. The effect on the traffic congestion in the local communities from this increased population level would be considerable in the cantonment area and in the roads on the range areas.

4.5.15 Cumulative Effects

Fort Carson

Cumulative impacts to air quality are a substantive issue as a result of continuing growth on Fort Carson and in the surrounding region. An air quality conformity analysis would need to be conducted on any project with the potential to impact air quality to ensure that projects are within designated thresholds for air quality attainment individually and cumulatively. Should the analysis result in a nonconformity finding, mitigation measures would be developed and implemented to reduce the impacts and achieve conformity. The conformity analysis and any subsequent required mitigation would prevent deterioration of air quality related to ozone levels or other pollutants, resulting from the interaction of multiple projects.

Cumulative impacts are a substantive issue as a result of continuing growth on Fort Carson and in the surrounding region. Some cumulative adverse effects could occur to fish, wildlife, and plants; air quality; transportation; and land-use resources.

Past Actions:

- Constructing Fort Carson facilities and infrastructure, including the Cantonment and downrange area.
- Constructing roadways on and surrounding Fort Carson, including I-25, SH 115, Academy Boulevard, and Powers Boulevard.
- Constructing utilities, including water, sewer, gas and electric lines, for Colorado Springs and other municipalities on or adjacent to Fort Carson.
- Continued operation of Fort Carson as a military installation.

Present Actions:

- Current operations on post, including training and deployments.
- Various construction, demolition, renovation, and maintenance activities on post, including expansion and upgrades to the Cantonment and downrange area.

Reasonably Foreseeable Future Actions:

- Implementation of Army Transformation & BRAC decisions at Fort Carson.
- Various maintenance and capital improvements projects at and near Fort Carson pertaining to housing, roadways, utilities, and other infrastructure.
- Constructing the arrival/departure air control group facility at the Colorado Springs Airport to support deployment of Fort Carson troops.
- Various capital improvements projects to surrounding municipal and county facilities now being planned or constructed.
- Improving roadway connections directly from I-25 to the Colorado Springs Airport, as currently being evaluated in the City's South Metro Accessibility Study and the SH 16 EA.

Pinon Canyon Maneuver Training Site

Past Actions:

The area surrounding the PCMS is currently, and has historically been, devoted primarily to agricultural uses, particularly ranches, large grazing operations, and undeveloped lands. U.S. 350, which follows a portion of the historic Santa Fe Trail and runs along the western edge of the Maneuver Training Site, connects the two largest cities (La Junta and Trinidad).

Cultural and paleontological resources are present throughout the area and at the Maneuver Training Site. Past agricultural practices might have disturbed these resources. Some of these resources are present on federal lands, such as the Comanche National Grassland, and are protected from disturbance. Historical grazing might also have affected wildlife, vegetation, soils, and water resources. The Maneuver Training Site was developed by the Army in the mid-1980s. The land, which previously supported large grazing operations and several residences, was purchased in 1983, and military training operations began at the site in 1985. Cumulative impacts, therefore, from the Proposed Action in combination with other past actions would not occur.

Present and Planned Future Actions. According to Las Animas County (Lucero, 2006) there are no permitted or anticipated projects in the vicinity of the PCMS because water and sewer infrastructure is not available. The potential exists for future wind-power projects in Las Animas County but no specific development plans are under consideration. According to the Otero County Engineering Department (Baker, 2006), no large-scale projects have been approved within Otero County.

Planned development in the area consists of approved projects for 14 individual homes located throughout the county. The Maneuver Training Site is a military training facility and has been used for training exercises, on average, approximately 4 months per year. Use of the Maneuver Training Site in recent years, however, has been less because of overseas deployments of military personnel in Iraq and Afghanistan. Future use of the Maneuver Training Site is projected to increase, as noted in this EIS. All planned future actions at the Maneuver Training Site are considered as part of this EIS. No capital improvements or changes to training activities have reached a stage at which they may be properly categorized as reasonably foreseeable, other than those associated with Transformation. Some actions, such as changes in weapons systems or repositioning of equipment at the Maneuver Training Site, could occur in the future.

Implementation of BRAC and Army Transformation at Pinon Canyon Maneuver Training Site. As part of BRAC, additional BCTs and supporting units will be stationed at Fort Carson, CO. These units will utilize the Pinon Canyon Maneuver Training Site in a more intensive fashion as is discussed in the 2007 Final Environmental Impact Statement for Transformation at the Pinon Canyon Maneuver Training Site. In addition to an increase of maneuver training, several training and garrison support facilities are planned and may be constructed. These include: brigade support complex, medical facilities, storage facilities, vehicle maintenance facility, motor pool, road upgrades, hand grenade range, ammunition holding area, protective equipment training facility, communications facilities, and upgrade of existing facilities as required.

Potential Future Stationing of Stryker Brigade and other units at Fort Carson and Training at the Pinon Canyon Maneuver Training Site. Fort Carson is being considered as one of three possible alternative locations for the future stationing of the Stryker BCT. These various locations are currently being assessed in the *Environmental Impact Statement for the Permanent Stationing of the 2/25th Stryker Brigade Combat Team* (SBCT). If the Army makes the decision to station the Stryker BCT at Fort Carson, the Stryker BCT would train at the Pinon Canyon Maneuver Site. No decision has been made at this time. Because of the stationing action of the 2/25th SBCT is at a pre-decisional stage, its impacts are not included in this PEIS. If a decision is made to station the Stryker BCT at Fort Carson, a site-specific analysis of the impacts of that stationing decision would be conducted at a future date, including an analysis of the training at the PCMS. This analysis would include an environmental and socio-economic assessment of impacts of any decisions made for actions related to this PEIS in addition to decisions made as part of the 2/25th SBCT stationing EIS for both Fort Carson and Pinon Canyon Maneuver Site.

Transformation Action at Fort Carson. The effects of Transformation activities on the Fort Carson military installation are being addressed in the *Fort Carson Transformation EIS*. The proposed Transformation of Fort Carson is an action that is currently being evaluated in accordance with NEPA regulations and BRAC law.

4.6 FORT DRUM, NEW YORK

4.6.1 Introduction

Fort Drum, located in northern New York, has approximately 107,265 acres, with 77,565 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.6-1). It has long supported armored/mechanized unit training and dismounted infantry unit training.

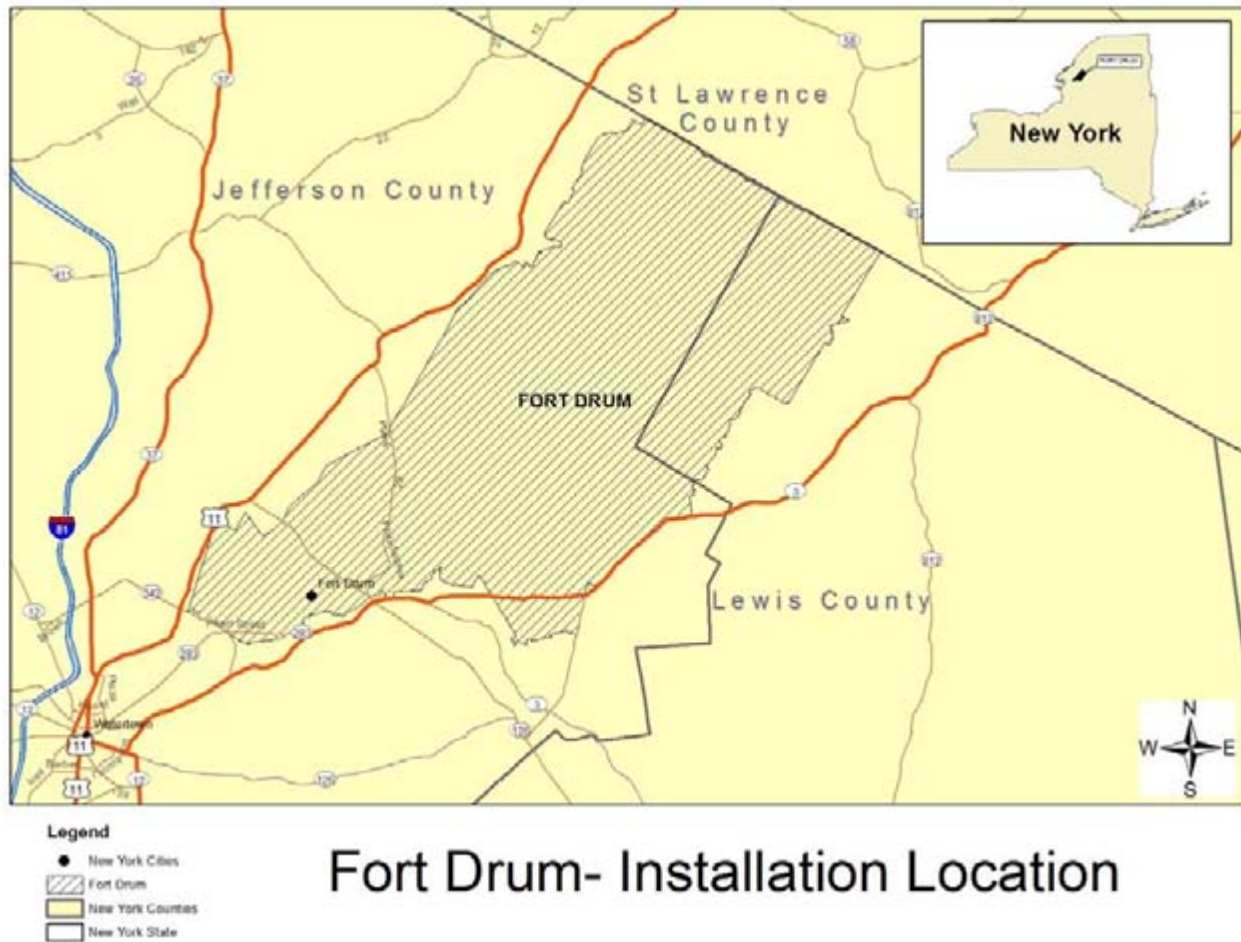


Figure 4.6-1 Fort Drum

Fort Drum's major unit is the 10th Mountain Division (Light Infantry). The Division consists of 3 Infantry BCTs, a Combat Aviation Brigade, and a Sustainment Brigade (www.drum.army.mil, n.d.).

Fort Drum has a robust range infrastructure. Encroachment from urbanization is not yet a challenge, but there are other concerns that could impact training. ACUBs have been developed to address encroachment and are pending approval at the Headquarters level; and the ACUB partnering meetings are concurrently taking place (Fort Drum, 2007b).

Table 4.6-1 contains the Fort Drum's VEC ratings for each of the various stationing action scenarios (Fort Drum, 2007a).

Table 4.6-1. Fort Drum VEC Ratings

Fort Drum					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low	Low	Low	Low
Air Space	Low	Low	Medium	Medium	Medium
Cultural Resources	Low	Low	Low	Medium	Medium
Noise	Low	Low	Medium	High	High
Soil Erosion Effects	Low	Low	Low	Medium	Medium
Biological Resources	Medium	Medium	Medium	Medium	Medium
Wetlands	Low	Low	Low	Medium	Medium
Water Resources	Low	Medium	Medium	Medium	Medium
Facilities	Medium	Medium	Medium	Medium	Medium
Socioeconomics	Low	Medium	Medium	Medium	Medium
Energy Demand/ Generation	Low	Medium	Medium	Medium	Medium
Land Use Conflict/ Compatibility	Low	Medium	Medium	Medium	Medium
Haz Mat/ Haz Waste	Low	Medium	Medium	Medium	Medium
Traffic and Transportation	Low	Medium	Medium	Medium	Medium

4.6.2 Air Quality

4.6.2.1 Affected Environment

The affected environment includes air emissions associated with Fort Drum, Lewis County, St. Lawrence County and Jefferson County, New York. Northern New York, including Fort Drum, is designated as a marginal ozone nonattainment area due to its location within the Northeast Ozone Transport Region. For all other criteria pollutants, the area is designated as being in attainment.

Actual emissions from stationary sources at Fort Drum fall below the thresholds for major source determination with the exception of VOCs. Potential emissions from stationary sources at Fort Drum exceed the Major Facility threshold for CO, NO_x, SO₂, and VOCs. Because permitting requirements are determined based on a facility's

“potential to emit,” Fort Drum is considered a major facility and has already submitted their Title V application. Since Fort Drum is a major source, the general conformity rule applies as a result of being in an ozone nonattainment area. The general conformity rule requires analysis of total direct and indirect emissions of criteria pollutants, including precursors, when determining conformity of the proposed action. The rule does not apply to actions where the total direct and indirect emissions of criteria pollutants are at or below established *de minimis* levels.

4.6.2.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Short- and long-term minor (low) impacts to air quality from the addition of 1,000 to 7,000 Soldiers are expected. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and facility operations will produce localized, short-term elevated air pollutant concentrations that should not result in any sustained impacts on regional air quality. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a significant effect on regional air quality, and no long-term impacts are expected. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected. Emissions resulting from stationary sources required for facility operations to support the increased number of Soldiers and their Families will have greater, long-term impacts than those resulting from training but not significant enough to cause regional air quality issues. The installation would expect increases in emissions from equipment required to support the installation such as fuel storage and dispensing, boiler operations, and possible electric peak-shaving generators. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these will tend to remain localized and produce no significant impact to regional air quality. The increase in POVs from the additional Soldiers and family members must also be addressed in the conformity analysis but do not appear too insurmountable. Construction, though not technically an operation subject to the provisions of the CAA but a short-term contributor to air quality, and changes to facility operations to support multiple brigades would have short-term impacts to air quality.

4.6.3 Airspace

4.6.3.1 Affected Environment

Fort Drum has 147 square miles of FAA-designated Special use airspace, up to 23,000 feet. The installation has access to this airspace continuously, with restrictions, and is controlled by the FAA of Boston, MA (U.S. Army, 1996). Restricted airspace R-5201 is found within the installation boundary (Fort Drum, 2007b).

The airspace includes the area within an approximate 40 mile-radius of Wheeler-Sacks Army Airfield (WSAAF) from the ground surface up to an altitude of 10,000 feet mean

sea level (MSL) to the west of the airfield and 6,000 feet MSL to the east. This airspace generally corresponds to the airspace allocated to the Fort Drum Army Radar Approach Control (ARAC). The ARAC provides air traffic control services for the Fort Drum region. The FAA Boston Air Traffic Control Center (ATC) controls airspace adjoining ARAC airspace (U.S. Army, 2005).

4.6.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Long-term minor (low) impacts to airspace are expected from the addition of 1,000 to 3,500 Soldiers. It is anticipated that the activities associated with a CS/CSS and Full Sustainment BDE would have almost no impact to air operations. Use of airspace would continue to be managed through scheduling and balancing requirements with airspace availability.

IBCT, HBCT, Multiple BCTs. Long-term moderate (medium) adverse impacts are expected from the addition of 3,500 to 7,000 Soldiers. The UAV activities associated with a BCT or multiple BCTs would require increased use of existing airspace. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource (U.S. Army, 2005).

4.6.4 Cultural Resources

4.6.4.1 Affected Environment

The Fort Drum affected environment for cultural resources is the footprint on the installation. Fort Drum has 636 historic sites, 215 prehistoric sites, 5 historic villages, and 13 cemeteries. Fort Drum is also the home of the LeRay Mansion Historic District. Approximately 85% of the installation has been surveyed for cultural resources. This equates to 90,950 acres that have been surveyed. Some of the previously surveyed portion of the installation will be resurveyed as some of the earlier field work does not meet modern standards (U.S. Army, 2002).

4.6.4.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Long-term minor (low) adverse impacts are expected from the addition of 1,000 to 3,500 Soldiers. It is anticipated that as maneuver activities increase the possibility of impacts to unknown sites increase as well. The equipment assigned to these units includes general medium to large vehicles, and in the case of the IBCT, towed artillery. It is anticipated that there would be little off road training in undisturbed areas. The relatively small number of vehicles and Soldiers will likely have little impact on undocumented cultural/archaeological resources. Additionally, due to the large percentage of previously surveyed land, the Cultural Resource Manager (CRM) would easily be capable of clearing previously surveyed land for off road training.

HBCT, Multiple BCTs. Short- and long-term moderate (medium) adverse impacts are expected from the addition of 3,800 to 7,000 Soldiers. The higher personnel count

equates to higher probability that historic and/or archaeological resources will be impacted. The heavy tracked vehicles of a HBCT could impact previously undiscovered cultural/archaeological resources within the training area. Currently, efforts are employed to avoid, minimize, or reduce impacts to installation cultural resources. All known sites have been reviewed and surveyed prior to training, and thus are avoided during training exercises.

4.6.5 Noise

4.6.5.1 Affected Environment

The noise environment on Fort Drum is characterized as aircraft, artillery, and blast such as the sound of a weapon firing or the projectile exploding in the impact area. Artillery weapons tend to generate the highest level of noise heard on and off the installation; however the highest sound exposure levels are generated from the aircraft maneuvers (fixed- and rotary-winged). Fort Drum is used by the Army, Army National Guard, and by the Air Force for aircraft training including air-to-ground weapons training (U.S. Army, 2006).

Residential housing outside the installation is largely composed of Soldiers and their Families; and civilians associated with the installation. Fort Drum is constructing, via the Residential Communities Initiative (RCI) program, some of that housing on-post, and leasing current available housing units.

According to the Programmatic Environmental Assessment for Fort Drum, NY (U.S. Army, 2000), NZ II extends off the installation boundary into the Town of Diana; however, most development in this area is agricultural with single-family residences and further development is generally discouraged. NZ II also extends off-post to the Town of Wilna along State Road 3 from artillery impact areas, and along the installation boundary into the Town of Rossie and north of the Village of Antwerp. No incompatible land uses occur in any of these three areas. NZ III created from blast noise or artillery fire does not extend off the installation boundary.

Noise generated from the airfield is heard off-post to the north in the town of Philadelphia along Great Bend Road. This area contains very few houses and one school. Aircraft flyover noise is also heard in the Town of Antwerp. Noise generated from helicopter operations within the training area is contained almost entirely on-post with the exception of a small area south of the Village of Spragueville. (U.S. Army, 2005)

4.6.5.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Short- and long-term minor (low) adverse impacts are expected to the natural environment from stationing a CS/CSS or Full Sustainment BDE to Fort Drum. Construction noise would be minor and short-lived. The installation is responsible for training more than 80,000 Soldiers annually. The addition of 1,000 to 3,500 Soldiers would have a minor impact to wildlife. Environmental Program

Managers would need to review their INRMPs to ensure best practices are used to mitigate noise from maneuver and training activities. Small arms training is not likely to be a problem on- or off-post. While noise from small arms ranges 7, 8, and 9 can be heard off-post, that noise tends not to significantly impact off-post residences. Several studies indicate that the wildlife on Army land tends to adjust quickly to noise generated from training (Stalmaster et al., 1997; Telesco and Van Manen, 2002; USACE, November 2002). Existing noise contours would not likely change.

IBCT. Short- and long-term moderate (medium) adverse impacts are expected to wildlife and the residential communities outside the installation border. Construction impacts would be minor and short-term. Though Fort Drum has three BCTs, all three have never been on the installation at the same time. An IBCT of 3,500 Soldiers permanently stationed on the installation may require Fort Drum to review current noise contours and ensure artillery fire is consistent with the current level of training. An increase in artillery fire from the IBCT may be heard off-post as part of NZ II, in the towns of Wilna and Rossie, however, the current peak noise threshold for artillery fire would not be exceeded.

HBCT, Multiple BCTs. Long-term significant (high) adverse impacts are expected to the local community and to other noise sensitive receptors from the addition of 3,800 to 7,000 Soldiers. The noise contours for NZ II from the artillery impact area may be impacted or extended. Further site-specific analysis would be necessary to determine any changes to the current noise contours at Fort Drum. Fort Drum is expecting an extraordinary amount of growth in the reasonably foreseeable future, which could mean more developments closer to the installation border, and more residents impacted by noise generated from training. The INRMP would need to be followed and possibly updated for noise mitigations and extra precaution taken during nighttime training.

4.6.6 Soil Erosion

4.6.6.1 Affected Environment

Fort Drum is located in the Lake Erie-Lake Ontario lowlands. Plainfield sands dominate this location, and they have a high permeability and low water holding capacity – leading to high water conductance. Wind erosion is likely in lowland unvegetated areas.

4.6.6.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Long-term minor (low) adverse impacts are expected from the wheeled vehicles in these units with the addition of 1,000 to 3,500 Soldiers. Off-road movement could have an impact on vegetation and soil surfaces, leading to the conditions for erosion. It is recommended that the condition of existing (unimproved) range roads and their ability to support for heavy truck traffic be evaluated. The IBCT dismounted training would have a low impact on soils and the vehicles of the IBCT could have a greater effect in areas where dismounted training is concentrated most.

HBCT, Multiple BCTs. Long-term moderate (medium) adverse impacts are expected on roads and off-road areas due to the number, size, and variety of wheeled and tracked vehicles in an HBCT or multiple BCTs and the weight and mobility characteristics of the vehicles. The terrain would show the impact from the vehicle maneuvers, turns, and traction. The road network may deteriorate rapidly leading to trafficability and erosion problems. Off-road traffic and maneuvers would increase, which would have a moderate negative impact on vegetation and the soils. Conditions for water and wind erosion could increase.

4.6.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.6.7.1 Affected Environment

There are 27 special status species of flora and fauna that are known to occur within the Fort Drum area. Fort Drum currently records only one endangered species as contiguous to the installation, and on-site, the Indiana Bat. A Biological Assessment is currently being prepared. More information on this species can be found in Appendix T.

4.6.7.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Under each of these unit growth scenarios, long-term moderate (medium) adverse impacts are expected on listed Indiana Bat or other species recorded as occurring on the installation. Implementation of any of these levels of Soldier strength could have an impact on this species. As mentioned, a Biological Assessment of the installation's listed species is currently being prepared. The installation would continue to manage its natural resources and potential habitat for in accordance with the installation INRMP and any conservation measures identified in any ESA, Section 7 consultation documents.

4.6.8 Wetlands

4.6.8.1 Affected Environment

Fort Drum contains approximately 16,244 acres of wetlands (Army Environmental Database-Environmental Quality, (n.d.)) which constitutes roughly 20% of the installation (U.S. Army, 2001). Numerous wetland types (forested wetland, freshwater marshes, scrub-shrub, etc.) are found throughout the installation. Wetland boundaries change frequently due to changing hydrology brought on by natural succession and beaver activity. Several compensatory wetlands were created on Fort Drum as part of past mitigation (U.S. Army, 2001). These wetlands were developed in perpetuity and the installation is ensuring sure that these wetlands will not be negatively impacted.

4.6.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Long-term minor (low) adverse impacts are expected on the installation wetlands as a result of the restationing of 1,000 to 3,500 Soldiers at Fort Drum. Training activities would be limited to established training areas.

The addition of even up to 3,500 Soldiers would not pose significant impacts to wetlands as best management practices are observed for training according to Fort Drum's INRMP. Additionally, the level of training associated with maneuver activities for the CS/CSS and Full Sustainment BDE is significantly lower than current training levels experienced on the installation for larger units. Efforts are made for dismounted Soldier training associated with the IBCT to avoid any impacts on wetlands.

HBCT, Multiple BCTs. Long-term moderate (medium) adverse impacts to the installation wetlands are expected due to the presence of an additional 3,800 to 7,000 Soldiers at Fort Drum. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands by using the installation wetlands planning level surveys or GIS mapping. Hardened crossings can be constructed when needed to reduce impacts.

4.6.9 Water Resources

4.6.9.1 Affected Environment

Water Supply

Potable water is supplied to Fort Drum from the Development Authority of the North Country (DANC), which subcontracts water and sewer service to the City of Watertown. However, Fort Drum is under contract for water and sewer service with DANC. Fort Drum estimates current water usage from DANC to be approximately 1.5 MGD. DANC can supply up to 4 MGD through its 20-inch transmission main to the installation. Water is supplied to the Watertown Water Treatment Plant from the Black River. The on-post well field is used as a backup water supply that has a total combined well capacity of up to approximately 3.3 MGD. The chlorination plant at the well field is currently sized for 5.7 MGD. Development with the on-post well field is restricted within 300 to 500 feet of a water supply well. In addition, Fort Drum operates, as needed, a well field of 11 wells near the airfield.

DANC and the City of Watertown recently (this year) finished a regional study for the water and sewer systems which determined that there is sufficient capacity in the transmission and treatment systems to support the total growth in the immediate area around and including Fort Drum (Fort Drum, 2007c).

Wastewater

The primary non-domestic discharges from Fort Drum included oil/water separators and treated groundwater from environmental remediation sites. The total domestic wastewater flow from Fort Drum rarely exceeds 2.5 MGD. The capacity of the existing collection system and off-post connections is ample. For example, the North Gate pump station is rated for 8 to 10 MGD, but the average daily wastewater flow from Fort Drum was only approximately 2.0 MGD for 2007. The installation has three other points of entry into the DANC sewer system; one from the North Post, one from the South Post and actually two others from the Pine Woods housing site. All have excess capacity from the actual flows being supplied at this time (Fort Drum, 2007c). The existing

infrastructure for wastewater conveyance could easily support a 50 percent increase in demand. There is an on-going upgrade process with the current system.

Stormwater

Fort Drum falls within the jurisdiction of the State of New York, an EPA National Pollutant Discharge Elimination System delegated state. As such, Fort Drum must comply with New York State laws and regulations governing stormwater discharges under State Pollutant Discharge Elimination System permits.

Fort Drum conveys stormwater runoff via open drainage ditches and swales and subsurface piping systems, which discharge directly to on-post grounds through infiltration and surface water bodies such as streams, creeks, ponds and rivers. Additionally, man-made stormwater treatment ponds have been and are being installed as required in conjunction with Fort Drum facility growth.

Fort Drum has obtained permit coverage for stormwater discharges from their industrial activities under the New York State Pollutant Discharge Elimination System Multi-Sector Permit for Stormwater Discharges Associated Industrial Activity. Further, Fort Drum has obtained storm water permit coverage for their airfield de-icing operations under an Individual New York State Stormwater General Permit.

Coverage for individual construction projects that meet or exceed 1 acre of disturbance on Fort Drum is obtained through the State Pollutant Discharge Elimination System Permit for Construction Activity.

Currently, Fort Drum is not subject to a State Pollutant Discharge Elimination System permit for Municipal Separate Storm Sewer Systems (MS4) (Fort Drum, 2007d).

4.6.9.2 Environmental Consequences

CS/CSS. Short- and long-term minor (low) adverse impacts are expected with the addition of 1,000 Soldiers at Fort Drum. Given the population of Fort Drum, the addition of a CS/CSS would not have significant impacts to water demand and associated treatment. There are adequate facilities at Fort Drum to accommodate this level of growth.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Short- and long-term moderate (medium) adverse impacts are expected with the addition of 3,000 to 7,000 Soldiers, Personnel consumption and washing of vehicles would increase water demand and associated treatment. The installation would also need to revisit their Stormwater Pollution Prevention Plan to incorporate best management practices for this level of growth. Additionally, any new construction/land disturbance over 1 acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction. Motorpool activities and washing of track-driven heavy-tracked

vehicles would produce an increase on water demand and associated treatment. Fort Drum may need to construct new washing systems to manage heavy-tracked vehicles.

4.6.10 Facilities

4.6.10.1 Affected Environment

Fort Drum encompasses approximately 107,265 acres in northern New York State and is located approximately 10 miles northeast of Watertown, NY and 15 miles east of Lake Ontario (U.S. Army, 2005).

In 2006, approximately 740,000 square feet of new facilities were completed. Most of these facilities are located at the WSAAF and are comprised of permanent and interim facilities for the Combat Aviation Brigade. Permanent construction completed in 2006 at the airfield includes: a 240-person barracks building, a brigade headquarters, three battalion headquarters, five company headquarters, a consolidated Soldier aid station, an aircraft hangar, a vehicle maintenance facility and associated infrastructure. Interim facilities completed include: a brigade headquarters annex, two battalion headquarters, fourteen company headquarters, two arms storage buildings, a dining facility and 25 barracks buildings to house 600 Soldiers.

Other projects completed in 2006 include three barracks buildings on North Post to house 276 Soldiers, a medical simulation training facility on South Post, a Departure/Arrival Airfield Control Group expansion, a Tactical Unmanned Aerial Vehicle facility and a fuel truck storage building at the airfield, and a defensive live-fire range.

Permanent facilities scheduled for completion in 2007 include: a 240-person barracks building, a dining facility, and hangar additions for company headquarters at the airfield, a force modernization educational facility on South Post, a Pine Plains Physical Fitness Center addition, an Ammunition Supply Point pallet processing facility, and a Readiness Center for the New York Army National Guard (U.S. Army, 2006).

Military functions can be divided into a number of land use categories displaying, with a few exceptions, the basic attributes of civilian land use types. Land uses at Fort Drum include Headquarters and Administration, Soldier Housing, Soldier Maintenance, Industrial, Community Facilities, Medical Facilities, Operations, Family Housing, Training Areas, and Buffer and Recreation. All of these uses are located within the Cantonment Area. Land outside the Cantonment Area and outside the WSAAF consists of Training and Operations.

4.6.10.2 Environmental Consequences

CS/CSS. Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Short- and long-term moderate (medium) adverse impacts to facilities are expected under all unit growth scenarios. It is anticipated an increase of 1,000 to 7,000 Soldiers would increase activities within the Cantonment Area, including but not limited to, increased usage of the Post Exchange, commissary, medical, and Family support facilities.

One factor to consider in fielding any of these unit growth scenarios is that while Fort Drum currently has three BCTs assigned, all units have not been on Post at the same time because of ongoing deployments. The installation is still constructing facilities to accommodate the third BCT. Other issues with potential stationing include shortages in available facilities. Fort Drum has available land to support a CS/CSS, but required studies have yet to be conducted. The available land may contain wetlands, requiring coordination with state and federal agencies and impact studies prior to construction of new facilities (Fort Drum, 2007c).

Activities within the training and range areas would be limited to existing firing ranges and roadways. However, these activities would have to be scheduled to coordinate with existing mission activities. The installation should be able to reasonably accommodate a CS/CSS. A study using SIRRA would also be beneficial.

Fort Drum would face similar challenges to fielding a Full Sustainment BDE that a CS/CSS would demonstrate, albeit at a greater scale. The installation would have to accommodate a *fourth* BCT while still adjusting to the presence of the third BCT on post. Increased facilities usage would be expected, as would additional construction to support a BDE.

The establishment of an HBCT at Fort Drum may exceed the capacity of the installation to accommodate the proposed action despite the availability of buildable space for expansion. If identified by the installation, additional coordination and consultation may be necessary for activities associated with an HBCT. An excess collective demand on facilities and infrastructure required by a HBCT could lead to an overall degradation of facilities quality within the Cantonment Area, with regards to housing and support services, unless new facilities were constructed to support this level of growth.

There is a high probability that multiple BCTs would increase congestion beyond the carrying capacity of the cantonment infrastructure and support services. The availability of buildable space would support multiple BCTs. However, the installation is still attempting to accommodate a current third BCT on post, and it is highly unlikely that the installation could support additional BCTs without extensive new construction. The level of construction required at this level is resource intensive and potentially beyond the ability of Fort Drum to sustain. The excess aggregate demand on cantonment facilities and infrastructure required by multiple BCTs may exacerbate system degradation within the Cantonment Area, or create non-compliant regulatory issues.

4.6.11 Energy Demand/Generation

4.6.11.1 Affected Environment

Fort Drum's energy requirements for electrical and natural gas service are provided by the local utility company National Grid. The internal distribution systems are government owned and operated.

Electricity: Transmission power is supplied to the installations two 15 MW substations, one located at the north end of the cantonment area and one at the south end. The combination of these stations provide for the capabilities to support a 30+ MW load. The current average monthly demand load is 15.8MW with a monthly average of 884 MWH. The current system can support an additional 50 % increase without any expansion required. This can easily support an additional BCT and associated families.

Natural Gas: Natural gas is supplied to the installation through three active service points. The two main services are both 8" supplies from the local utilities high pressure system. The third point is a 6" line supplied from a medium pressure system. The current usage on the system is a monthly average of 716,666 therms. Without any changes the system can support up to three times this load. The current supply and system can easily support an additional BCT and associated families without any expansion requirements.

4.6.11.2 Environmental Consequences

CS/CSS. Long-term minor (low) adverse impacts are expected with the addition of a CS/CSS unit with 1,000 Soldiers. This represents a small fraction of the overall mission activity at Fort Drum. This fact, combined with a large excess of energy resources available, means that this unit growth scenario is likely to have a minimal impact on energy demand and to the natural environment.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Long-term moderate (medium) adverse impacts are expected from the addition of 3,000 to 7,000 Soldiers. New electrical hardware may need to be installed (for training and housing facilities), and distribution pressure of natural gas could be increased in order to support the increase in demand. This can be attributed to Fort Drum's abundance of energy resources available.

4.6.12 Land Use Conflicts/Compatibility

4.6.12.1 Affected Environment

Military functions can be divided into a number of land use categories displaying, with a few exceptions, the basic attributes of civilian land use types. Land uses at Fort Drum include Headquarters and Administration, Soldier Housing, Soldier Maintenance, Industrial, Community Facilities, Medical Facilities, Operations, Family Housing, Training Areas, and Buffer and Recreation. All of these uses are located within the Cantonment Area. Fort Drum also has 'Local Training Areas' wherein Cantonment lands are used for common task training missions until allocated use is funded (e.g. housing, facilities/ranges, recreation, etc.). Land outside the Cantonment Area and outside the WSAAF consists of Range Operations and Training Lands. Locations and descriptions for each of the land uses at Fort Drum are presented in Figure 2.2 of the Programmatic EA (U.S. Army, 2000).

The military operations land use areas at Fort Drum include facilities that support mission operations. There are three areas of operations land use at Fort Drum. The largest area is the WSAAF. Additionally, the Ammunition Supply point is also classified as operations land use. The operations land use areas comprise less than 2,500 acres, or less than three percent of Fort Drum's land area.

Within the Cantonment Area, training areas primarily consist of Local Training Areas that extend outward from Memorial Drive, in the Mountain View portion of the post. Local Training Areas are outdoor areas used for company-level, individual, and collective training. Training land use in the Cantonment Area comprises approximately 1,628 acres. This land is buildable land not yet programmed

Buffer land is used to separate incompatible land uses and mitigate the impacts on more sensitive land uses (such as Family Housing). Buffer land at Fort Drum runs north along Mount Belvedere Boulevard, from the Belvedere Gate to North Memorial Street then west along North Memorial Street to the Memorial Gate. The Buffer land use occupies 780 acres within the Cantonment Area (US Army, 2005). However, lands referred to as buffer lands may soon be programmed for construction (Fort Drum, 2007c).

4.6.12.2 Environmental Consequences

CS/CSS. Short and long-term minor (low) adverse environmental impacts on installation land use are expected due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. The installation has vacant space available in existing buildings, and has land available to build needed facilities, or a combination thereof to meet the unit's mission requirements. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional CS/CSS unit. The facilities required for a CS/CSS would be located within a single contiguous land unit.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Short and long-term moderate (medium) adverse environmental impacts on installation land use are expected due to the presence of an additional 3,000 to 7,000 Soldiers and their family members. Building new facilities to accommodate this level of growth may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges.

4.6.13 Hazardous Materials/Hazardous Waste

4.6.13.1 Affected Environment

The affected environment includes the use, storage, transport, and disposal of hazardous materials and wastes at Fort Drum. This includes hazardous materials and

wastes from USTs and aboveground storage tanks, deicers, pesticides, LBP, asbestos, PCBs, radon, and UXO.

Maintenance support and specialized flight support operations currently use large quantities of aviation fuel, ground vehicle fuel, lubricants, hydraulic fluids, antifreeze, degreasers and solvents, chemical batteries, and paint-related materials. The volume of hazardous waste generated on an annual basis at Fort Drum qualifies the post as a large quantity generator. To handle this waste, Fort Drum utilizes two hazardous waste storage facilities. Fort Drum manages its hazardous waste as summarized in its Hazardous Waste Management Plan updated every two years (U.S. Army, 2005).

4.6.13.2 Environmental Consequences

CS/CSS. Long-term minor (low) adverse environmental impacts from hazardous materials and waste are expected with the restationing of a CS/CSS unit. It is anticipated that Fort Drum would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Short- and long-term moderate (medium) adverse environmental impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 7,000. Impacts to environmental management could be considered more significant if use or removal of hazardous substances caused an uncontrollable release of the substances to the environment, which then posed an increased threat to the environment or human well-being. (Fort Drum, 2005) Currently, Fort Drum has three BCTs that have yet to be present at the installation at the same time. Additional BCTs could be a challenge to handle waste generation, storage, and disposal (Fort Drum, 2007a).

With the addition of 3,000 to 7,000 Soldiers, substantial urban and semi-urban settings to support training and future mission requirements would be needed. Many projects involve the use, generation, and storage of hazardous materials and wastes during facility demolition, renovation, or construction. The demand for additional storage and disposal capacity would have to be met at the local level at the installation. Army policies, regulations, and guidelines that manage the use, storage, and disposal of materials and wastes would need to be updated to reflect the change in mission at Fort Drum and expanded training activities.

4.6.14 Traffic and Transportation

4.6.14.1 Affected Environment

The ROI of the affected environment for traffic and transportation aspects include Fort Drum, and several neighboring counties, to include Jefferson, Lewis, and St. Lawrence Counties, and the communities therein, to include the City of Watertown. Major road routes in the region include I-81 and US 11; I-81 is a north-south interstate highway

located approximately 5 miles west of the installation. US Route 11 is a north-south major arterial that passes through the City of Watertown. New York State Routes 3, 283, and 342 lead to the installation cantonment area. The City of Watertown, located approximately 3 miles southeast of the Fort Drum cantonment area, owns and operates a bus transit system, but none of its routes include Fort Drum.⁵

4.6.14.2 Environmental Consequences

CS/CSS. Short and long-term minor (low) adverse environmental impacts on traffic and transportation systems on the installation are expected due to the presence of an additional 1,000 Soldiers and their family members assigned to Fort Drum. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the installation, and is not expected to reduce the level of service (LOS) on the installation's road network. There may be a slight increase in traffic volume during peak morning and evening hours, but it would not affect either level of service or pose an increased risk to the safety of pedestrians and bicyclists.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Short and long-term moderate (medium) adverse environmental impacts on traffic and transportation systems on the installation are expected due to the presence of an additional 3,000 to 7,000 Soldiers and their family members assigned to the installation. The increase in off-post traffic would have a moderate impact on traffic in the community overall and could contribute to a decrease in the LOS in the road network leading to the installation, particularly during peak morning and afternoon travel periods. This level of increase in population could also have a moderate impact on the traffic volume on the installation, and could cause a minor decrease in LOS on some of the installation's arterial routes. The increased traffic volume in both the neighboring communities and on the installation could pose a moderate increased level of risk to the safety of pedestrians and bicyclists.

4.6.15 Cumulative Effects

Fort Drum personnel (Fort Drum, 2007a) identified a list of cumulative effects actions, on- and off-post, that may present further effects to the installation and surrounding community when the effects of these actions are considered cumulatively. Fort Drum acknowledged that other construction and modification projects (in addition to what is listed below) may be likely in the reasonably foreseeable future; but may not contribute considerably to cumulative effects when combined with the level of growth identified in this PEIS.

Past and recently completed projects off-post:

- Construction of a Super Wal-Mart occurred in 2006;
- Over the last two year there has been, in the city of Watertown, construction of a Target, a strip of stores (with Pet Smart, Old Navy, and Bed Bath & Beyond),

⁵ Reference: <http://www.citywatertown.org/citibus/citibus.html>, Accessed 23 April 2007.

across from another strip of stores (with a Panera Bread, Sally's Beauty, Game Store, and two empty sections), several restaurants (Texas Road House, Ruby Tuesdays, TOGA Fridays), two new hotels (a holiday Inn express opened and a Hampton Inn is still in construction), near there is a stand alone Starbucks and a new Ponderosa restaurant (moved because of road construction to change the ramps onto I-81).

Current and Ongoing Activities Off-Post:

- I-81 to US 11 Connector Project. This project will provide an improved connection between Interstate 81 (I-81) and US Route 11 at or near the North Gate Entrance to Fort Drum. The project study area is located in the central portion of the Town of Pamela and the southwest quadrant of the Town of LeRay. The study area is bounded by I-81 as the western limit, US Route 11 as the eastern and southern limits with Waddingham Road as the northern limit;
- Construction of a Strip Mall next to the Super Wal-Mart is ongoing;
- Construction of a hotel adjacent to the Super Wal-Mart is also an ongoing project;
- Route 11 roadwork (includes additional turn lanes at Route 11 and Route 342 intersection, widening of Route 11 to accommodate wider shoulders and center turn lanes to access new businesses that have sprung up along the route 11 between the Route 11 and Route 342 intersections and the installation main gate (this includes two other strip malls, a dollar store, a car dealer, a Dunkin Donuts, a car wash);
- There are major infrastructure upgrade projects going on throughout the city of Watertown;
- Major road construction and power line upgrades are being conducted where the main business road in City of Watertown (Arsenal Street) meets Interstate 81. The on and off ramps are being changed. This has caused the closure/relocation of a few businesses and major road work on Arsenal Street. (all of this is in hopes of relieving the traffic congestion on Arsenal Street); and
- McDonald's on Arsenal Street was torn down to rebuild a new one, now in construction. Several box stores, also on Arsenal Street, have changed to car dealerships.

Reasonably Foreseeable Future Projects off-post:

- Proposed Interstate 81 Connector (a new highway from Interstate 81 to the Installation main gate at Route 11); and
- New housing developments in Town of Pamela off Route 342, Town of Champion, Village of Great Bend (off Route 3), proposed housing happening in Town of Wilna, Village of Carthage, new housing in City of Watertown. The area has not been experiencing a great amount of growth in housing when the initial expansion occurred in the 80's and now there is a big spark for new housing due to the need for improvement of existing housing. As a result, a number of residential communities are currently being planned that would be available to support additional Soldier growth.

Future projects at Fort Drum:

- The Army's Residential Communities Initiatives (RCI). Fort Drum is in the process of negotiating housing contracts that would result in construction of new housing on-post, replacing current off-post housing. The net result would be an increase of 1,244 new housing units and other buildings on-post (current estimate may be as low as 800 units); and
- Construction of temporary facilities, including a vehicle maintenance facility, motor pool parking, storage areas, an arms vault, and brigade and company headquarters buildings. This action is part of the aviation brigade restructuring, and is located at the Wheeler-Sacks Army Airfield (U.S. Army, 2005).

On-post, the installation expects soils to continue to erode in places of high construction, resulting in the potential for more sedimentation from training and construction in local streams. Water quality would continue to degrade, though this effect may be temporary until construction ceases. Air quality may also continue to degrade as new stationary sources are added to the installation, and mobile sources may significantly increase at the BCT and multiple BCT level of growth. Noise would temporarily be increased, primarily due to construction, but would return to normal levels as experienced by training activities. Finally, the generation of solid waste from construction and demolition activities would be elevated, but would not present a significant impact.

Fort Drum also expects cumulative effects to traffic and transportation, on- and off-post; however, with the recent and ongoing road improvements outside the installation boundary Fort Drum expects only short-term adverse effects, with an end result being beneficial, relieving traffic congestion in crucial areas.

With the growth of a BCT, the installation expects growth at schools in Fort Drum's region of influence. For example, the current average class size in the Indian River School District, Kindergarten through the sixth grade, ranges from 18.9 to 22.7 students per class respectively (Fort Drum Initiative Summary by District/Year/Elementary Grade Level). The school district is in the midst of adding to its infrastructure to meet the increasing demand it foresees as a result of the Army's modularity Transformation. In addition to favorable class sizes, the school district retains a number of classrooms which can be converted into full-time class use should the need arise. Therefore, it was determined that growth at Fort Drum would not have an overcrowding affect to the local school system (New York Department of Education, 2007).

Fort Drum Initiative Summary by District/Year/Elementary Grade Level

<u>Carthage grades:</u>		<u>School Yr 05-06</u>		<u>School Yr 06-07</u>		<u>School Yr 07-08</u>	
	Sections	Sept Enr.	June Enr.	Sections	Sept Enr.	June Enr.	Sections Enr.
K		19.7	18.4		18.7	18.0	19.9 -
1st		17.1	16.0		19.3	18.7	18.9 -
2nd		18.8	17.9		18.9	18.7	20.6 -
3rd		21.4	21.4		19.6	19.3	18.3 -
4th		20.5	20.2		19.8	19.4	19.3 -
5th		24.7	23.4		21.1	21.2	20.8 -
6th		Sixth grade are not self contained in the Carthage School District					

<u>Indian River grades:</u>		<u>School Yr 05-06</u>		<u>School Yr 06-07</u>		<u>School Yr 07-08</u>	
	Sections	Sept Enr.	June Enr.	Sections	Sept Enr.	June Enr.	Sections Enr.
K	19	19.2	18.6	17	19.6	17.1	20 18.9 -
1st	16	19.2	18.1	17	19.5	19.5	17 19.4 -
2nd	15	19.3	17.7	16	18.2	16.8	17 20.5 -
3rd	14	20.7	19.9	14	18.9	18.4	13 21.7 -
4th	13	22.0	20.8	13	21.2	20.2	13 21.8 -
5th	12	25.2	23.8	12	22.4	21.5	12 22.8 -
6th	12	22.8	22.5	12	23.7	21.3	12 23.1 -

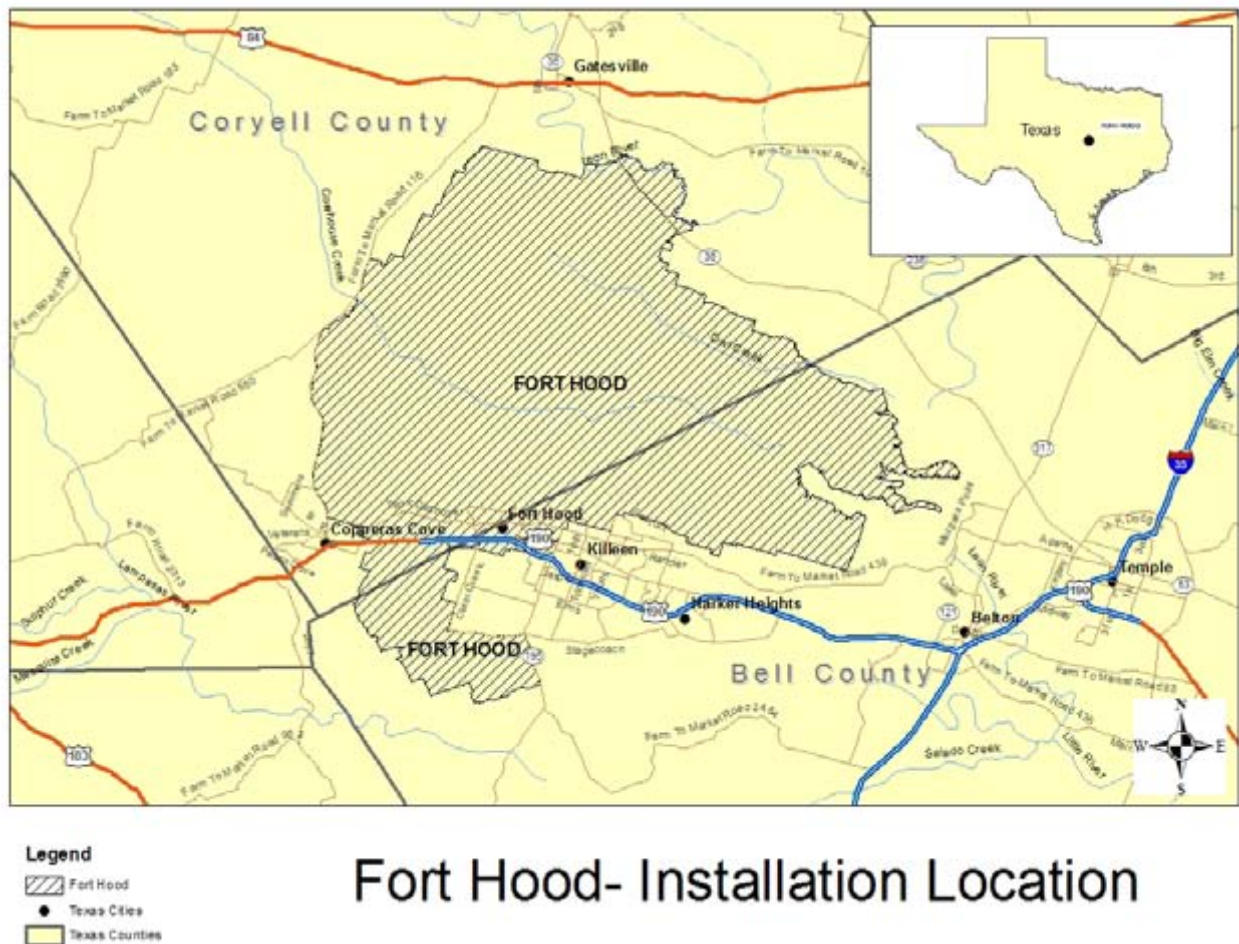
<u>Watertown City grades:</u>		<u>School Yr 05-06</u>		<u>School Yr 06-07</u>		<u>School Yr 07-08</u>	
	Sections	Sept Enr.	June Enr.	Sections	Sept Enr.	June Enr.	Sections Enr.
K	19	20.6	18.7		23.6	22.4	
1st	18	21.4	22.2		22.7	21.3	
2nd	17	21.9	20.6		21.9	16.8	
3rd	19	20.8	18.8		22.2	19.7	
4th		316	362		22.5	21.7	
5th		334	307		21.8	20.9	
6th		338	305		22.3	22.9	

*Analysis provided by New York Department of Education (2007)

4.7 FORT HOOD, TEXAS

4.7.1 Introduction

Fort Hood, located in Central Texas, has approximately 136,000 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.7-1). It has long been the Army's most densely populated installation and has supported intensive armored/mechanized unit training for decades.



Fort Hood- Installation Location

Figure 4.7-1 Fort Hood

Fort Hood's major unit is III Corps and its primary subordinate units: the 1st Cavalry Division, 4th Infantry Division, 3rd Armored Cavalry Regiment and 13th Sustainment Command.

Fort Hood has a robust range infrastructure that supports Abrams Tank, Bradley Fighting Vehicle and Apache Helicopter live-fire training. It has the Army's first Digital Multi-Purpose Range Complex (DMPRC). Given the density of maneuver units and restrictions on maneuver land use due to slope, TES and other factors units can face challenges scheduling training areas of required doctrinal size.

Table 4.7-1 contains the Fort Hood’s VEC ratings for each of the various stationing action scenarios.

Table 4.7-1. Fort Hood VEC Ratings

Fort Hood					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low	Low	Low	Low
Airspace	Low	Low	Low	Low	Low
Cultural Resources	Very low	Low	Low	Medium	Medium
Noise	Very low	Very low	Low	Low	Low
Soil Erosion Impacts	Low	Low	Medium	High	High
Biological Resources	Very low	Low	Low	Medium	Medium
Wetlands	Low	Low	Low	Low	Low
Water Resources	Low	Low	Low	Low	Low
Facilities	Low	Medium	Medium	Medium	Medium
Socioeconomics	Very low	Very low	Low	Low	Low
Energy Demand/ Generation	Low	Low	Low	Low	Low
Land Use Compatibility	Very low	Low	Low	Low	Low
Scheduling Conflict	Low	Low	High	High	High
Haz Mat/ Haz Waste	Low	Low	Low	Low	Low
Traffic and Transportation	Very low	Low	Low	Medium	Medium

4.7.2 Air Quality

4.7.2.1 Affected Environment

At Fort Hood, the ROI for air quality includes Coryell and Bell Counties in Texas. Bell and Coryell counties, including all of Fort Hood, are considered to be unclassified or in attainment with regard to each of the NAAQS criteria pollutants. Therefore, the General Conformity Rule demonstrating compliance with the State Implementation Plan (SIP) does not apply to Fort Hood.

Fort Hood is classified as a major source of air pollutant emissions. Fort Hood operates under the provisions of a current Title V Operating Permit and several individual air permits.

4.7.2.2 Environmental Consequences

Short-term intermittent minor adverse impacts would be expected within the ROI as a result of construction activities, training exercises, and increased automobile use. Heavy construction equipment and trucks would emit minor amounts of NO_x, PM-10, CO, SO_x, and VOCs. These affects, though possibly significant at the moment, are not considered to have a long-term impact on regional air quality.

CS/CSS. The restationing of a CS/CSS unit and its 1,000 Soldiers and family members would have minor (low) long-term impact to regional air quality. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality.

Full Sustainment BDE. There would be an expected minor (low) level impact on the installation and surrounding communities by the restationing of a Sustainment Brigade Combat Team and its 3,000 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a significant effect on regional air quality. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to Fort Hood's boundaries that visible emissions migrate beyond the installation. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

IBCT. There would be an expected minor (low) impact on the installation and surrounding communities by the restationing of an Infantry Brigade Combat Team and its 3,500 Soldiers. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training. It is anticipated that the installation would see increases in emissions from equipment required to support the installation such as fuel storage and dispensing. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails.

HBCT. There would be an expected minor (low) impact on the installation and surrounding communities by the restationing of a Heavy Brigade Combat Team and its 3800 Soldiers. Mobile source emissions from military equipment are currently exempt from emission calculations. These emission sources are not included in county mobile source emission inventories. Emission increases would come from stationary

combustion sources, fugitive dust emissions and fuel operations. These emissions would tend to remain localized and produce no significant impact to regional air quality.

Multiple BCTs. A minor (low) impact to air quality is expected on the installation and surrounding communities by the restationing of multiple HBCTs and approximately 7,000 Soldiers. Construction and changes to facility operations to support multiple BCTs would be significant initially but should provide no sustained negative impact to regional air quality. Long-term minor intermittent adverse impacts would be expected from emissions of criteria pollutants from aircraft operations, military equipment maneuvers, artillery exercises, and use of privately owned vehicles.

4.7.3 Airspace

4.7.3.1 Affected Environment

Fort Hood has 269 square miles of FAA-designated Special use airspace, up to 45,000 feet. The installation has access to this airspace continuously, with restrictions, and is controlled by the FAA of Houston, TX. (US Army Corps of Engineers, 2002)

Fort Hood has two Army-operated airfields on-site. Robert Gray Army Airfield is located at West Fort Hood, and Hood Army Airfield is located at the eastern edge of the main cantonment area. Hood Army Airfield is used primarily for helicopters. (US Army Corps of Engineers, 1995)

4.7.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, and Multiple BCTs. There would be minor (low) long-term impacts to airspace. It is anticipated that activities associated with an increase of these units would modestly increase activities within the training and range areas, and no impacts are expected with the CS/CSS or Full Sustainment BDE. BCT activities would have to be scheduled to coordinate with existing mission activities, to include UAV operations, and ordnance and other large caliber munitions firing that requires the use of airspace over ranges and impact areas. Any increased operations of UAVs, and use of this airspace would continue to be managed through scheduling and balancing training requirements with airspace availability. Where existing airspace is insufficient, or already saturated with military activity, installation commanders would have to seek additional special use airspace designations from the FAA. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource. (US Army Corps of Engineers, 2002). Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use.

4.7.4 Cultural Resources

4.7.4.1 Affected Environment

Cultural Resource sites can be found throughout the installation. Over 95 percent of the land has been inventoried. Currently, 370 sites are managed because they are eligible or potentially eligible for listing on the National Register for Historic Places.

4.7.4.2 Environmental Consequences

CS/CSS. The addition of a CS/CSS unit should have minimal (very low) impacts to cultural resources. The relatively small number of vehicles and Soldiers would likely have little effect on cultural resources, even in areas that have not previously been surveyed.

Full Sustainment BDE, IBCT. There would be minor (low) significant short- and long-term impacts from the addition of 3,000 to 3,500 Soldiers as with the Full Sustainment BDE and the Infantry BCT. The additional Soldiers could slightly increase the instances of inadvertent damage to archaeology sites, however, the light vehicles and dismounted training associated with these scenarios would not have greater impacts than the current level of training at Fort Hood.

HBCT, and Multiple BCTs. There would be moderate (medium) short- and long-term environmental impacts to cultural resources due to an additional Heavy BCT and its up to 4,000 Soldiers or an increase of approximately 7,000 Soldiers. There would be a significant increase in foot and vehicle traffic, but impacts would be experienced on mostly disturbed range and maneuver areas. The HBCTs could impact both previously unrecorded and currently inventoried cultural resources located in the ranges due to unrestricted maneuvering.

4.7.5 Noise

4.7.5.1 Affected Environment

The noise generated on Fort Hood, TX is characterized as being from fixed-wing and rotary-winged aircraft operating out of the Hood Army Field and Robert Grey Army/Killeen Joint Field; and from heavy armor training. Aircraft overflights, specifically by helicopter overflights are the cause of some noise concerns off the installation. Fort Hood is home to two Armored Divisions which contribute heavy maneuver training noise and large caliber fire. Artillery training close to the borders of the installation generates noise complaints from nearby residents (for instance, causing windows to rattle) (Fort Hood, 2004).

Fort Hood is expected to lose one Heavy Brigade Combat Team to Fort Carson, Colorado as recommended by BRAC2005.

4.7.5.2 Environmental Consequences

CS/CSS. Minimal (very low) impacts are expected with this action at Fort Hood. Noise generated from expected small arms range usage is largely insignificant when compared to the current mission. The installation would need to ensure best practices

are used, as established in the INRMP and installation environmental noise management program.

Full Sustainment BDE. The impact associated with this action is expected to be minimal (very low). An addition of up to 3,500 Soldiers would have an overall general increase on small arms facilities but would not present a significant enough noise impact (or change noise contours) to be heard off post or disrupt wildlife breeding cycles.

IBCT. There would be a minor (low) impact to the natural environment and to some local residential communities. The quality of noise generated from maneuver would be similar to that of a Full Sustainment BDE. The INRMP would need to be adhered to, as would the most recent IENMP. Additional artillery fire associated with the action would not impact already established noise contours or Noise Zones, to include sound traveling off-post.

HBCT, Multiple BCTs. There would be a minor (low) impact from noise generated by an additional HBCT. Noise contours would be similar to existing training. An increase in armored training is not expected to exceed April 2006 developed PK15 (met) noise contours. Noise contours would not change, only an increase in range usage to conduct annual training would be anticipated.

4.7.6 Soil Erosion

4.7.6.1 Affected Environment

Fort Hood topographic features include valleys, buttes and mesas and the terrain consists of partly dissected plains and the remnants of old plateaus. The plateaus are sparsely wooded hills and ridges, which rise 100-200 feet above the plains with steep bluffs along creeks.

There are four soil associations on Fort Hood and the soil cover is typically shallow to moderately deep clayey soil underlain by limestone bedrock. The soils have a relatively low permeability and high shrink-swell potential. Excessive rates of soil erosion occur in approximately 35 percent of Fort Hood training areas due primarily to maneuver damage.

When maneuver actions intersect natural drainage patterns, destabilization occurs resulting in an increase in erosion. Surface water is affected as the soil is transported in the runoff during rainfall events resulting in sedimentation. Through the implementation of best management practices during construction and actions detailed in the Installation Training Area Management (ITAM) plan, loss rates have decreased from approximately 33 tons per acre per year to 4.4 tons per acre per year in the heaviest maneuver training areas. This decrease has been achieved through the development of gully plugs, low-water crossing structures, sedimentation collection ponds, ripping, mulch application and revegetation.

4.7.6.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. There would be a minor (low) impact from the wheeled vehicles in these units. Off-road movement could have an impact on vegetation and soil surfaces, leading to the conditions for erosion. The condition of existing (unimproved) range roads and their ability to support for heavy truck traffic would have to be evaluated. These roads could be prone to water erosion, so road construction, hardening and maintenance practices would have to be reviewed and modified. Off-road movement would impact soil erodibility based on disturbance to vegetation and soil surfaces.

IBCT. The IBCT dismounted training would have a moderate (medium) impact on soils in plains and rolling areas, and the vehicles of the IBCT could have a moderate effect in small selected areas where dismounted training and the vehicles associated with the IBCT could be concentrated.

HBCT. The HBCT would have a significant (high) impact on roads and off-road areas due to the number of tracked vehicles in an HBCT and the weight and mobility characteristics of the tracked vehicles. The terrain would show the impact from the vehicle maneuvers, turns and traction. These areas could then be prone to water erosion.

Multiple BCTs. An overall significant (high) impact would result from Multiple BCTs, given that the number, size, variety and impact of wheeled and tracked vehicles would increase as well. The road network would deteriorate rapidly leading to trafficability and erosion problems. Off-road traffic and maneuvers would increase, which would have a significant negative impact on vegetation and the surface. Conditions for potential water erosion would increase.

4.7.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.7.7.1 Affected Environment

There are over 25 Federal endangered, threatened, candidate species and species of concern that occur or may occur on Fort Hood. Fort Hood has two threatened and endangered species that nest on the installation; the protection of the Black-capped Vireo and the Golden-cheeked Warbler are the most predominant concerns. Appendix T of this document provides a comprehensive list of listed species.

4.7.7.2 Environmental Consequences

CS/CSS. Implementation of this level of Soldier strength is anticipated to have a minimal (very low) impact on the two species of greatest concern. Maneuver is expected to take place on roads, or within the footprint of existing units. No new construction is likely for this level of Soldier increase at Fort Hood.

Full Sustainment BDE, IBCT. It is anticipated that implementation of this level of Soldier strength would have a minor (low) impact on the two species of greatest concern. The threatened and endangered species recorded on the installation are managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents.

HBCT, and Multiple BCTs. It is anticipated that implementation of any of these levels of Soldier strength may have a moderate (medium) impact on the two species of greatest concern. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP. However, since implementation of either of these actions may affect any of the recorded listed species, the installation would be required to consult with the USFWS either informally or formally, depending on whether take is anticipated to occur. Based on Fort Hood's effective conservation and management efforts for a number of listed species, the installation was able to reduce ESA training restrictions so that only 4.3% of the installation is now restricted. Implementation of these Soldier strength scenarios could also potentially result in reestablishment of previous training and land restrictions.

4.7.8 Wetlands

4.7.8.1 Affected Environment

Waters of the U.S., including wetlands, exist across the installation. These resources range from small emergent wetlands associated with ephemeral streams to large forested wetland complexes adjacent to perennial channels. Currently, efforts are underway to delineate all water features, both jurisdictional and non-jurisdictional, on the installation as project sites are identified and as funding allows. Training activities currently avoid wetlands to the degree possible.

4.7.8.2 Environmental Consequences

CS/CSS. There would be a minor (low) impact on the installation wetlands as a result of the restationing of a CS/CSS unit to Fort Hood. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands by using the installations wetland planning level surveys/GIS mapping.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be a minor (low) impact on the installation wetlands as a result of the restationing of 3,000 to 7,000 Soldiers to Fort Hood. To the degree possible, training would be limited to established training areas. If additional training area is required then through the NEPA process locations would be selected that would, when possible, avoid wetland impacts. If wetlands are to be impacted, Clean Water Act Section 404 permits would be required as well as coordination with the local USACE District. The development of delineations and mitigation, which may be costly, would be required as part of the Section 404 permit.

4.7.9 Water Resources

4.7.9.1 Affected Environment

Surface Water

Surface water is the primary water supply for Fort Hood. Currently, there is no known usage of groundwater at the installation. Surface water resources of Fort Hood include approximately 200 miles of named intermittent and perennial streams and numerous additional tributaries of those features. The streams on Fort Hood are currently being delineated to determine jurisdictional status under Section 404 of the Clean Water Act. Fort Hood contains more than 200 water impoundments constituting approximately 692 surface-acres. Most of these are used for flood control, sediment retention, wildlife and livestock water, and fish habitat. A few of the impoundments serve as either wash rack storage facilities or sewage treatment ponds. Fort Hood also shares 43 miles of shoreline at Belton Lake.

Ground Water

The primary stratigraphic units that occur in the Fort Hood area are, from lowest to highest, the Glen Rose Formation, the Paluxy Formation, the Walnut Formation, the Comanche Peak Formation, and the Edwards and associated limestones. The Glen Rose and Paluxy Formations are part of the Trinity Aquifer, which is the major aquifer in the Fort Hood area. The predominately limestone Glen Rose Formations yield only small amounts of water, while the sand and shale consisting Paluxy Formation is capable of yielding small to moderate amounts of water. The Walnut and Comanche Peak Formations consist of a limestone and shale mixture, which can yield small amounts of water. The Edwards and associated limestones are typically porous and have the potential to yield the greatest amount of quality water of any of the units in the area (TDWR 1978). However, the Edwards and associated limestones are stratigraphically thicker, and more contiguous and permeable south and east of Fort Hood where they are part of the large-scale, highly productive Edwards aquifer. On Fort Hood, Edwards Group limestone contains localized perched water aquifers and springs of varying sizes, but not extensive, large-scale confined aquifers.

Potentially sensitive groundwater areas of the Fort Hood region are the springs and the karst recharge systems (caves, rock fractures, rock interstitial spaces) found throughout the installation. The aquifers recharged by these areas are relatively shallow and could be affected by hazardous material spills and seepage.

No major groundwater resources outside the installation are affected by recharge from within Fort Hood, and recharge that occurs within the installation affects only the small, shallow groundwater supplies that remain on the installation.

Watersheds

Fort Hood can be divided into portions of six large watersheds and several smaller subwatersheds. Designated uses for each water body are primarily assumed to be high aquatic life use and contact recreation. Three surface water bodies on or near Fort Hood were listed in 2004 by the Texas Commission on Environmental Quality (TCEQ)

as impaired water bodies under Section 303(d) of the Clean Water Act because of bacterial quantities. One additional surface water body on Fort Hood was added to the draft version of the 2006 Texas 303(d) list dated March 19, 2007. For one of the four water bodies, a Total Maximum Daily Load (TMDL) is underway, scheduled, or will be scheduled. Additional data is needed by the TCEQ before they can schedule a TMDL for the remaining three water bodies.

Water Supply

Fort Hood has water rights to 12,000 acre-feet of water in Belton Lake. However, since there is no water treatment plant at Fort Hood, the installation purchases treated drinking water from Bell County Water Control & Improvement District No. 1 for South Fort Hood and West Fort Hood. North Fort Hood's drinking water is purchased from the Gatesville Regional Water Supply. Belton Lake is the primary water supply for Fort Hood and many of the surrounding communities, while Stillhouse Hollow Lake serves as a water supply for other nearby areas.

Wastewater

Fort Hood has two Texas Pollutant Discharge Elimination System (TPDES) wastewater permits. These cover the sewage treatment plant at North Fort Hood, the sewage treatment plant at the BeltonLake Outdoor Recreation Center (BLORA), and various vehicle washing activities throughout the main cantonment.

Sanitary sewer overflows have been noted as a potential source of contamination of water resources on Fort Hood. There are records of occasional sanitary sewer overflows across the installation, with a greater number occurring in or near Clear Creek and South Nolan Creek. In any given year, it is possible that tens to hundreds of thousands of gallons of sewage are discharged to the environment due to overflows, a considerable percentage of which can go directly into surface waters.

Stormwater

Although precipitation amounts can vary greatly from year to year, Fort Hood averages almost 34 inches of rainfall per year with most occurring during the months of May, June, and October.

Currently, Fort Hood has a TPDES general permit to discharge stormwater from covered industrial activities. Fort Hood will also be required to obtain coverage as a regulated small MS4 (Municipal Separate Storm Sewer System), once TCEQ issues an MS4 general permit.

4.7.9.2 Environmental Consequences

CS/CSS. An addition of a CS/CSS is anticipated to have a minor (low) impact on the installation's watershed, water demand, and associated treatment systems. The addition would only slightly increase water demand for consumption and vehicle washing. CS/CSS activities should not significantly increase the potential for additional sewage overflows. The installation may need to revisit their Industrial Storm

Water Pollution Prevention Plan (SWP3) to incorporate best management practices for any new covered activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit. Fort Hood has a thorough and effective inspection program in place for several years to monitor and ensure compliance with this permit.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. The addition of a Full Sustainment BDE or any level of BCTs would have a minor (low) impact on the installation's watershed, water demand, and associated treatment systems. The 3,000 to 7,000 additional Soldiers and their Families would likely increase water demand for consumption and vehicle washing, but should not do so to a level that would put the installation at risk of violating their contracts or state regulations, or require any increase in the contract limits. The installation may need to revisit their SWP3 to incorporate best management practices for any new covered activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction. Fort Hood has been successfully implementing these permit requirements for over four years, so no significant increase in the risk to water resources is anticipated.

4.7.10 Facilities

4.7.10.1 Affected Environment

Fort Hood Military Reservation encompasses over 214,000 acres. The installation is comprised of three cantonment areas, two instrumented airfields, and many maneuver and live-fire training areas. The cantonment areas are primarily for urban uses and are designated the Main Cantonment Area, West Fort Hood, and North Fort Hood. The Main Cantonment Area and Hood Army Airfield are located at the southern edge of the training area and adjacent to Killeen, Texas. West Fort Hood is located south of U.S. Highway 190, near the City of Copperas Cove, Texas, and includes the Robert Gray Army Airfield/Killeen-Fort Hood Regional Airport. North Fort Hood, located near Gatesville, Texas, is the primary site for Army Reserve and National Guard training, equipment service, and storage (US Army, September 2004).

4.7.10.2 Environmental Consequences

The impacts of the Proposed Action and other alternatives on utilities and communications are primarily related to projected increases in population on and off post. These were analyzed by estimating per unit consumption on generation rates using the most recently available data, and then estimating how total consumption or generation rates would change with the changed population. The increased consumption and generation were then compared with the ability of existing infrastructure to handle those changes.

CS/CSS. There would be minor (low) impacts to facilities. It is anticipated that the activities associated with an increase of 1,000 Soldiers would increase facilities usage

within the cantonment and training and range areas. Activities within the training and range areas would be limited to existing firing ranges and roadways. Currently, Fort Hood has the potential to accommodate a CS/CSS with good planning.

Full Sustainment BDE. There would be moderate (medium) short- and long-term impacts to facilities. Increased Soldier strength of 3,000 to 3,500 would be reflected through increased usage and construction throughout the cantonment areas. Fort Hood could support a Full Sustainment BDE. Increased activities within the training and range areas would be expected to cause long-term impacts due to increased human presence, as well as construction and training activities within the range and training areas. The installation Master Plan would require modifications to allow for implementation of the ACP. A study using SIRRA would also be beneficial.

IBCT, HBCT, Multiple BCTs. Fielding a BCT or multiple BCTs would also result in moderate (medium) short- and long-term impacts to facilities. The addition of one or multiple BCTs would potentially increase usage of cantonment assets beyond what is projected for a BDE; however, a review of the installation Master Plan along with other facilities and infrastructure studies may be able to accommodate the proposed action. The availability of buildable space at Fort Hood supports fielding a BCT on the installation, however, the possibility that increased construction in previously undisturbed land is likely. The potential for construction in areas that contain wetlands is possible, and would require an increased level of coordination with state and federal regulatory agencies.

4.7.11 Energy Demand/Generation

4.7.11.1 Affected Environment

Fort Hood's energy needs are currently met by a combination of natural gas and electric power, both of which are provided by private utilities.

Electricity. Electric power is supplied to Fort Hood at three existing substations. The usage of these three substations is presently 60 percent of capacity. Fort Hood used an average of 1.2 MBTUs of electricity over the past three years. Construction is underway to provide a new substation on the west side of the cantonment area that would service West Fort Hood. These four substations would provide an electric capacity of 248 MWA. The capacity of Fort Hood's electricity is sufficient to handle an infrastructure to support additional Soldiers for the next 20 years before reaching 80 percent of its total capacity.

Natural Gas. Natural gas is distributed throughout the post via installation distribution lines running from three metered stations. Fort Hood has, over the past three years, consumed an average of 1.0 million MMBtu of fossil fuels per year. There is sufficient capacity of natural gas on Fort Hood for any future expected growth (Fort Hood, 2000).

4.7.11.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Stationing of 1,000 to 7,000 Soldiers is anticipated to have a minor (low) impact on overall energy demand. Any level of these growth scenarios would represent only a small fraction of the overall mission activity at Fort Hood. There is also an abundance of energy resources available. Apart from the initial expansion of the energy infrastructure to accommodate a Full Sustainment BDE (barracks, motor pools, miscellaneous facilities, etc.) there is no limiting factor present to suggest a different potential impact from the CS/CSS scenario, and while a Full Sustainment BDE and the BCTs would certainly have an incrementally larger impact than the CS/CSS, all scenarios result in a new energy demand that is well within current system capacity.

4.7.12 Land Use Conflicts/Compatibility

4.7.12.1 Affected Environment

Land use at Fort Hood is allocated to cantonment areas, maneuver/live-fire training areas, and airfields. The cantonment areas are urban areas that contain administrative, maintenance, industrial, supply/storage, unaccompanied personnel housing, family housing, community support facilities, medical, outdoor recreation, and open space land uses. Maneuver/live-fire training areas support the maneuver and live-fire training areas that provide locations for combat training activities, which fulfill Fort Hood's primary purpose. Additionally, a limited amount of cattle grazing is permitted (through 5-year leases) throughout the training areas. The airfields are located adjacent to the cantonment areas and house the fixed-wing/rotary-wing assets and support facilities. Various other land uses located on Fort Hood include the Belton Lake Outdoor Recreation Area, and miscellaneous uses such as roadways, and easements. Most of Fort Hood's land area is used for training and preparedness. Over 88 percent of the land (191,157 acres) is used for maneuver/live-fire training involving combat, combat support, and combat service support elements integrated into formations to conduct multi-echelon, combined arms training to simulate battlefield conditions. Training includes infantry, mechanized infantry, armored units, artillery and air support with helicopters, fixed-wing tactical aircraft, high-speed interceptors, and large bombers. The post's training land is divided into two main areas, the Western Maneuver Area and the Eastern Training area. There are 120 individual ranges on Fort Hood (US Department of the Army, 2004).

4.7.12.2 Environmental Consequences

CS/CSS. There would be minimal (very low) short and long-term impacts on installation land use due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. The installation has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings that would be suitable for the units' mission.

Full Sustainment BDE. There would be minor (low) short and long-term impacts on installation land use due to the presence of an additional 3,000 to 3,500 Soldiers. The installation has sufficient land available to either build the facilities needed for this unit,

or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional BDE. The facilities for a BDE would likely be located within a single contiguous land unit.

IBCT, HBCT, Multiple BCTs. There would be minor (low) short- and long-term impacts on installation land use due to the presence of an additional 3,500 to 7,000 Soldiers. The installation has sufficient land available to either build the facilities needed for this type of growth, or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional BCT(s). Some MILCON, and Army programming and construction would be required.

4.7.13 Hazardous Materials/Hazardous Waste

4.7.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage, transport, and disposal of hazardous materials and wastes at Fort Hood. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO. The entire installation operates under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and nonhazardous materials for toxic and hazardous ones; ensure compliance with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste (US Army Corps of Engineers, February, 2002). All hazardous materials/hazardous waste generated on Fort Hood is managed in accordance with Fort Hood Regulation 200-1 (FH Reg 200-1).

4.7.13.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There is expected to be a minor (low) long-term impact from hazardous materials and waste from any level of growth at Fort Hood. It is anticipated that Fort Hood would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Growth above the 1,000 Soldier level, though a minor impact is still expected, would present impacts incrementally higher than the CS/CSS from waste collection, storage, and disposal processes. An increase in the use of hazardous chemicals may be seen in the cantonment and training and range areas. Demolition, renovation, and construction would mostly likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as increase in the use of herbicides and pesticides due to the addition of family housing and other facilities. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards

and regulations. The hazardous waste disposal facilities would be adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed. Additionally, the generation of unexploded ordnance and explosives would all be higher with the BCT scenarios than with the other actions, but would continue to be managed in accordance with current procedures and regulations.

4.7.14 Traffic and Transportation

4.7.14.1 Affected Environment

Fort Hood is located in Central Texas, about 45 miles south-southwest of Waco, TX, and approximately 55 miles north of Austin, TX. The regions of influence (ROI) of the affected environment for traffic and transportation aspects of the proposed action include Fort Hood, and immediately surrounding area consisting of Bell and Coryell Counties. Towns included with the ROI include Killeen, Copperas Cove, Harker Heights, Nolanville and Temple. Major road routes in the area include I-35, and US Highway 190. I-35 is a north-south interstate highway about 20 miles east of Fort Hood, accessed by US Route 190.

4.7.14.2 Environmental Consequences

CS/CSS. There would be minimal (very low) short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. A large percentage of the unit's married population, and unmarried soldiers in the grade of E-6 (Staff Sergeant) and higher, would likely reside in off-post housing. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities.

Full Sustainment BDE. There would be minor (low) short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 3,500 Soldiers and their family members assigned to the installation. This level of increase in population would also have a minor impact on the traffic volume on the installation, but would contribute to a decrease in LOS on a higher percentage of the installation's road network.

IBCT. There would be minor (low) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,500 Soldiers and their family members. The increase in traffic congestion, accompanying decrease in LOS, and increased safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

HBCT. There would be moderate (medium) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,800 to 4,000 Soldiers and their family members. The increase in traffic congestion, accompanying decrease in LOS, and increased safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of an IBCT.

Multiple BCTs. There would be moderate (medium) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 7,000 Soldiers, or more, and their family members. The increase in off-post traffic would decrease in the LOS in the road network leading to the installation, particularly during peak morning and afternoon travel periods. This increase in both Soldier and Family-member population would cause a major impact on the LOS of the installation's road network and pose an increased risk to the safety of pedestrians and bicyclists.

4.7.15 Cumulative Effects

The following is a list of major projects that are either recently completed, undergoing construction, or are planned for the near future. Although all of the projects may not specifically impact, or be impacted by, the Proposed Action, they are important to note due to their size or impact on Fort Hood.

Residential Communities Initiative Program

In 2001, Fort Hood transferred operational management of its on-post family housing to a private sector developer. The transaction has led to demolition, renovation, and construction to provide an end state inventory of more than 6,200 family housing units. This project, along with the Proposed Action, increases the amount of construction and demolition debris deposited into the landfill. Further, because most finger drainages in the area eventually empty into Belton Lake, both projects would likely increase the amount of sedimentation that enters the lake. Use of BMPs should decrease sedimentation and prevent any hazardous materials from ending up in Belton Lake.

Privatization of Army Lodging (PAL)

The PAL program is a new initiative, started in 2006, which will allow a private developer to lease land on the installation to construct privatized, short-term and long-term lodging. Several areas have been identified by Fort Hood Master Planning and PAL developers, and the leasing actions are underway. PAL will increase construction, which will increase sedimentation, landfill debris, and possibly hazardous materials. Waters of the U.S. and cultural resources should not be impacted as a result of PAL, due to the use of delineations and existing installation data prior to finalizations of construction plans.

Robert Gray Army Airfield - Joint Use

In August 2004, Fort Hood's RGAAF entered into joint use service with the City of Killeen. RGAAF joint use has increased fixed wing aircraft use and has subsequently increased Fort Hood's airspace traffic. Although this increase does not affect the fixed wing airspace use, it is important to note nonetheless. RGAAF is further expanding parking lots and adding additional runway components and infrastructure. However, the joint use section of RGAAF does not drain towards Belton Lake.

Tank Trail Maintenance

Fort Hood has over 400 miles of tank trails. Range Control, partnering with the Maintenance Division, has begun a tank trail maintenance program on Fort Hood. The purpose of the program is to both repair damaged trails as well as maintain trails in good condition. The tank trail maintenance program is anticipated to promote Soldier safety and training ability while reducing the amount of sedimentation and runoff due to poorly maintained trails.

Gully Plug Program

The gully plug program is an initiative through Range Control to reduce the amount of sedimentation that ends up in Lake Belton. The gully plugs are rock structures that cross finger drainages throughout the training areas. During a rain event, disturbed soil washes into the creeks on Fort Hood through the channel of finger drainages. These rock structures capture a majority of the sediment that travels through the drainages. The result is less sedimentation entering the major waterways. The gully plugs also serve in a bridge-like capacity for tanks and other vehicles in the training area. If vehicles cross the drainages by driving across the gully plugs, it is both safer for the Soldier and the environment.

Texas A&M University Campus

Legislation pending in Congress would authorize Fort Hood's transfer of approximately 672 acres to the Texas A&M University System for development of a campus to serve roughly 20,000 students. The essentially undeveloped land in the southeastern portion of West Fort Hood, in Training Area 74, is located around State Highway 195, southeast of RGAAF. The transfer would increase the population around Fort Hood, and likely add to the overall tax base in both Bell and Coryell counties.

10-Year Range Development Plan Projects

Fort Hood proposes to construct or modify 18 ranges and their associated supporting facilities within the restricted live-fire area of Fort Hood, Texas. Under the proposed action, all 18 ranges would be constructed or modified to fit the Army's emerging doctrinal training standards. Some construction on these ranges has already begun. The newly upgraded and constructed ranges will provide better training to all Soldiers on Fort Hood. The construction could cause increased erosion and decreased water and air quality. Those impacts are anticipated to be short-term and insignificant, due to the fact that these impacts should conclude with the conclusion of construction on the ranges.

North Fort Hood Development Plan

Fort Hood is the installation of choice to support annual training and mobilizations for many of the National Guard and Reserve components. Because most mobilizations and demobilizations occur at North Fort Hood, plans are underway to improve the ability to maximize the effectiveness of the deployment process and training requirements. Current plans include the construction of an Operation Readiness Training Complex (Forward Operating Base) at North Fort Hood. One set will be completed each year beginning in fiscal year 2007, for a total of six sets. Each set includes two barracks, one

NCO and officers quarters, one battalion building, one company operations building, one maintenance facility, one dining facility, and four workshop buildings.

Additional facilities to be constructed at North Fort Hood include a fire station, a Troop Medical Clinic, a physical fitness center, new chapels, an Army Air Force Exchange Service (AAFES) shoppette, and an automatic rapid fire range.

The North Fort Hood Development Plan would change the infrastructure and use of North Fort Hood, as well as increase training capabilities and joint/combined training. Using BMPs would minimize the effects of heavy construction activities at both North Fort Hood and in the live-fire area.

In conjunction with the anticipated cumulative environmental effects listed for each project listed above, each project increases Fort Hood's capacity to perform its mission by providing for the infrastructure necessary for growth. Although there are plans for various construction activities, the use of BMPs and promotion of the programs aimed at reducing sedimentation create a balance to sustaining the environment on Fort Hood. Therefore, the projects listed above, in conjunction with the Proposed Action, are not anticipated to have a significant effect on the environment. Additionally, future projects will be addressed individually for environmental impacts in separate documentation.

4.8 FORT HUNTER LIGGETT, CALIFORNIA

4.8.1 Introduction

Fort Hunter Liggett is an Army Reserve installation located in central California and has approximately 111,000 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.8-1). It has long supported armored/mechanized unit training and dismounted infantry unit training.

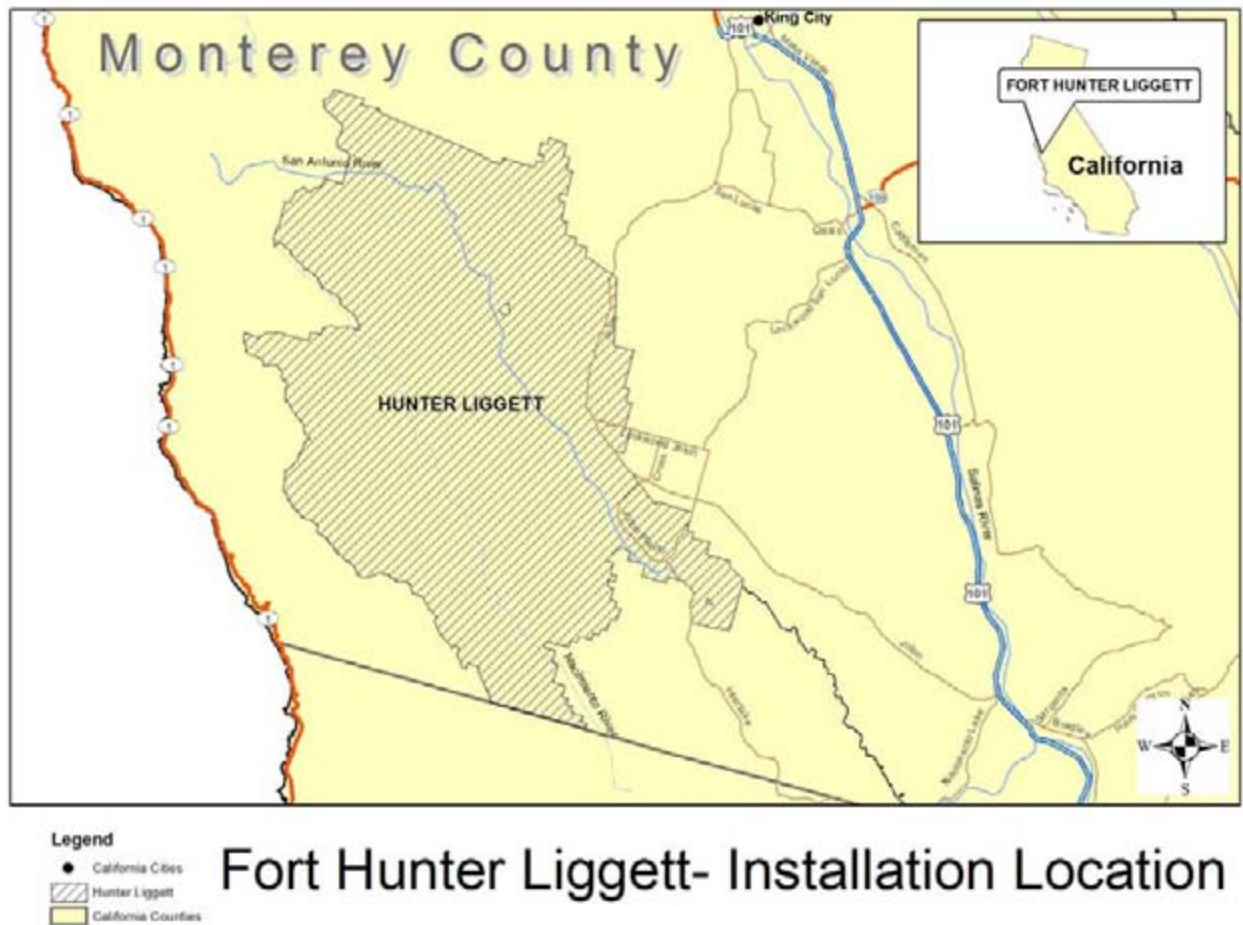


Figure 4.8-1 Fort Hunter Liggett

Fort Hunter Liggett hosts training by all types of Army units as well as units from the Navy, Marines and Air Force and has been designated as a Combat Support Training Center (CSTC).

Fort Hunter Liggett has a wide variety of training land available, and includes shrublands, grasslands, and forests in plains and mountainous settings. Fort Hunter Liggett has a good range infrastructure, but one that requires major modernization and expansion. Encroachment from urbanization is not yet a challenge, but there are other concerns that could impact training.

Table 4.8-1 contains the Fort Hunter Liggett's VEC ratings for each of the various stationing action scenarios.

Table 4.8-1. Fort Hunter Liggett VEC Ratings

Hunter Liggett					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low	Medium	Medium	High
Airspace	Very low	Very low	Very low	Very low	Very low
Cultural Resources	Low	Low	Medium	Medium	Medium
Noise	Low	Low	Medium	Medium	Medium
Soil Erosion Impacts	Low	Low	Medium	High	High
Biological Resources	Low	Medium	Medium	High	High
Wetlands	Low	Low	Medium	Medium	Medium
Water Resources	Low	Low	Low	Medium	Medium
Facilities	Low	Low	Low	Low	Medium
Socioeconomics	Low	Medium	Medium	Medium	Medium
Energy Demand/ Generation	Low	Low	Low	Low	Low
Land Use Compatibility	Low	Low	Medium	Medium	Medium
Haz Mat/ Haz Waste	Low	Low	Low	Low	Low
Traffic and Transportation	Low	Low	Medium	Medium	Medium

4.8.2 Air Quality

4.8.2.1 Affected Environment

At Hunter Liggett, the ROI for air quality is Monterey County, which is located within the North Central Coast Air Basin. The Monterey Bay Unified Air Pollution Control District has primary responsibility for air quality management programs within this region. The air pollutants of greatest concern in the basin include ozone, PM₁₀, and PM_{2.5}.

Monterey County has no federal nonattainment designations but is designated as a federal maintenance area for the 1-hour ozone standard (Monterey Bay Unified Air Pollution Control District (MBUAPCD) 2006). Monterey County also has nonattainment designations for the state ozone and PM₁₀ standards.

4.8.2.2 Environmental Consequences

CS/CSS. The restationing of a CS/CSS unit and its 1,000 Soldiers and family members would have minor (low) long-term impact to regional air quality. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and fugitive dust emissions may produce localized, short-term elevated air pollutant concentrations that may not result in any sustained impacts on regional air quality.

Full Sustainment BDE. There may minor (low) impacts on the installation and surrounding communities by the restationing of a Sustainment Brigade and its 3,000 to 3,500 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a major effect on regional air quality. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to installation boundaries that visible emissions leave the installation. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

IBCT. Moderate (medium) impacts are expected on the installation and surrounding communities by the restationing of an Infantry Brigade Combat Team and its 3,500 Soldiers. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families may have greater, long-term impacts than those resulting from training. It is anticipated that the installation would see increases in emissions from equipment required to support the installation such as fuel storage and dispensing, boiler and incinerator operations and possible electric peak-shaving generators. Additionally, it is anticipated that more training/operations are likely to occur away from established roads and tank trails.

HBCT. There may be an expected moderate-level (medium) impact on the installation and surrounding communities by the restationing of a HBCT and its 4,000 Soldiers. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these tend to remain localized and produce no significant impact to regional air quality.

Multiple BCTs. The expected impact on the installation and surrounding communities by the restationing of multiple Brigade Combat Teams and approximately 7,000 Soldiers is expected to produce significant (high) short and long-term effects on regional air quality. Construction and changes to facility operations to support multiple brigades would be significant initially but should provide no sustained negative impact to regional air quality. Long-term adverse impacts would be expected from emissions of criteria pollutants from the increase in garrison support operations as well as the increases in aircraft operations, military equipment maneuvers, artillery exercises, and use of privately owned vehicles by Soldiers and their Families.

4.8.3 Airspace

4.8.3.1 Affected Environment

Fort Hunter Liggett boasts two tactical airfields, Tusi Army Heliport and Schoonover Tactical Air Strip. Tusi Army Heliport contains 36 prepared parking pads and a lighted runway that is 570 ft in length. Schoonover Tactical Air Strip has a 6,400 ft hardened dirt/rock runway capable of accommodating the C-17, C-130, and C12. The installation has 33 Drop Zones capable of battalion level mass attacks and heavy drop missions (Fort Hunter Liggett, n.d.).

Airspace at FHL is restricted to 24,000 mean sea level (MSL). Flight space above 8,000 feet MSL is controlled by the Oakland Center FAA, with military operations above 8,000 MSL controlled as part of a Military Operation Area. Aviation training on FHL involves flight operations to gain tactical and combat proficiency, live-fire operations, and provide other unit training support. Helicopters generally train in the installation's western areas and may involve up to 60 helicopters. Training generally occurs around the clock. Larger fixed-winged aircraft such as the C-130 use the Schoonover Tactical Airstrip for practice landing. The airspace over FHL is also used as an over-flight zone for jet aircraft and in joint land and air training operations (FHL INRMP, 2004).

4.8.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There may be minimal (very low) long-term impacts to airspace and minimal long-term direct impacts from the addition of UAV operations, and from the airspace used from ordnance firing and artillery use. The addition of each BCT would increase operations of UAVs, and use of this airspace would continue to be managed through scheduling and balancing training requirements with airspace availability. The installation has adequate enough airspace to accommodate the additional use by BCTs operations.

4.8.4 Cultural Resources

4.8.4.1 Affected Environment

Fort Hunter Liggett contains several historic and archaeological resources that are listed or eligible for listing on the National Register for Historic Places. The Mission of San Antonio Padua, a mission founded in the 18th century, is located within the viewshed of the cantonment area at Fort Hunter Liggett.

The BRAC program will increase both the Soldier and civilian presence on the installation. Some historic buildings may be impacted by the additional workspace required for the increase in personnel. Additional foot traffic of Soldiers and civilians could adversely impact archaeological sites.

4.8.4.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. This level of growth may have minor (low) short- and long-term impacts on Fort Hunter Liggett. Due to the size of the installation and that these scenarios (units) typically stay to roads and hardened surfaces, which have already been surveyed for cultural resources, there is a low expected impact to the installation's cultural resources. The equipment assigned to these units include medium to large trucks.

IBCT, HBCT, Multiple BCTs. There may be moderate (medium) impacts on cultural resources at Fort Hunter Liggett from the addition of a BCT. It is anticipated that the impacts would most likely be to archaeological sites. However, it is not anticipated that this would rise above a medium impact due to the number of Soldiers and vehicles. The additional Soldiers may strain historic building resources due to the need for both office and living space. With proper planning, historic buildings should not be adversely impacted by the additional personnel.

4.8.5 Noise

4.8.5.1 Affected Environment

The land surrounding FHL is zoned as agricultural, rural residential, and recreational. The facility is capable of supporting mechanized (up to Tank Table VII for Bradley and Tanks) and other maneuver training; and supports a variety of fixed- and rotary-winged operations (U.S. Army, IMA, May 2006). The city nearest to FHL is Salinas, CA, which is over 30 miles away. The nearest recreational areas to the installation are Los Padres National Forest and Silver Peak Wilderness Area. The installation is also located in close proximity to several mountain ranges. Noise Zones for the Tank Gunnery ranges extend off the installation into portions of San Antonio Valley, which is located east of FHL (U.S. Army, IMCOM, October 2006).

4.8.5.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. There is an overall minor (low) impact to wildlife receptors close to maneuver areas and small arms ranges where training occurs. Noise from this level of activity is not likely to be heard outside the installation boundary. This level of noise is relatively minor compared to other training activities on the installation. The guidelines of the installation environmental noise management plan should be reviewed and proper mitigations should be in place. As with the CS/CSS, use of ranges (from the Full Sustainment BDE) would be similar to existing training noise generated at the installation, and less significant than noise generated by the large caliber firing from tanks at the multi-purpose training range. Noise generated would be intermittent and would not have any impacts to current noise contours.

IBCT, HBCT, Multiple BCTs. There is a moderate (medium) impact expected from realigning or growing a BCT at FHL. Though current noise contours may not change, further analysis may be necessary. Noise generated from artillery (155mm) fire associated with an IBCT is similar to that generated from the main gun of an M1 Tank (120mm cannon) in the HBCT. Additional foot and maneuver traffic would create long-

term minor noise impacts to wildlife receptors, including T&E species found throughout the installation. Guidance for noise mitigation procedures found in FHL's ESMP and/or INRMP should be followed; especially to ensure the installation's Bald eagle and the California condor populations would not be significantly impacted.

4.8.6 Soil Erosion

4.8.6.1 Affected Environment

Fort Hunter Liggett is characterized by having shallow soils and rocks in the steep highlands, deeper soils derived from alluvial terraces or underlying parent material in rolling hills and alluvial deposits in river valleys. The majority of soils are sandy loams, clay loams and silty clay loams. The soils are classified generally as stable, with the exception of areas in the maneuver areas. These soils are moderately to highly erodible, and as the topography becomes steeper the erosion potential increases. The installation also has scattered areas of grasslands, riparian habitat, wetlands, and areas of coast live oak forest. (2004 – 2008 FHL INRMP)

4.8.6.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. There are expected short- and long-term minor (low) impacts from the wheeled vehicles in these units. The CS/CSS and Full Sustainment BDE are not expected to travel off-road, minimizing the potential for soil erosion impacts. Any level of Soldier increase would require construction at the installation as there is currently not enough facilities to accommodate the permanent stationing of additional Soldiers and their equipment. Construction effects to soils would be short-lived and mitigable.

IBCT. Fort Hunter Liggett expects a moderate (medium) long-term impact to soils; and short-term effects from construction. Impacts from construction would likely be on the same level of impacts as the Full Sustainment BDE. Construction would be needed in both the cantonment area and range areas, requiring some degree of mitigation. The construction area would recover. Increased dismounted training at the installation would have moderate but mitigable long-term effects to vegetation and soil surfaces in localized areas, leading to the conditions for erosion.

HBCT, Multiple BCTs. The installation anticipates a significant (high) long-term adverse impact to roads and off-road maneuver areas. The Heavy tracked vehicles associated with the HBCT and the weight and mobility characteristics of the tracked vehicles would continue to degrade trails in maneuver areas, causing distress to vegetation and further compacting soils, which increases erodibility. The terrain would likely show the impact from the vehicle maneuvers, turns and traction. These areas could be more prone to water erosion. Given the number, size, variety and impact of wheeled and tracked vehicles presented by the multiple BCT scenarios, road network could deteriorate leading to trafficability and erosion problems. Off-road traffic and maneuvers are likely to increase. Construction to accommodate an HBCT and multiple

BCTs would have significant short-term impacts. The installation does not currently have the infrastructure to support permanent stationing of this level of growth.

4.8.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.8.7.1 Affected Environment

There are over 75 special status species of flora and fauna that occur or may occur on Fort Hunter Liggett. However, Fort Hunter Liggett currently records six threatened and endangered species as occurring on the installation and another four species as contiguous. More information on these species can be found in Appendix T.

4.8.7.2 Environmental Consequences

CS/CSS. The installation anticipates a minor (low) impact from implementation of this level of Soldier increase to the listed species on or contiguous to the installation. The threatened and endangered species recorded on the installation are managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents.

Full Sustainment BDE and IBCT. It is anticipated that implementation of any of these levels of growth may have a moderate (medium) impact on the listed species onsite and possibly those contiguous to the installation. Conditions of noise and training would increase, potentially impacting habitat of the installation's recorded listed species. The installation may be required to consult with the USFWS either informally or formally, depending on whether take is anticipated to occur.

HBCT, Multiple BCTs. It is anticipated that implementation of either of these levels of Soldier growth may have a significant (high) impact on the listed species recorded on the installation and possibly the four contiguous species. The noise, increased live-fire, and increased maneuver required by tracked vehicles, and multiple BCTs would have adverse direct and indirect impacts to the installation's listed species. Excess noise from training is expected to have short- and long-term effects. Short-term effects are expected during training events. Studies on bird species indicate no adverse –long-term impacts. However, as training intensifies, terrestrial species may choose habitat in quieter portions of the installation; more analysis would be necessary.

4.8.8 Wetlands

4.8.8.1 Affected Environment

Fort Hunter Liggett contains approximately 261 acres of wetlands (Army Environmental Database-Environmental Quality, (n.d)). Wetlands occur in many areas of the installation and include vernal pools, wet meadows, seasonal wetlands, and ponds. Larger wetlands occur in only a few training areas. These areas are not typically used for intensive training and fall within sensitive resource protection areas. Vernal Pool

Fairy shrimp, a federally listed species, are found within vernal pools in both training and nontraining areas. Vernal pools are commonly found in areas along roads. (INRMP, Fort Hunter Liggett, 2004)

4.8.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. There is expected to be a minor (low) impact on the installation wetlands as a result of the restationing 1,000 to 3,500 Soldiers to Fort Hunter Liggett. Additional training activities would have little impact on wetlands as training would likely be limited to established training areas. Additionally, very little off-road maneuver is expected from the CS/CSS or Full Sustainment BDE. Dismounted training from the IBCT may have minor to moderate impacts as the installation would conduct training away from wetland resources.

HBCT. There is expected to be a moderate (medium) impact on the installation wetlands due to the presence of an additional 3,800 to 7,000 Soldiers. Training activities may be limited to established training areas. Efforts may be made to avoid any impacts on wetlands by using the installation wetland planning level surveys/GIS mapping. Erosion issues associated with a more wheeled and tracked vehicles may have an effect on vernal pools along roads and trails.

4.8.9 Water Resources

4.8.9.1 Affected Environment

Watersheds

The San Antonio and Nacimiento rivers are two main drainages that traverse the installation from northwest to southeast. The Nacimiento River drains the western portion of the installation, and the San Antonio River drains the eastern portion. The Nacimiento Reservoir is located just south of FHL and is a major storage reservoir.

Water Supply

The FHL water supply is a ground water source. There are currently three active wells that supply FHL. Capacities of two storage tanks at the installation are 1 MG and 200,000 gallons. FHL's water system is expected to be privatized within the next several years.

Two groundwater basins are tapped by the FHL wells. The Mission-San Antonio Basin consists of approximately 2422 ha (\approx 6000 ac) completely located within the FHL Military Reservation boundaries. The Mission-San Antonio Basin is estimated to contain 35,000 acre-feet usable ground water in storage, with a safe yield of 2500 acre-feet per year. The Jolon-Lockwood Basin is estimated to contain 250,000 acre-feet usable ground water in storage, with a safe yield of 10,000 acre-feet per year. Several municipalities located to the east of FHL draw their water from the Jolon-Lockwood Basin, and numerous farms and vineyards draw irrigation water from the basin. FHL draws less than 500 acre-feet per year total from all wells.

Wastewater

According to the 2001 Environmental Program Assessment Report, Fort Hunter Liggett's wastewater treatment plant consists of an aerated lagoon with a design flow of 1.0 million gallons per day and an average daily flow of less than 100,000 gallons per day. The effluent is disposed of through spray irrigation and biosolids are removed and disposed in a landfill approximately once every 10 years. FHL's wastewater system is expected to be privatized within the next several years.

Stormwater

FHL has implemented the FHL storm-water pollution prevention plan, which primarily addresses industrial activities. It also requires separate permits and individual storm-water pollution prevention plans for construction projects that disturb more than one acre of land.

4.8.9.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. An addition of a CS/CSS is anticipated to have minor (low) impact to FHL. Given the existing population of FHL, the addition of a CS/CSS is not likely to have a significant impact to the watershed, water demand, and associated treatment systems. Any new construction/land disturbance over one acre would require a stormwater construction permit.

HBCT, Multiple BCTs. An addition of the HBCT or Multiple BCTs (3,800 to 7,000 Soldiers) is anticipated to have a moderate (medium) impact to FHL. The addition would increase water demand for consumption and vehicle washing. The installation may need to construct a new washing system to manage the heavy and light vehicles. The installation currently has some issues with surface water quality. The installation would need to revisit their Storm Water Pollution Prevention Plan to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

4.8.10 Facilities

4.8.10.1 Affected Environment

Fort Hunter Liggett is the largest US Army Reserve Command training installation and the eighth largest Army installation in the Continental United States. The installation's mission is to support total force training and readiness and to provide base operations and area support. Fort Hunter Liggett is a training area for all services of the military, offering a range of realistic training opportunities to fit various training scenarios.

4.8.10.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT. There is expected to be minor (low) impacts to facilities. It is anticipated that the activities associated with an increase of

1,000 to 4,000 Soldiers would increase facilities usage within the cantonment and training and range areas. Activities within the training and range areas would be limited to existing ranges and roadways. Currently, FHL has buildable space and can accommodate any of these scenarios of Soldier growth with good planning; however, additional coordination and consultation may be necessary to support this growth. The installation has a minimal amount of facilities to accommodate this level of growth; a great amount of construction would be likely.

Multiple BCTs. Fielding multiple BCTs would result in moderate (medium) short-term impacts to facilities resources. Multiple BCTs may increase usage within the cantonment and training areas. The installation does not have the facilities to accommodate this level of growth, however, there is an abundant amount of buildable space, and a substantial amount of construction would be anticipated. Additional coordination and a review of the FHL real property management plan may be necessary for activities associated with fielding multiple BCTs.

4.8.11 Energy Demand/Generation

4.8.11.1 Affected Environment

Utilities are generally connected across the cantonment area and therefore contribute collectively to the overall capacity, use, and storage as a unit. As such, the ROI for this resource is the cantonment area of Fort Hunter Liggett.

Electricity at the installation is provided by the Pacific Gas and Electric Company and is distributed via overhead lines, those of which that are located on the installation are owned and operated by the Army. Liquid propane gas (LPG) is trucked into the installation to refill the 68 LPG aboveground storage tanks that are installed across the developed portion of the installation. The LPG tanks range in size from 250 gallons to 9,200 gallons and are connected to buildings throughout the cantonment via buried pipeline.

4.8.11.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. The addition of 1,000 to 7,000 Soldiers is anticipated to have a minor (low) impact on energy demand and resources. The existing energy infrastructure has sufficient capacity and scalability to readily absorb this level of growth. As with any expansion, a capital investment may be required to extend the current electrical distribution infrastructure and LPG deployment model in order to accommodate the new mission activity. The current energy system has sufficient capacity; however, no critical thresholds would be crossed. While multiple BCTs would certainly require extensive construction and expansion of the existing energy infrastructure, the capacity and scalability of the energy systems are not likely to be challenged. Like the other stationing options, this scenario results in a new energy demand posture that is well within the capacity of the existing energy providers to meet.

4.8.12 Land Use Conflicts/Compatibility

4.8.12.1 Affected Environment

Fort Hunter Liggett is in Monterey County in west-central California, approximately 70 miles southeast of the city of Monterey, 23 miles southwest of King City, and 12 miles west of Lockwood (Figure 2-1). The installation encompasses approximately 160,000 acres in the San Antonio Valley and the Santa Lucia Mountains. The installation cantonment area consists of approximately 500 to 700 acres in the eastern-central portion of the installation (US Army Fort Hunter Liggett, 2006).

4.8.12.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. There may be minor (low) short and long-term impacts on installation land use due to this level of unit growth and their associated activities and missions. The installation has sufficient land available to either build the facilities, sufficient vacant space in existing buildings, or a combination thereof to meet the unit's mission requirements. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with these unit scenarios. The facilities required for a CS/CSS or Full Sustainment BDE would likely be located within a single contiguous land unit.

IBCT, HBCT, Multiple BCTs. There may be moderate (medium) short and long-term impacts on installation land use due to the presence of an additional 3,500 Soldiers and their family members. The installation may not have sufficient land available to either build the facilities needed for this unit, or may not have sufficient vacant space in existing buildings suitable for the unit's mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges.

4.8.13 Hazardous Materials/Hazardous Waste

4.8.13.1 Affected Environment

The affected environment for the proposed action includes the use, storage, transport, and disposal of hazardous materials and wastes at Hunter Liggett. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO. Each installation operates under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and nonhazardous materials for toxic and hazardous ones; ensure compliance with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste. (US Army Corps of Engineers, February, 2002)

4.8.13.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There may be minor (low) long-term impacts from hazardous materials and waste. It is anticipated that Hunter Liggett would need to minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers, and waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue. The Soldier increase above the CS/CSS scenario (Full Sustainment BDE to Multiple BCTs equating to 3,000 to 7,000 Soldiers) would have impacts to a greater degree than the CS/CSS, but is still expected to have minor impacts to the installation's overall Hazardous waste program. An increase in the use of hazardous chemicals may be experienced in the cantonment and training and range areas. Demolition, renovation, and construction would most likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as an increase in the use of pesticides and herbicides due to the addition of family housing and other facilities. BCTs would also have minor adverse long-term impacts as the generation of ordnance and explosives would all be higher than with the other actions, but would continue to be managed in accordance with current procedures and regulations. Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at Hunter Liggett and expanded training activities.

4.8.14 Traffic and Transportation

4.8.14.1 Affected Environment

Fort Hunter Liggett is located in a rural area of the California Central coast, approximately half-way between San Francisco and Los Angeles. The installation is approximately 70 miles southeast of Monterey and borders Los Padres National Forest to the north and west, private agricultural lands to the east, and county recreational and private lands to the south. The region of influence (ROI) of the affected environment for traffic and transportation aspects of the proposed action include Fort Hunter Liggett, and the central portions of Monterey County, to include the municipalities of King City, San Lucas, and Bradley, California. US 101 is the only major public route that connects FHL with the surrounding community (ROI). US 101 is a north-south highway, located approximately 15 miles east of the installation. The next north-south exit is approximately 50 miles in either direction. Also, there is only one road that links the interior valley near FHL with the coast.

4.8.14.2 Environmental Consequences

CS/CSS. There is expected to be minor (low) short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. Concentrated to the two main roads accessing the installation, this level of proposed growth would likely have de

minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the installation, and is not expected to reduce the level of service (LOS) on the installation's road network. There may be a slight increase in traffic volume during peak morning and evening hours, but it would not affect level of service or pose an increased risk to the safety of pedestrians and bicyclists.

Full Sustainment BDE. There may be minor (low) impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 3,500 Soldiers and their family members assigned to the installation. The increase in off-post traffic would have a minimal impact on traffic in the community overall and it is unlikely it would contribute to a decrease in the LOS in the road network leading to the installation. This level of increase in population would have a minimal impact on the traffic volume on the installation, and would not likely cause a decrease in LOS on installation's arterial road network. The increased traffic volume in both the neighboring community and on the installation would likely pose minimal to moderate increased level of risk to the safety of pedestrians and bicyclists.

IBCT, HBCT, Multiple BCTs. There is likely to be moderate (medium) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,500 to 7,000 Soldiers and their family members. Both on the installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would have a moderate impact on LOS. The two main roads accessing the installation would likely experience traffic congestions during morning and evening hours as a result of support staff commuting to-from the installation.

4.8.15 Cumulative Effects

Fort Hunter Liggett expects their most significant cumulative effects to stem from air quality and soil erosion. Monterey County is a Maintenance area for ozone. Additional growth at Fort Hunter Liggett, especially for HBCTs or Multiple BCTs, is expected to have moderate to significant impacts to air quality at the installation-level, and cumulative impacts possible to the region from the excess emissions from traffic (tactical, non-tactical and personal vehicles), and including stationary sources.

The soil at FHL is shallow and composed of sandy, silty, and clayey loam. Increased traffic with the HBCT and multiple BCT scenarios may lead to water quality issues as continued and heavy use of ranges would compact the soil, reducing vegetation and making the top layers prone to wind and water erosion. Sedimentation would likely increase in the waterbodies at or near ranges.

4.9 FORT IRWIN, CALIFORNIA

4.9.1 Introduction

Fort Irwin, located in south-central California, has approximately 600,000 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.9-1). It has long supported armored/mechanized unit training and dismounted infantry unit training, and is the Army's National Training Center (NTC).



Figure 4.9-1 Fort Irwin

Fort Irwin's main unit is the 11th Armored Cavalry Regiment (ACR) which until recently supported the NTC's primary mission of training Army units on a rotational basis. However, the 11th ACR deployed to OIF as an operational unit and will convert to a Heavy Brigade Combat Team.

Fort Irwin is a rugged training environment; the terrain includes desert and mountains. Fort Irwin has a small traditional range infrastructure. As a Training Center, its primary capabilities include a large force-on-force maneuver area and an instrumented live-fire maneuver area. Encroachment from urbanization is not yet a challenge, but there are restrictions from specific TES (ex. the Desert Tortoise).

Table 4.9-1 contains the Fort Irwin’s VEC ratings for each of the various stationing action scenarios.

Table 4.9-1. Fort Irwin VEC Ratings

Fort Irwin					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Medium	High	High	High
Airspace	Very low	Very low	Very low	Very low	Very low
Cultural Resources	Very low	Very low	Low	Low	Low
Noise	Very low	Very low	Very low	Very low	Very low
Soil Erosion Impacts	Very low	Very low	Low	Low	Low
Biological Resources	Very low	Very low	Very low	Very low	Very low
Wetlands	Low	Low	Low	Low	Low
Water Resources	Very low	Very low	Medium	Medium	High
Facilities	Low <i>High</i>	Low <i>High</i>	Low <i>High</i>	Low <i>High</i>	Medium <i>High</i>
Socioeconomics	Low	Low	Low	Low	Low
Energy Demand/ Generation	Low	Low	Low	Low	Low
Land Use Compatibility	Low	Low	Low	Low	Low
Haz Mat/ Haz Waste	Low	Low	Low	Low	Low
Traffic and Transportation	Low	Low	Medium	Medium	High

4.9.2 Air Quality

4.9.2.1 Affected Environment

The ROI is in the high desert, which includes Fort Irwin and the Los Angeles Air Basin. The ROI is in nonattainment for ozone, according to the state standards, as well as for the federal 1-hour standard below the UTM 90 gridline. The ROI is in attainment for both the state and federal carbon monoxide standards, as well as for sulfates, and unclassified for hydrogen sulfide at the state and federal levels. The ROI is in nonattainment for both the state and federal PM₁₀ standards.

4.9.2.2 Environmental Consequences

Short-term intermittent minor adverse impacts would be expected within the ROI as a result of construction activities, training exercises, and increased automobile use. Emissions from heavy construction equipment and trucks would include NO_x, PM₁₀, CO, SO_x, and VOCs, however, the amounts would be dependent on factors such as hours of operation and miles traveled. Although the immediate affects could be significant in the near term, the cumulative effect is not considered to have a long-term impact on regional air quality.

CS/CSS. A long-term low (minor) adverse impact is expected to air quality from the restationing of approximately 1,000 Soldiers and family members. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and fugitive dust emissions would likely produce localized, short-term elevated air pollutant concentrations that would likely not result in any sustained impacts on regional air quality.

Full Sustainment BDE. A long-term medium (moderate) adverse impact is expected on the installation and surrounding communities by the restationing of a Full Sustainment BDE and its 3,000 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a major effect on regional air quality. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to installation boundaries that visible emissions leave the installation. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

IBCT, HBCT, Multiple BCTs. Short and long-term significant (high) adverse impacts on the installation and surrounding communities are expected from the addition of 3,500 to 7,000 Soldiers. Combustion emissions from stationary sources would considerably increase due to the plus up in infrastructure required to support the influx of new Soldiers and their Families. Fugitive dust emissions are already an issue for the facility and any increases would add to the very large mitigation burden already facing the installation. Opacity regulations must also be considered if activities are close enough to installation boundaries that visible emissions leave the installation. There is an interstate highway which virtually borders the eastern edge of the installation.

4.9.3 Airspace

4.9.3.1 Affected Environment

Fort Irwin has 955 square miles of FAA-designated Special use airspace, with no limit in altitude. The installation has access to this airspace continuously, and is controlled by the FAA of Edwards, CA. (US Army Corps of Engineers, 2002)

4.9.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Short- and long-term minimal (very low) impacts are expected to airspace from artillery and UAV operations from the addition of 1,000 to 7,000 Soldiers. It is anticipated that the activities associated with an increase of 1,000 to 7,000 Soldiers would increase activities within the cantonment and training and range areas, while the addition of each BCT would increase operations of unmanned aerial vehicles, and from the airspace required for live-fire artillery and ordnance into impact areas. Use of this airspace would continue to be managed through scheduling and balancing training requirements with airspace availability. Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use. Airspace is not a concern with the CS/CSS or Full Sustainment BDE as these units have only minor to no airspace requirements.

4.9.4 Cultural Resources

4.9.4.1 Affected Environment

The affected environment for Fort Irwin, relating to cultural resources, is the installation footprint. Fort Irwin contains enough historic and archaeological resources to employ a full time cultural resources group. Fort Irwin also has a curation facility located on the installation.

4.9.4.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Long-term minimal (minimal) adverse impacts are expected on Fort Irwin with an increase of approximately 1,000 to 3,500 Soldiers. Due to the size of the installation, the low number of Soldiers and type of equipment that a CS/CSS or Full Sustainment BDE entails, a deployment of either size would not impact cultural resources at Fort Irwin.

IBCT, HBCT, Multiple BCTs. Under these BCT levels of growth, long-term minor (low) adverse impacts are expected on cultural resources. Due to the size of the installation, the vehicles deployed with an IBCT are more likely to cause low level damage to cultural resources at Fort Irwin. The damage from vehicles may be mitigated as they are expected to be used on road more than off road. The higher personnel count increases the opportunity for archaeological resources to be disturbed. The heavy tracked vehicles of a HBCT or Multiple BCTs could impact previously undiscovered archaeological resources. The additional Soldiers, via foot traffic, could lead to inadvertently disturbing surface archaeological sites.

4.9.5 Noise

4.9.5.1 Affected Environment

Fort Irwin is home to the National Training Center, where brigade-size units are able to train in simulated rigorous combat conditions using weapons simulators and live-fire. The range areas support air-to-ground gunnery and firing, artillery, air maneuver, and ground maneuver, including armored vehicle training. The noise generated from

armored training is not of high concern off the installation. Some air maneuver does take place in Noise Zones that extend off the installation boundary, but these operations so close to the border are generally minimal. Artillery and other large caliber fire take place in noise zones that are either incompatible or normally incompatible; but the noise zones for artillery does not extend beyond the installation border. The largest noise impacts from the installation are generated by sonic booms from aircraft and low-altitude flights.

The area surrounding Fort Irwin is generally characterized as desert and rocky hills. The nearest noise-sensitive receptors within 10 miles of the installation include a 1,103 family housing unit, a school, a religious facility, and a hospital. There are also 150 residents within 1-7 miles of the Fort Irwin. Sensitive wildlife that are most susceptible to noise at or near installation ranges consist of the ground squirrel, bats, raptors, the Desert Tortoise, and the Bighorn Sheep (Fort Irwin, August 2005).

4.9.5.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Under all levels of unit growth scenarios, long-term minimal (very low) adverse noise impacts to wildlife receptors on the installation and nearby residential areas are expected. The noise associated from a CS/CSS is significantly lower than what is generated by the current training environment. There is expected to be a slight overall increase in usage of small arms ranges and maneuver areas in all levels of growth. Any impacts to wildlife may be short-term and insignificant. The noise generated by small arms fire or artillery live-fire is not heard off the installation so there are no impacts to nearby residential areas. Noise levels would not exceed current peak noise levels and may have only low long-term impacts to off-post residents. Noise contours may not change, but guidelines for noise mitigation procedures protecting biological receptors as defined in the installation's INRMP or ESMP should be followed, and the IENMP should be reviewed or updated to ensure current management procedures are followed. There are no significant impacts from noise currently at Fort Irwin.

4.9.6 Soil Erosion

4.9.6.1 Affected Environment

Fort Irwin is located in the Central Mojave Desert and is characterized by high mountain peaks and ridges separated by broad alluvial fans and wide valleys. Large basins without external drainage develop playas (very flat, dry lake beds). The average elevation is 2,500 feet, with peaks up to 6,150 feet.

Desert soils are extremely fragile and vulnerable to disruption, which can result in wind and water erosion. These soils are also highly vulnerable to compaction. Hardened crusts can form on clay or silty loam soils as a result of biological activity. This stabilizes the soil surface integrity and resists erosion. "Desert pavement" surfaces consist of pebbles and rocks that protect the desert soils. Vehicle traffic can disrupt both the crusts and pavement.

4.9.6.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Long-term minimal (very low) adverse impacts from the wheeled vehicles in these maneuver activities are expected. Off-road movement could have an impact on vegetation and soil surfaces, leading to the conditions for erosion. It is recommended that the condition of existing (unimproved) range roads and their ability to support heavy truck traffic from a Full Sustainment BDE be evaluated.

IBCT, HBCT, Multiple BCTs. Under these BCT scenarios, long-term minor (low) adverse impacts are expected from training activities associated with the addition of 3,500 to 7,000 Soldiers. The IBCT dismounted training would have a minor impact on soils and the vehicles of the IBCT could have some effect in small selected areas. The terrain would show the impact from the vehicle maneuvers, turns, and traction. These areas could then be highly prone to erosion. The road network could deteriorate rapidly leading to trafficability and erosion problems. Off-road traffic and maneuvers would increase, which could have a negative impact on vegetation and the soils. Conditions for erosion would increase with the addition of each BCT.

4.9.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.9.7.1 Affected Environment

There are approximately 45 special status species of flora and fauna that occur or may occur on Fort Irwin. However, Fort Irwin currently records only two ESA listed species as occurring on the installation. The installation also records two high priority Army species at risk. Appendix T of this document provides a comprehensive list of federally listed species.

4.9.7.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Under each of these unit growth scenarios, long-term minimal (very low) adverse impacts are expected on listed or other species recorded on the installation. Listed species and species at risk recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. The ESA conservation and management measures required for the expansion of the maneuver training area at Fort Irwin may be sufficient to accommodate any additional increases in Soldier strength and utilization of the training area.

4.9.8 Wetlands

4.9.8.1 Affected Environment

Fort Irwin contains very few acres of wetlands. Wetlands at the National Training Center (NTC) and Fort Irwin are confined to 10 springs and are essential to the survival and well being of a number of wildlife species. These areas are marked and fenced as off-limits. NTC regulation 350-3 states that “No vehicle or foot traffic is authorized around springs or vegetation within the spring’s area.” (INRMP, Fort Irwin, 2006)

4.9.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Long-term minor (low) adverse impacts to installation wetlands are expected from the influx of 1,000 to 7,000 Soldiers to Fort Irwin. Training activities would be limited to established training areas. Efforts should be made to avoid any impacts on wetlands by using the installations wetland planning level surveys or GIS mapping. Wetland management as addressed in the installation INRMP would provide best training practices.

4.9.9 Water Resources

4.9.9.1 Affected Environment

Surface Water

Surface water resources within the NTC and Fort Irwin and its vicinity are scarce. Surface water in shallow ephemeral lakes is usually lost through groundwater percolation or evaporation. The only naturally occurring permanent surface water resources on the NTC and Fort Irwin are six springs and one watershed that produce meager to small quantities of water.

Groundwater

Bicycle, Irwin, and Langford groundwater basins are used to supply current water needs of the NTC and Fort Irwin.

Total dissolved solids (TDS) are a growing concern of the NTC. The TDS in the soil are being leached through the soil to the water table, where the NTC and Fort Irwin draws its water.

Water Rights

Fort Irwin has water rights to water on property owned by Fort Irwin; any potential use of percolating groundwater in the expansion area would be limited to use by the Army. In the case of insufficient water supply, the available supply is equally appropriated among owners of overlying lands. Surplus water, which may be withdrawn without creating an overdraft on groundwater supply, may be appropriated for use on overlying lands. The Army has purchased two sections of land for water rights in Coyote Basin. This land could be developed as a groundwater resource for the NTC, if required.

Water Supply and Demand

The NTC and Fort Irwin consumes an average of 2.5 MGD. About 60,000 gallons (227,400 liters) per day of this demand are used outside the cantonment area for field activities involving Soldier maneuvers. Based on the Water Basin Development Plan (Wilson F. So & Associates, 1989), projections of daily demand will increase to 3.75, 4.11, and 4.36 MGD by the years 2000, 2020, and 2040, respectively.

An approved water supply project involves development of three new production wells in Langford Basin to meet anticipated future water demands. The NTC has recently completed two wells downrange to provide water for non-potable use. Coyote Basin is believed to contain substantial groundwater resources. Although the NTC and Fort Irwin has withdrawn two public land sections overlying Coyote Basin groundwater resources for water production purposes, it currently does not draw from Coyote Basin and is not likely to initiate immediate use of this basin. The need for future water development may be delayed by water conservation measures that reduce demand within the cantonment area and extend the production life of Bicycle, Langford, and Irwin aquifers. The installation's water system has recently been privatized.

Wastewater

The NTC and Fort Irwin wastewater treatment facility has recently been privatized. The facility has a 2.0 MGD design capacity and was designed to support a daily population of 10,000 people. It is permitted as a zero discharge system; therefore, no discharge to surface watercourses occurs.

Stormwater

Stormwater is an important facet of environmental management at the NTC and Fort Irwin as significant rainfall events can generate enough stormwater to inundate the wastewater treatment plant. The installation has developed a stormwater management plan (Radian Corporation, 1995).

4.9.9.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Short- and long-term minimal (very low) adverse impacts are anticipated with the addition of 1,000 to 3,500 Soldiers to Fort Irwin. Given the population of Fort Irwin, the addition of a CS/CSS or Full Sustainment BDE would not have a significant impact on water demand. Upgrades to the private water and wastewater treatment systems to handle the additional capacity are not anticipated.

IBCT, HBCT. Short- and long-term moderate (medium) adverse impacts on water demand are expected with the addition of 3,500 to 4,000 Soldiers at Fort Irwin. Personnel consumption and washing of vehicles would increase water demand and associated treatment. Motorpool activities and washing of track-driven heavy-tracked vehicles would produce an increase on water demand and associated treatment; however due to diligent planning by the installation the water supply would not be significantly impacted by either growth scenario.

Multiple BCTs. Short- and long-term significant (high) adverse impacts on water resources are expected with the addition of up to 7,000 Soldiers at Fort Irwin. Personnel consumption, motorpool activities may create a sizeable increase on water demand and associated treatment. Fort Irwin may need to invest in water, wastewater, and water-related infrastructure to manage the requirements of multiple BCTs. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

4.9.10 Facilities

4.9.10.1 Affected Environment

The Main Cantonment Area is the urbanized portion of Fort Irwin, and has been developed into a wide variety of land uses that comprise the elements necessary for a complete community. This includes the installation Post Exchange, commissary, housing and family support services, medical, and mission-support facilities. The VECs for utilities, energy, and traffic/transportation are addressed in separate sections of this PEIS.

4.9.10.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT. Short- and long-term minor (low) adverse impacts to facilities resources are expected with the addition of up to 4,000 Soldiers at Fort Irwin. Activities within the training and range areas would be limited to existing firing ranges and roadways. Currently, Fort Irwin has buildable space to support an expansion of the cantonment, and can accommodate these maneuver activities with good planning. Additional coordination and consultation may be necessary to support an HBCT. However, because the installation landfill is running at near capacity; long-term high (major) adverse impacts to the landfill are expected. It is likely that a program to transport solid waste to facilities in Barstow would need to be developed. A review of the installation's landfill capacity would be recommended to determine if it could support an IBCT or HBCT.

Multiple BCTs. Short- and long-term moderate (medium) adverse impacts to facilities resources are expected with the addition of up to 7,000 Soldiers. Multiple BCTs may increase usage within the cantonment and training areas. Additional coordination and a review of the installation Real Property Master Plan may be necessary for activities associated with fielding multiple BCTs. Although Fort Irwin has buildable space for the cantonment, the installation landfill is near capacity and would be unlikely to support multiple BCTs. Long-term high (major) adverse impacts to the landfill are expected, as the extra solid waste would require transport offsite to Barstow.

4.9.11 Energy Demand/Generation

4.9.11.1 Affected Environment

Utilities are generally connected across the cantonment area and along defined utility corridors and therefore contribute collectively to the overall capacity, use, and storage as a unit. As such, the ROI for this resource is the cantonment area of Fort Irwin and the various utility rights of way that connect Fort Irwin with the regional systems.

Electric power is provided by Southern California Edison and is distributed via overhead lines to Fort Irwin and the surrounding communities. While there is a transcontinental natural gas transmission pipeline that runs along its boundary, Fort Irwin itself does not utilize natural gas as a source of energy.

4.9.11.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Long-term minor (low) adverse impacts on energy resources are expected from the addition of 1,000 to 7,000 Soldiers at Fort Irwin. The existing electric utility infrastructure has sufficient excess capacity and scalability to readily absorb the addition of a CS/CSS unit. As with any expansion, an initial capital investment would be required to extend the existing electrical distribution infrastructure in order to accommodate the addition of a Full Sustainment BDE, IBCT, or HBCT. The current electrical system has sufficient capacity that would not necessitate expansion beyond any critical threshold. Although Multiple BCTs would certainly require major construction and expansion of the existing energy infrastructure, the capacity and scalability of the electrical distribution system are not likely to be challenged. Like the others, this scenario results in a new energy demand posture that is comfortably within the capacity of the existing energy utility.

4.9.12 Land Use Conflicts/Compatibility

4.9.12.1 Affected Environment

Fort Irwin is located approximately 37 miles northeast of Barstow, California in the High Mojave Desert midway between Las Vegas, Nevada and Los Angeles, California. The installation is surrounded by desert hills and mountains. Natural vegetation is sparse and consists of mesquite, creosote, yuccas, and other low growing plants. The entire reservation encompasses more than 761,000 acres (over 1,100 square miles) comprised mostly of arid basins, dry lakebeds, ridges, and mountain ranges. The northern boundary of the training area is less than 1.7 NM (3 km) from Death Valley National Monument. The San Bernardino and San Gabriel Mountains extend in an east-west path 73 NM (135 km) southwest of Bicycle Lake. The Sierra Nevada Mountains, oriented north to south, are to the west. Elevations in excess of 10,000 feet (3,050 meters) are common in these ranges.⁶

⁶ <http://www.globalsecurity.org/military/facility/fort-irwin.htm>, Accessed, April 27, 2007.

4.9.12.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Under each of these unit growth scenarios, short- and long-term minor (low) environmental impacts to installation land use from an additional 1,000 to 7,000 Soldiers and their family members are expected. The installation has sufficient land available to either build the facilities, sufficient vacant space in existing buildings, or a combination thereof to meet each unit's mission requirements. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with all additional maneuver activities. The facilities required for each unit growth scenario would likely be located within a single contiguous land unit.

4.9.13 Hazardous Materials/Hazardous Waste

4.9.13.1 Affected Environment

The affected environment includes the use, storage, transport, and disposal of hazardous materials and wastes at Fort Irwin. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO. Each installation operates under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and nonhazardous materials for toxic and hazardous ones; ensure compliance with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste. (US Army Corps of Engineers, February, 2002)

4.9.13.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Short- and long-term minor (low) adverse impacts from hazardous materials and waste are expected with the addition of 1,000 to 7,000 Soldiers. An increase in the storage and use of hazardous chemicals may be seen in the cantonment and training and range areas. Demolition, renovation, and construction would mostly likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as an increase in the use of pesticides due to the addition of family housing and other facilities. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. The hazardous waste disposal facilities would be adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed to incorporate mission activities associated with the new units stationed at Fort Irwin and expanded training activities.

4.9.14 Traffic and Transportation

4.9.14.1 Affected Environment

Fort Irwin is located approximately 37 miles northeast of Barstow, California. The ROI of the affected environment for traffic and transportation aspects includes Fort Irwin, and the neighboring communities of Yermo and Barstow, California. The major road route in the region is I-15, a north-south interstate highway located about 20 miles from the cantonment area. I-15 links the installation to Barstow and Los Angeles California to the southwest, and Las Vegas, Nevada, to the northeast.

4.9.14.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. Short and long-term minor (low) adverse impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 to 3,500 Soldiers and their family members assigned to the installation are expected. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the installation, and is not expected to reduce the level of service (LOS) on the installation's road network. There may be a slight increase in traffic volume during peak morning and evening hours, but it would not affect level of service and would likely pose a minor increased level of risk to the safety of pedestrians and bicyclists.

IBCT, HBCT. Short- and long-term medium (moderate) adverse impacts on traffic and transportation systems on the installation due to the presence of an additional 3,500 to 4,000 Soldiers and their family members are expected. Both on the installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would have a moderate impact on LOS. Similarly, the increased traffic volume could pose a slightly higher safety risk to pedestrians and bicyclists than that posed by the presence of a Full Sustainment BDE.

Multiple BCTs. Short- and long-term significant (high) impacts on traffic and transportation systems on the installation are expected due to the presence of an additional 7,000 Soldiers and their family members. The effect on the traffic congestion in the local communities from this increased population level would be sizeable in the community at large and would likely cause a decrease in LOS in the community's road network, and would likely cause a major decrease in the LOS on the road network leading to the installation. This increase in both Soldier and Family-member population would cause a major impact on the LOS of the installation's road network and pose an increased risk to the safety of pedestrians and bicyclists.

4.9.15 Cumulative Effects

Fort Irwin has identified no foreseeable off-post projects, or on-post military operations or activities that would, in conjunction with Army growth, result in adverse cumulative effects to the environment. The impacts on utilities and communications are primarily

related to minor projected increases in population inside and outside Fort Irwin's boundary. These were analyzed by estimating per unit consumption on generation rates using the most recently available data, and then estimating how total consumption or generation rates would change with the changed population. To determine significance, the increased consumption and generation were compared with the ability of existing infrastructure to handle those changes.

4.10 FORT KNOX, KENTUCKY

4.10.1 Introduction

Fort Knox, located in northeastern Kentucky has approximately 46,000 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.10-1). It has been home to the Armor School and armor/mechanized training for decades.



Figure 4.10-1 Fort Knox

Fort Knox's major organizations are the Armor Center and Armor School. The Armor School conducts armor and cavalry officer and non-commissioned officer training, and armor and cavalry Soldier Basic Combat and Advanced Individual Training. The Armor School will move to Fort Benning as part of the Maneuver Center of Excellence, as a result of BRAC 2005.

Fort Knox has a robust range infrastructure and a small but varied maneuver area. Fort Knox is facing challenges of growing adjacent urbanization

Table 4.10-1 contains the Fort Knox's VEC ratings for each of the various stationing action scenarios.

Table 4.10-1. Fort Knox VEC Ratings

Fort Knox					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low	Low	Low	Low
Airspace	Low	Low	Low	Low	Low
Cultural Resources	Low	Medium	Medium	Medium	Medium
Noise	Low	Low	Low	Low	Low
Soil Erosion Impacts	Low	Low	Low	Medium	Medium
Biological Resources	Low	Low	Low	Low	Low
Wetlands	Low	Low	Low	Low	Low
Water Resources	Low	Low	Low	Low	Low
Facilities	Low	Medium	Medium	Medium	Medium
Socioeconomics	Low	Medium	Medium	Medium	High
Energy Demand/ Generation	Low	Medium	Medium	Medium	Medium
Land Use Conflict/ Compatibility	Low	Low	Low	Low	Medium
Haz Mat/ Haz Waste	Low	Low	Low	Low	Medium
Traffic and Transportation	Medium	High	High	High	High

4.10.2 Air Quality

4.10.2.1 Affected Environment

Fort Knox is located in the North Central Quality Control Region for Air Quality and in the Kentucky portion of the southeast air quality transport zone. All construction associated with the cantonment area would be within Hardin County Attainment Zone. Ambient air quality at Fort Knox is in attainment for all criteria pollutants and within USEPA's NAAQS guidelines for acceptable air quality.

Fort Knox holds a Title V operating permit. The permit covers all known point sources located at Fort Knox. Emission sources include storage and use of gasoline, distillate fuel, jet fuel (JP-8), paint booth operations, oil and gas fired boilers, and degreaser tanks. The permit requirements include an annual inventory update on each of these sources. No problems are anticipated in continuing to obtain air quality permits.

The Fort Knox cantonment area is not located in a nonattainment or maintenance area and is therefore not subject to a conformity analysis. The "major source" designation does, however, trigger the provisions of 40 CFR 52.21, *Prevention of Significant Deterioration (PSD)*. The PSD provisions require Fort Knox to assess all new emission units to determine if their operation constitutes a major modification.

4.10.2.2 Environmental Consequences

CS/CSS. There would be an expected minor (low) impact on the installation and surrounding communities by the restationing of a CS/CSS unit and its 1,000 Soldiers. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and facility operations would produce localized, short-term elevated air pollutant concentrations that should not result in any sustained impacts on regional air quality. Given the existing air quality and the small anticipated increase in vehicle emissions, this option would have a negligible adverse impact on air quality.

Full Sustainment BDE. There would be an expected minor (low) impact on the installation and surrounding communities by the restationing of a Sustainment Brigade Combat Team and its 3,000 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a major effect on regional air quality. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Some training activities generate vehicle emissions and smoke. Fugitive dust may also be generated during training maneuvers and routine operational functions when equipment crosses exposed soils. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected. Options to demonstrate conformity have been identified.

IBCT. There is not expected to be any long-term impact to the installation and surrounding communities by the restationing of an Infantry Brigade Combat Team and its 3,500 Soldiers; therefore impacts are expected to be minor (low). It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training but not significant enough to cause regional air quality issues. It is anticipated that the installation would see increases in emissions from equipment required to support the installation such as fuel storage and dispensing, boiler and incinerator operations and possible electric peak-shaving generators. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails.

HBCT. There is an anticipated minor (low) impact to the installation and surrounding communities by the restationing of a Heavy Brigade Combat Team and its 3,800 to 4,000 Soldiers. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these would tend to remain localized and produce no major impact to regional air

quality. The increase in POVs from the additional Soldiers and family members must also be addressed in the conformity analysis but do not appear too insurmountable.

Multiple BCTs. Multiple BCTs are expected to produce minor (low) long-term impacts on air quality of the installation and surrounding communities. Construction, though not technically an operation subject to the provisions of the CAA but a short-term contributor to air quality, and changes to facility operations to support multiple brigades would be significant initially. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

4.10.3 Airspace

4.10.3.1 Affected Environment

Fort Knox has 151 square miles of FAA-designated Special use airspace, up to 20,000 feet. The installation has access to this airspace continuously, and is controlled by the FAA of Edwards, CA. (US Army Corps of Engineers, 2002)

Godman Army Airfield is located adjacent to the cantonment area. Airspace is used for military tactics and transportation. There are several commercial airports in the vicinity of Fort Knox. (US Army Corps of Engineers, 1995)

4.10.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be minor (low) adverse long-term environmental impacts to the airspace and minor short- and long-term direct adverse impacts to UAV operations. It is anticipated that the activities associated with an increase of 1,000 Soldiers would not have any impacts to airspace. Activities within the training and range areas would be limited to existing firing ranges and roadways. As with the Full Sustainment BDE, the CS/CSS mission activities would have to be scheduled to coordinate with existing mission activities, and conflicts with airspace are not identified. BCTs are also expected to have a minor effect to airspace. The use of UAVs is anticipated to modestly affect SUA. If there is existing airspace which is insufficient, the installation would have to seek additional special use airspace designations from the FAA. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource (US Army Corps of Engineers, 2002). Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use. Additionally, large caliber munitions or ordnance would be consistent with current training operations and would not require additional airspace.

4.10.4 Cultural Resources

4.10.4.1 Affected Environment

In relation to cultural resources, the footprint of Fort Knox is the affected environment, or Area of Potential Effect (APE). Fort Knox is an installation with both historic buildings and archaeological sites. The footprint includes all land within the fence line.

The BRAC program will result in major increases in both personnel and foot traffic on the installation. It is anticipated that existing buildings be leveraged to maximize occupancy in order to address the needs of both civilian and military personnel. The impacts of adding personnel to historic buildings can include inadequate Heating Ventilation and Air Conditioning (HVAC) and constraints on customizing internal build-outs due to lack of infrastructure (such as sufficient electrical outlets, pipes, etc.). The additional foot traffic of civilians and Soldiers can lead to the both inadvertent stripping of surface archaeological sites and intentional resource hunting.

4.10.4.2 Environmental Consequences

CS/CSS. There would be a minor (low) impact to cultural resources within the APE for the addition of a CS/CSS unit. CS/CSS units have 1,000 Soldiers, general and attack helicopters and medium to large cargo trucks. While the trucks are designed for both off road and on road maneuvering, it is anticipated that the trucks would generally be used on road. Depending on the off road areas, the tire tread and the heaviness of the truck, cultural resources could be negatively impacted. However, it is a low risk to cultural resources, even in unsurveyed areas as the number of vehicles and Soldiers is minimal.

Full Sustainment BDE. The 3,000 to 3,500 Soldiers, and heavy equipment, of a Full Sustainment BDE would have moderate (medium) impacts to cultural resources. The additional Soldiers and their training activities, in previously unsurveyed areas, could disturb both historic and archaeological resources. Additionally, the added foot traffic to the training areas could adversely impact surface sites through accidental disturbance of sites. The number of Soldiers is not anticipated to strain the historic building resources on post.

IBCT. There would be moderate (medium) impacts on cultural resources due to an IBCT. It is anticipated that the impacts would mirror the BDE. The number of Soldiers and the type of equipment would not produce long term difficulties for the installation in relation to cultural resources roadways. The number of Soldiers is not expected to create issues with historic buildings.

HBCT. The 3,800 to 4,000 additional Soldiers should have moderate (medium) long term impacts on the installation. The higher the personnel count, the more likely that either a historic or archaeological resource would be adversely impacted. However, the greater danger to cultural resources lies in the heavy tracked vehicles, Abrams tanks and Bradley vehicles that would be maneuvering in previously undisturbed areas. The heavy tracked vehicles and tanks could crush both historic resources and archaeology sites.

Multiple BCTs. The impacts to cultural resources of multiple BCTs would be moderate (medium) to significant. The influx of Soldiers and equipment would add a strain to historic and archaeological resources. The actual impacts would depend on the number of Soldiers training at one time. It may be possible for the existing infrastructure to absorb the increase in Soldiers and support personnel. However, it is likely that the number of Soldiers and the type of equipment used for training would adversely affect historic buildings and archaeology sites. Additionally, archaeological resources could be impacted by inadvertent and intentional disturbances.

4.10.5 Noise

4.10.5.1 Affected Environment

Noise, on and adjacent to Fort Knox is dominated by large caliber fire (from tanks) and by aircraft noise. Aircraft noise (from fixed- and rotary-winged aircraft) stems mainly from the Northern Training Area, of which weapons firing and maneuver on Wilcox Range also occurs. The Yano Multi-Purpose Tank Range has a Noise Zone II, classified as normally incompatible, that extends beyond the installation boundary into an area that has some residential development (USACE, August 2006).

The Armor Center and School is the largest organization on Fort Knox and has the mission of training all armor Soldiers and Marines (Fort Knox, 2007). The Armor Center and School will be moved to Fort Benning (BRAC2005) so that Fort Knox can accommodate an IBCT (DoD, May 2005).

4.10.5.2 Environmental Consequences

CS/CSS. There is expected to be a minimal (low) to minor impact to the local community and natural environment. Given the mission of Fort Knox, the addition of a CS/CSS would not create any new noise contours, would not have any impacts to Noise Zones, and would not have any significant impacts to wildlife, with the exception of possible short-term impacts associated with additional maneuver. Small arms fire is very small in comparison to current installation activities. Any additional activity would require the installation to review procedures and mitigations set in its INRMP, ESMP (for noise), and IENMP.

Full Sustainment BDE. There is an overall minor (low) noise impact from fielding a Full Sustainment BDE to Fort Knox. Maneuver areas and small arms ranges would have similar impacts as the CS/CSS. An additional 2,500 Soldiers (above a CS/CSS) would have only minor impacts and installation INRMPs and the IENMP should be used as guidance during training.

IBCT. This action may result in minor (low) short-term and long-term impacts to the natural environment. Noise generated from IBCT artillery activities are small in comparison to the armor training currently conducted on the installation. Maneuver impacts would be similar in scale to those generated by a Full Sustainment BDE.

HBCT. An addition of a heavy brigade combat team is expected to have an overall minor (low) impact to surrounding communities and the natural environment. This action would be similar to the current training baseline. Noise contours would not change and noise would not exceed peak noise thresholds established by current training requirements. Fort Knox may have to update the installation environmental noise management program to account for the extra BCT; the expansion of Noise Zones is not expected.

Multiple BCTs. Fort Knox expects that the addition of Multiple BCTs would have minor (low) short- and long-term impacts to the natural environment and to the public. The baseline of training would not change considerably, and impacts would be similar to those of adding a HBCT. The IENMP would need to be updated and further noise mitigation techniques or best practices would be necessary.

4.10.6 Soil Erosion

4.10.6.1 Affected Environment

The major portion of Fort Knox is located on the eastern Pennyroyal Plateau, which has rolling to steep topography underlain by limestone and shale. There are three separate flats originating from the Ohio, Salt and Rolling Rock Rivers. The latter two rivers run through Fort Knox and their floodplains are generally located in the range impact area. There are also numerous caverns and sinkholes on Fort Knox.

Most of the soils at Fort Knox are rated as having slight to moderate erosion limitations (U.S. Department of the Army, 1990). Heavy use of tracked vehicles in long term training areas can result in extensive sheet erosion and severe gully erosion.

4.10.6.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. There would be minor (low) impacts to soil conditions at Fort Knox from the vehicles in these units. They could have a slight to moderate effect in selected off-road areas. The condition of existing (unimproved) range roads and their ability to support for heavy truck traffic may have to be evaluated. These roads could be prone to water erosion, so road construction, hardening and maintenance practices would have to be reviewed and modified. Off-road movement would have slight to moderate impact on soil erodibility based on disturbance to vegetation and soil surfaces, and moisture content and temperatures (U.S. Department of the Army, 1990).

HBCT, Multiple BCTs. The vehicles of a HBCT, or the doubling impact from an even higher amount of vehicles as from the multiple BCT scenario is expected to have a moderate (medium) impact on roads and off-road areas due to the number of tracked vehicles in an HBCT and the weight and mobility characteristics' of the tracked vehicles. Areas with a slope of greater than 30% would not be affected by the tracked vehicles. Flat to relatively flat areas would show the impact from the vehicle maneuvers, turns and traction. These areas could then be prone to water erosion. The road network

could deteriorate rapidly leading to trafficability and erosion problems. Off-road traffic and maneuvers would increase, which would have a major negative impact on soils. Conditions for potential water erosion would increase.

4.10.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.10.7.1 Affected Environment

There are 20 special status species of flora and fauna known to occur on Fort Knox. However, Fort Knox currently records only three endangered or threatened species as occurring on the installation. Appendix T of this document provides a comprehensive inventory of federally listed species.

4.10.7.2 Environmental Consequences

CS/CSS. It is anticipated that implementation of this level of Soldier strength would have a minor (low) impact on the three listed species at Fort Knox. The threatened and endangered species recorded on the installation are managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents.

Full Sustainment BDE, IBCT, HBCT, and Multiple BCTs. It is anticipated that implementation of any of these levels of Soldier growth may have a minor (low) impact on the three listed species. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of either of these actions may affect any of the recorded listed species, the installation would be required to consult with the USFWS either informally or formally, depending on whether take is anticipated to occur.

4.10.8 Wetlands

4.10.8.1 Affected Environment

Fort Knox contains approximately 2,310 acres of wetlands making up 2% of the installation (INRMP, Fort Knox, 2006). Wetlands are primarily composed of Riverine, Lacustrine and Palustrine.

4.10.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be an expected minor impact on the installation wetlands as a result of the restationing of a CS/CSS unit to Fort Knox. Training activities would be limited to established training areas. There should be very little impact to wetlands based on the small number that are found on the installation. Efforts would be made to avoid any impacts to wetlands by

using the installations wetland planning level survey's/ GIS mapping and best management practices.

4.10.9 Water Resources

4.10.9.1 Affected Environment

Surface Water

Surface waters on Fort Knox include both streams and lakes. There are more than 25 water bodies that serve multiple purposes. In the vicinity of the cantonment area, there are several creeks and two ponds. Mill Creek, the nearest major body of water, is classified as "water quality limited" by Kentucky, due to metals, ammonia, and low dissolved oxygen concentrations.

Water Supply

Potable water at Fort Knox is provided by two different sources: West Point Well Field in the Ohio River alluvial aquifer and surface water from McCracken Springs near Otter Creek. Groundwater used for the Fort Knox drinking water supply is from 15 deep wells.

Fort Knox owns and operates two drinking water plants. Ownership and operation of the drinking water treatment and supply system is planned for privatization. The Fort Knox Central Water Plant treats both groundwater and surface water while the Muldraugh Water Plant treats only groundwater. The two plants serve a daytime, on-installation population of approximately 26,000. Together, the plants treat an average of 3.065 MGD and are designed for a maximum capacity of 13 MGD. Treated water is supplied to the installation and sold to the City of Muldraugh and Hardin County Water District #1.

Wastewater

The Fort Knox Wastewater Treatment Plant (WWTP) was designed for an average wastewater flow of 6 MGD, a maximum hydraulic capacity of 14 MGD, and a peak wastewater flow of 18 MG. The facility handles flow from the installation and the City of Muldraugh and treats an average domestic flow of about 2.5 MGD.

Ownership and operation of the Fort Knox wastewater system was transferred to Hardin County Water District No. 1 (District) in partnership with Veolia Water North America – South, LLC (Veolia Water). The wastewater system at Fort Knox is generally adequate to convey and treat wastewater from all existing and future development.

Stormwater

The District also owns and operates the stormwater collection system at Fort Knox. The stormwater drainage system at Fort Knox is generally able to meet the demands of normal rainfall conditions.

Fort Knox has a permit which allows the installation to discharge stormwater from industrial areas and from construction activities disturbing more than one acre.

4.10.9.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. An addition of 1,000 to 7,000 Soldiers is anticipated to have minor (low) impacts to Fort Knox. Given the existing population of Fort Knox this level of growth would not have significant impacts to the watershed, water demand, and associated treatment systems. Although water consumption and vehicle washing would increase, there is more than ample capacity at the water and wastewater systems to handle HBCT and multiple BCT activities. The installation would likely need to revisit their Storm Water Pollution Prevention Plan to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit, which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

4.10.10 Facilities

4.10.10.1 Affected Environment

Fort Knox is divided into two general areas: the cantonment (or built-up area of the installation) and the portions of the installation used as maneuver training facilities, ranges, and range impact areas. The cantonment occupies approximately 6,902 acres (approximately 6.3 percent) of the installation. Fort Knox's cantonment is the portion of the installation that has been developed into a variety of urban land uses that together comprise the elements necessary for a complete community. It includes but is not limited to, commercial and service support facilities similar to those associated with a civilian community. The commercial facilities include a commissary and Post Exchange that would make up the commercial aspects of a community center. The service support facilities include educational, post office, library, childcare center, youth center, and chapel and religious education functions. The U.S. Bullion Depository is located at Fort Knox on a 30-acre tract of land completely surrounded by the installation. The Depository is a restricted area.

Building land is a consideration for any expansion of current activities at Fort Knox. The Army Armor School is scheduled to be transferred from Fort Knox to Fort Benning in FY11 as part of BRAC 2005.

4.10.10.2 Environmental Consequences

The impacts of the Proposed Action and other alternatives on utilities and communications are primarily related to projected increases in population on and off post. These were analyzed by estimating per unit consumption on generation rates using the most recently available data, and then estimating how total consumption or generation rates would change with the changed population. The increased consumption and generation were then compared with the ability of existing infrastructure to handle those changes.

CS/CSS. There would be minor (low) environmental impacts to facilities. It is anticipated that the activities associated with an increase of 1,000 Soldiers would increase facilities usage within the cantonment and training and range areas. Activities within the training and range areas would be limited to existing firing ranges and roadways. Although buildable space at Fort Knox is an issue, the relocation of the Armor School should allow the installation to accommodate a CS/CSS with good planning.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be moderate (medium) short- and long-term impacts to facilities resources. Increased Soldier strength of 3,000 to 7,000 would be reflected within increased activity within the cantonment and training and range areas. The availability of buildable space that can support expansion of the cantonment is a factor to consider, although the building space freed up by the BRAC 2005 transfer of the Armor School (potentially to Fort Benning) should allow Fort Knox to accommodate this level of Soldier growth and their associated missions. To accommodate multiple BCTs, however, the installation may require additional buildable space within the cantonment area.

4.10.11 Energy Demand/Generation

4.10.11.1 Affected Environment

Fort Knox's energy needs are currently met by electricity provided by a public utility. The power supply capacity from this utility is adequate and able to meet current and future energy demands.

4.10.11.2 Environmental Consequences

CS/CSS. This basing scenario is likely to have a minor (low) impact to energy demand. The addition of a CS/CSS unit with 1,000 Soldiers represents a small fraction of the overall mission activity at Fort Knox. The installation also possesses a fair excess of available energy resources.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. The installation anticipates a moderate impact to energy demand from the addition of 3,000 to 7,000 Soldiers, their Families, and potential civilian support. New electrical and natural gas infrastructure plans may need to be considered in order to accommodate the increase in usage. New infrastructure could easily be constructed to accommodate the electrical and natural gas demands resulting from an increase in personnel.

4.10.12 Land Use Conflicts/Compatibility

4.10.12.1 Affected Environment

Fort Knox occupies 109,054 acres, of which approximately 6,902 acres are the cantonment area. Land in the areas outside the cantonment area is used mainly for training, small arms and artillery impact, and vehicle uses. About 52,000 acres of land

are under forest management. These lands are used as training grounds and buffer areas and for timber supply and recreation. Overall, the main land use at Fort Knox, occupying approximately two-thirds of the total acreage, consists of live-fire ranges and impact areas (Department of the Army, 1995).

4.10.12.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT. There would be minor (low) short and long-term impacts on installation land use due to the additional mission requirements at Fort Knox. The installation has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, is located such that surrounding facilities are compatible with all growth scenarios. The facilities required to support this level of growth would likely be located within a single contiguous land unit.

Multiple BCTs. There would be moderate (medium) short- and long-term impacts on installation land use due to the presence of an additional 7,000, or more Soldiers and their Families assigned to the installation. The installation may not have sufficient land available to either build the facilities needed for this unit, or may not have sufficient vacant space in buildings suitable for the units' mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges.

4.10.13 Hazardous Materials/Hazardous Waste

4.10.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage, transport, and disposal of hazardous materials and wastes at Fort Knox. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO.

Fort Knox is a large quantity hazardous waste generator and has a RCRA Part B permit for a treatment, storage, and disposal (TSD) facility. The types of wastes generated and stored at the installation include those found in maintenance activities, printing and painting operations, as well as electrical and mechanical shops. Approximately 90% of the waste solvents at Fort Knox are generated from vehicle and aircraft maintenance facilities. Many of the wastes received for disposal are expired commercial chemical products. All hazardous waste generated at Fort Knox is manifested under Fort Knox's USEPA identification number (KY6210020479). (US Army Corps of Engineers, August, 2006)

4.10.13.2 Environmental Consequences

CS/CSS. There would be minor (low) long-term environmental impacts from hazardous materials and waste. It is anticipated that Fort Knox would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BDE. Minor (low) short- and long-term environmental impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 3,500. An increase in the use of hazardous chemicals may be seen in the cantonment and training and range areas. Demolition, renovation, and construction would mostly likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as an increase in the use of pesticides due to the addition of family housing and other facilities. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. The hazardous waste disposal facilities would be adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed.

IBCT. There would be minor (low) short- and long-term impacts from hazardous materials and waste associated with the addition of an IBCT. Materials used, stored, and handled would increase; however, existing procedures, regulations, and facilities would be able to meet storage, use, and handling requirements. No adverse impacts anticipated.

HBCT. There would be minor (low) short- and long-term impacts from hazardous materials and wastes. The volume of hazardous waste would be slightly higher than the IBCT, and existing management plans would need to be updated to reflect the change in mission at Fort Knox and expanded training activities. Construction of new facilities under this alternative would entail the use of various paints, lacquers, adhesives, sealants, fuel, and other hazardous substances. Generation of small quantities of toxic and hazardous wastes during construction is likely. An increase in personnel would result in an increase in the amounts of hazardous wastes created and used (e.g. oil, solvents, paints, POL products, and pesticides.) (US Army Corps of Engineers, August, 2006).

Multiple BCTs. The establishment of multiple BCTs at Fort Knox would result in moderate (medium) short- and long-term impacts from hazardous materials and waste. Generation and management of hazardous materials and waste, pesticides, petroleum storage tanks, ordnance and explosives would all be higher than with the other actions, and waste management plans would need to be updated to reflect the change in mission and expanded training activities.

4.10.14 Traffic and Transportation

4.10.14.1 Affected Environment

The affected environment or region of influence (ROI) for this proposed action includes Fort Knox and Hardin County, Kentucky. Within Hardin County, the areas most influenced by the proposed restationing of units to Fort Knox would be the town of Radcliff and City of Elizabethtown. There are no commercial air carriers, waterway or maritime shipping at this installation. The installation has a railhead for rail movement of tactical vehicles.

Table 4.10-2, below, shows the expected population of Fort Knox at the completion of all restationing actions associated with the 2005 Base Realignment and Closure (BRAC) decision.

Table 4.10-2. Projected population at Fort Knox

Year	Officers	Warrant Officers	Enlisted	Total, Military	Civilians	Contractors	Students	TOTAL
2011	1,834	302	9,877	12,013	5,575	4,799	767	23,168

The BRAC program will result in major increases in vehicle traffic volume both on the installation and in the local community leading to it. This is largely due to the changing demographics on Fort Knox. The large contingent of enlisted Soldiers attending basic training and/or the Armor School Advanced Individual Training will conduct that training at Fort Benning. While the population changes little, the student population of Soldiers will be replaced by permanent party senior non-commissioned officers, commissioned officers, Department of the Army civilians, and contractors. A large portion of the military and all of the civilians and contractors will commute to Fort Knox by private auto.

During July 2005 Fort Knox conducted a survey of installation personnel to inquire about the level of interest in a transit system in the region, to include commuting to Fort Knox. The results indicate that single occupant vehicles will be the preferred means of transportation of Fort Knox employees. A majority (69%) of those responding to the survey indicated they would use a bus or transit system for commuting to work; 65% of respondents indicated they would use such a system several days a week or more, and 70% stated they would prefer a park and ride type arrangement (Springer, 2005).

4.10.14.2 Environmental Consequences

CS/CSS. There would be a moderate (medium) impact on the installation and surrounding communities by the restationing of a CS/CSS unit and its 1,000 Soldiers. The additional population that would routinely commute to work would have a moderate negative effect on traffic congestion on the installation. A portion of these Soldiers would be authorized to live in off-post housing, and would add a minor to medium level of congestion to off-post traffic. The increase in off-post traffic would have a de minimis impact on traffic in the community overall, but could contribute to a minor decrease in

the level of service (LOS) in the road network leading to the installation, particularly during peak morning and afternoon travel periods.

Full Sustainment BDE. There would be significant (high) short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 3,500 Soldiers. As more Soldiers are assigned to the installation, an increasing percentage of married Soldiers, and unmarried Soldiers with a grade of E-6 (Staff Sergeant) and higher would reside in off-post housing. The increase in off-post traffic would have a noticeable impact on traffic in the community overall and could contribute a notable decrease in the LOS in the road network leading to the installation, particularly during peak morning and afternoon travel periods. The increased traffic volume in both the neighboring community and on the installation would pose an increased level of risk to the safety of pedestrians and bicyclists.

IBCT. There would be significant (high) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,500 Soldiers. The increase in traffic congestion, accompanying decrease in LOS, and increased safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

HBCT. There would be significant (high) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,800 to 4,000 Soldiers. The increase in traffic congestion, accompanying decrease in LOS, and increased safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

Multiple BCTs. There would be significant (high) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 7,000 Soldiers, or more. The additional POVs, and military vehicles may cause increased congestion, delays; especially during peak commuting hours. This increase in both Soldier and Family-member population would cause a major impact on the LOS of the installation's road network and pose an increased risk to the safety of pedestrians and bicyclists.

4.10.15 Cumulative Effects

Cumulative Effects at Fort Knox include Army mission-related activities and potential land transfer activities. Past, present, and reasonably foreseeable future actions include:

Ongoing Projects:

- Construction of new dining facilities which occurred in April 2007; and
- An Annex to the Headquarters building at Fort Knox beginning in July 2007

Future Projects:

- Construction of a Human Resources Resource Center in March 2008; and

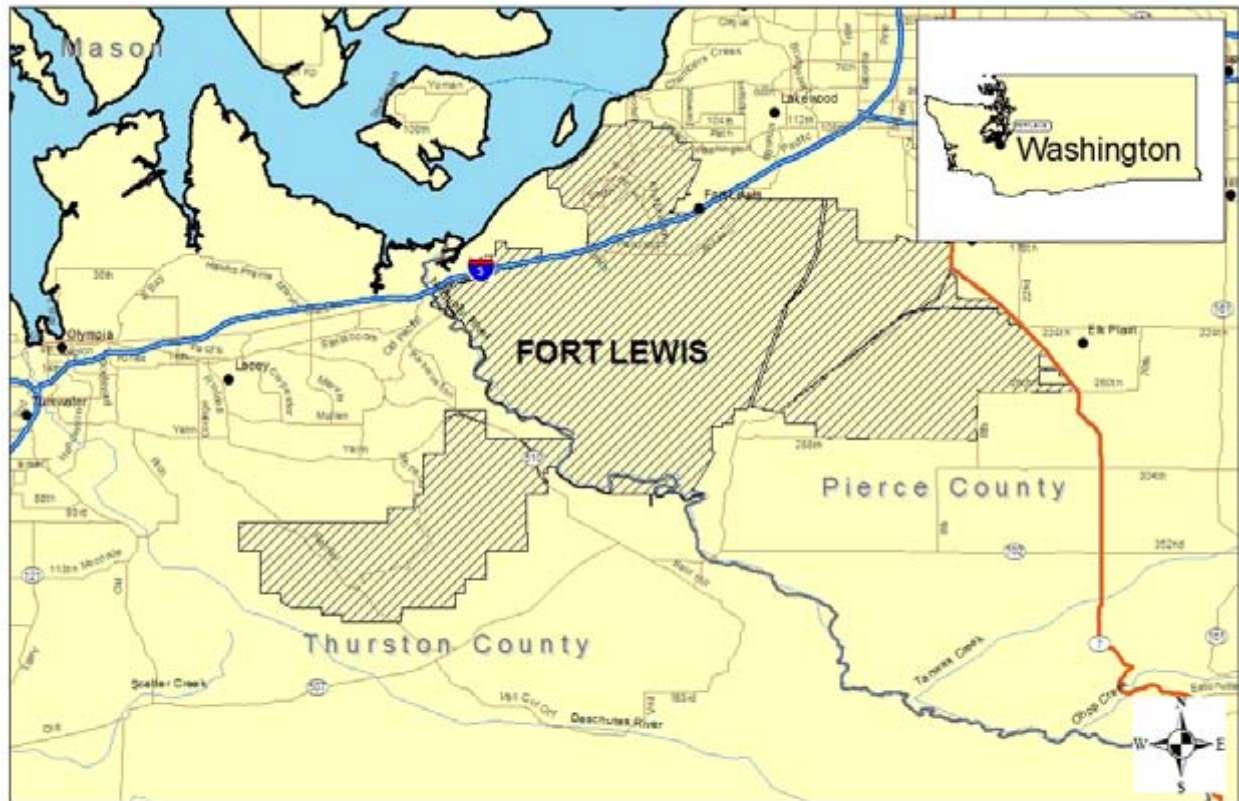
- The potential land transfer of approximately 194 acres to the State of Virginia for a Virginia Nursing Home and Medical Center, beginning in FY08-09

Cumulative effects include impacts to air quality, soils, water quality, and biological resources. Adverse effects include increases in mobile and stationary point sources; removal of vegetation and the temporary increase in siltation or sedimentation from transportation of pollutants through stormwater and sediments; soil loss and erosion, and the potential degradation of habitats and ecosystem integrity. (Phone conversation with Fort Knox Personnel, July 2007)

4.11 FORT LEWIS, WASHINGTON

4.11.1 Introduction

Fort Lewis, located in Western Washington, has approximately 65,000 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.11-1). In the past it has been the home of light infantry, armored, Special Forces and Stryker and Motorized units. It is adjacent to McChord Air Force Base, a major DoD deployment facility.



Fort Lewis- Installation Location

Figure 4.11-1 Fort Lewis

Fort Lewis' major unit is I Corps and its subordinate units to include three Stryker Brigades.

Fort Lewis has a robust range infrastructure that supports individual and crew-served weapons live-fire training. Larger weapons systems training (e.g. Abrams tanks) and large-scale maneuver training occur at the Yakima Training Center in Eastern Washington. Fort Lewis is pressured by intense urbanization along the Seattle-Tacoma-Olympia corridor, as well as land use and TES challenges.

Table 4.11-1 contains the Fort Lewis's VEC ratings for each of the various stationing action scenarios.

Table 4.11-1. Fort Lewis VEC Ratings

Fort Lewis						
VEC	CS/CSS Units (1,000 Soldiers)	Full Sust. BCT (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 Soldiers)	Stryker BCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low-Medium	Low	High	High	High
Airspace	Low	Low	Low	Low	Low	Medium
Cultural Resources	Low	Medium	Medium	High	High	High
Noise	Medium	Medium	High	High	High	High
Soil Erosion Impacts	Low	Low	Low	Medium	High	High
Biological Resources	Low	Low	Medium	Medium	Medium	Medium
Wetlands	Low	Low	Medium	Medium	Medium	Medium
Water Resources	Low	Low	Very Low	Low	Low	Low
Facilities	High	High	High	High	High	High
Socioeconomics	Medium	High	High	High	High	High
Energy Demand/ Generation	Medium	Medium	Medium	Medium	Medium	Medium
Land Use Conflict/ Compatibility	Medium	Medium	Medium	Medium	Medium	Medium
Haz Mat/ Haz Waste	Low	Low	Low	Low	Low	Low
Traffic and Transportation	Low	Medium	Medium	Medium	Medium	Medium

4.11.2 Air Quality

4.11.2.1 Affected Environment

The affected environment for this proposed action includes air emissions associated within the Puget Sound Region, Washington. Air quality regulation is carried out by the Puget Sound Clean Air Agency (PSCAA) in Pierce County, and by the Olympic Region Clean Air Agency in Thurston County. The existing air quality in the Fort Lewis area is good. The major sources of air pollution are particulate matter and vehicular emissions, which contribute to the formation of ozone. The Washington State Department of Ecology (WS DOE) has designated the entire state of Washington as in attainment with the NAAQS for ozone. In addition, the entire western Washington region is either in attainment for CO or is unclassified/attainment. These areas are treated as attainment

areas by WS DOE. Fort Lewis is located in an unclassifiable area for PM₁₀, and in an area that was previously designated as a nonattainment area for both ozone and CO. As part of the redesignation process, the state submitted a maintenance plan under which Fort Lewis can continue to maintain attainment standards for a 10-year period.

Opacity is regulated at Fort Lewis under the jurisdiction of the local air pollution control agencies. The closest Prevention of Significant Deterioration (PSD) Class I area to Fort Lewis is Mount Rainier National Park, which is located approximately 50 miles to the east.

The primary emission sources at Fort Lewis are motor vehicles and industrial sources. Industrial sources include aerospace maintenance and rework operations, fuel burning, fuel storage and dispensing, degreasing, woodworking, and painting operations.

Currently, Fort Lewis maintains a "Synthetic Minor" operating permit which means that any increase in stationary source emission could require the transition back to major source status. Additional thresholds are pollutant-specific for nonattainment and maintenance areas. Portions of Fort Lewis (northern half) are partially within an ozone (a product of VOCs and NO_x reacting in the atmosphere) and CO maintenance area. Actions at Fort Lewis resulting in an increase of 100 tons per year (tpy) of ozone or CO would trigger a conformity analysis.

4.11.2.2 Environmental Consequences

CS/CSS. There would be a minor (low) impact on Fort Lewis and surrounding communities by the restationing of a CS/CSS unit and its 1,000 Soldiers. The increase in Soldiers living and working on the installation would result in an increased usage of automotive stations and wastewater treatment on the installation. Thus, there would be an associated increase in VOC emissions on Fort Lewis. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population. In general, combustion and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality, including opacity.

Full Sustainment BCT. There would be an expected minor (low) to moderate (medium) range impact by the restationing of a Sustainment Brigade Combat Team. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a significant effect on regional air quality. In general, training, fuel storage and transfer, automotive travel, construction, and generator usage would all contribute to emission increases of criteria pollutants at both installations. Increased VOC emissions would result from increased fuel storage and transfer to provide fuel to additional training vehicles. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to installation boundaries that visible emissions leave the installation.

Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

IBCT. There would be an expected moderate-level (low) environmental impact at Fort Lewis and surrounding communities by the restationing of an Infantry Brigade Combat Team and its 3,500 Soldiers. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training. It is anticipated that Fort Lewis would see increases in emissions from equipment required to support each installation such as fuel storage and dispensing, boiler and incinerator operations and possible electric peak-saving generators. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails.

Stryker BCT, HBCT, Multiple BCTs. In terms of long-term environmental impacts, there would be a significant (high) impact at Fort Lewis and its surrounding communities, by the restationing of any these types of BCTs. Combustion emissions from stationary sources would significantly increase due to the plus up in infrastructure required to support the influx of new Soldiers and their Families. Fugitive dust emissions remain a localized issue and should be addressed if activities are close enough to installation boundaries that visible emissions leave the installation.

4.11.3 Airspace

4.11.3.1 Affected Environment

Fort Lewis has 55 square miles of FAA-designated Special use airspace, up to 14,000 feet. The installation has access to this airspace in area R6703, Sub-Areas A, B, and D from 0700 to 2300 daily Mondays through Fridays. Sub-Area C is scheduled by NOTOM (Notice to Airmen) (Fort Lewis, 2007).

The primary purpose for R6703 is live-fire training with artillery, mortars, small arms, helicopters, USAF aircraft, and demolitions (Fort Lewis, 2007). FAA has designated portions of Fort Lewis airspace as special use airspace. Restricted areas within the special use airspace may be activated, in which case nonmilitary and unauthorized military aircraft are prohibited from entering the airspace. Areas of airspace over artillery practice ranges and other spaces are restricted from general use. (U.S. Army Corps of Engineers, 1995)

4.11.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT. Fort Lewis is expecting a minor (low) impact to airspace. The addition of a CS/CSS is not expected to have any adverse impacts to airspace required at the installation. Any increase from BCTs is likely to have only a minor impact from increased operations of UAVs and in the training areas where live-fire occurs (artillery and air-delivered ordnance). Use of this airspace would continue to be managed through scheduling and balancing training requirements with airspace availability.

Multiple BCTs. Fort Lewis anticipates a moderate (medium) level of impact from re-stationing or growing multiple BCTs at the installation. Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use. Scheduling conflicts from multiple BCTs using UAVs would need addressing and future systems or modifications may require further analysis or study by the installation.

4.11.4 Cultural Resources

4.11.4.1 Affected Environment

The footprint of Fort Lewis, the 87,000 acres within the legal boundaries, is the affected environment relating to cultural resources. Planning level surveys have been completed for all but approximately 20% of the installation. Fort Lewis has almost 350 recorded archaeological sites, including: American Indian villages, camps, and households dating from 8,500 years ago to the Nisqually Reservation period (1854-1917); British farms operated by the Hudson's Bay Company, 1832-1869; American pioneer homesteads, 1846-1942; and WWI, WWII, Korean War, and Vietnam-era military training features. Planning-level surveys to characterize the types of archaeological resources that might be present have been completed for most areas of Fort Lewis. More detailed sub-surface archaeological inventories are needed on a case-by-case basis to determine whether new construction or military training activities will affect presently unidentified archaeological resources. Most recorded archaeological sites have not been evaluated for National Register eligibility.

Fort Lewis has three National Register eligible historic districts including more than 400 contributing historic buildings, structures and objects built between 1917 and 1948. The Fort Lewis Museum, built in 1919 as the Salvation Army Red Shield Inn, has been listed on the National Register since 1979.

Fort Lewis lies within the traditional homelands of the Nisqually Indian Tribe, and the Tribe exercises treaty-reserved rights to hunt, fish and gather at all their usual and accustomed places. More than two-thirds of the Nisqually Indian Reservation was condemned by Pierce County and donated to the U.S. Government for the purpose of establishing Camp Lewis in 1918. The remaining Nisqually Indian Reservation lands lie immediately adjacent to the Fort Lewis boundary. The Squaxin Island Tribe and the Puyallup Tribe of Indians also exercise treaty-reserved rights to hunt, fish and gather at all their usual and accustomed places on Fort Lewis. All three tribes recognize sacred sites and traditional cultural properties on Fort Lewis lands. The 'Department of Defense American Indian and Alaska Native Policy' establishes principles for interacting and working with federally-recognized tribes on matters that may affect these or other protected tribal resources.

4.11.4.2 Environmental Consequences

CS/CSS. A CS/CSS unit is anticipated to have minor (low) short and long term impacts to cultural resources. Training these 1,000 Soldiers would result in additional foot and

off-road vehicle maneuver and excavation that could have adverse effects on archaeological sites and protected tribal resources (as defined in the DoD American Indian and Alaska Native Policy). New construction and rehabilitation of existing facilities could have adverse effects on historic districts, buildings and structures.

Full Sustainment BCT and IBCT. A Full Sustainment BCT is expected to have moderate (medium) short and long term impacts to cultural resources on Fort Lewis. Training these 3,000-3,500 Soldiers would likely result in increased off-road vehicle maneuver impacts on a significantly greater scale than the CS/CSS. Construction to accommodate the proposed actions would also likely have greater impacts than the CS/CSS as well.

HBCT, Stryker BCT, Multiple BCTs. An HBCT may have significant (high) short and long term impacts to cultural resources on Fort Lewis. Training these 3,800 – 7,000 Soldiers and potential off-road heavy and light vehicle maneuver could have adverse effects on archaeological sites and protected tribal resources. The numbers of Soldiers, vehicles, and types of required training associated with heavy tracked vehicles and Stryker vehicles (when traveling off-road) would likely be ‘high’.

4.11.5 Noise

4.11.5.1 Affected Environment

The chief sources of noise from Fort Lewis include aircraft (rotary- and fixed-winged) flyovers from Gray Army Airfield and McChord Air Force Base; munitions detonations; and live-fire (artillery and mortar) (Fort Lewis, 2004). Construction of an aerial gunnery range with combined use for mounted maneuver and dismounted Soldier training is planned at Fort Lewis’ sub-installation, Yakima Training Center, to accommodate increasing training requirements at Fort Lewis (USAEC, 2006). It should be noted that the impacts of the aerial gunnery range are being analyzed separately from this document. According to a 1994 Stationing EIS, range limitations are imposed on nighttime firing to reduce noise impacts to nearby residential communities. Small towns near the installation sometimes experience short-term noise level increases from training activities (USACE, February 1994).

4.11.5.2 Environmental Consequences

CS/CSS and Full Sustainment BCT. Fort Lewis expects a moderate (medium) impact to wildlife and sensitive noise receptors nearby the installation boundary. This action would have only short-term maneuver and small arms related impacts (flushing) to bird species (including T&E species), but biological receptors would recover quickly. The need for analysis into the impacts on migratory birds should be taken into consideration and Best Management Practices to reduce potential noise impacts should be identified. Small arms weapons fire is not heard off the installation boundary. Noise mitigation recommendations for the protection of biological resources are found within the installation’s ESMP. New noise contours would not be developed for this action, though the IONMP would need to be reviewed.

IBCT, HBCT, Stryker BCT, Multiple BCTs. Fort Lewis expects a significant (high) impact with the stationing of 3,500 to 7,000 Soldiers and their respective equipment (tactical and non-tactical) due to an increase in gunnery and demolition noise. Any additional Soldiers and equipment would likely elevate peak noise thresholds to above existing levels. Increased weapons firing, demolition, and aviation activities may subject nearby sensitive receptors to disproportionate noise impacts. The installation would need to conduct further noise evaluations and update their IONMP to reflect recent changes. Installation noise contours would be revised for site specific impact analysis, should it be needed. The installation would need to conduct further noise evaluations and update their IONMP to reflect recent changes. Installation noise contours would be revised for site specific impact analysis, should it be needed.

4.11.6 Soil Erosion

4.11.6.1 Affected Environment

The topography of Fort Lewis is typically flat to gently rolling, with localized areas of moderately sloping lands. The slopes are generally less than 15 percent, except along the steep escarpments along the Nisqually River and Puget Sound. The geological units underlying Fort Lewis are primarily the result of glacial and alluvial processes.

Over 90 percent of the Fort Lewis surface area is composed of somewhat excessively drained, gravelly sandy loams up to 2 feet thick. Most Fort Lewis prairies are found on the Spanaway association and these soils are coarse-textured, loose and highly permeable.

4.11.6.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT. There is expected to be a minor (low) impact from the vehicles in these units. A low to medium effect in selected off-road areas may be realized depending on the frequency and intensity of vehicular and foot traffic. The condition of existing (unimproved) range roads and their ability to support for heavy truck traffic would have to be evaluated. These roads could be prone to soil erosion, so road construction, hardening and maintenance practices would have to be reviewed and modified. Although soil erosion is not of great concern at Fort Lewis, off-road movement may impact soil erodibility based on disturbance to vegetation and soil surfaces. IBCT Dismounted training and the vehicles of the IBCT would have a low training impact to soil erosion.

HBCT. The HBCT is anticipated to have a significant (high) impact on road and off-road areas at Fort Lewis. This is due to the number of tracked and wheeled vehicles in an HBCT and the weight and mobility characteristics of the vehicles. Flat and rolling areas would show the impact from the vehicle maneuvers, turns and traction. These areas could then be prone to soil erosion.

Stryker BCT. The Stryker BCT would likely have a significant (high) impact on road and off-road areas at Fort Lewis. The wheeled vehicles of the Stryker BCT are expected to stay primarily to hardened surfaces or roads; however, there are areas on the installation where Strykers maneuver off-road. These areas may be prone to soil erosion.

Multiple BCTs. An overall significant (high) impact would result from Multiple BCTs, given that the number, size, variety and impact of wheeled and tracked vehicles would increase as well. Off-road traffic and maneuvers would increase, which would have a potentially adverse impact on soils. Conditions for potential soil erosion would increase.

4.11.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.11.7.1 Affected Environment

There are 10 threatened and endangered species at Fort Lewis. The installations recently completed a programmatic consultation with the USFWS and National Marine Fisheries Service (NMFS) covering these species for the combined installations (14 total combined). In addition, current records identify four candidate species occurring onsite at Fort Lewis. One additional species will be officially listed in the upcoming months. Another species is identified as a high priority species at risk (SAR) (See Appendix T for a detailed listing).

While the elements of Army growth are covered under the current programmatic agreement with both USFWS and NMFS. Additional consultation with the USFWS and NMFS will be required if conditions change from what is currently proposed and what is observed on the ground at the installation level when the units actually start training.

4.11.7.2 Environmental Consequences

CS/CSS, Full Sustainment BCT. The overall effect to vegetation at Fort Lewis from the addition of a CS/CSS or Full Sustainment BDE alternative is expected to have a minor (low) impact on the listed species on or contiguous to the installation, or within critical habitat designated onsite, that would increase as the intensity of ground disturbing and human activity increases. Ground disturbances that violate the 50-meter buffer areas on Fort Lewis may result in indirect effects to fish as a result of riparian corridors and stream banks being impacted. In addition, habitat alteration from ground disturbance may convert habitat from suitable to unsuitable for some species, especially species associated with open prairie habitat. An increase in the mortality rate of wildlife species, including avian species, is expected as the potential for vehicle or aircraft strikes increase.

IBCT, HBCT, Stryker BCT, and Multiple BCTs. The expected impact from an additional 3,500 to 7,000 Soldiers and their equipment is expected to be moderate (medium). Impacts to vegetation in prairies would likely be high if maneuver occurred in off-trail or off-road surfaces. Any damage to prairie vegetation would take years to be

re-established and recover. As the number of vehicles increase, impacts are expected to increase to candidate species on the installation as well. Also, increased human presence and vehicular traffic could potentially cause reproductive failure for ground nesting birds. Increased disturbance to vegetation at the installation may result in bare ground and expansion of non-native species with an overall decrease in the native component.

4.11.8 Wetlands

4.11.8.1 Affected Environment

Fort Lewis contains approximately 4,500 acres of wetlands (Army Environmental Database-Environmental Quality, (n.d)) spread over 86,000 installation acres. The installation has six lakes or marshes that are over 100 acres in size. Wetland types include emergent, scrub-shrub, and forested. Fort Lewis limits the types of activities that can occur within 50 meters of all wetlands on the installation. (Draft INRMP, Fort Lewis, 2006) Off-road vehicle traffic, bivouacking, digging, and assembly areas are prohibited within the 50 meter buffer.

4.11.8.2 Environmental Consequences

CS/CSS, Full Sustainment BCT. There is anticipated to be a minor (low) impact on installation wetlands as a result of the restationing of additional Soldiers (1,000 to 3,500) at Fort Lewis. Training activities would be limited to established training areas. Trainers are provided an Environmental Coordination Map that delineates all sensitive resources on the installation and their associated restrictions/prohibitions.

IBCT, HBCT, Stryker BCT, and Multiple BCTs. Impacts to wetland areas are expected to be moderate (medium) under current field conditions. Failure of hardened low water crossing approaches may occur unless these areas are restored or fortified. The potential exists for additional Soldiers (3,500 to 7,000) to increase groundwater withdrawal that may impact Murray Creek; and hardscaping of nearby surfaces may result in decreased recharge rates within the watershed.

4.11.9 Water Resources

4.11.9.1 Affected Environment

Surface Water

Four major source water drainage basins occur on Fort Lewis: the Nisqually River basin, the Sequelitchew Creek basin (including American Lake), the Deschutes River basin, and the Chambers Creek basin. The Nisqually River crosses through the installation and empties into Puget Sound. There are 29 lakes on the installation.

Stormwater

Surface runoff from portions of the cantonment area is conveyed via drainage facilities to Puget Sound and other surface waters on Fort Lewis. Most stormwater flow on Fort Lewis passes under Sequelitchew Creek in culverts and then continues as a

constructed storm drainage channel that discharges to the Puget Sound. The stormwater collection and conveyance system is currently at capacity for most of the cantonment area. Any additional construction in this area requires that stormwater be infiltrated on site.

Water Supply and Demand

Fort Lewis operates four public water systems that are served entirely by groundwater sources. The primary water system provides potable water to over 30,000 people in the cantonment area. The three other potable water systems serve areas on the Fort Lewis Military Reservation. These include the Golf Course, Ammunition Supply Point (ASP), and Range 17 potable water systems.

Fort Lewis has adequate source capacity and storage capacity to serve an effective population of over 40,000. There are eleven wells and a protected spring source, Sequalitchew Springs. The total supply capacity of Sequalitchew Springs and the nine active wells is 19,650 gpm. Recent demand for water in the cantonment area has ranged from approximately 2.8 to 13.3 MGD (1,944 to 9,236 gpm), with an average demand of approximately 4.9 MGD, or 3,402 gpm.

There are twelve water storage reservoirs that serve the system and have a total storage capacity of 6.9 MGD (4,792 gpm). There is also an emergency tie-in with the city of DuPont to allow either party to provide water to the other during critical periods. The Army plans to privatize the potable water distribution system at Fort Lewis.

Water Rights

Fort Lewis asserts a Federally reserved water right for all its consumptive uses, present and future. Fort Lewis currently holds water rights claims for several of its sources.

Wastewater

The wastewater treatment system on Fort Lewis collects industrial and domestic wastewater from the Main Post, North Fort, McChord AFB, Veterans Administration Medical Center, and Camp Murray. All wastewater collection lines on the installation are separate from the stormwater runoff and drainage system.

The installation's wastewater treatment system has a permitted capacity of 7.6 MGD (5,278 gpm) and design capacity of 15 MGD (10,417 gpm). In 2003, the wastewater treatment plant treated a total of 1,049 MG of wastewater, with an average of 3.6 MGD (2,500 gpm).

The Army plans to privatize the wastewater treatment system at Fort Lewis.

4.11.9.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs.

The addition of 1,000 to 7,000 Soldiers is anticipated to have minor (low) impacts to Fort Lewis; with very low impacts expected from the addition of an IBCT. Given the existing

population of Fort Lewis, impacts to the watershed, water demand, and associated treatment systems. Although water consumption and vehicle washing would increase, there is more than ample capacity at the water and wastewater systems to handle the increase in activities. The installation would need to revisit their Storm Water Pollution Prevention Plan (SWP3) to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

Erosion from the use of field-driven heavy tracked vehicles may increase sediment loading in receiving waters and degrade water quality. Motorpool activities and washing of field-driven heavy-tracked vehicles would produce an increase on water demand and associated treatment. Such an increase may require upgrades to the installation's existing water and wastewater treatment system or new water/wastewater infrastructure if the footprint is in remote areas.

4.11.10 Facilities

4.11.10.1 Affected Environment

Major land uses within the Fort Lewis boundary include the cantonment area (10,603 acres) and training areas (75,573 acres). The cantonment area serves as the center for most activities on Fort Lewis, other than field training. It supports residential, administrative, commercial, and industrial activities, as well as Gray Army Airfield. There are approximately 4,400 buildings on Fort Lewis, about half of which are used for housing (US Army, November 2004).

4.11.10.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs.

There would be significant (high) impacts to the facilities at Fort Lewis with any increase of Soldiers to the installation. The addition of any additional units with 1,000 Soldiers or more would place a major burden on the existing facilities at this installation. There is not sufficient family housing to accommodate additional married Soldiers, forcing virtually all newly assigned Soldiers and their Families to reside off post. The additional housing and travel costs place an economic burden on married Soldiers in the lower enlisted grades. Units would be placed in temporary buildings until permanent facilities could be built. These challenges are substantial with as few as 1,000 additional Soldiers and would be magnified with the addition of HBCTs.

The installation has numerous land use constraints, and would be extremely challenged to find sufficient land on which to build facilities for newly arriving units. The proposed action would require the construction of new buildings, and land use constraints place enormous challenges to building new facilities within the cantonment area. Existing barracks and family housing units would be used to accommodate many of the new

Soldiers. The remainder would reside off-post. Additional socioeconomic, utilities, and housing studies would likely be required to evaluate this scenario as well.

Activities within the training and range areas would be limited to existing firing ranges and roadways. These activities would have to be scheduled to coordinate with existing mission facilities. The addition of a HBCT, Stryker BCT, or Multiple BCTs would likely result in a major increase in facilities use. These BCTs may exceed the capacity of the installation to accommodate the proposed action. Fort Lewis has neither sufficient land on which build new facilities, nor does it have sufficient training ranges and maneuver areas to support multiple BCTs.

4.11.11 Energy Demand/Generation

4.11.11.1 Affected Environment

Electricity. Fort Lewis purchases wholesale electrical power from Tacoma Power (a division of Tacoma Public Utilities) at four separate primary delivery points (substations): Army Central, Madigan, South, and Sequelitchew. These substations are located within the main cantonment area and are supplied by Tacoma City Utility's 110-kilovolt (kV) Boise Cascade-Fort Lewis Loop transmission system (C.H. Gurnsey and Company 1997). Fort Lewis used approximately 211,472 megawatt hours of electricity in 2003 (Howell 2004). The Army plans to privatize the electric utility system at Fort Lewis, which will entail transferring all ownership, maintenance, repair, and replacement responsibilities for this system over to a private contractor.

Natural Gas and Fuel Oil. Natural gas and fuel oil are the primary sources of heating energy. Both firm and interruptible natural gas are supplied to the installation by Puget Sound Energy, with fuel oil used as a backup to interruptible gas supplies when they are turned off (CH2M HILL 1994a). The total quantity of natural gas consumed on Fort Lewis in 2003 was 12,719 million British thermal units (Howell 2004). The total amount of fuel oil consumed in 2003 was 1,068,915 gallons.

4.11.11.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs.

The expected impact of any of the proposed actions to Fort Lewis is moderate (medium) in terms of energy usage and generation. The existing energy infrastructure at both installations has sufficient excess capacity to readily absorb the addition of 1,000 to 7,000 Soldiers, including their Families and mission support. In order to accommodate any new mission activity over and above the CS/CSS, an initial capital investment may be required to extend the existing energy infrastructure to meet the new demand. It is unlikely that the capacity of the electrical and natural gas distribution systems would be exceeded.

4.11.12 Land Use Conflicts/Compatibility

4.11.12.1 Affected Environment

Fort Lewis occupies 86,176 acres of land. There are three categories of land use at Fort Lewis: the cantonment area, including administrative, residential, and open spaces (10,603 acres); training areas, such as maneuver and special uses (75,573 acres); and Gray Army Airfield. Recreational uses and commercial timber harvests occur on the installation. Two impact areas are located in the central portion of the installation and are surrounded by training areas. Gray Army Airfield is located in the southern portion of the cantonment area.

Land use at Fort Lewis is primarily governed by the *Fort Lewis Real Property Master Plan – Volume I* (RPMP). This plan, based on military needs, allocates sufficient space to accommodate activities in compatible use zones, and serves as a screening mechanism to ensure new activities are provided space in the appropriate areas (US Army, November 2004). This zoning was based on a previous high population of 26,000 troops. This RPMP did not anticipate a population increase of up to 32,000 troops for the project FY 2011 end state or the additional troop growth above the FY 2011 end state suggested with any of the alternatives in this EIS.

4.11.12.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs.

There would be moderate (medium) short and long-term environmental impacts on installation land use due to the presence of an additional 1,000 to 7,000 Soldiers and their family members assigned to the installation.

The installation would not have enough existing facilities, located in areas with comparable land uses to accommodate an additional CS/CSS unit. New or existing facilities would not be contiguous, distant from Soldier support facilities and training and maneuver ranges. Building new facilities would require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. This, in turn, would cause a measurable decrease of the installation's capacity to train Soldiers. Building new facilities could also require construction on, or immediately adjacent to, environmentally sensitive areas, requiring extensive, and/or expensive mitigation actions.

4.11.13 Hazardous Materials/Hazardous Waste

4.11.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage, transport, and disposal of hazardous materials and wastes at Fort Lewis. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO.

Units and activities on Fort Lewis typically use hazardous materials such as fuels, paints, solvents, lubricants, coolants, and sanitation chemicals. Hazardous waste is generated as a result of facility and equipment maintenance, medical care activities, and Soldier training. Fort Lewis operates as a permitted large quantity hazardous waste generator (RCRA ID# WA9214053465). (Fort Lewis Directorate of Public Works, 2005) Fort Lewis has several plans in place to help manage hazardous materials and waste including a Pollution Prevention Plan; Installation Spill Contingency Plan; Spill Prevention, Control, and Countermeasures Plan; and Pest Management Plan.

4.11.13.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs. It is anticipated that Fort Lewis would experience minor (low) long-term impacts from hazardous materials and waste generation. Fort Lewis may be required to minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance; and waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

An increase in the use of hazardous chemicals may be seen in the cantonment and training and range areas. Demolition, renovation, and construction would mostly likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as an increase in the use of pesticides due to the addition of family housing and other facilities. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. Waste management programs may be updated or expanded as needed. Generation and management of petroleum storage tanks, ordnance and explosives would increase, but would continue to be managed in accordance with current procedures and regulations.

4.11.14 Traffic and Transportation

4.11.14.1 Affected Environment

The ROI for the affected environment for traffic and transportation aspects include Fort Lewis and the western portion of Pierce County, including the communities of DuPont, Lacy and Lakewood. Major road routes in the region include I-5, a north-south interstate highway that separates North Post from the main cantonment area. Other major routes in the area include US Route 101 (approximately 20 miles away) and Washington State Routes 7, 507 and 510.

4.11.14.2 Environmental Consequences

CS/CSS. There is expected to be a minor (low) impact on traffic and transportation systems to Fort Lewis due to the presence of an additional 1,000 Soldiers and their family members assigned to the installations. Spread across their respective ROIs, the populations would have a minor impact on the overall traffic congestion in the neighboring communities. The additional population may contribute nominally to traffic

volume on each of the installations, and is expected to slightly reduce the LOS on the installations' road network. There may be a slight increase in traffic volume during peak morning and evening hours.

Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs. There is expected to be moderate (medium) would be moderate short and long-term impacts on traffic and transportation systems to the installation due to the presence of an additional 3,000 to 7,000 Soldiers and their family members assigned to the installation. The increase in off-post traffic would have a medium impact on traffic in the community overall and could contribute to a decrease in the LOS in the road network leading to both installations, particularly during peak morning and afternoon travel periods where traffic is expected to be more congested. This level of increase in population could also have a moderate impact on the traffic volume on both installations, and could cause a minor decrease in LOS on some of Fort Lewis' arterial routes.

4.11.15 Cumulative Effects

The most important cumulative effects are expected from noise impacts to the surrounding communities and local tribes. Direct and indirect impacts from (short-term) construction noise, simultaneously with increased training activities; and combined with any off-post development expected to accompany growth would continue to amplify noise issues off-post, especially with the potential for changes in noise contours on the installation. The need for further (detailed) analysis may be possible.

Changes in land use may also impact the number of candidate species on the installation, which could potentially influence the need to list species under the Endangered Species Act. Such listing could have significant impacts on training due to the time and cost associated with compliance.

4.12 FORT POLK, LOUISIANA

4.12.1 Introduction

Fort Polk is located in south-central Louisiana and consists of Army-owned lands plus U.S. Forest Service-owned lands used by the Army under a special use permit. The Main Post of Fort Polk is located in Vernon Parish and consists of Army-owned land in the northern portion and Forest Service-owned land in the southern portion [also known as the Intensive Use Area (IUA)]. Land within the IUA is used primarily by the military under the special use permit, which also allows the Army to use the Forest Service fee-owned land to the south of the IUA in an area referred to as the Limited Use Area (LUA). The IUA and the LUA constitute the Vernon Unit of the Calcasieu Ranger District of the Kisatchie National Forest. The Peason Ridge training area consists of Army-owned land situated in portions of Sabine, Natchitoches and Vernon Parishes. Peason Ridge is located approximately 15 miles northwest of Fort Polk's Main Post area. The Army also has a permit to use the Special Limited Use Area (SLUA), or "Horse's Head" area, approximately one mile north of Peason Ridge in the Kisatchie Ranger District of the Kisatchie National Forest (Figure 4.12-1) (USACE, 2002). Table 4.12-1 lists the real property acreage designations for each area.

Table 4.12-1. Army and Forest Service Real Property Acreage on Fort Polk

Real Property Parcel	Administering Agency	Size (acres)
Main Post	Army	66,418
Peason Ridge	Army	33,491
Intensive Use Area	Forest Service	40,506
Limited Use Area	Forest Service	44,799
Special Limited Use Area (Horse's Head)	Forest Service	12,820
Total		198,134

Fort Polk has approximately 136,000 acres of maneuver area suited for vehicle and non-vehicular military training. It has long supported armored/mechanized unit training and dismounted infantry unit training, and is the Army's Joint Readiness Training Center (JRTC). The Joint Readiness Training Center is the Army's premier combat training center. JRTC is one of the three Combat Training Centers (CTC) that conduct thorough, realistic, multi-echelon, joint and combined arms training. The purpose is to train leaders to deal with complex situations; to create flexible, skilled Soldiers; and develop highly proficient, cohesive units capable of conducting operations across the full spectrum of conflict. JRTC is the busiest of the three CTCs. In FY 2006, JRTC executed seven Mission Rehearsal Exercises (MREs) and is scheduled to conduct nine in FY 2007. In the last 24 months, the majority of brigades training at JRTC deployed shortly after their rotation to OIF/OEF (Polk, 2007).

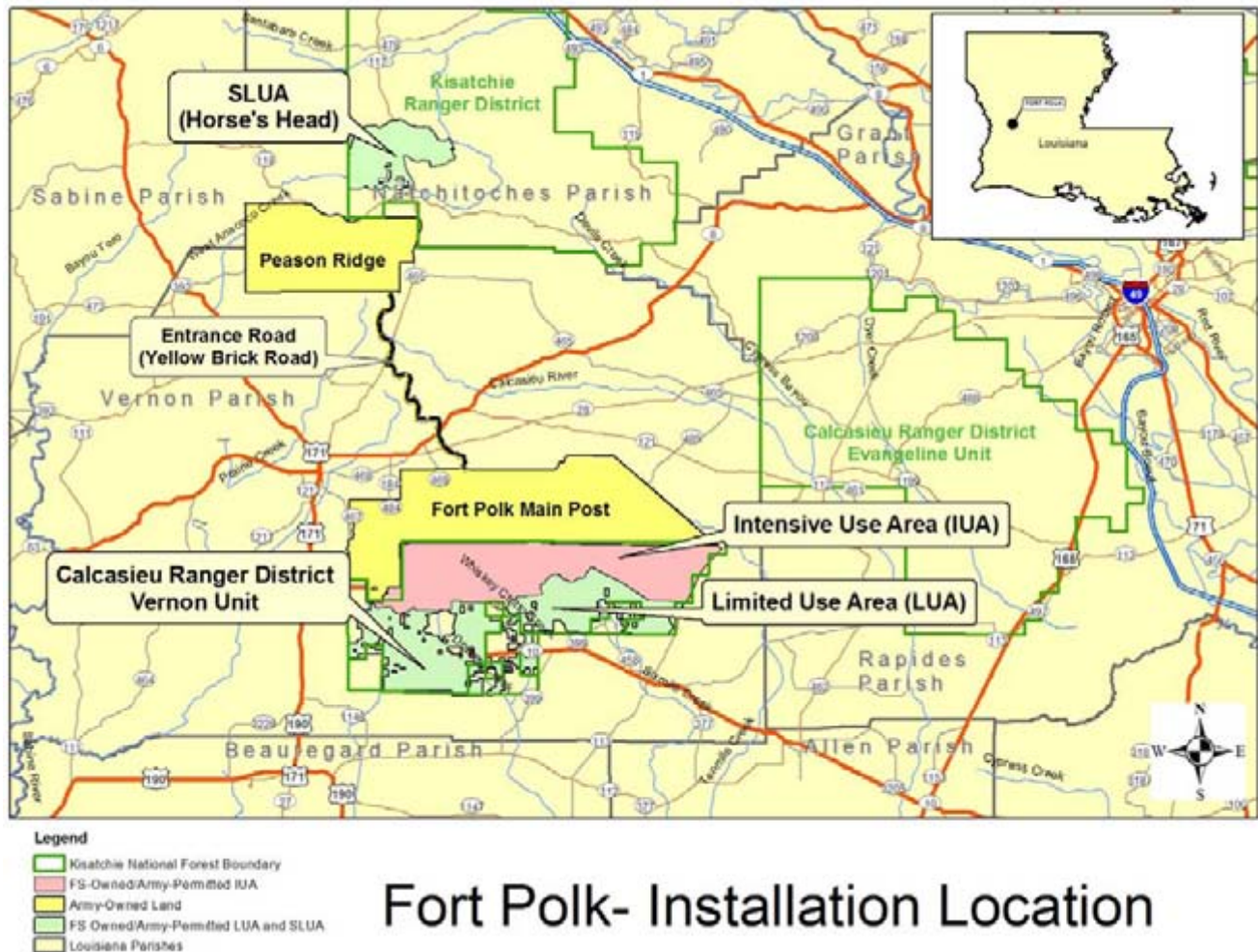


Figure 4.12-1 Fort Polk

Fort Polk is home to the 1st Combat Support Brigade (CSB) Maneuver Enhancement (ME) Provisional (P) and the 4th Brigade 10th Mountain Division (4/10th) Combat Team Unit of Action (BCT/UA), which can quickly deploy anywhere, in the world to protect our nation's interest. The 1st CSB (ME) (P) is the most deployed unit of its size in the Army. Since 2001, the 1st CSB (ME) (P) has provided combat ready engineer, military police, medical, dental, chemical, transportation and other specialties to commanders operating in 19 different countries. 1st CSB (ME) (P) units continue to be in high demand in support of the Global War on Terrorism and its span of control is continually expanding.

This year the 1st CSB (ME) (P), the 88th QM CO consisting of 711 personnel will join the organization. In FY 2008 and FY 2009 four units, with 304 Soldiers, will activate under the 1st CSB (ME) (P) (Polk, 2007).

The 4/10th BCT is on the of the Army's new modular Brigade Combat Teams and activated at Fort Polk in January 2005. The 4/10th BCT's intensive training effort culminated in November 2005, with a Mission Rehearsal Exercise at JRTC. Elements of the 4/10th BCT and specialized Task Forces represent 30% of all brigade personnel

deployed over to Afghanistan in support of Operation Enduring Freedom in February and March of 2006 (Polk, 2007).

Fort Polk range infrastructure is in good condition. As a Training Center its primary capabilities include a large force-on-force maneuver area and an instrumented live-fire maneuver area. Encroachment from urbanization is not yet a challenge, but there are other concerns that could impact training.

Table 4.12-2 contains the Fort Polk’s VEC ratings for each of the various stationing action scenarios.

Table 4.12-2. Fort Polk VEC Ratings

Fort Polk					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Very low	Low	Low	Medium	Medium
Airspace	Very low	Low	Low	Low	Low
Cultural Resources	Very low	Low	Low	Medium	Medium
Noise	Very low	Low	Medium	Medium	Medium
Soil Erosion Impacts	Very low	Low	Medium	High	High
Biological Resources	Very low	Low	Low	Medium	High
Wetlands	Very low	Low	Low	Medium	Medium
Water Resources	Very low	Low	Medium	Medium	High
Facilities	Low	Medium	Medium	High	High
Socioeconomics	Medium	Medium	Medium	Medium	High
Energy Demand/ Generation	Very low	Low	Low	Medium	Medium
Land Use Compatibility	Very low	Low	Low	High	High
Haz Mat/ Haz Waste	Low	Low	Low	Low	Low
Traffic and Transportation	Low	Low	Low	Low	Low

4.12.2 Air Quality

4.12.2.1 Affected Environment

The JRTC and Fort Polk is located in Air Quality Control Regions (AQCR) 106 and 022. The ROI for air quality affected is defined as AQCRs 106 and 022. The JRTC and Fort Polk is primarily in Vernon Parish, with small portions of the post (Peason Ridge Training Area) extending into Sabine and Natchitoches Parishes. England Industrial Airpark, Fort Polk's primary departure and return point for deploying units, is located in Rapides Parish (AQCR 106). Air quality in all four parishes meets or exceeds the NAAQS as established by USEPA; therefore, these areas are considered attainment areas.

Fort Polk is designated as a major stationary source of air pollutants and operates under a CAA Title V Operating Permit. Under the Title V Operating Permit, permitted stationary sources include gasoline and JP8 (jet fuel) storage, fueling and dispensing facilities, paint booths, generators, boilers, wastewater treatment facilities, degreasing operations, solvent reclamation, munitions detonation, and engine testing.

In addition to stationary sources, air pollutants are generated at the JRTC and Fort Polk by activities such as fugitive dust from training vehicles, exhaust emissions from training vehicles, aircraft engine emissions, decomposition products of propellants, obscurants, pyrotechnics, explosives, and emissions from prescribed burning and wildfires. In 1989 Fort Polk received an exemption for air emissions resulting from fugitive dust from vehicles, smoke from obscurant burning fog oil and decomposition, and in-place detonation of small explosives associated with training exercises conducted within the boundaries of the military reservation and Peason Ridge training. This exemption is still in effect for Fort Polk. Although air quality standards may be exceeded locally at source points within the installation boundary during training events, the events do not cause exceedances or visual obstructions outside JRTC and Fort Polk Military Reservation.

Construction of new support facilities and training targets would also result in short-term increased criteria pollutant emissions. These proposed increases would not violate the PSD or any other environmental rule or regulation.

4.12.2.2 Environmental Consequences

CS/CSS. Short- and long-term very low (minimal) adverse impacts to air quality are expected. The restationing of a CS/CSS unit and its 1,000 Soldiers and family members would have virtually no long-term impact to regional air quality. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality. Short-term intermittent minor adverse impacts would be expected within the ROI as a result of construction activities, training exercises, and increased automobile use. Heavy construction equipment and trucks would emit minor amounts of NO_x, PM-10, CO, SO_x, and VOCs and are not considered to have a long-term impact on regional air quality.

Full Sustainment Brigade. Short- and long-term low (minor) adverse impacts to air quality are expected. Under the Full Sustainment Brigade scenario, the increase of 3,000 Soldiers and their Families, and the additional emissions from training requirements are expected to result in minor increases in emissions. Construction-related emissions would result in localized, short-term elevated air pollutant concentrations; however, they are not anticipated to have an overall significant affect on regional air quality. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

IBCT. Short- and long-term low (minor) adverse impacts to air quality are expected. Under the IBCT scenario, it is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of 3,500 Soldiers and their Families would be greater, long-term impacts than those resulting from training. Emission sources include equipment required to support the installation (i.e., fuel storage and dispensing, boiler and incinerator operations). Additionally, under this scenario, it is anticipated that more training/operations would occur away from established roads and tank trails.

HBCT. Short- and long-term medium (moderate) adverse impacts to air quality are expected. As with the IBCT unit scenario, the influx of Soldiers and their Families to the project area is expected to be the primary source of stationary and mobile source emissions. The influx of an additional 500 Soldiers and their Families (total of 4,000), above that described under the IBCT scenario, is expected to result in emission increases. Although air quality within Fort Polk and the surrounding community is expected to experience and increase in mobile and stationary source emissions associated with this unit scenario, increased emissions are expected to remain localized and produce no substantial change to regional air quality.

Multiple BCTs. Short- and long-term medium (moderate) adverse impacts to air quality are expected. The addition of 7,000 Soldiers and their Families would result in additional emissions from sources described in the unit scenarios above. Increases in emissions from mobile and stationary sources would occur due to direct increases in installation population and training activities. While increases in emission are expected under this scenario, they would tend to remain localized a produce no significant impact to regional air quality.

4.12.3 Airspace

4.12.3.1 Affected Environment

Fort Polk has 255 square miles of FAA-designated Special use airspace (with restrictions), up to 35,000 feet. The installation has access to this airspace continuously, and is controlled by the FAA of Houston, TX. (US Army Corps of Engineers, 2002)

4.12.3.2 Environmental Consequences

CS/CSS. Long-term very low (minimal) adverse impacts are expected. It is anticipated that the activities associated with an increase of 1,000 Soldiers would result in a minimal increase activities within the cantonment and training and range areas. Activities within the training and range areas would be limited to existing firing ranges and roadways. These activities would have to be scheduled to coordinate with existing mission activities.

Full Sustainment Brigade, IBCT, HBCT, and Multiple BCTs. Long-term low (minor) adverse impacts to airspace operations is expected from these unit scenarios at Fort Polk. Air space use is not expected to change on Fort Polk; however the intensity of that use is expected to increase. Use of the installation air space would be scheduled to coordinate with existing mission activities. The addition of these units to Fort Polk would increase operations of UAVs, and use of this airspace would continue to be managed through scheduling and balancing training requirements with airspace availability. Where existing airspace is insufficient, or already saturated with military activity, it is expected that the installation would request additional special use airspace designations from the FAA. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource (US Army Corps of Engineers, 2002). Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use.

4.12.4 Cultural Resources

4.12.4.1 Affected Environment

There are no historic buildings or structures at Fort Polk. All of the installation has been surveyed for archeological sites and all eligible sites are marked as off-limit areas.

The BRAC program is not expected to adversely impact Fort Polk.

4.12.4.2 Environmental Consequences

CS/CSS. Short- and long-term very low (minimal) adverse impacts to cultural resources are expected. Under a CS/CSS unit scenario, it is anticipated that there would be minimal off-road training. The relatively small number of vehicles and Soldiers would likely have very little impact on cultural resources, particularly because areas with archeological resources are designated off limits. Because the installation does not contain historic structures, there are no impacts to historic resources.

Full Sustainment Brigade and IBCT. Short- and long-term low (minor) adverse impacts to cultural resources are expected. There is a low probability of impact to archeological resources within the training and range areas under these two unit scenarios because areas with archeological resources are designated off limits. Training activities are expected to avoid sensitive areas. The increased number of

Soldiers present within training areas could lead to greater instances of inadvertent and unintentional impacts to archaeological resources. The IBCT vehicles are intended to be driven on road more than off road.

HBCT and Multiple BCTs. Short- and long-term medium (moderate) impacts to cultural resources are expected due to the increase of additional Soldiers and equipment under these unit scenarios. Even with designated off-limits areas, the higher number of personnel presents an increase in the probability for archaeological resources to be disturbed due to increased presence and foot traffic. In addition, the heavy tracked vehicles of a HBCT could impact previously undiscovered archaeological resources.

4.12.5 Noise

4.12.5.1 Affected Environment

Fort Polk's noise environment consists of private and public activities such as hunting, commercial air traffic, and logging operations nearby the post. On-post military operations include three aircraft corridors that support fixed-wing and helicopter training; small and large caliber weapons firing; and armored training.

The small arms ranges at Zion Hill and Peason Ridge did not need noise contours as even .50 caliber rifle noise did not extend beyond the installation border. On a "busy" training day, noise from large caliber weapons fire and artillery extends 1,000 to 5,000 meters from the installation boundary and is categorized in a normally incompatible noise zone (Noise Zone II). Noise Zone III, classified as incompatible, does not extend beyond the installation. Noise measurements taken by CHPPM show that the noise environment around Fort Polk is slightly higher than the predicted level, but is overall indicative of ambient noise levels throughout the entire on- and off-post environments.

4.12.5.2 Environmental Consequences

CS/CSS. Short- and long-term very low (minimal) adverse impacts are expected. The most important sources would be from small arms weapons fire and some maneuver; which, when compared to the current training environment is largely insignificant. No noise contours would be needed. Noise from small arms ranges would not be heard in off-post locations. Wildlife in the area is noise tolerant of the current training environment.

Full Sustainment BDE. There is expected to be low (minor) short- and long-term adverse impacts from noise associated with an addition of 3,500 Soldiers (plus maneuver equipment). General impacts related to small arms weapons fire and maneuver would have similar impacts as the CS/CSS. Noise contours would not be needed. Noise management practices should be reviewed within the installation's INRMP, ESMP, and IENMP.

IBCT. Short- and long-term medium (moderate) adverse impacts are expected from noise generated under this scenario. Noise may be elevated at off-post residential areas during periods of heavy training; however, the level of noise associated with this action would have an overall lower impact than what is heard during normal training operations. Noise from simulated Artillery rounds and .50 caliber blank weapons fire and small arms fire does not impact RCW nesting or reproductive success, even for those inhabiting direct fire ranges and impact areas (Delaney et al., 2000).

HBCT. Short- and long-term medium (moderate) adverse impacts are expected. Noise management practices and mitigations within the INRMP and IENMP should be reviewed. Short- and long-term impacts may be experienced by wildlife receptors including threatened and endangered species, though these impacts are not expected to be significant. Noise contours would not change, however it is possible the installation's IENMP would need updating by CHPPM.

Multiple BCTs. An overall short- and long-term medium (moderate) adverse impact from noise is expected. Noise zones would likely stay the same as they currently, however, CHPPM would need to update the installation's IENMP and ensure proper mitigations recommendations are being implemented. Noise levels outside of the installation boundary would be elevated during periods of heavy training. New noise contours may be needed, to include the addition of contours for small arms firing, as this activity would likely greatly increase usage of ranges.

4.12.6 Soil Erosion

4.12.6.1 Affected Environment

Fort Polk is located in the Coastal Plain province and is characterized by a rolling topography moderately to heavily covered with second-growth timber. Local relief is generally less than 100 feet while the terrain at Peason Ridge (northwest portion of installation) is low well-rounded hills of less than 500 feet.

Soils on Fort Polk have been grouped into 6 units based on similarity of engineering characteristics. The majority of Fort Polk is mantled with a fine-grained silty sand topsoil. The Soil Conservation Service classifies the Fort Polk soils such as the thick layer of sand, clay and alluvium as highly erodible. (U.S. Department of the Army, 1992).

4.12.6.2 Environmental Consequences

CS/CSS. Short- and long-term very low (minimal) adverse impacts to soils are expected. Activities off of existing roadways or outside of existing training areas are not anticipated under this unit scenario.

Full Sustainment Brigade. Short- and long-term low (minor) adverse impacts to soils are expected. Increases in foot and vehicular traffic are expected to result in minor impacts to areas along roadways and trails on the installation.

IBCT. Short- and long-term medium (moderate) adverse impacts to soils are expected. Increases in foot and vehicular traffic are expected to result in minor impacts to areas along roadways and trails on the installation. Under the IBCT unit scenario, off-road movement would impact soil erodibility based on disturbance to vegetation and soil surfaces, and rainfall intensity.

HBCT. Short- and long-term high (major) adverse impacts to soils are expected. The HBCT would have a substantial impact on roads and off-road areas due to the increase in the number of tracked vehicles in an HBCT, the weight and mobility characteristics of the tracked vehicles, and the intensity of use of the training areas on the installation. Vehicular maneuvers, turns and traction result in direct impacts to soil, particularly those areas prone to erosion.

Multiple BCTs. Short- and long-term high (major) adverse impacts to soils are expected. Multiple BCTs, given that the number, size, variety and impact of wheeled and tracked vehicles, would increase the probability of soil compaction and impact due to increases in intensity of use of training and range areas. Off-road traffic and maneuvers would increase, which would have a significant negative impact on vegetation and surface soils. Conditions for potential erosion would also increase.

4.12.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.12.7.1 Affected Environment

Fort Polk has 59 documented amphibian and reptile species, more than 20 species of mammals, and 221 avian species. However, Fort Polk currently records only one ESA listed animal species and one candidate species as occurring on the installation. The candidate species is a priority Army species at risk. More information on this species can be found in Appendix T.

4.12.7.2 Environmental Consequences

CS/CSS. Very low (minimal) short- and long-term adverse impacts are expected. It is not anticipated that implementation of this level of Soldier strength would have any impact on the listed or candidate species found on the installation. Current management and conservation efforts of these species would be sufficient to ensure no impacts on the species.

Full Sustainment BDE and IBCT. Short- and long-term low (minor) adverse impacts are expected. It is anticipated that the implementation of either of these actions would have minor to no impact on the priority species found on the installation. Listed species and other special status species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents.

HBCT. Short- and long-term medium (moderate) adverse impacts are expected. It is anticipated that implementation of this level of Soldier strength may have an impact on the listed and candidate species found on the installation. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of this action may affect the listed species, the installation would be required to consult with the USFWS either informally or formally, depending on whether take is anticipated to occur. Part of the Vernon/Fort Polk Primary Core population of Red-cockaded Woodpecker (RCW) is located on Fort Polk. It is possible that implementation of the HBCT could affect the installations management and conservation of the RCW and impact recovery efforts onsite. This level of Soldier strength may also impact the installation's ability to implement the conservation measures identified in the candidate conservation agreement (CCA) that they are party to.

Multiple BCTs. Short- and long-term high (major) adverse impacts are expected. It is anticipated that implementation of either of these levels of Soldier strength would have a substantial impact on the listed, candidate and other sensitive species recorded on the installation. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of this action would most likely adversely affect the listed species, the installation would be required to consult with the USFWS informally and formally to address and assess the impacts of the action. This level of Soldier strength could also impact the landscape to the point that the installation could not achieve the installation recovery goals for the RCW as identified in the RCW recovery plan. This action could also jeopardize the species if minimization and/or conservation efforts are not sufficient enough to prevent a significant amount of take. In addition, this action may prevent the installation from implementing their current CCA, which could potentially lead to the U.S. Fish and Wildlife Service proposing to list the species. Listing of the species would have a significant impact on the installation's ability to train.

4.12.8 Wetlands

4.12.8.1 Affected Environment

Fort Polk contains approximately 9,000 acres of wetlands making up 4.6% of the total land coverage (INRMP, Fort Polk, 2004). Almost all of the wetlands are riparian.

4.12.8.2 Environmental Consequences

CS/CSS. Short- and long-term very low (minimal) adverse impacts on wetlands are expected as a result of the restationing of a CS/CSS unit to Fort Polk. Additional training activities would have little to no impacts on wetland areas.

Full Sustainment Brigade and IBCT. Short- and long-term low (minor) adverse impacts to wetlands are expected. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands by using the installations wetland planning level survey's/ GIS mapping and the installation INRMP. Using best management practices outlined in the INRMP, training would be conducted away from any possible wetland impacts.

HBCT. Short- and long-term medium (moderate) adverse impacts to wetlands are expected due to the presence of an additional 4,000 Soldier presence at Fort Polk. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands by using the installations wetland planning level survey's/ GIS mapping. Hardened stream crossing can be constructed to accommodate additional wheeled/tracked vehicles.

Multiple BCTs. Short- and long-term medium (moderate) adverse impacts to wetlands are expected as a result of the addition of 7,000 Soldiers to Fort Polk. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands in accordance with the installation INRMP. Additional training may require hardened crossings be established at stream crossings. Siltation from soil erosion may result in secondary impacts to wetlands.

4.12.9 Water Resources

4.12.9.1 Affected Environment

Watersheds

The Main Post lies within three major watersheds: the Lower Sabine River basin, Whiskey-Chitto River basin, and Upper Calcasieu River basin. Three watersheds, the Lower Sabine, the Upper Calcasieu, and the Lower Red-Lake latt, contain water bodies listed as impaired in 2002. TMDLs will be established for the pollutants of concern within these impaired water bodies.

The headwaters of many streams lie within the installation's boundaries. Five streams are either headwaters or tributaries to streams or rivers designated under the Natural and Scenic River System and are located within the watersheds of the JRTC and Fort Polk Military installation.

Groundwater

Groundwater is the principal source of drinking water for the JRTC and Fort Polk and Vernon Parish. The Williamson Creek, Carnahan, and Evangeline aquifers support water supply wells in the area of the JRTC and Fort Polk. The Evangeline aquifer is also the source of groundwater to the public-supply wells for the town of Pitkin, 5 miles south of the installation, and to domestic wells in the southern part of Vernon Parish. The Williamson Creek aquifer is the source of groundwater for public supply wells in the town of Pickering. The Carnahan Bayou aquifer is also a source of groundwater for public supply wells in the towns of Leesville and Simpson.

Water Supply

Water for South Fort Polk is supplied entirely by wells situated throughout the South Fort Polk area. These wells have a combined maximum capacity of approximately 7.8 million gallons per day (MGD). A sustainable daily yield for these water wells is approximately 5.2 MGD. Annual water use in 2000 was approximately 2.15 MGD. The South Fort Polk distribution system is generally in good condition and can be expected to provide sufficient quantities and pressures for domestic and fire flow requirements under baseline and projected populations.

Water for North Fort Polk is supplied entirely by wells situated throughout the North Fort Polk area. These well have a combined maximum capacity of approximately 4.2 MGD. A sustainable daily yield for these water wells is approximately 3.5 MGD. Annual water use in the North Fort and North Fort Housing was approximately 950,000 gallons per day in 2000. The North Fort Polk distribution system is also in good condition and can be expected to provide sufficient quantities and pressures for domestic and fire flow requirements under baseline and projected populations.

Wastewater

The JRTC and Fort Polk operates two wastewater treatment plants: the North Fort Wastewater Treatment Plant (NFWWTP), with a design flow of 1.4 MGD, and the South Fort Wastewater Treatment Plant (SFWWTP), with a design flow of 3.8 MGD. The JRTC and Fort Polk also operates three other wastewater treatment systems (Peason Ridge, Toledo Bend, and the Landfarm Pond). Each of these systems is relatively small and has design flows of less than 25,000 gallons per day.

The average daily combined wastewater discharge from both the NFWWTP and the SFWWTP has ranged from just below 2 MGD in 1995 to 3.5 MGD in 1992. Since 1992, the amount of wastewater discharged from the installation has declined significantly, primarily because of a decrease in population of more than 17,000 people and a decrease of approximately 1 million square feet in real property resulting from the transfer of the 5th Infantry Division from Fort Polk to Fort Hood. Average daily discharges in 2000 at the NFWWTP and the SFWWTP were 0.344 MGD and 1.74 MGD, respectively.

The Peason Ridge Sanitary Sewage Treatment Facility supports the sanitary sewage treatment requirements of the Peason Ridge Cantonment Area and the JRTC at the Peason Ridge Training Area. The treatment facility is a lagoon system capable of processing 2,400 gallons of sewage per day and a peak flow of 3.0 gallons per minute.

Stormwater

Industrial activities, including such transportation-related activities as vehicle maintenance, fueling, and washing, are currently permitted under the NPDES Industrial Activities permit program. The installation also obtains permits for construction activities disturbing more than one acre. Fort Polk also has permit coverage for its MS4.

4.12.9.2 Environmental Consequences

CS/CSS. An addition of a CS/CSS is anticipated to have a very low (minimal) adverse impact on water resources. Given the existing population of Fort Polk, the addition of a CS/CSS would not have significant impacts on the watershed, water demand, and associated treatment systems. Any new construction/land disturbance over one acre would require a stormwater construction permit.

Full Sustainment Brigade. Short- and long-term low (minor) adverse impacts on water resources are expected. Given the existing population of Fort Polk, the addition of a Full Sustainment BDE would not have a significant impact on the watershed, water demand, and associated treatment systems. Any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

IBCT. Such an addition is anticipated to have a moderate impact on Fort Polk water resources. The addition of an IBCT would most likely add to the sediment and erosion issues that the installation is already experiencing. Water demands and wastewater treatment would increase, but Fort Polk's water supply and water/wastewater infrastructure capacities are adequate. The installation would need to revisit their Storm Water Pollution Prevention Plan (SWP3) to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit.

HBCT. Addition of a HBCT would have a moderate impact on Fort Polk. The addition of an HBCT would add to the sediment and erosion issues that the installation is already experiencing. Motorpool activities and washing of field-driven heavy-tracked vehicles would increase water demand and associated treatment. The water supply and infrastructure capacities appear adequate for the increased demand. Fort Polk may need to construct new washing systems to manage heavy-tracked vehicles. The installation would need to revisit their Storm Water Pollution Prevention Plan (SWP3) to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit.

Multiple BCTs. Addition of multiple BCTs would have a significant impact on Fort Polk water resources. The addition of multiple BCTs would increase the sediment and erosion issues that the installation is already experiencing. Motorpool activities and washing of field-driven heavy-tracked vehicles would increase water demand and associated treatment. Fort Polk may need to construct new washing systems to manage heavy-tracked vehicles. The installation would need to revisit their Storm Water Pollution Prevention Plan (SWP3) to incorporate best management practices for any new training activities. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit which would entail

identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

4.12.10 Facilities

4.12.10.1 Affected Environment

The Joint Readiness Training Center (JTRC) and Fort Polk consists of three general land use categories: the cantonment area, training areas, and impact areas. The cantonment area of Fort Polk, divided into North Fort Polk and South Fort Polk, contains about 8,050 acres in the western portion of the installation and consists of administration, billeting, and family housing areas. It has been developed into a wide variety of land uses that comprise the elements necessary for a complete community. This includes the installation Post Exchange, commissary, housing and family support services, medical, and mission-support facilities.

4.12.10.2 Environmental Consequences

The impacts of the Proposed Action and other alternatives on utilities and communications are primarily related to projected increases in population on and off post. These were analyzed by estimating per unit consumption on generation rates using the most recently available data, and then estimating how total consumption or generation rates would change with the changed population. The increased consumption and generation were then compared with the ability of existing infrastructure to handle those changes.

CS/CSS. There would be minor impacts to facilities. It is anticipated that the activities associated with an increase of 1,000 Soldiers would increase facilities usage within the cantonment and training and range areas. Activities within the training and range areas would be limited to existing firing ranges and roadways.

Full Sustainment BDE. There would be medium short- and long-term environmental impacts to facilities. Increased Soldier strength of 3,000 to 3,500 would be reflected through increased usage and construction throughout the cantonment areas. Fort Polk and JTRC could support a Full Sustainment BDE. Increased activities within the training and range areas would be expected to cause long-term impacts due to increased human presence, as well as construction and training activities within the range and training areas. The installation real property management plan (RPMP) would require a review to allow for implementation of the ACP. A study using SIRRA would also be beneficial.

IBCT. Fielding an IBCT would also result in moderate short- and long-term impacts to facilities. The addition of an IBCT would potentially increase usage of cantonment assets beyond what is projected for a Full Sustainment BDE; however, a review of the installation RPMP along with other facilities and infrastructure studies may be able to accommodate the proposed action. Since Fort Polk and JTRC are scheduled to receive a BCT and other additional units in FY08, the possibility that increased construction

could occur in previously undisturbed land is likely. This could require an increased level of coordination with state and federal regulatory agencies.

HBCT. Unlike the IBCT, there would be significant short- and long-term environmental impacts to facilities. The addition of an HBCT would likely result in degradation of facilities within the cantonment. The establishment of an HBCT at Fort Polk and JTRC may exceed the capacity of the installation RPMP to accommodate the proposed action due to the lack of available space for expansion. If identified by the installation, additional coordination and consultation may be necessary for activities associated with an HBCT. An excess aggregate demand on facilities and infrastructure required by both scheduled incoming units and a HBCT could lead to an overall degradation of facilities quality.

Multiple BCTs. The establishment of multiple BCTs would also result in significant short- and long-term impacts to facilities. There is a high probability that multiple BCTs would increase congestion beyond the carrying capacity of the cantonment infrastructure. The lack of available building space would contribute to this. It is highly unlikely that the installation RPMP could accommodate this iteration of proposed action. The level of construction required to support scheduled incoming units and multiple BCTs is resource intensive and potentially beyond the ability of Fort Polk and JTRC to sustain. The excess aggregate demand on cantonment facilities and infrastructure required by multiple BCTs may lead to system degradation or non-compliant regulatory issues.

4.12.11 Energy Demand/Generation

4.12.11.1 Affected Environment

Electrical: The existing electrical system on the JRTC and Fort Polk is divided into two distribution systems that serve the two distinct cantonment areas of the installation. Each system is supplied by its own substation, through a commercial electric utility. Overall electricity use was 189,245 megavolt-hours in 2000.

Natural Gas: The natural gas system at the JRTC and Fort Polk was installed in 1942 and has served the majority of the installation's heating, domestic hot water, and institutional services (cooking, laundry, and the like) and some cooling requirements since its installation. Two commercial gas companies using separate transmission lines provide natural gas to South and North Fort Polk. In 2000, natural gas consumption at the JRTC and Fort Polk was 266,178 thousand cubic feet (KCF). Current supplies of natural gas are considered adequate based on the fact that the current 8-inch transmission line, which feeds the JRTC and Fort Polk, could deliver in excess of 400,000 KCF, which far exceeds historic demand levels.

4.12.11.2 Environmental Consequences

CS/CSS. A minimal impact in terms of energy usage and generation is expected. The existing energy infrastructure has sufficient excess capacity and scalability to readily absorb the addition of a CS/CSS unit.

Full Sustainment BDE. The likely impact of a Full Sustainment BDE is minimal. In order to accommodate any new mission activity, an initial capital investment would be required to extend the existing energy infrastructure to meet the new demand. That said, assuming other VEC needs are accommodated, the current electrical and natural gas distribution systems have sufficient capacity such that the addition of a Full Sustainment BDE would not necessitate expansion beyond any critical threshold.

IBCT. In terms of energy usage, this scenario is very close to the Full Sustainment BDE scenario, resulting in a similarly minimal impact.

HBCT. The HBCT scenario is likely to have a moderate impact on energy. The size and scope of the HBCT differs somewhat from the Full Sustainment BDE in terms of increased number of Soldiers and attendant facilities, resulting in a potentially higher energy use profile. While it is unlikely that the capacity of the electrical and natural gas distribution systems would be exceeded, they may be stretched to a relatively high percentage of maximum capacity at times of peak use.

Multiple BCTs. The addition of Multiple BCTs would have a moderate impact on the energy infrastructure as well as on the local community and the natural environment. While the addition of multiple BCTs would certainly require extensive construction and expansion of the existing energy infrastructure, this scenario is not likely to result in a new energy demand posture that exceeds the capacity of the existing energy infrastructure to meet that demand.

4.12.12 Land Use Conflicts/Compatibility

4.12.12.1 Affected Environment

Fort Polk consists of two land areas, the Main Post and Peason Ridge that are owned, operated, and managed by the Army. The IUA (Main Post south), LUA, and SLUA land areas are owned and managed by the Forest Service and used by the military for training (USACE, 2002). Fort Polk's Main Post is divided into two cantonment areas, and into several large training areas, including the IUA and the LUA. One cantonment area, South Fort Polk, is located along the western boundary of the fort and is the larger and more extensively developed of the two cantonment areas on the Main Post. The other cantonment area, North Fort Polk, lies in the northwest portion of the main post. Each cantonment area is divided into zones. An artillery range impact area covers most of the eastern to central portion of Fort Polk. Zion Hills Small Arms Impact Area is located in the southeastern part of the main post. Peason Ridge training area lies northwest of the main post. This area is divided into six sections. A third cantonment area lies on the east side of Peason Ridge, and the north-central region of Peason

Ridge is an impact area (U.S. Department of the Army, 1995). The SLUA, or “Horse’s Head”, area is located north of Peason Ridge. A case-by-case supplemental special use permit is required for the Army to train on the SLUA (USACE, 2002).

Table 4.12-3 presents the overall inventory of training activities occurring within the IUA, LUA, and SLUA on Fort Polk. Training activities are specific for each area of occurrence based on limitations identified in the special use permit.

Table 4.12-3 Inventory of Training Activities

Title of Activity	Description	Typical Vehicle and Equipment Types	Area of Occurrence ¹		
			IUA	LUA	SLUA
Cross-Country Dismounted Maneuvers	Movement of troops on foot off-road or on unimproved trails. May include crossing of streams and wetland areas. May also include occasional, brief road guards to allow safe passage of troops.	Wheeled and tracked vehicles (when mounted and dismounted maneuvers occur simultaneously)	X	X	X
Cross-Country Vehicle Maneuvers	Movement of wheeled and tracked vehicles off-road and on unimproved trails.	Wheeled and tracked vehicles with trailers	X	X ²	
Stream and Wetland Crossings	Fording of intermittent and perennial streams and wetlands by wheeled and tracked military vehicles at established crossing points.	Wheeled and tracked vehicles with trailers	X	X ^{2,3}	
Road Maneuvers (Mounted/Dismounted)	Troop marches, driver training, and other road-bound operations. May include occasional, brief road guards for safety.	Wheeled and tracked vehicles	X	X	X
Blackout Driving	Nighttime driving without headlights (no vehicle lights or "cat eye" lighting only).	Wheeled and tracked vehicles	X	X ^{2,4}	
Vehicle Convoy Operations	Movement of wheeled and tracked vehicles along designated routes. May include occasional, brief road guards for safety.	Wheeled and tracked vehicles	X	X	X
Firing of Blank Ammunition	Engagements between small units during force-on-force maneuver training exercises.	M2 (.50 caliber) and below ⁵	X	X	X
Use of Pyrotechnic/Artillery Simulation Devices	Simulation of direct/indirect artillery fires, use of smoke for screening/obscuring maneuver forces, and use of flares by designated personnel.	Various pyrotechnic/artillery simulation devices; all-terrain vehicles	X	X ²	
Obscuration Activities (Use of Fog Oil)	Production of visual smoke screen using vehicle-mounted	Wheeled and tracked vehicles, smoke generator	X		

Table 4.12-3 Inventory of Training Activities

Title of Activity	Description	Typical Vehicle and Equipment Types	Area of Occurrence ¹		
			IUA	LUA	SLUA
	generator.				
Airborne Operations	Insertion of troops into designated drop zones using parachutes.	Individual combat equipment, vehicles	X	X	
Low-Level Helicopter Flights/Aeroscout Reconnaissance	Flying of helicopter near treetop level and above.	Helicopters	X	X	X
Simulated Chemical Defense Training	Movement along routes to perform simulated chemical detection tasks, including simulated decontamination of vehicles and equipment.	"FOX" chemical detection vehicles, chemical suits, decontamination equipment, and simulated chemical/biological training aids (pepper sauce)	X	X	X
Simulated Biological Defense Training	Use of Biological Integrated Detection System (BIDS), vehicles, and equipment to simulate detection of biological agents along routes and at fixed locations.	BIDS wheeled vehicles and towed generators (dissemination of biological simulants and use of Micronaire backpack sprayer are not allowed on Forest Service lands)	X	X	X
Breaching of Obstacles/Mine Clearance	Breaching and removal of obstacles and simulated mines.	Wheeled and tracked vehicles, anti-mine equipment, road plows (road plows permitted in IUA only)	X	X	
Construction of Hasty Defensive Positions	Excavation of individual fighting positions (foxholes) dug using hand tools. All positions to be filled in upon completion of training exercise.	Hand tools	X	X ²	
Construction of Limited Defensive Positions	Excavation of individual and two person crew served fighting positions dug using mechanized equipment. All positions to be filled in upon completion of training exercise.	Small emplacement excavator	X	X ²	
Construction of Deliberate Defenses	Excavation/construction of vehicle positions, ditches, berms, and bunkers.	Small emplacement excavator, dozers, other engineering/excavatio	X		

Table 4.12-3 Inventory of Training Activities

Title of Activity	Description	Typical Vehicle and Equipment Types	Area of Occurrence ¹		
			IUA	LUA	SLUA
		n equipment			
Emplacement of Obstacles	Placement of concertina wire and burial of simulated mines along unpaved roads. All wire and simulated mines to be recovered at completion of training exercise.	Concertina wire, barbed wire, simulated mines	X	X ²	
Bivouacking/ Establishment of Troop Assembly Areas	Establishment of an area where troops eat, rest overnight, and perform minor equipment and vehicle maintenance. May involve day and night movement of vehicles to and from site.	Tents, supplies, equipment, wheeled and tracked vehicles	X	X	X ⁶
Communications and Surveillance Operations	Establishment of sites to coordinate communications and/or conduct surveillance of enemy forces.	Communications equipment, radio antennas, tents, radar equipment, camouflage nets, wheeled vehicles	X	X	X
Establishment of Combat Support Areas and/or Field Hospitals	Stockpiling, loading/unloading of supplies, logistics and maintenance operations, and medical treatment of simulated casualties. Includes hasty defensive positions.	Tents, equipment, supplies, kitchen/laundry/shower units, reverse osmosis (ROWPUs), wheeled and tracked vehicles, forklifts, engineering equipment (stationary), helicopters	X	X ²	
Vehicle Maintenance Operations	Performance of basic repairs to wheeled and tracked vehicles under field conditions.	Tracked, wheeled, and recovery vehicles	X	X	X
Vehicle/ Helicopter Fueling	Transferring of fuel from bulk containers/fuel tanks to tactical vehicles.	Fuel containers, wheeled and tracked vehicles, and helicopters	X	X	X
Vehicle Staging/ Assembly	Positioning of wheeled and tracked vehicles at fixed sites in preparation of other operations.	Wheeled and tracked vehicles, and trailers	X	X	X
Establishment of Aviation Assembly Areas	Tactical landing/securing of helicopters at a fixed location.	Helicopters, fuel trucks, wheeled vehicles	X	X	X ⁶
Helicopter Sling Loading	Loading/unloading of equipment, vehicles,	Helicopters, vehicles, various supplies and	X	X	X ⁶

Table 4.12-3 Inventory of Training Activities

Title of Activity	Description	Typical Vehicle and Equipment Types	Area of Occurrence ¹		
			IUA	LUA	SLUA
Operations	and/or personnel in training areas by helicopter.	equipment			
Helicopter Landings	Insertions/extractions of personnel in training areas by helicopter.	Helicopters, individual combat equipment	X	X	X ⁶
Small Arms Firing	Firing of individual and crew-served weapons for marksmanship qualification, up to and including .50 caliber and below (i.e., rifles, pistols, machine guns, grenade launchers, and rockets).	Small arms, tracked and wheeled vehicles	X		
Tank/Infantry Fighting Vehicle Gunnery	Firing and rehearsals for firing of family of tanks (i.e., M60, M1, M2, M3) from crew drills through qualification, subcaliber through live munitions, 120mm and below.	Tanks, support vehicles, tents, forklifts	X		
Artillery Firing	Firing of artillery (155mm and below) and mortars (120mm and below).	Wheeled and tracked vehicles and trailers, artillery and mortars	X		
Aerial Gunnery	Qualification tables I – XII firing 7.26mm machine guns, 2.75-inch rockets, 40mm grenade launcher, 20 – 30mm guns, and Hellfire missiles.	All rotary-wing aircraft, subcaliber through Hellfire missiles	X		
Artillery Impact and Detonation	Impact of 40mm grenades, anti-tank rocket launchers, and hand grenades, and detonation of grenades and other explosive devices.	Small arms	X		
Demolition	Training/test demolition of various objects using high explosive charges.	Trucks and other wheeled vehicles	X		

Source: Fort Polk, 2007

NOTES:

- (1) Vernon and Kisatchie Districts of Kisatchie National Forest: IUA = Intensive Use Area; LUA = Limited Use Area; SLUA = Special Limited Use Area ("Horse's Head). Under the Army's existing SUP with the Forest Service, all military activities at SLUA/Horse's Head require a separate, case-by-case SUP specifying the nature, location, and date/duration of the proposed activity.
- (2) Permitted in Limited Use Level 1 Training Areas (Johnsonville, Flatwoods, Rustville, Pitkin) but prohibited in Level 2 Training Areas (Providence, Marlow, Cravens)

- (3) Limited Use Area stream and wetland crossing points to be jointly approved by the Forest Service and Army, and hardened or bridged prior to crossing by military vehicles.
- (4) Permitted on selected roads in LUA; road guards required. Public notification required in some circumstances.
- (5) Firing of 7.62mm (M60) blank ammunition and below is permitted with RCW cluster boundaries. Firing of larger-caliber weapons within RCW clusters is prohibited.
- (6) Activities allowed only at designated sites.

Land use at Fort Polk is divided into two separate land ownership categories, Army-owned lands and Forest Service-owned lands. Table 4.12-4 contains the land use types, total acreages of land areas, and the corresponding land use requirements on Fort Polk.

Table 4.12-4- Land use at Fort Polk

Land Ownership	Total Training Land Acreage	Total Range and Impact Area	Total Maneuver Area	Total Unusable Acreage	Available Maneuver Acreage with SDZ	Available Maneuver Acreage without SDZ
Army-owned	91,049*	62,269	28,780	6,938	21,842	78,646
Forest Service-owned	98,125***	33,572	64,553	49,835	14,718	24,664**
TOTALS	189,174	95,841	93,333	56,773	36,560	103,310

Source: [LURS; Fort Polk and USACE Huntsville Center (by John Gallup & Associates and The Chosen Group), 2005]

* Does not include 8,050 acres in the cantonment area, 442 acres of leased lands, 387 acres in easements, 24.31 acres at Toledo Bend Recreation site, or 56.79 acres in railroad right-of-ways; total Army fee-owned land is 100,009.1 acres.

** 42,901 acres of Limited and Special Limited Use Lands are considered unusable for training.

*** Includes 40,026 acres of Intensive Use, 44,799 acres of Limited Use, and 12,820 acres of Special Limited Use Land.

4.12.12.2 Environmental Consequences

CS/CSS. There would be minimal short and long-term impacts on installation land use due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. The installation has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional CS/CSS unit. The facilities required for a CS/CSS would likely be located within a single contiguous land unit. The installation has developed a plan that would place these facilities within the existing cantonment area with less than five areas of new disturbance.

Full Sustainment BDE. There would be minimal short and long-term impacts on installation land use due to the presence of an additional 3,000 to 3,500 Soldiers. The installation has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional Full Sustainment BDE. It is unlikely these facilities would entirely fit within the existing cantonment areas at Fort Polk, therefore a site specific environmental analysis (e.g., Environmental Assessment) on the proposed construction footprint would likely be required.

IBCT. There would be minimal short and long-term impacts on installation land use due to the presence of an additional 3,500 Soldiers. The installation has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional IBCT. It is unlikely these facilities would entirely fit within the existing cantonment areas at Fort Polk, therefore a site specific environmental analysis (e.g., Environmental Assessment) on the proposed construction footprint would likely be required.

HBCT. There would be moderate short- and long-term impacts on installation land use due to the presence of an additional 3,800 to 4,000 Soldiers and their Families assigned to the installation. The installation may not have sufficient land available to either build the facilities needed for this unit, or would not have sufficient vacant space in buildings suitable for the units' mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities would not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges. It is unlikely these facilities would entirely fit within the existing cantonment areas at Fort Polk, therefore a site specific environmental analysis (e.g., Environmental Assessment) on the proposed construction footprint would likely be required.

Multiple BCTs. There would be moderate short- and long-term impacts on installation land use due to the presence of an additional 7,000, or more Soldiers and their Families assigned to the installation. The installation may not have sufficient land available to either build the facilities needed for these units, or would not have sufficient vacant space in buildings suitable for the units' mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities would not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges.

4.12.13 Hazardous Materials/Hazardous Waste

4.12.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage, transport, and disposal of hazardous materials and wastes at Fort Polk. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO.

Common hazardous materials present at the installation include POLs; paint and paint-related material from paint shops and motorpools; flammable stains/coatings; cleaning products; photographic wastes; batteries; pesticides, insecticides, rodenticides, and herbicides; bomb propellants; smoke pots; flammable adhesives; solvents; calcium hypochlorite; and nonexpended ammunition. Hazardous waste streams generated at the installation include the above-mentioned items in addition to lead-contaminated paint chips/debris and gasoline-contaminated rags, soil, or used Drysweep. Nonregulated wastes include oil-, fuel-, and grease-contaminated rags and debris; all petroleum-contaminated soil and used Drysweep; grease; used oil; oil and fuel filters; used antifreeze; brake/transmission fluid; asbestos; and nonflammable adhesives. (JRTC, 2004)

The installation is a large-quantity generator. Hazardous materials and waste are primarily managed by the Environmental and Natural Resources Management Division (ENRMD). The ENRMD publishes a Hazardous Waste Management Plan and an Oil and Hazardous Substances Contingency Plan. These documents provide standard operating procedures for the collection, storage, transport, and disposal of hazardous materials and waste. (JRTC, 2004)

4.12.13.2 Environmental Consequences

CS/CSS. There would be minor long-term impacts from hazardous materials and waste. It is anticipated that Fort Polk would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BDE. Minor short- and long-term impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 3,500. An increase in the use of hazardous chemicals may be seen in the cantonment and training and range areas. Demolition, renovation, and construction would mostly likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as an increase in the use of pesticides due to the addition of family housing and other facilities. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. The hazardous waste disposal facilities would be adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed.

IBCT. There would be minor short- and long-term impacts from hazardous materials and waste associated with the addition of an IBCT. The volume and type of hazardous waste would be the same as described under the Full Sustainment BDE, with similar environmental impacts as well.

HBCT. As with the IBCT, there would be minor short- and long-term impacts from hazardous materials and wastes. The volume of hazardous waste would be slightly higher than the IBCT, but existing procedures would be adequate to ensure that the increases do not adversely affect the environment. Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at Fort Polk and expanded training activities.

Multiple BCTs. The establishment of multiple BCTs at Fort Polk would also result in minor short- and long-term impacts from hazardous materials and waste. Generation and management of hazardous materials and waste, pesticides, petroleum storage tanks, ordnance and explosives would all be higher than with the other actions, but would continue to be managed in accordance with current procedures and regulations. Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at Fort Polk and expanded training activities.

4.12.14 Traffic and Transportation

4.12.14.1 Affected Environment

Fort Polk is located in west central Louisiana, approximately 125 miles west, north west of Baton Rouge, LA and 90 miles north of the Gulf of Mexico. The regions of influence (ROI) of the affected environment for traffic and transportation aspects of the proposed action include Fort Stewart, and several neighboring counties, to include Fort Polk, Vernon Parrish, and the town of Leesville. Major road routes in the region include US Route 171, and State Routes 10 and 467.

4.12.14.2 Environmental Consequences

CS/CSS. There would be minimal short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their family members assigned to the installation. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the installation, and is not expected to reduce the level of service (LOS) on the installation's road network. There may be a slight increase in traffic volume during peak morning and evening hours, but it would not affect level of service or pose an increased risk to the safety of pedestrians and bicyclists.

Full Sustainment BDE. There would be minimal short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 3,500 Soldiers and their family members assigned to the installation. The

increase in off-post traffic would have a minimal impact on traffic in the community overall and it is unlikely it would contribute to a decrease in the LOS in the road network leading to the installation. This level of increase in population would have a minimal impact on the traffic volume on the installation, and would not likely cause a decrease in LOS on installation's arterial road network. The increased traffic volume in both the neighboring community and on the installation would likely pose minimal to moderate increased level of risk to the safety of pedestrians and bicyclists.

IBCT. There would be minimal short- and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 3,500 Soldiers and their family members. Both on the installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would be slightly greater than that caused by the presence of the Full Sustainment BDE. Similarly, the safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

HBCT. There would be minimal short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,800 to 4,000 Soldiers and their family members. Both on the installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would be slightly greater than that caused by the presence of an IBCT. Similarly, the safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of an IBCT.

Multiple BCTs. There would be minimal short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 7,000 Soldiers, or more, and their Family members. This increase in both Soldier and Family-member population would cause a minor to moderate impact on the LOS of the installation's road network and pose a minor to moderate risk to the safety of pedestrians and bicyclists.

4.12.15 Cumulative Effects

Cumulative Effects at Fort Polk include Army mission-related activities and Forest Service activities associated with management of the Kisatchie National Forest. Past, present, and reasonably foreseeable future actions include:

On-Post:

- Army/Forest Service restoration of long-leaf pine habitat;
- Construction of the 40 Series Range;
- 5th Infantry Division (Mechanized) unit training;
- Construction of the Multi-Purpose Range Complex;
- JRTC moves to Fort Polk;
- Construction of Geronimo and Avellino drop zones;
- Construction of Peason Ridge Live-Fire Complex;
- Most Efficient Support Organization (MESO) action;

- Construction of cantonment area security fence;
- Construction and operation of Digital Multipurpose Battle Area Complex at Peason;
- Army/Forest land interchange;
- Final Disposition of Trespass Horses at JRTC and Fort Polk;
- Construction and operation of Live-Fire Villages/Urban Assault Course/Shoot House;
- Construction and operation of a Combined Arms Training Facility;
- Construction and operation of a Multipurpose Machine Gun Range;
- Construction and operation of a Heavy Sniper Range
- Off-road and other training in the LUA;
- State highway construction (LA 28); and
- Commercial forestry operations.

Cumulative effects include impacts to air quality, soils, water quality, wetlands, cultural resources, biological resources, socioeconomics, transportation, and hazardous and toxic materials. Adverse effects include increases in mobile and stationary point sources; removal of vegetation and the increase in impervious surface; transportation of pollutants through stormwater and sediments; soil loss, erosion and sedimentation; loss of wetlands; degradation of habitats and ecosystem integrity; and effects from use of hazardous and toxic materials and generations of wastes.

Off-Post:

- Widening of several segments of State Highway LA-28 (the major arterial between Alexandria and Leesville).
 - Four segments of LA-28 totalling 23 miles have been modified to four-lanes;
 - Currently undergoing a 9.9 mile section from the west junction of State Highway LA-121 to the junction of State Highway LA-465, and another 4.3 mile section from there to the Rapides/Vernon Parish Line;
 - Planning 8.6 miles of expansion/improvement of LA-28 between Alexandria and Leesville (Louisiana Department of Transportation and Development (October 2007)).

4.13 FORT RILEY, KANSAS

4.13.1 Introduction

Fort Riley, located in Central Kansas, has approximately 70,000 acres of maneuver area suited for vehicular and non-vehicular military training (Figure 4.13-1). It has long supported armored/mechanized unit training.

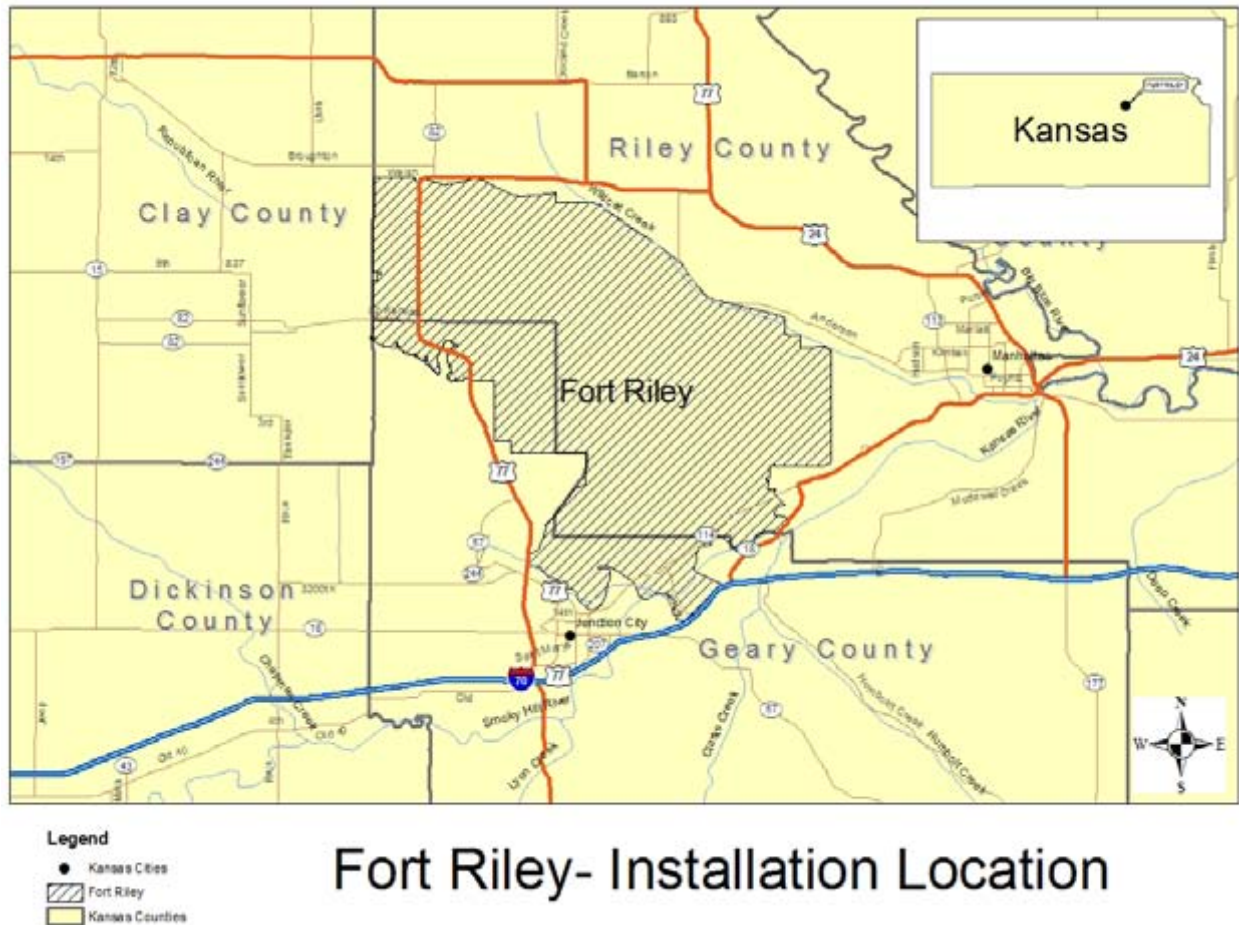


Figure 4.13-1 Fort Riley

Fort Riley's major unit is the 1st Infantry Division, with an additional brigade of the 1st Armored Division.

Fort Riley has good range infrastructure, but one that requires considerable modernization and expansion. Encroachment from urbanization is not yet a challenge, but there are other concerns that could impact training.

Table 4.13-1 contains the Fort Riley's VEC ratings for each of the various stationing action scenarios.

Table 4.13-1. Fort Riley VEC Ratings

Fort Riley					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low	Low	Low	Low
Airspace	Low	Low	Low	Low	Low
Cultural Resources	Low	Low	Low	Medium	Medium
Noise	Low	Low	Low	Medium	Medium
Soil Erosion Impacts	Low	Low	Low	Medium	Medium
Biological Resources	Low	Low	Low	Low	Medium
Wetlands	Low	Low	Low	Low	Low
Water Resources	Low	Low	Low	Low	Low
Facilities	Medium	High	High	High	High
Socioeconomics	Low	High	High	High	High
Energy Demand/ Generation	Low	Low	Low	Low	Low
Land Use Conflict/ Compatibility	Low	Low	Medium	Medium	High
Haz Mat/ Haz Waste	Low	Low	Low	Low	Low
Traffic and Transportation	Low	Medium	Medium	Medium	High

4.13.2 Air Quality

4.13.2.1 Affected Environment

Fort Riley is located in portions of Geary, Riley, and Clay Counties, in northeastern Kansas, which is controlled by the North Central Kansas Intrastate AQCR. All three counties are in attainment for the six criteria pollutants(i.e., meet all NAAQS).

Fort Riley is a major source of air pollutants and regulates air emissions through a Class I Air Emission Source Operating (Title V). Primary stationary sources include boilers, generators, fuel storage and dispensing areas, and surface coating operations (Fort Riley, 2005).

Since Fort Riley is located in attainment areas there is no requirement to conduct a conformity analysis. The CAA's Prevention of Significant Deterioration requirements are not expected to be triggered by the installation's activities.

4.13.2.2 Environmental Consequences

CS/CSS. There would be an expected minor (low) impact on the installation and surrounding communities by the restationing of a CS/CSS unit and its 1,000 Soldiers. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility.

In general, combustion and facility operations would produce localized, short-term elevated air pollutant concentrations that should not result in any sustained impacts on regional air quality.

Full Sustainment BDE. There would be an expected minor (low) impact on the installation and surrounding communities by the restationing of a Sustainment Brigade Combat Team and its 3,000 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a major effect on regional air quality. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected. Options to demonstrate conformity have been identified.

IBCT. There is an expected minor (low) long-term environmental impact to the installation and surrounding communities by the restationing of an Infantry Brigade Combat Team and its 3,500 Soldiers. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training but not significant enough to cause regional air quality issues. It is anticipated that the installation would see increases in emissions from equipment required to support the installation such as fuel storage and dispensing, boiler and incinerator operations and possible electric peak-shaving generators. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails.

HBCT. There is an expected minor (low) long-term environmental impact on the installation and surrounding communities by the restationing of a Heavy Brigade Combat Team and its 4,000 Soldiers. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these would tend to remain localized and produce no significant impact to regional air quality. The increase in POVs from the additional Soldiers and Family members must also be addressed in the conformity analysis but do not appear too insurmountable.

Multiple BCTs. Minor (low) impacts on the installation and surrounding communities by the restationing of multiple Brigade Combat Teams and approximately 7,000 Soldiers are expected. Construction, though not technically an operation subject to the provisions of the CAA but a short-term contributor to air quality, and changes to facility operations to support multiple brigades would be sizeable initially. Combustion emissions resulting from training would be primarily from mobile sources and be widely

distributed both spatially and temporally. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

4.13.3 Airspace

4.13.3.1 Affected Environment

Fort Riley has 158 square miles of FAA-designated Restricted, Special use airspace, up to 29,000 feet. The installation has access to this airspace continuously, and is controlled by the FAA of Kansas City, MO. (US Army Corps of Engineers, 2002)

Military uses of airspace at Fort Riley include air corridors over and in the vicinity of the installation for training of rotary-wing and fixed-wing aircraft. Airspace surrounding Fort Riley consists of 1,120 acres of Installation Compatible Use Zone (ICUZ) Zone II airspace. No ICUZ Zone II airspace extends off post. (US Army Corps of Engineers, 1995)

4.13.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be minor (low) long-term impacts to the airspace from the addition of a BCT, and an expected even less degree of impact from the CS/CSS or Full Sustainment BDE as these activities are not associated with the UAV. Future new systems potentially associated with BCTs or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource (US Army Corps of Engineers, 2002). Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use.

4.13.4 Cultural Resources

4.13.4.1 Affected Environment

The affected environment for cultural resources is the footprint of Fort Riley. Fort Riley possesses both historic and archaeological resources.

4.13.4.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. Growth of approximately 1,000 to 3,500 Soldiers and their associated mission is anticipated to have a minor (low) short and long term impact on Fort Riley. Due to the size of the installation and the low vehicle mobility requirements of the CS/CSS and Sustainment BDE, and the dismounted training associated with the IBCT, surface archaeological sites are not expected to be disturbed to any great degree. The number of Soldiers should not affect historic buildings.

HBCT, Multiple BCTs. There is an expected moderate (medium) long term effect to cultural resources relating to the 3,800 to 7,000 additional Soldiers. The higher personnel count increases the opportunity for archaeological resources to be disturbed by inadvertent means. The heavy tracked vehicles of a HBCT could impact previously

undiscovered archaeological resources. Historic buildings could be modified to accommodate personnel. The increased foot traffic could lead to slightly higher impacts to historic and archaeological resources.

4.13.5 Noise

4.13.5.1 Affected Environment

The noise environment at Fort Riley results from operations common to many active Army installations. Those operations include small arms and heavy weapons firing, demolitions, and aircraft operations. Excepting small arms firing, those operations present the most challenging noise concerns because noise from those sources is often not limited to within the installation boundaries and has the potential to annoy individuals in the surrounding communities. Other sources of noise from installation operations and activities include maintenance and shop operations, ground traffic, construction, and similar sources. However, this noise is generally confined to the installation and is comparable to sounds that occur in communities adjacent to the installation.

The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) conducted a study (Operational Noise Consultation 52-ON-046Q-06, Aircraft, Small and Large Caliber Weapons Noise Contours for Fort Riley, KS, January 2006), “to provide Fort Riley with aviation, small and large caliber weapons noise contours in relation to realignment” under the then proposed BRAC actions. That study used two noise simulations programs to assess noise resulting from large caliber (20mm and larger) and small caliber (50 caliber and smaller) weapons firing. A third program was used to determine adequate noise buffer zones to reduce potential annoyance from aircraft operations.

4.13.5.2 Environmental Consequences

When evaluating the actions proposed in this PEIS, the primary concern is the potential to change the frequency and duration of noise that is experienced in the local communities. The alternatives identified below would not necessarily introduce new weapons systems or aircraft, rather the frequency of training would increase because more personnel would use training ranges more often. Community annoyance could increase and Fort Riley could receive more noise complaints.

The anticipated environmental noise impacts for each of the proposed alternatives at Fort Riley follow:

CS/CSS. Implementation of the CS/CSS alternative would generate minor (low) short-term and long-term impacts to the noise environment. Troop strength would increase by approximately 1,000 Soldiers, and the number of vehicles and equipment to support the additional Soldiers would increase. The CS/CSS vehicles are relatively light and although they have off-road capability, they would often maneuver on hardened surfaces or trails. The installation anticipates minimal off-post noise impacts from

tactical vehicle operations. Weapons of the CS/CSS are small caliber and the number of personnel that would need to train on those weapons would be relatively small, and thus, would cause minimal off-post noise impacts.

The noise associated with an increase of 1,000 Soldiers and their accompanying equipment would be relatively minor compared to existing operations and training at Fort Riley. Weapons and vehicle noise would most likely be contained within the installation boundary and would have no additional perceived impact to the local community.

Full Sustainment BDE. Implementation of the Full Sustainment BDE alternative would generate minor (low) short-term and long-term impacts to the noise environment. Under the Full Sustainment BDE alternative, troop strength would increase by approximately 3,000 to 3,500 Soldiers, and would include rotary-winged aircraft and live-fire training with M1 Tanks (120mm, 7.62mm sub-machine gun, .50 caliber machine gun) and Bradley Fighting Vehicles (BFVs) (25mm cannon, TOW II missiles, and the 7.62mm sub-machine gun). Noise levels associated with aircraft and armored live-fire training would not exceed noise levels projected in the USACHPPM, 2006 report and would also be represented by the noise contours found in the Environmental Assessment for the Construction of a New Automated Multi-Purpose Training Range and Upgrade of an Existing Multi-Purpose Range Complex, Fort Riley, KS, 2003. The artillery noise environment under this alternative would be similar to the noise environment found on Fort Riley in 2005 because the heavy artillery of the proposed Full Sustainment BDE would be similar to that found on the installation during that time. However, the frequency and duration of events required to train the additional military personnel could result in more complaints from the surrounding communities. Aircraft operations in 2005 were few in number, but present day aircraft operations are representative of training to support a Full Sustainment BDE.

IBCT. Implementation of the IBCT alternative would generate minor (low) short-term and long-term impacts to the noise environment. Under the IBCT alternative, troop strength would increase by approximately 3,500 Soldiers, and would field fewer vehicles than a HBCT. An IBCT fields mostly wheeled vehicles and howitzers. The artillery required to support a single IBCT would impact the noise environment less than the artillery required to support a Full Sustainment BDE or HBCT.

HBCT. Implementation of the HBCT alternative would generate moderate (medium) short-term and long-term impacts to the noise environment. Under the HBCT alternative, troop strength would increase by approximately 3,800 to 4,000 Soldiers training with wheeled and track vehicles including M1 Tanks, BVFs, and howitzers. This alternative would represent a noise impact similar to that analyzed in the Environmental Assessment for the Construction of a New Automated Multi-Purpose Training Range and Upgrade of an Existing Multi-Purpose Range Complex, Fort Riley, KS, 2003. The proposed HBCT would field heavy artillery and would use the Multi-Purpose Range Complex (MPRC) for live-fire training. The proposed increase in troop strength would increase the potential for noise complaints because more personnel would use the

MPRC more often. As a result, citizens in the surrounding communities would experience higher frequencies of blast noise and could perceive the noise environment to be louder.

Multiple BCTs. Implementation of the multiple BCT alternatives would generate moderate (medium) short-term and long-term impacts to the noise environment. Under the multiple BCT alternatives, troop strength would increase by approximately 7,000 Soldiers. The proposed multiple BCTs would field vehicles and equipment similar to those previously used at Fort Riley, and thus, the noise environment would be reflective of past military training at the installation. However, training requirements for the proposed multiple BCTs that would increase the number of troops and equipment at Fort Riley would result in greater throughput at installation ranges. As the frequency of blast noise heard by citizens in the surrounding communities would increase, some citizens would likely find the noise more annoying and could file noise complaints more often. Fort Riley would benefit from a noise study for the multiple BCT alternatives to evaluate the potential noise environment and its affect the surrounding communities. Fort Riley currently has rotary-winged aircraft using flight corridors and routes along the installation boundary. An increase in the number of flights, which would likely occur under this alternative, could annoy citizens in the surrounding communities when aircraft would enter or exit Fort Riley airspace.

Noise related to the proposed actions listed above has the potential to affect livestock and wildlife. The land use for a large portion of the area surrounding Fort Riley is rural with agricultural and livestock production. The installation provides habitat for migratory birds and a broad range of other wildlife, including threatened and endangered species. Fort Riley would anticipate short-term impact to livestock and wildlife as training under implementation of any one of the proposed actions would increase the frequency of noise events. However, animals often habituate to noise.

Aircraft flyover is known to startle livestock and wildlife. The Combat Aviation Brigade arrived on Fort Riley in 2006 and began training exercises with several types of rotary-winged aircraft. Implementation of any one of the proposed actions would involve the same type and number of aircraft currently stationed at Fort Riley.

Fort Riley does not anticipate that blast or aircraft noise associated with any of the proposed actions would result in a major impact to livestock or wildlife in the area.

4.13.6 Soil Erosion

4.13.6.1 Affected Environment

Fort Riley is located in the Central Lowlands province with elevations at approximately 1,000 feet. There are 3 types of topographical areas: high upland tall grass prairies, alluvial bottomland floodplains, and broken and hilly transition zones.

Fort Riley is part of the Great Plains Winter Wheat and rangeland Soil Resource Region. Most soils are friable, silt loam up to 12 inches thick, overlying nearly impervious clays .

4.13.6.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. There is an expected minor (low) impact from the wheeled vehicles in these units. Though off-road maneuver is not expected from the CS/CSS or Sustainment BDE, the dismounted training associated with the IBCT may have only minor impacts to soil in localized areas or already disturbed ranges.

HBCT, Multiple BCTs. This level of growth is anticipated to have a moderate (medium) impact on roads and off-road areas due to the number, weight, and mobility characteristics of tracked vehicles or other heavy vehicles. The training areas would likely show the impact from the vehicle maneuvers, turns and traction. These areas could then be prone to erosion.

4.13.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.13.7.1 Affected Environment

Inventories have documented the presence of four Federally-listed and seven State-listed species, and 21 rare species on Fort Riley. Eighteen other listed or rare species have never been observed but could possibly occur on Fort Riley. (Appendix T of this document provides a comprehensive list of listed species.)

4.13.7.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, and HBCT. Fort Riley expects a minor (low) impact to vegetation and to the listed species found onsite. Listed species and other special status species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents.

Multiple BCTs. It is anticipated that implementation of this level of Soldier strength may have a moderate (medium) impact on the four listed species. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of this action may affect any of the recorded listed species, the installation would be required to consult with the USFWS either informally or formally, depending on whether take is anticipated to occur. Fort Riley was exempted from critical habitat for the Topeka shiner because their INRMP provides a benefit to the species (ESA Section 4(a)(3)(B)). Activities associated with this action may also affect the installation's ability

to implement the management and conservation measures identified in the installation's INRMP that were/are essential for their exclusion from Topeka shiner critical habitat. This could affect the installation's ability to be excluded from critical habitat for this species if the USFWS proposes to redesignate critical habitat for this species in the future.

4.13.8 Wetlands

4.13.8.1 Affected Environment

Fort Riley contains approximately 1,532 acres of wetlands (Army Environmental Database-Environmental Quality, (n.d)). The wetlands on the installation are considered a rarity across the Great Plains. A wetland complex of well over 100 acres has been created by the installation in partnership with Ducks Unlimited. These wetlands are seasonally flooded. Impacts on wetlands by the installation seldom occur. (INRMP, Fort Riley, 2001)

4.13.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be a minor (low) impact on the installation wetlands as a result of the restationing of 1,000 to 7,000 Soldiers to Fort Riley. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands by using the installations wetland planning level survey's/ GIS mapping. The potential exists for military training to impact wetlands, but those impacts would not be considered deleterious or permanent. Training would occur only rarely in wetlands as those on Fort Riley are not conducive to training.

4.13.9 Water Resources

4.13.9.1 Affected Environment

Surface Water

Nearly 145 miles of rivers and streams, consisting of 14 miles of rivers and 131 miles of streams, are present on Fort Riley. Streams drain to Wildcat Creek, Republican River or Kansas River. Surface water bodies on Fort Riley are designated for non-contact recreation, expected aquatic life, consumptive recreation, domestic water supply,, industrial water supply, and groundwater discharge.

Water Supply

Groundwater is the primary raw water source at Fort Riley. Fort Riley has two well fields containing eight wells ranging in depth from about 60 to 80 feet. Individual well capacities range from 500 to 1,250 gpm. The total pumping capacity from these wells is 7,500 gpm or 10.8 MGD. Groundwater is withdrawn from aquifers that are recharged by the Republican and Kansas rivers. The existing water supply could support an effective population of more than 63,000 persons, much greater than the installation's current population of about 25,000.

Fort Riley has a water treatment facility with a design capacity of up to 10 MGD. The existing water treatment facilities could support a population of nearly 59,000 persons. The total treated water storage capacity is 7.25 million gallons. Fort Riley currently stores about 5.5 million gallons of potable water.

Wastewater

Fort Riley is currently served by an innovative wastewater treatment plant (WWTP) based on oxidation ditch technology. The WWTP, brought on line in 2005, replaced three separate trickling filter wastewater treatments plants that formerly served the three major camps within the Installation. The WWTP consists of oxidation ditches, ultraviolet (UV) disinfection, solids stabilization using aerobic digesters and post aeration. The plant utilizes gravity belt thickening of waste activated sludge and belt filter press dewatering. The design flow is about 2.35 million gallons per day (MGD), a maximum monthly flow of 2.8 MGD, a maximum daily flow of 3.2 MGD, and a peak instantaneous flow of 7.4 MGD.

Domestic wastewater is collected from sources around the post and conveyed through the gravity collection system to a series of pump stations that pump the wastewater to the WWTP located at the site of the former Custer Hill Wastewater Treatment Plant. The WWTP influent consists of domestic wastewater, vehicle maintenance area wastewater, silver recovery effluent from spent photo fixer, medical facility wastewater, floor-scrubbers wash water, cooling towers heat exchanger coil cleaning wastewater, oily aircraft washwater, purge water from monitoring wells and laundry wastewater.

To accommodate the BRAC build-up at Fort Riley, the installation plans to construct an additional WWTP adjacent to Camp Funston. That proposed WWTP would have a 3 MGD capacity.

Stormwater

Stormwater normally goes through the storm drain and is released directly into the environment. However, a few storm drains in the industrial area on Custer Hill do enter the industrial wastewater treatment system where the water is treated before being released into the environment. Fort Riley has a Stormwater Pollution Prevention Plan (SWP3) and SSSWP2. Fort Riley obtains stormwater permits for construction projects covering one or more acres.

4.13.9.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. An addition of a 1,000 to 7,000 Soldiers is anticipated to have a minor (low) impact on Fort Riley water resources. Any new construction/land disturbance over one acre would require a stormwater construction permit. Domestic and industrial wastewaters generated from HBCT and multiple BCT activities may have a short-term minor impact on Fort Riley's wastewater system. Although water demand would increase, Fort Riley has sufficient potable water supply, treatment, and storage capacity to support the increase in demand.

4.13.10 Facilities

4.13.10.1 Affected Environment

The Fort Riley Cantonment Area includes land uses such housing, community services, recreation, administrative support, industrial, and transition areas. Community services include commercial services such as the Post Exchanges, eating establishments, and theaters, and community facilities such as schools and churches. Community services are scattered around the cantonment area. Recreation and buffer areas generally separate the Family housing areas and community services from the remainder of the cantonment area. The recreation and buffer areas include ball fields and other recreational facilities and open space.

On-post land uses at Fort Riley are functional in nature, have a common purpose, and denote major land uses not minor adjuncts to the primary use. For example, although an industrial land use area may also contain administration, medical, community facilities, and supply and storage areas, the main use is industrial. Cantonment-type Training/Ranges land use functions include all types of academic facilities, indoor firing ranges, Army Reserve and Army National Guard centers, range control towers, ammunition breakdown and distribution sheds, target storage and maintenance buildings, range control buildings, simulator buildings, training courses, and outdoor facilities (US Army, April 2004).

The changes to Fort Riley resulting from BRAC and Integrated Global Presence and Basing Strategies (IGPBS) have affected the installation and surrounding community. Although the installation could support an additional 1,000 Soldiers, it is unknown how larger increases would affect Fort Riley. A large challenge to implementing the proposed action is scheduling of required events prior to fielding. For example, the available labor pool and local contractors are being used to their capacity to support existing construction activities on Fort Riley.

4.13.10.2 Environmental Consequences

The impacts of the Proposed Action and other alternatives on utilities and communications are primarily related to projected increases in population on and off post. These were analyzed by estimating per unit consumption on generation rates using the most recently available data, and then estimating how total consumption or generation rates would change with the changed population. The increased consumption and generation were then compared with the ability of existing infrastructure to handle those changes (Abel, 2007).

CS/CSS. There would be moderate (medium) impacts to facilities. It is anticipated that the activities associated with an increase of 1,000 Soldiers would increase facilities usage within the cantonment and training and range areas. Activities within the training and range areas would be limited to existing firing ranges and roadways. Fort Riley is expected to be able to accommodate a CS/CSS with good planning.

Full Sustainment BDE. There would be significant (high) short- and long-term impacts to facilities. Increased Soldier strength of 3,000 to 3,500 would be reflected through increased usage and construction throughout the cantonment areas. Increased activities within the training and range areas would be expected to cause long-term impacts due to increased human presence, as well as construction and training activities within the range and training areas. BRAC and IGPBS actions make supporting a Full Sustainment BDE a challenge to Fort Riley. The installation real property management plan (RPMP) would require a review to allow for implementation of the ACP. A study using SIRRA would also be beneficial.

IBCT. Fielding an IBCT would also result in significant (high) short- and long-term impacts to facilities. The addition of an IBCT would potentially increase usage of cantonment assets beyond what is projected for a Sustainment BDE; however, a review of the installation RPMP along with other facilities and infrastructure studies may be able to accommodate the proposed action. Since Fort Riley is already undergoing both BRAC and IGPBS actions, this could require an increased level of coordination with state and federal regulatory agencies.

HBCT. Similar to the IBCT, there would be significant (high) short- and long-term impacts to facilities. The addition of an HBCT would likely result in degradation of facilities within the cantonment. The establishment of an HBCT at Fort Riley may exceed the capacity of the installation RPMP to accommodate the proposed action since the installation is undergoing BRAC and IGPBS actions already. Constraints on the local labor pool may delay new construction. If identified by the installation, additional coordination and consultation may be necessary for activities associated with an HBCT. An excess aggregate demand on facilities and infrastructure required by both scheduled incoming units and a HBCT could lead to an overall degradation of facilities quality.

Multiple BCTs. The establishment of multiple BCTs would also result in significant (high) short- and long-term environmental impacts to facilities. There is a high probability that multiple BCTs would increase congestion beyond the carrying capacity of the cantonment infrastructure. The lack of available building space would contribute to this. It is highly unlikely that the installation could accommodate this iteration of proposed action as well as current BRAC and IGPBS actions. The level of construction required to support scheduled incoming units and multiple BCTs is resource intensive and potentially beyond the ability of Fort Riley to sustain. The excess aggregate demand on cantonment facilities and infrastructure required by multiple BCTs may lead to system degradation or non-compliant regulatory issues.

4.13.11 Energy Demand/Generation

4.13.11.1 Affected Environment

Electrical System. A private electric utility company provides primary electrical power to Fort Riley. All other power distribution lines, transformers, and associated equipment

are owned, operated, and maintained by the installation. The electrical transmission and distribution system consists of both overhead and underground lines providing adequate coverage to areas on the installation. Some remote training areas on the installation are supplied electric power through independent rural electrical companies.

Natural Gas and Propane. Natural gas is supplied to Fort Riley via two parallel pipelines measuring 8 inches and 10 inches in diameter. The Fort Riley distribution system for natural gas consists of pipe sizes ranging from 2 to 12 inches in diameter and extends from the gas service main to all required locations within the cantonment areas. The overall condition of the distribution system is good and is adequate for existing demands. Propane is used to heat remote locations such as training areas at Fort Riley, where very small amounts of liquid propane gas are used.

4.13.11.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Growth at Fort Riley (of any of these scenarios) is likely to have a minor (low) impact to energy demand and generation. The existing energy infrastructure has sufficient excess capacity and scalability to readily absorb this level of growth. In order to accommodate any new mission activity, an initial capital investment will be required to extend the existing energy distribution infrastructure to meet the new demand. While multiple BCTs may require a large amount of construction and expansion of the existing energy infrastructure, the capacity and scalability of the electrical and natural gas distribution systems are not likely to be challenged.

4.13.12 Land Use Conflicts/Compatibility

4.13.12.1 Affected Environment

Installation-Wide Land Use. Land use on the installation has been categorized into twelve general types—training ranges, open space, Family housing, outdoor recreation, maintenance, airfield, supply storage, community facility, industrial, unaccompanied personnel housing, administration, and medical. Training ranges are the predominant land use at Fort Riley, with almost 90,000 acres, or approximately 90 percent of the installation reserved for training and range activities. Training areas encompass much of the cantonment area, and extend throughout the entire north portion of the installation. Training areas within the cantonment area are used for instruction and academics as well as indoor firing ranges, and necessary ancillary facilities associated with training. Training areas outside the cantonment area are typically firing ranges and impact areas. Open space is unoccupied land that provides transition areas between land uses, as well as a buffer between the installation and areas off-post. These areas are found throughout the installation. Family housing areas are areas with residential units occupied by enlisted and officer Families. Outdoor recreation areas provide outdoor athletic and recreation facilities for a variety of interests, including natural resources and cultural values. Maintenance areas include facilities and shops that are for the maintenance and repair of Army equipment, and are located throughout the cantonment area. Airfield includes the areas necessary for the operation and maintenance of

Marshall Army Airfield (MAAF), and is located only in the southeastern portion of the installation. Supply/storage areas are designed for bulk-type storage of all classes of Army supplies, and are located throughout the cantonment area. Community facilities include commercial services such as the Post Exchanges (PXs), eating establishments, and theaters, and community facilities such as schools and churches. Community facilities are located in the cantonment area, and are typically near to housing areas. Industrial areas include facilities for manufacturing Army equipment and materials, utility plants and waste disposal facilities. These areas are located within the cantonment area, and are not compatible with housing areas. Unaccompanied Personnel Housing is located in several areas within the cantonment area and provides enlisted and officer barracks as well as associated administrative and community facilities for these personnel. Administration areas are typically headquarters or office buildings to accommodate offices and technical activities. These areas are located in cantonment area, and some areas are included within the RCI footprint. Medical areas include areas for inpatient and outpatient medical services, including the Irwin Army Community Hospital located northeast of the Main Post Housing Area.

The cantonment area includes land uses such housing, community services, recreation, administrative support, industrial, and transition areas. Community services include commercial services such as the Post Exchanges (PXs), eating establishments, and theaters, and community facilities such as schools and churches. Community services are scattered around the cantonment area. Recreation and buffer areas generally separate the Family housing areas and community services from the remainder of the cantonment area. The recreation and buffer areas include ball fields and other recreational facilities and open space. (Fort Riley, 2005)

4.13.12.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. There is an anticipated minor (low) short- and long-term environmental impact on installation land use due to the presence of an additional CS/CSS or Sustainment BDE. The installation has sufficient land available to either build the facilities, sufficient vacant space in existing buildings, or a combination thereof to meet the unit's mission requirements. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional CS/CSS unit. The facilities required for a CS/CSS would be located within a single contiguous land unit.

IBCT, HBCT. There would be moderate short and long-term environmental impacts on installation land use due to the presence of an additional 3,500 to 3,800 Soldiers and the associated training missions. The installation may not have sufficient land available to either build the facilities needed for this unit, or may not have sufficient vacant space in existing buildings suitable for the unit's mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges.

Multiple BCTs. There is an expected significant (high) short- and long-term environmental impact on installation land use due to the presence of an additional BCT or multiple BCTs assigned to the installation. The installation would not have enough existing facilities, located in areas with comparable land uses to accommodate multiple BCTs. New or existing facilities would not be contiguous, and distant from Soldier support facilities and training and maneuver ranges. Building new facilities for multiple BCTs could require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. This, in turn, would cause a measurable decrease of the installation's capacity to train Soldiers. Building new facilities could also require construction on, or immediately adjacent to, environmentally sensitive areas such as wetlands, requiring extensive, and/or expensive mitigation actions.

4.13.13 Hazardous Materials/Hazardous Waste

4.13.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage, transport, and disposal of hazardous materials and wastes at Fort Riley. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO. Each installation operates under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and nonhazardous materials for toxic and hazardous ones; ensure compliance with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste. (US Army Corps of Engineers, February, 2002)

4.13.13.2 Environmental Consequences

CS/CSS. There would be minor (low) long-term impacts from hazardous materials and waste. It is anticipated that Fort Riley would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BDE. Minor (low) short- and long-term impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 3,500. An increase in the use of hazardous chemicals may be seen in the cantonment and training and range areas. Demolition, renovation, and construction would most likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as an increase in the use of pesticides due to the addition of Family housing and other facilities. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. The hazardous waste disposal facilities would be

adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed.

IBCT. There would be minor (low) short- and long-term impacts from hazardous materials and waste associated with the addition of an IBCT. The volume and type of hazardous waste would be the same as described under the Full Sustainment BDE, with similar environmental impacts as well.

HBCT. As with the IBCT, there would be minor (low) short- and long-term impacts from hazardous materials and wastes. The volume of hazardous waste would be slightly higher than the IBCT, but existing procedures would be adequate to ensure that the increases do not adversely affect the environment. Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at Fort Riley and expanded training activities.

Multiple BCTs. The establishment of multiple BCTs at Fort Riley would also result in minor (low) short- and long-term impacts from hazardous materials and waste. Generation and management of hazardous materials and waste, pesticides, petroleum storage tanks, ordnance and explosives would all be higher than with the other actions, but would continue to be managed in accordance with current procedures and regulations. Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at Fort Riley and expanded training activities.

4.13.14 Traffic and Transportation

4.13.14.1 Affected Environment

Fort Riley is located in northeastern Kansas, approximately 55 miles west of Topeka, and 115 miles west of Kansas City. The region of influence (ROI) of the affected environment for traffic and transportation aspects of the proposed action include Fort Riley, and several neighboring counties, to include Riley Geary and Clay Counties, and the communities therein, to include the City of Manhattan, and the towns of Junction city and Ogden. Major road routes in the region include I-70, an east-west interstate highway that passes less than 5 miles to the south of the cantonment area. Other major routes in the area include US Route 77, and Kansas State Routes 18 and 57.

4.13.14.2 Environmental Consequences

CS/CSS. There would be minor (low) short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their Family members assigned to the installation. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the installation, and is not expected to reduce the level of service (LOS) on the installation's road network. There may be a slight increase in traffic volume during

peak morning and evening hours, but it would not affect either level of service or pose an increased risk to the safety of pedestrians and bicyclists.

Full Sustainment BDE. There would be moderate (medium) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 3,500 Soldiers and their Family members assigned to the installation. The increase in off-post traffic would have a minimal impact on traffic in the community overall and could contribute to a decrease in the LOS in the road network leading to the installation, particularly during peak morning and afternoon travel periods. This level of increase in population could also have a moderate impact on the traffic volume on the installation, and could cause a minor decrease in LOS on some of the installation's arterial routes. The increased traffic volume in both the neighboring communities and on the installation could pose a moderate increased level of risk to the safety of pedestrians and bicyclists.

IBCT. There would be moderate (medium) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,500 Soldiers and their Family members. Both on the installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would be slightly greater than that caused by the presence of the Full Sustainment BDE. Similarly, the safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

HBCT. There would be moderate (medium) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,800 to 4,000 Soldiers and their Family members. Both on the installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would be slightly greater than that caused by the presence of an IBCT. Similarly, the safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of an IBCT.

Multiple BCTs. There would be significant (high) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 7,000 Soldiers, or more, and their Family members. The increased military and personal vehicles would have a significant impact to traffic conditions on-post; and may have a moderate effect to the local community from the increase in POVs, especially during peak commuting hours. This increase in both Soldier and Family-member population would cause a major impact on the LOS of the installation's road network and pose an increased risk to the safety of pedestrians and bicyclists.

4.13.15 Cumulative Effects

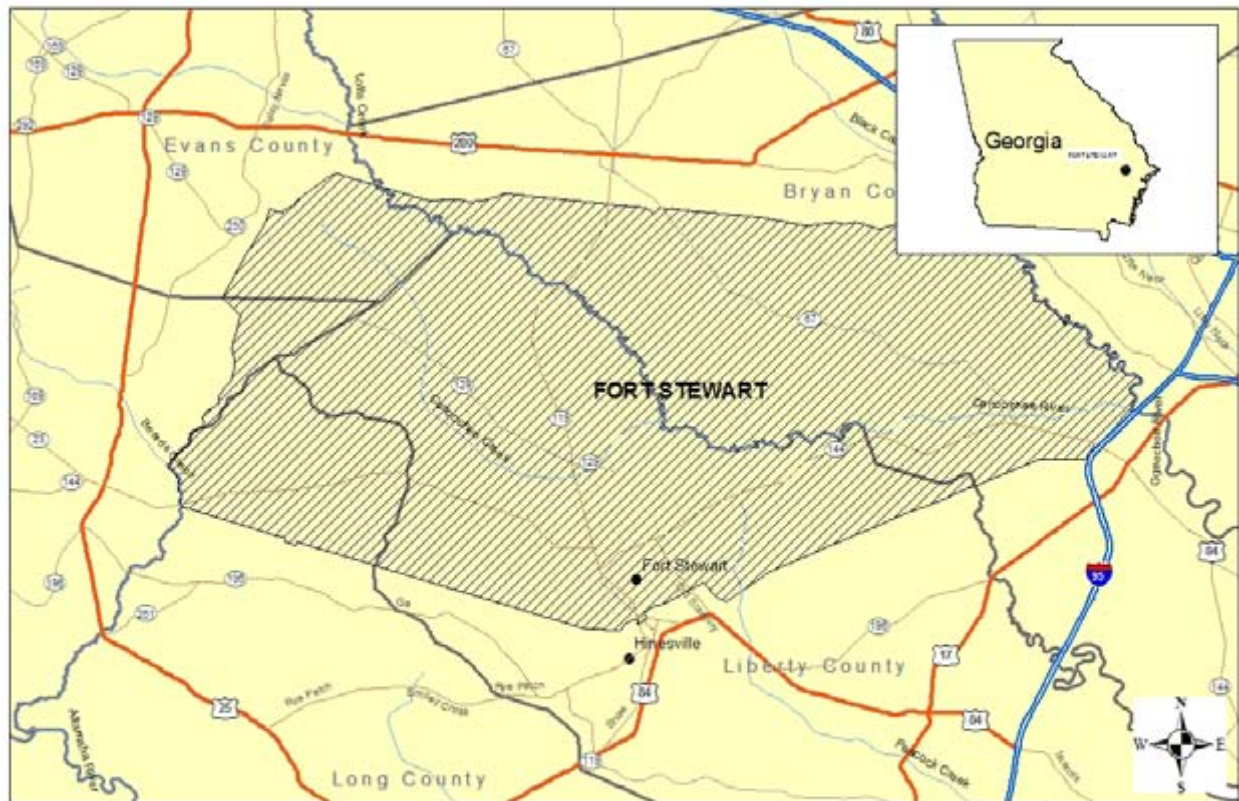
Fort Riley does not anticipate cumulative effects from ongoing or future projects at the installation. Fort Riley is remotely located, and has identified no minor or major projects outside the installation boundary. The impacts from construction and training have been programmatically analyzed herein. If Fort Riley were to be significantly affected by

Army growth, gaining at least one BCT, site-specific analysis would be required to determine more precise local impacts.

4.14 FORT STEWART, GEORGIA

4.14.1 Introduction

Fort Stewart, located in southeastern Georgia, contains approximately 280,000 acres and has long supported armored/mechanized unit training and dismounted infantry unit training (Figure 4.14-1). Hunter Army Airfield (AAF) is a sub-installation of Fort Stewart located 15 miles to the northeast of the installation boundary. However, any BCT stationing actions described would take place within Fort Stewart proper; therefore, potential impacts to Hunter AAF are not discussed.



Fort Stewart- Installation Location

Figure 4.14-1 Fort Stewart

Major units of the 3rd ID, which is stationed at Fort Stewart include three HBCTs and a Full Sustainment BDE, and supporting CS/CSS units. A fourth HBCT is stationed at Fort Benning and conducts major training missions at Fort Stewart. In addition, the 48th BCT of the Georgia Army National Guard is a HBCT in transition to an IBCT and conducts annual training and assorted unit training at Fort Stewart. Current METL tasks trained at Fort Stewart are expected to remain the same with the addition of similar type of units. Also of note is that the METL tasks of an IBCT are included within the METL tasks of a HBCT. Summarily, it is anticipated that there will be no changes to training

tasks currently being conducted on Fort Stewart with the addition of a CS/CSS, Sustainment Brigade, IBCT, HBCT or Multiple BCTs due to these types of units currently train at Fort Stewart. What will change with the addition of units is the frequency at which these tasks occur over a given time. However, METL tasks are subject to change with doctrinal change, or with guidance from higher headquarters; or if unit configuration changes, METL task will change accordingly.

Fort Stewart has a robust range and training land infrastructure that supports Abrams Tank, Bradley Fighting Vehicle, Aerial Gunnery, Artillery Live-Fire Training, other assorted live-fire training, maneuver training, individual, and team and collective tasks. Training land configuration allows for concurrent live-fire and maneuver training in separate sections of the installation, each not interfering with the other. Encroachment from urbanization is a challenge that is being effectively addressed by active Army Compatible Use Buffer (ACUB) and Joint Land Use Study (JLUS) programs. Coastal Georgia growth projections indicate that the current population will double in this region over the next 10 years. Fort Stewart works closely with multiple local communities to minimize potential conflicts with the military mission and reduce encroachment risks.

Table 4.14-1 contains the Fort Stewart's VEC ratings for each of the various stationing action scenarios.

Table 4.14-1. Fort Stewart VEC Ratings

Fort Stewart					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BCT (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Low	Low	Low	Low	Medium
Airspace	Low	Low	Low	Low	Low
Cultural Resources	Low	Low	Low	Medium	High
Noise	Low	Low	Low	High	High
Soil Erosion Impacts	Low	Medium	Medium	High	High
Biological Resources	Medium	Medium	Medium	High	High
Wetlands	Medium	Medium	Medium	High	High
Water Resources	Low	Low	Low	Low	Low
Facilities	Medium	Medium	Medium	Medium	Medium
Socioeconomics	Low	Medium	Medium	Medium	High
Energy Demand/ Generation	Low	Low	Low	Low	Low
Land Use Conflict/ Compatibility	Low	Medium	Medium	Medium	High
Haz Mat/ Haz Waste	Low	Low	Medium	Medium	High
Traffic and Transportation	Medium	Medium	Medium	Medium	High

4.14.2 Air Quality

4.14.2.1 Affected Environment

The region of influence for the Fort Stewart/Hunter Army Airfield Military Complex includes portions of six counties—Bryan, Chatham, Evans, Liberty, Long, and Tattnall. The City of Hinesville and Liberty County are adjacent to the cantonment area along the southern boundary of the post. The City of Pembroke and Bryan County surround Fort Stewart to the north. The Cities of Glennville and Richmond Hill lie to the west and east of post boundaries, respectively. The surrounding counties are in attainment for EPA's NAAQS.

Fort Stewart is a major source of air pollutants and maintains a Title V Operating permit. Primary stationary sources include boilers, generators, fuel storage and dispensing areas, and surface coating operations.

Since Fort Stewart is located in attainment areas there is no requirement to conduct a conformity analysis. The CAA's Prevention of Significant Deterioration requirements are not expected to be triggered by the installation's activities.

4.14.2.2 Environmental Consequences

CS/CSS. There would be an expected minor (low) impact on the installation and surrounding communities by the restationing of a CS/CSS unit and its 1,000 Soldiers. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and facility operations would produce localized, short-term elevated air pollutant concentrations that should not result in any sustained impacts on regional air quality.

Full Sustainment BDE. There would be an expected minor (low) impact on the installation and surrounding communities by the restationing of a Sustainment Brigade Combat Team and its 3,000 to 3,500 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a significant effect on regional air quality. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

IBCT. There is an expected minor (low) long-term environmental impact to the installation and surrounding communities by the restationing of an Infantry Brigade Combat Team and its 3,500 Soldiers. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training but not significant enough to cause regional air quality issues. It is anticipated that the installation would see increases in emissions from equipment required to support the installation such as fuel storage and dispensing, boiler and incinerator operations and possible electric peak-shaving generators. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails.

HBCT. There is an expected minor (low) long-term environmental impact on the installation and surrounding communities by the restationing of a Heavy Brigade Combat Team and its 3,800 – 4,000 Soldiers. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these would tend to remain localized and produce no significant impact to regional air quality.

Multiple Brigade Combat Teams. The restationing of multiple Brigade Combat Teams and approximately 7,000 Soldiers is expected to produce minor (low) long-term impacts

on air quality. Construction, though not technically an operation subject to the provisions of the CAA but a short-term contributor to air quality, and changes to facility operations to support multiple brigades would be substantial initially. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

4.14.3 Airspace

4.14.3.1 Affected Environment

Fort Stewart has 386 square miles of FAA-designated Special use airspace, up to 29,000 feet. The installation has access to this restricted airspace from 0600 to 2400 local daily for area R3005 A, B, D, E; and 0600 to 0300 local daily for area R3005 C with other times available by Notice to Airmen (NOTAM) 24 hours in advance.(Fort Stewart, 2007). In addition, for 14 days per year, Special Use Airspace can be increased to 45,000 feet.

4.14.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be minor (low) long-term environmental impacts to airspace and minor short- and long-term direct adverse impacts from UAV operations. It is anticipated that the activities associated with the CS/CSS or Full Sustainment BDE would not affect airspace as no UAVs or artillery is associated with these scenarios. Increased or new activities from BCTs would have to be scheduled to coordinate with existing mission activities. Future new systems or modifications to existing systems from the stationing of an additional BCT could also affect airspace use, resulting in greater demand for exclusive military use of the resource (US Army Corps of Engineers, 2002). Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use. The IBCT, HBCT, and Multiple BCTs would be required to seek additional special use airspace designations or Certificates of Authorization from the FAA for use of the National Airspace System outside of restricted airspace.

4.14.4 Cultural Resources

4.14.4.1 Affected Environment

The affected environment for Fort Stewart encompasses the legal boundaries of the installation. Counties potentially affected are the counties in the standard region of influence for Fort Stewart is Bryan, Chatham, Evans, Liberty, Long and Tattnall. Fort Stewart is located in an area outside Savannah, Georgia. The Installation is approximately 280,000 acres and contains a variety of prehistoric and historic period cultural resources. The ICRMP (Grover & McKivergan, 2001) describes in detail the human history of Fort Stewart and the following history is based upon that information. The Fort Stewart region has been occupied for at least 12,000 years by Native Americans, Europeans, and the military. Most prehistoric sites at Fort Stewart consist of habitation sites, base camps, small villages, seasonal use camps, hunting stations,

and isolated artifact scatters. Most historic period sites at Fort Stewart consist of homesites, agri-industrial related activities, naval stores production/collection sites, and isolated artifact scatters.

Approximately 164,000 of the 280,000 acres of Fort Stewart have been surveyed for cultural resources. As a result of these archaeological surveys, 2,883 archaeological sites have been recorded at Fort Stewart of which 32 have been recommend eligible and 175 potentially eligible for the National Register of Historic Places. In addition to these archaeological sites, 64 historic period cemeteries, one sacred site (Lewis Mound) and 2 Traditional Cultural Properties (Taylors Creek and Pleasant Grove Cemeteries) have been identified. Regarding historic buildings and structures, Fort Stewart has conducted an entire survey and evaluation of all buildings and structures built before 1990 (to include Cold War Era buildings eligible under Criteria G of the NRHP). As a result of this building survey, 6 historic buildings have been identified at Fort Stewart (Glisson's Mill Pond Store and 4 Fire Towers). Each year, as buildings approach the 45 year mark, they are reassessed for eligibility.

The 2001 Programmatic Agreement (renewed in 2006) between the 3rd Infantry Division (Mechanized), Fort Stewart, and the Georgia State Historic Preservation Office (GA SHPO) provides a streamlined process for Section 106 of the NHPA compliance by the Army at Fort Stewart. The Programmatic Agreement states that Fort Stewart will conduct archaeological surveys (if not previously conducted) to identify any historic properties that could be affected by a project, activity, or undertaking. It also provides a listing of undertakings excluded from evaluation under Section 106 (e.g. undertakings in severely disturbed special use and bivouac areas, most areas within the cantonment, and impact areas that are highly likely to be contaminated with unexploded ordnance). For all undertakings that are determined by cultural resource staff to have no adverse effects upon historic properties, individual consultations with the GA SHPO is not required. If the undertaking has the potential to adversely affect historic properties, consultation per 36 CFR 800 is required. At this time, a revised Programmatic Agreement is in draft. This new Programmatic Agreement, upon successful implementation, proposes to eliminate the requirements for archaeological surveys within areas determined to have a low likelihood of cultural resources. Furthermore, areas that contain a risk of unexploded ordnance are also proposed to be eliminated from future surveys.

4.14.4.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. This level of growth (1,000 to 3,500 Soldiers on Fort Stewart is expected to have minor (low) short and long term impacts on cultural resources. Measures are in place in place to accommodate this type of training to *prevent* adverse impacts to cultural resources; future improvements to the Programmatic Agreement would address impacts more effectively; and the nature of the military activity by itself is of a lesser impact activity (e.g. foot traffic, vehicle traverse via established tank trails, reoccurring/habitual use of training areas, etc...). Large portions of Fort Stewart are forested and require the use of tank trails and low water crossings.

Therefore, it is unlikely that there would be adverse impacts to cultural resources from off road or foot traffic. The number of Soldiers should be easily absorbed by the existing buildings without requiring that historic buildings be reconfigured.

HBCT. There would be moderate (medium) short and long term impacts to cultural resources relating to the 3,800 – 4,000 additional Soldiers of a HBCT. Although a higher personnel count of the HBCT technically increases the odds that archaeological resources would be impacted from both accidental and intentional means, the combination of increased Soldiers and vehicular traffic would not cross the threshold of significance. The additional Soldiers, via foot traffic, are not expected to result in inadvertent disturbance of surface archaeological sites or buried archaeological resources. The heavy tracked vehicles of a HBCT could impact previously undiscovered archaeological resources. Currently about 60% of the installation has been surveyed for cultural resources. Future improvements to the Programmatic Agreement should reduce further requirements for future surveys, however, at a minimum, 10,000 acres of high probability for cultural resources remain to be surveyed. Regarding historic buildings, only a slightly higher potential for impact would occur due to the higher number of individuals requiring admin/housing/support. Furthermore, the low number of historic buildings currently identified at Fort Stewart, the impact would still remain low.

Multiple BCTs. There could be significant (high) impacts to cultural resources at Fort Stewart. The consequences to cultural resources should be in line with a HBCT, except for increased volume of Soldiers (approximately 7,000).

4.14.5 Noise

4.14.5.1 Affected Environment

According to a 2005 Joint Land Use Study (Coastal Georgia Redevelopment Center, 2005) all noise generated from small arms weapons fire is effectively contained on installation lands and maneuver areas and thus, do not pose compatibility issues with off-post residential communities. Noise associated with LUPZ is experienced at off-post locations (and sometimes can cause annoyances in these areas) affecting the City of Pembroke, and Bryan County to the north; and the City of Hinesville, and Liberty County to the south. NZ II, which on Fort Stewart is caused by large caliber weapons firing, extends beyond the installation boundary north into Bryan County. NZ III is fully contained within the installation. Maneuver noise is not currently an issue with respect to local communities. Fort Stewart will need to estimate increases in throughput on new and existing ranges to determine how noise contours will be affected by each growth scenario.

4.14.5.2 Environmental Consequences

CS/CSS. There would be minor (low) short- and long-term impacts expected from the proposed action. Maneuver noise is expected to be very low and insignificant when compared to the current training environment. Wildlife receptors such as the RCW

would experience short-term impacts (flushing for instance) but would recover very quickly (Delaney et al; 2002). Noise management practices should be considered from the installation's INRMP and IENMP. Noise contours for the small arms weapons ranges would not be affected. Noise from these areas would remain contained within the installation boundary.

Full Sustainment BDE. Minor (low) long-term impacts are expected. Maneuver training would have only slightly higher impacts than a CS/CSS. Small arms ranges would experience an increase in usage, but noise contours would remain unchanged.

IBCT. Fort Stewart expects an overall minor (low) impact from fielding an IBCT to the installation. Noise generated from maneuver and small arms ranges would have similar impacts as the Full Sustainment BDE, and only slightly higher noise impacts than the CS/CSS. The largest caliber weapon an IBCT has is a .50 caliber machine gun. It also has TOWs and the 105mm Howitzer. Current noise zones would not be affected but BMPs for noise reduction should be considered. These BMPs are to be determined by the installation on a situational basis.

HBCT and Multiple BCTs. Significant (high) noise impacts are expected to influence sensitive noise receptors such as residential communities within NZ II and sensitive wildlife species. Noise contours may change; Fort Stewart would likely need to conduct a new noise study and update their IENMP.

4.14.6 Soil Erosion

4.14.6.1 Affected Environment

Fort Stewart is a relatively flat, coastal landscape predominantly made up of poorly drained loamy sand/sandy soil, riparian, and other wetland areas (Coastal Georgia Redevelopment Center, 2005; USAEC, 2006). The principal cause of soil erosion is from maneuver of tracked and wheeled vehicles on already disturbed range areas. However, over the past five years Fort Stewart has constructed several LWCs to reduce impacts on ranges where vehicles have historically traversed streams and wetland areas on traditional dirt tank trails. Fort Stewart has recently mapped wetland areas crucial for training, for potential LWCs. Due to anticipated Army Transformation actions, Fort Stewart is expecting to accommodate more training which, prior to Army Growth, would further degrade the soils at the installation (Fort Stewart Personnel, July 2007).

4.14.6.2 Environmental Consequences

CS/CSS. Minor (low) adverse impacts are expected. Foot traffic and other maneuvers associated with this level of Soldier increase is expected to have only minor short- and long-term consequences to already disturbed range areas. Any impacts from an increase in use of the installation's small arms firing ranges in training areas are minor in comparison to other training activities at Fort Stewart. These impacts would likely be easily mitigated within the installation's ITAM program, and in accordance with the INRMP.

Full Sustainment BDE and IBCT. There is expected to be moderate (medium) impacts from maneuver training, from this level of increase at Fort Stewart. Most vehicle transit is expected to remain on hardened surfaces or range course trails for the Full Sustainment BDE, maneuver in ranges, even in the current training footprint would continue to further degrade the trails and soils in these areas. Increased dismounted Soldier and vehicle maneuver expected from the IBCT on unimproved surfaces and range areas may reduce vegetative cover, increasing the erodibility of soils. Fort Stewart should continue to employ various erosion control techniques that may include hardening of existing and heavily utilized stream/wetland crossings, redirection and recontour of roads, slopes and ditches, and range area revegetation.

HBCT and Multiple BCTs. Significant (high) impacts to roads and off-road areas is expected due to the number of heavy tracked and wheeled vehicles associated with this level of increase. The maneuver box needed for a HBCT is also much larger than what is needed for the IBCT; and the heavy tracked vehicles would continue to degrade rapidly from the expected increase in training throughput, leading to potential extensive erosion problems. The weight and mobility characteristics of the heavy tracked vehicles could disrupt already stressed soils on trails and range courses that currently accommodate a high amount of training, making those areas more prone to wind and water erosion. Range course trails and range roadways may need to be improved or hardened to help control an increase in soil transport. Multiple BCTs may have an impact to soils to an even greater degree than the HBCT. The installation's training areas would need continuous monitoring and improvements from the ITAM program.

4.14.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.14.7.1 Affected Environment

Fort Stewart is home to nine special status plant species and 17 special status fauna species. Among these species, six Endangered Species Act (ESA) listed fauna species are currently recorded as occurring on the installation. One high priority species at risk (SAR) is also found onsite. The following table lists threatened or endangered species found on Fort Stewart. More information on federally listed species can be found in Appendix T of this document.

Table 4.14-2- Threatened or Endangered Species Found On Fort Stewart

Federally Listed or Listed by the State of Georgia

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	GEORGIA STATE STATUS
PLANTS			
<i>Baldunia atropurpurea</i>	Purple honeycomb head	-	Rare
<i>Elliottia racemosa</i>	Georgia plume	-	Threatened
<i>Epidendrum conopseum</i>	Green-fly orchid	-	Unusual
<i>Fothergilla gardenii</i>	Dwarf witch-alder	-	Threatened

<i>Habenaria quinqueseta</i>	Michaux's spider orchid	-	Threatened
<i>Litsea aestivalis</i>	Pond spice	-	Rare
<i>Pteroglossaspis ecristata</i>	Crestless plume orchid	-	Threatened
<i>Sarracenia minor</i>	Hooded pitcher plant	-	Unusual
<i>Sideroxylon thornei</i>	Swamp buckthorn	-	Rare
<i>Stewartia malacodendron</i>	Silky camellia	-	Rare
MAMMALS			
<i>Corynorhinus rafinesquii</i>	Rafinesque's big-eared bat	-	Rare
<i>Trichechus manatus</i>	West Indian manatee	Endangered	Endangered
BIRDS			
<i>Aimophila aestivalis</i>	Bachman's sparrow	-	Rare
* <i>Haliaeetus leucocephalus</i>	Bald eagle	Threatened	Threatened
<i>Mycteria americana</i>	Wood stork	Endangered	Endangered
<i>Picoides borealis</i>	Red-cockaded woodpecker	Endangered	Endangered
<i>Elanoides forficatus</i>	Swallow-tailed kite	-	Rare
<i>Falco peregrinus</i>	Peregrine falcon	-	Rare
<i>Falco sparverius paulus</i>	Southeastern kestrel	-	Rare
<i>Sterna antillarum</i>	Least tern	-	Rare
REPTILES and AMPHIBIANS			
<i>Ambystoma cingulatum</i>	Flatwoods salamander	Threatened	Threatened
<i>Clemmys guttata</i>	Spotted turtle	-	Unusual
<i>Drymarchon couperi</i>	Eastern indigo snake	Threatened	Threatened
<i>Gopherus polyphemus</i>	Gopher tortoise	-	Threatened
<i>Heterodon simus</i>	Southern hognose snake	-	Threatened
<i>Malaclemys terrapin</i>	Diamondback terrapin	-	Unusual
<i>Notophthalmus perstriatus</i>	Striped newt	-	Threatened
<i>Ophisaurus mimicus</i>	Mimic glass lizard	-	Rare
<i>Rana capito</i>	Gopher frog	-	Rare
FISH			
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	Endangered	Endangered
INVERTEBRATES			
<i>Cordulegaster sayi</i>	Say's spiketail	-	Threatened

* As of 8 August 07, the Bald Eagle is no longer afforded protection under the Endangered Species Act (ESA). However, it is protected under the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act. The Eagle Act is the primary law protecting eagles and protection is very similar to the ESA.

Furthermore, Fort Stewart has an active Forestry program, one of the largest in DoD. The installation contains Georgia's largest remaining stand of longleaf pine forest.

4.14.7.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, and IBCT. There is an anticipated moderate (medium) impact to vegetation and the installation's listed species and SAR. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of any of these actions may affect any of the recorded listed species, the installation would be required to consult with the USFWS either informally or formally, depending on whether take is anticipated to occur. If the proposed action were

implemented at Fort Stewart, the METL is not expected to change, unless otherwise directed, therefore there would likely be no major modifications to training that would impact current threatened and endangered species management practices. If the METL were to change, Fort Stewart would modify their ESMP and/or INRMP accordingly. If a change in the METL were to occur, these changes would likely impact the installation's RCW population. The population on Fort Stewart is identified as a primary core population of the South Atlantic Coastal Plain recovery unit. If the level of RCW take and/or disturbance of RCW habitat is high, then it would be more difficult for the installation to achieve the recovery goal for the Fort Stewart RCW population. The installation would also not be able to take advantage of the lesser restrictions that are being proposed in the updated Army RCW management guidelines, if recovery goals are not met. The installation would need to continue to implement conservation and management efforts for the number of SAR species found on the installation as a means to help prevent their listing. One such species, the Gopher Tortoise has been recently petitioned for listing under the ESA.

HBCT and Multiple BCTs. It is anticipated that implementation of either of these levels of Soldier strength would have a significant (high) impact on the six listed species. Implementing either of these actions would also make it difficult for the installation to support conservation efforts for the SAR and listing of the species would be more probable. There could be impacts to the Forestry program if Fort Stewart receives 3,800 - 4,000 more Soldiers. The additional troops would likely reduce the available burning days at Fort Stewart. Forest road use would increase, and road conditions would deteriorate more than they already are. Timber harvest access behind SDZs and in some training areas would become more difficult. Traveling through the cantonment area daily with large trucks and heavy equipment poses added risks to traffic/pedestrian safety and reduces wildfire response time.

4.14.8 Wetlands

4.14.8.1 Affected Environment

Fort Stewart contains approximately 91,000 acres of wetlands (Army Environmental Database-Environmental Quality, (n.d)) spread across 280,000 acre installation. Palustrine wetlands comprise 77% of the wetland acreage (INRMP, Fort Stewart, 2001). The primary threat to wetlands on Fort Stewart is siltation associated with roads and trails. Fort's Stewart's recent wetland mitigation plans were proactively designed to ensure wetland mitigation for Army training growth.

The Fort Stewart Wetland Bank (FSWB) was established in 2000. The installation has implemented a wetlands mitigation banking instrument to satisfy the needs of the installation with regards to expanding ranges to account for any major disturbances to wetlands adjacent to or within these ranges. The FSWB is located at Pond 4, west of Fort Stewart Road 40 in training compartments TA, E-2, E-3, and E-4. The federal policy of "no net loss to wetlands" is what drove the establishment of the FSWB. The FSWB enables Fort Stewart to continue meeting its mission training objectives while complying with the Clean Water Act (CWA) and the current "no net loss to wetlands"

federal policy. Work on the FSWB was initiated in 1994, formally permitted in April 1999, and the first credits received in 2000.

Section 404 Permits may be required, for construction of new facilities or ranges. Section 303d (Impaired Streams) should also be taken into consideration, as there are several impaired stream segments on Fort Stewart and they could easily be impacted by the additional construction and training. Furthermore, there are 303d-specific BMPs and NPDES Permits and Stream Buffer Variances for construction.

4.14.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. There would be a moderate (medium) impact on the installation wetlands as a result of the restationing of 1,000 to 3,500 Soldiers to Fort Stewart. Efforts would be made to avoid any impacts on wetlands by using the installations wetland planning level survey's/ GIS mapping. The GIS database can be used to highlight areas most suited to training. The INRMP would be addressed for best management practices.

HBCT, Multiple BCTs. There would be a significant (high) impact on the installation wetlands as a result of the addition of 3,800 to 7,000 Soldiers to Fort Stewart. Training activities would be limited to established training areas where possible. Because the METL for Fort Stewart is not expected to change, even if the proposed action were implemented at the installation, and training intensity would not change, Fort Stewart expects that impacts to wetlands would be likely cumulative from multiple (more) Soldiers and vehicles training at the installation, rather than through increased usage in alternative training locations. Fort Stewart would continue to maintain their specific land management practices to minimize wetland impacts. A permit is not required for military maneuvers, Section 404 of the Clean Water Act only prohibits discharge of fill and dredged material into jurisdictional wetlands it does not prohibit the use of wetland areas for military maneuvers, except for possible engineer troop training construction projects. There would be no instances where the training activities would require a 404 Permit since combat training does not entail discharge of dredged material or placement of fill in wetlands. Note, Fort Stewart has recently mapped wetland areas crucial to training for potential future low water crossings.

4.14.9 Water Resources

4.14.9.1 Affected Environment

Surface Water

Fort Stewart's surface water resources are diverse and include numerous rivers, streams, ponds, and lakes. The majority of the surface waters of Fort Stewart are part of the Ogeechee River drainage system. The Canoochee River is and bisects Fort Stewart. The majority of the post drains to the Canoochee River, the main tributary of the Ogeechee. Fort Stewart uses one acre as the threshold for requiring a NPDES permit for stormwater construction. The fee is \$80 per disturbed acre. For sanitary

water issues, Fort Stewart is tied into and utilizes the Hinesville Wastewater Treatment Plant.

The watersheds of Taylor's Creek, Canoochee Creek, Horse Creek, Savage Creek, and Peacock Creeks are greatly influenced by extensive range, road, and training area facilities construction that will be needed with increased troop population. Conversely, the extensive construction in the communities outside the installation that are in the watersheds of these streams will have a marked effect upon the stream flow characteristics on post.

Water Supply

Fort Stewart obtains its potable water from groundwater within the Floridian aquifer. The Georgia Department of Natural Resources (DNR) Environmental Protection Division (EPD) has identified Fort Stewart as one of the top ten water users in the southeastern region of Georgia (Fort Stewart INRMP, 2001). Fort Stewart is implementing water conservation measures, to reduce water withdrawals; however, this is being done strictly as a conservation measure and not due to a dwindling of aquifer capacity or permitted withdrawal capacity. Fort Stewart has an adequate withdrawal capacity to support additional growth.

Stormwater

Per regulatory Stormwater Phase II requirements for Municipal Separate Storm Sewer Systems, the post construction site runoff is required to be the same as pre-construction runoff coefficients, to not impact the existing watershed conditions. Fort Stewart currently has an Industrial Wastewater Plant with adequate capacity. The installation is tied into and utilizes the Hinesville Wastewater Treatment Plant.

4.14.9.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. An addition of approximately 1,000 to 7,000 Soldiers is anticipated to have a minor (low) impact on Fort Stewart's water resources. This level of growth would not adversely impact Fort Stewart's water supply. Fort Stewart is currently using only approximately 50 percent of its water supply; and is currently implementing water resource conservation measures to ensure adequate resources in the future. Additional Soldiers, their Families, and any support staff would likely have only a minor drawdown impact to the current water supply. Domestic and industrial wastewaters generated from HBCT activities would have a short-term minor impact on Fort Stewart's wastewater system. The installation would need to revisit their SWP3 to incorporate best management practices for any new training activities if there are changes to the installation's METL. Additionally, any new construction/land disturbance over one acre would require a stormwater construction permit.

4.14.10 Facilities

4.14.10.1 Affected Environment

Military functions can be divided into a number of land use categories displaying, with a few exceptions, the basic attributes of civilian land use types. Land uses at Fort Stewart Headquarters and Administration, Soldier Housing, Soldier Maintenance, Industrial, Community Facilities, Medical Facilities, Operations, Family Housing, Ranges and Training Areas, and Buffer and Recreation. Training Ranges and Training Areas assessments, based upon training needs and quality requirements, are maintained on record through the SRP program under the guidance of DA G-3/5/7.

4.14.10.2 Environmental Consequences

CS/CSS. There would be moderate (medium) impacts to facilities. It is anticipated an increase of 1,000 Soldiers would increase activities within the Cantonment Area, including but not limited to, increased usage of the Post Exchange, commissary, medical, and Family support facilities.

Although Fort Stewart does not have available buildings to support the CS/CSS, the installation has buildable space. However, these activities would have to be scheduled to coordinate with existing mission activities. The installation should be able to reasonably accommodate a CS/CSS with a review of the real property management plan (RPMP). Additional facilities construction to support the CS/CSS in range areas is not likely.

Full Sustainment BDE. There would be moderate (medium) short- and long-term impacts to facilities. Increased Soldier strength of 3,000 to 3,500 would be reflected through increased usage throughout the Cantonment Area. The availability of buildable space on Fort Stewart supports implementation of the ACP at this level although existing building space is not available. Increased activities within the training and range areas would be expected to cause long-term impacts due to increased human presence, as well as construction and training activities within the range and training areas. The RPMP would require modifications to allow for implementation of the ACP. A study using the Sustainable Installations Regional Resource Assessment (SIRRA) would also be beneficial.

IBCT, HBCT, Multiple BCTs. Fielding a BCT would also result in moderate (medium) short- and long-term impacts to facilities. The addition of a BCT would potentially increase usage of cantonment assets beyond what is projected for a BDE; however, a review of the installation RPMP along with other facilities and infrastructure studies may be able to accommodate the proposed action. Although the installation has buildable space available, there is a lack of existing space in the installation's facilities to support an additional BCT. Construction of the required infrastructure would be necessary in both the cantonment and range areas. Special Use Airspace is also of concern as construction in the existing restricted use airspace area can adversely impact the utilization of overlying airspace. There is a high probability that multiple BCTs would

increase congestion beyond the carrying capacity of the cantonment infrastructure and support services. The level of construction required for the multiple BCT scenario is resource intensive and potentially beyond the ability of Fort Stewart to sustain. The excess aggregate demand on cantonment facilities and infrastructure required by multiple BCTs may exacerbate system degradation within the Cantonment Area, or create non-compliant regulatory issues. More analysis would determine if multiple BCTs would have significant impacts to Fort Stewart.

4.14.11 Energy Demand/Generation

4.14.11.1 Affected Environment

Fort Stewart energy consumption profile is very diverse, consisting of six different sources of energy – electric power and natural gas, both delivered by commercial utilities, as well as No. 2 fuel oil, propane, waste wood, and waste oil. The abundance of energy sources, and adequate supplies from each source, provide Fort Stewart with ample excess energy capacity, allowing them to accommodate a variety of future mission expansion scenarios.

4.14.11.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Growth of 1,000 to 7,000 Soldiers, their Families, and civilian support is anticipated to have a minor (low) impact on the local community and the environment. In terms of energy usage and generation, Fort Stewart's existing energy infrastructure has sufficient excess capacity, diversity, and scalability to readily absorb growth. In order to accommodate any new mission activity, an initial capital investment would be required to extend the existing energy infrastructure to meet the new demand. That said, the current electrical and natural gas distribution systems, supplemented by the additional sources of energy outlined above, have sufficient excess capacity. Multiple BCTs may require extensive construction and expansion of the existing energy infrastructure, the joint capacity and scalability of the electrical and natural gas distribution systems, supplemented by the other energy sources outlined above, are not likely to be challenged. Like the others, this scenario results in a new energy demand posture that is comfortably within the capacity of the existing energy infrastructure to accommodate.

4.14.12 Land Use Conflicts/Compatibility

4.14.12.1 Affected Environment

Fort Stewart has grown to approximately 280,000 acres, becoming the largest Army installation east of the Mississippi River. Fort Stewart divides its 279,270 acres of land into 120 maneuver training areas. These areas total over 191,000 acres (including 19,985 acres of impact areas), or 68 percent of Fort Stewart's total property. The Army conducts live-fire training exercises involving mortars, artillery, and tanks at Fort Stewart on a 24-hour a day basis throughout the year. The ranges provide training and qualification firing for individual and crew-served weapons systems, anti-tank weapons, demolitions, helicopter gunnery, 25 mm gun and 120 mm tank gun firing. The artillery

and mortar firing points (approximately 90) can support MLRS, 105 mm through 155 mm howitzers and 60 mm through 120 mm mortars (US Army Fort Stewart, 2005).

The cantonment area at Fort Stewart is immediately north of Hinesville, approximately 35 miles southwest of Savannah. Hunter Army Airfield (HAAF) is an integral part of Fort Stewart, but approximately 40 miles east of Hinesville in the City of Savannah and Chatham County, Georgia. Hunter Army Airfield covers approximately 5,400 acres in northeastern Georgia in Chatham County. It borders Savannah at the city's southwest corner (US Army Fort Stewart, 2002).

Fort Stewart maintains active Army Compatible Use Buffer (ACUB) and Joint Land Use Study (JLUS) programs, working with local community partners to protect natural resources and sustain military operations. Our common goals are to minimize rural land conversion to dense residential development around the installation, utilizing a variety of methods (depending on property owners' objectives), and to encourage smart development methods in addressing an anticipated doubling of our regional area population over the next 10 years.

4.14.12.2 Environmental Consequences

CS/CSS. There would be minor (low) short and long-term environmental impacts on installation land use due to the presence of an additional 1,000 Soldiers and their Family members assigned to the installation. The installation has sufficient land available to either build the facilities, sufficient vacant space in existing buildings, or a combination thereof to meet the unit's mission requirements. Additionally, the land or existing facilities are located such that surrounding facilities are compatible with the additional CS/CSS unit. The facilities required for a CS/CSS would be located within a single contiguous land unit.

Full Sustainment BDE. There would be moderate (medium) short and long-term environmental impacts on installation land use due to the presence of an additional 3,000 to 3,500 Soldiers and their Family members. The installation may not have sufficient land available to either build the facilities needed for this unit, or may not have sufficient vacant space in buildings suitable for the unit's mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges.

IBCT. There would be moderate (medium) short and long-term environmental impacts on installation land use due to the presence of an additional 3,500 Soldiers and their Family members. The installation may not have sufficient land available to either build the facilities needed for this unit, or may not have sufficient vacant space in existing buildings suitable for the unit's mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities

may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges.

HBCT. There would be moderate (medium) short- and long-term environmental impacts on installation land use due to the presence of an additional 3,800 to 4,000 Soldiers and their Families assigned to the installation. The moderate negative effects of stationing a HBCT would be similar to that of stationing an IBCT at the installation.

Multiple BCTs. There would be significant (high) short- and long-term environmental impacts on installation land use due to the presence of an additional 7,000, or more Soldiers and their Families assigned to the installation. The installation would not have enough existing facilities, located in areas with comparable land uses to accommodate multiple BCTs. New or existing facilities would not be contiguous, and distant from Soldier support facilities and training and maneuver ranges. Building new training ranges for multiple BCTs could require construction on, or adjacent to, existing training facilities, such that those training facilities become unusable. This, in turn, would cause a measurable decrease of the installation's capacity to train Soldiers. Building new facilities on previously inactive ranges could also require construction on or immediately adjacent to, environmentally sensitive areas such as wetlands, requiring extensive, and/or expensive mitigation actions.

4.14.13 Hazardous Materials/Hazardous Waste

4.14.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage, transport, and disposal of hazardous materials and wastes at Fort Stewart. This includes hazardous materials and wastes from underground storage tanks (USTs) and aboveground storage tanks; pesticides; lead-based paint (LBP); asbestos; polychlorinated biphenyls (PCBs); radon; and unexploded ordnance (UXO). Each installation operates under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and non-hazardous materials for toxic and hazardous ones; ensure compliance with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste. (US Army Corps of Engineers, February, 2002)

4.14.13.2 Environmental Consequences

CS/CSS. There would be minor (low) long-term impacts from hazardous materials and waste. It is anticipated that Fort Stewart would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BDE. Minor (low) short- and long-term impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 3,500. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. Direct beneficial impacts include activities associated with land transactions where the Army would continue to operate under its installation restoration program to return contaminated lands to fully usable status. Direct adverse impacts include increased facility construction and modification. (US Army Corps of Engineers, February, 2002)

IBCT, HBCT. There would be moderate (medium) short- and long-term impacts expected from an additional BCT. Many projects involve the use, generation, and storage of hazardous materials and wastes during facility demolition, renovation, or construction. The installation would incur an additional demand for storage and disposal capacity that would have to be met at the local level. Installation guidelines that manage the use, storage, and disposal of materials and wastes would need to be updated to reflect the change in mission at Fort Stewart and expanded training activities.

Multiple BCTs. The establishment of multiple BCTs at Fort Stewart would result in significant (high) short- and long-term impacts from hazardous materials and waste. Generation and management of hazardous materials and waste, pesticides, petroleum storage tanks, ordnance and explosives would all be higher than with the other actions, and waste management plans would need to be updated to reflect the change in mission and expanded training activities.

4.14.14 Traffic and Transportation

4.14.14.1 Affected Environment

The region of influence (ROI) of the affected environment for traffic and transportation aspects of the proposed action include Fort Stewart, and several neighboring counties, to include Bryan, Chatham, Evans, Liberty, Long and Tattnall counties, and the communities therein, to include Hinesville, Riceboro, Flemington, Gum Branch, and Richmond Hill. Major road routes in the region include I-95 located approximately 15 miles east of the Fort Stewart cantonment area, and US Route 84 another North-South arterial, which goes through Hinesville.

4.14.14.2 Environmental Consequences

CS/CSS. There would be moderate (medium) short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their Family members assigned to the installation. Spread across the ROI, this population would have *de minimis* impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the installation, and is not expected to reduce the level of service (LOS) on the installation's road network. There may be a slight increase in traffic

volume during peak morning and evening hours. The population increase may have a minor to moderate increase of risk to the safety of pedestrians and bicyclists.

Full Sustainment BDE. There would be moderate (medium) short and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 3,500 Soldiers and their Family members assigned to the installation. The increase in off-post traffic would have a minimal impact on traffic in the community overall and could contribute to a decrease in the LOS in the road network leading to the installation, particularly during peak morning and afternoon travel periods. This increase in population would also have a moderate impact on the traffic volume on the installation, and could cause a minor decrease in LOS on some of the installation's arterial routes. The increased traffic volume in both the neighboring community and on the installation could pose an increased level of risk to the safety of pedestrians and bicyclists.

IBCT. There would be moderate (medium) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,500 Soldiers and their Family members. Both on the installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would be slightly greater than that caused by the presence of the Full Sustainment BDE. Similarly, the safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of a Full Sustainment BDE.

HBCT. There would be moderate (medium) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 3,800 to 4,000 Soldiers and their Family members. Both on the installation and in the local communities, the increase in traffic congestion and accompanying decrease in LOS would be slightly greater than that caused by the presence of an IBCT. Similarly, the safety risk to pedestrians and bicyclists would be slightly higher than that posed by the presence of an IBCT.

Multiple BCTs. There would significant (high) short- and long-term impacts on traffic and transportation systems on the installation due to the presence of an additional 7,000 Soldiers, or more, and their Family members. The effect on Fort Stewart from this increased population level would be significant due to congestion, and would likely cause a decrease in LOS in the installation's road network.

4.14.15 Cumulative Effects

Fort Stewart is bordered to the north by agriculture and wetlands; to the east by the Ogeechee River; to the south by agriculture, wetlands and the City of Hinesville; and to the west by agricultural lands. The nearest cities are Hinesville to the south; Richmond Hill to the east; Pembroke to the north; Glennville to the west; and Savannah, approximately 41 miles to the northeast. There are no known significant projects ongoing, or in the foreseeable future, in the communities outside the installation

boundary; however, routine activities, such as roads maintenance and minor construction (Fort Stewart, 2007).

Several projects have been identified that are either in progress now, or would be in progress within the next five years and have the potential to result in cumulative effects, when considered in conjunction with the proposed action. Most of these projects have been previously identified in the Installation's Real Property Master Planning Board and preliminarily assessed for environmental impacts via the NEPA process; however, some of the projects are still pending final approval and subsequent compliance with NEPA. These projects are listed below:

- Improvements to the Convoy Live-Fire training area;
- Construction of additional MOUT sites [CACTF, Shoot houses (2), Urban Assault Course], a Convoy Live-Fire Course, a Digital Multi-Purpose Range Complex, a Digital Multi-Purpose Training Range, an Engineers Qualification Area, permanent facilities for the 4th Brigade Combat Team, a new AAFES shopping center; additional Residential Communities Initiative Single Soldier Housing, several MWR projects (to include shoppettes), new facilities within the GA Army National Guard Complex (to include demolition of two existing facilities), and two new middle schools (one for Bryan County and one for Liberty County);
- Upgrades to Wright Army Airfield and the Evans Field Wastewater Treatment Plant;
- Road improvement projects, including the widening of Georgia Highway 144 and the construction of a bypass, moving traffic away from the cantonment area; and
- Extension of utilities access to outlying areas via the Cypress Pipeline (natural gas) and East Side Right of Way (electricity) projects.

Other reasonably foreseeable actions, such as routine road and tank trail maintenance, range, building, and hangar maintenance, building/hangar renovations, unit motor pool maintenance, troop training, and routine airfield activities, would continue in the current manner on an annual basis. (Fort Stewart, Environmental Assessment of the Construction of Artillery Firing Point 311, June 2007)

Fort Stewart expects a range of potential direct and indirect effects from Army Growth, primarily minor to moderate (low to medium). The installation currently provides training for three HBCTs stationed at Fort Stewart, and two additional HBCTs plus an IBCT stationed elsewhere. As stated above, there are no known significant projects in the reasonably foreseeable future outside the installation boundary. Cumulative impacts are expected to be the result of growth on Fort Stewart and are as follows:

Air quality is expected to have an overall minor effect. Although Fort Stewart is a major source of air pollutants, the primary source of these pollutants are stationary (e.g., boilers or fuel storage and dispensing areas). Only localized, short-term elevated air pollutants are expected and should not significantly impact regional air quality. Cumulatively, short-term effects are expected from periods of heavy construction

combined with days when training intensity is elevated. Air quality may be impacted by an increase in ozone, particulate matter, and fugitive dust.

Noise levels may also be elevated in NZ II during days of heavier training and heavy construction noise and traffic. Disturbance to wildlife receptors on- or off-post residential receptors is expected to be short-term and not permanent. Though during these times of increased noise intensity, the installation's peak noise thresholds may increase slightly, peak noise would not remain elevated, nor would this increase require a modification to the installation's noise plan.

Direct and indirect impacts to cultural or historical resources may have cumulative consequences. For example, the increase in vehicle traffic and construction may directly damage unknown, undocumented artifacts. Although approximately 58 percent (164,000 of 280,000 acres) of the installation has been surveyed, a large portion of the installation would still need to be surveyed to identify potential impacts and mitigations. Fort Stewart does maintain a programmatic agreement (as identified in Section 4.15.4.1) for projects that would not adversely affect cultural resources at the installation; however, site-specific analysis would be required to identify the level of impact, if Fort Stewart were to be significantly impacted by Army growth. Adverse effects to cultural resources or historic properties would require additional consultation under 36 CFR 800. Indirect impacts to cultural or historic resources may come from the percussion or vibration of additional traffic from heavy tactical and non-tactical vehicles.

Minor cumulative effects to soil erosion and surface water would be expected from the combination of construction and additional maneuver traffic. The installation anticipates the potential for increased siltation and sedimentation which could have water quality impacts, resulting in indirect effects to many of the installation's Federal and State listed species, which rely on those water sources for foraging and survival.

Overall, cumulative impacts would likely be short-term and minor in nature. However, more significant impacts would be expected if there is a change in Fort Stewart's METL. Fort Stewart already accommodates a considerable amount of training (Infantry and Heavy Brigade), as well as from nearby installations. However, any impacts from an additional BCT alone are not expected to change the installation's mission. Interactions with other ongoing and proposed actions would not add to these effects substantively or permanently.

4.15 WHITE SANDS MISSILE RANGE, NEW MEXICO
4.15.1 Introduction

White Sands Missile Range (WSMR), located in south central New Mexico and is adjacent to Fort Bliss. It has approximately 2,200,000 acres of varied and rugged terrain (Figure 4.15-1). WSMR’s mission is one of testing Army missile systems and air-defense systems, as well as other items. WSMR has six non-duded training ranges in the northern portion of the installation.

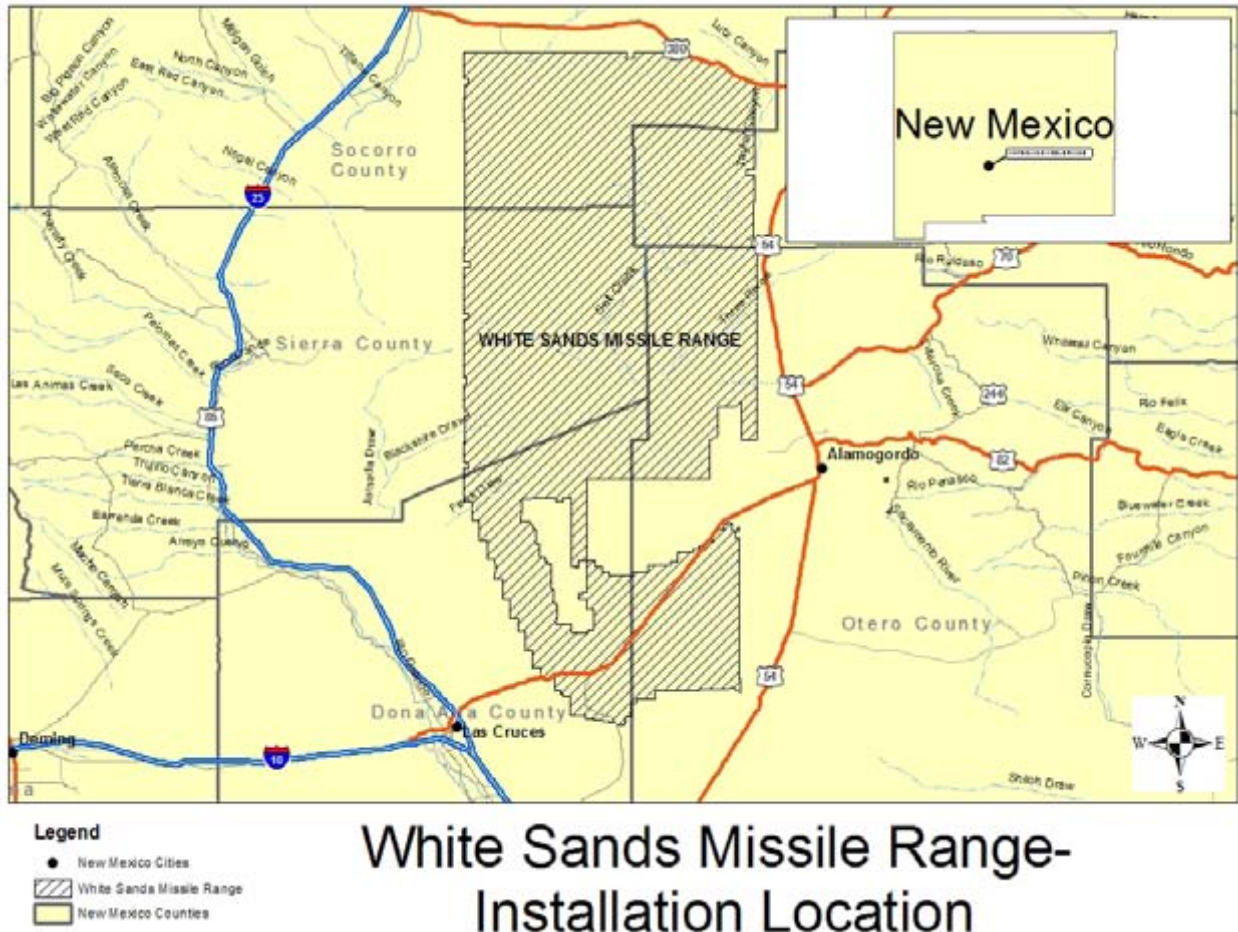


Figure 4.15-1 White Sands Missile Range

Table 4.15-1 contains the WSMR’s VEC ratings for each of the various stationing action scenarios.

Table 4.15-1. White Sands Missile Range VEC Ratings

White Sands Missile Range						
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Stryker BCT (4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Medium	Medium	Medium	Medium	Medium	Medium
Airspace	Low	Low	Low	Low	Low	Medium
Cultural Resources	Low to high depending on survey results	Low to high depending on survey results	Low to high depending on survey results	Low to high depending on survey results	Low to high depending on survey results	Low to high depending on survey results
Noise	Low	Low	Low	Low	Low	Low
Soil Erosion Impacts	Low	Medium	Medium	Medium	Medium	Medium
Biological Resources	Low	Low	Low	Low	Low	Low
Wetlands	Low	Low	Low	Low	Low	Low
Water Resources	Medium	Medium	Medium	High	High	High
Facilities	Low	Low	Low	Low	Low	Low
Socioeconomics	Low	Low	Low	Low	Low	Low
Energy Demand/ Generation	Low	Low	Low	Low	Low	Low
Land Use Conflict/ Compatibility	Low	Low	Medium	Medium	Medium	Medium
Haz Mat/ Haz Waste	Low	Medium	Medium	Medium	Medium	Medium
Traffic and Transportation	Low	Low	Low	Low	Low	Low

4.15.2 Air Quality
4.15.2.1 Affected Environment

At WSMR, the ROI for air quality is located in New Mexico AQCR 6. New Mexico AQCR 6 includes Doña Ana, Otero, Sierra, and Lincoln counties. These counties, along with six counties in Texas, also are part of the EPA El Paso-Las Cruces-Alamogordo Interstate AQCR 153. WSMR is located in designated attainment areas relative to compliance with ambient air quality standards.

There are no sensitive receptors of air pollutant impacts associated with WSMR, and the climate does not exhibit wide variations in monthly or seasonal patterns of atmospheric dispersion conditions. Airborne dust is a persistent problem throughout WSMR, with strong westerly winds in the spring (March through early May). These

produce dust storms prior to the onset of the rainy season. Intact soils and vegetation generally promote better air quality; however, if vegetation is removed and soil exposed, wind erosion often leads to substantial amounts of airborne dust.

WSMR is a major source of air pollutants and maintains a Title V Operating Permit. Primary stationary sources include boilers, generators, fuel storage and dispensing areas, and surface coating operations (USAEC, 2006)).

Since WSMR is located in attainment areas there is no requirement to conduct a conformity analysis. The CAA's Prevention of Significant Deterioration requirements are not expected to be triggered by the installation's activities.

Short-term intermittent minor adverse impacts would be expected within the ROI as a result of construction activities, training exercises, and increased automobile use. Heavy construction equipment and trucks would emit minor amounts of NO_x, PM-10, CO, SO_x, and VOCs. These affects, though possibly significant at the moment, are not considered to have a long-term impact on regional air quality.

4.15.2.2 Environmental Consequences

CS/CSS. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of a CS/CSS unit and its 1,000 Soldiers. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality.

Full Sustainment BDE, IBCT. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of 3,000 to 3,500 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a significant effect on regional air quality. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to installation boundaries that visible emissions leave the installation. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected. Additionally, with the IBCT it is anticipated that more training/operations would occur away from established roads.

HBCT, Stryker BCT. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of a Heavy Brigade Combat Team and its 3,800 to 4,000 Soldiers. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these would tend to remain localized and produce no significant impact to regional air quality.

Multiple BCTs. As stated above, the expected environmental impact on the installation and surrounding communities by the restationing of multiple Brigade Combat Teams and approximately 7,000 Soldiers is expected to be “moderate-level” (medium) regarding the long-term effect on air quality. Construction and changes to facility operations to support multiple brigades would be significant initially but should provide no sustained negative impact to regional air quality.

4.15.3 Airspace

4.15.3.1 Affected Environment

WSMR is the largest open-air/over-land missile range in the hemisphere, and includes major ranges and testing facilities for all of DoD. Activities include bomb delivery, air-to-air combat maneuvers, supersonic flight tactics, low-altitude flights (including fixed- and rotary-winged operations), and missile and rocket delivery (USAEC, August 2006).

4.15.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT. There would be minor (low) long-term impacts to airspace from UAV operations. It is anticipated that the activities associated with an increase of the CS/CSS or Full Sustainment BDE would not affect airspace at WSMR. The addition of a BCT would have to be scheduled to coordinate with existing mission activities. Where existing airspace is insufficient, or already saturated with military activity, the installation commander would have to seek additional special use airspace designations from the FAA. Future new systems or modifications to existing systems could also affect airspace use, resulting in greater demand for exclusive military use of the resource. No changes to airspace from firing of munitions/artillery/ordnance would accompany the BCT.

Multiple BCTs. The establishment of multiple BCTs would result in a moderate-level (medium) long-term impact to airspace. Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use. The need for additional special use airspace may be necessary with the additional UAV operations, site-specific analysis would be required to make this determination. Additionally, if there are any significant changes to live-fire training areas where ordnance is delivered or exploded (such as artillery), modifications would be needed to ensure adequate training airspace is available.

4.15.4 Cultural Resources

4.15.4.1 Affected Environment

The affected environment, relating to cultural resources, is the footprint of WSMR. The installation has extremely rich deposits of archaeological resources. Many of these archaeological resources are on the surface and easily destroyed by foot and vehicle traffic. In addition to Cold War-era facilities, the historical buildings inventory of WSMR includes 200 ranches and a Depression-era Civilian Conservation Corps camp.

4.15.4.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs . The environmental consequences of the proposed action, relative to cultural resources, could be minor to significant (low to high) depending on survey results for the chosen training area. WSMR is approximately 3,200 square miles. The size of WSMR has made it impossible to survey an appreciable percentage of the installation for cultural resources. Therefore, any new training missions would require surveys to identify any cultural resources within the proposed training area. This would add both cost and time to the initiation of training. There should be little impact on historic buildings as the buildings at WSMR are not over crowded at this time.

4.15.5 Noise

4.15.5.1 Affected Environment

WSMR is the largest open-air/over-land missile range in the hemisphere, and includes major ranges and testing facilities for all of DoD. Noise at WSMR is generated from largely from bomb delivery, air-to-air combat maneuver, supersonic flight tactics (producing sonic booms), low-altitude flights (including fixed- and rotary-winged operations), missile and rocket delivery producing ordnance explosions (USAEC, August 2006). Any current noise heard off the installation would likely be from sonic booms. The National Guard uses some of WSMR's ranges, infrequently for training, but this does not register outside the installation boundary. Though low-level, vehicle noise is persistent around the main post.

4.15.5.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT Multiple BCTs . WSMR expects minor (low) short- and long-term impacts to wildlife or nearby residents from any of the proposed scenarios including the addition of a 1,000 to 7,000 Soldiers to WSMR. WSMR has large tracts of testing land that is far from any major population centers and the wildlife receptors located on the installation have been thriving there despite the current testing mission. Guidelines for responsible noise management which protects wildlife including T&E species can be found in the installation's ESMP and INRMP, and would continue to be followed. Noise contours would need to be reviewed and the installation's noise plan may require updating; however, noise impacts to sensitive off-post receptors would be minimal or unlikely. Construction of the required facilities and utilities to accommodate growth at the installation would have short-term impacts. There currently is not expected to be any noise generated from training, only traffic, as training is expected to take place at nearby Fort Bliss.

4.15.6 Soil Erosion

4.15.6.1 Affected Environment

WSMR is located in the Tularosa basin of south-central New Mexico covered mostly by Sand Sage, Creosote bush and Tarbush Shrublands, and Alkali Sacaton grassland. Predominant soil associations include sandy and stony loams (USAEC, August 2006). Common soil stressors (to WSMR) such as wildfire and drought increase the erodibility of soils, which is accelerated by military activities such as maneuver and live-fire training and natural processes such as high wind conditions (WSMR, 2001).

4.15.6.2 Environmental Consequences

CS/CSS. Minor (low) long-term impacts are expected. Construction may not be necessary to accommodate the additional 1,000 Soldiers at WSMR. Maneuver from this level of realignment is expected to be contained to hardened or improved surfaces, with only a slight increase in foot and light vehicle traffic in range course roads and unimproved surfaces in range areas. Any training other than typical maneuver would likely occur at Fort Bliss. No adverse impacts are expected to small arms ranges. Soils and erosion potentials would continue to be monitored as part of the installation's ITAM program and in accordance with the installation's INRMP.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. Moderate (medium) short- and long-term impacts to soil erodibility are expected. Construction to accommodate growth for 3,000 to 7,000 additional Soldiers, their Families, and any support staff would likely be significant, but short-lived and mitigable, having only moderate impacts to the soil, which is expected to recover. Traffic and a certain degree of maneuver impacts from this increase of Soldiers, including associated equipment may displace soils in the already disturbed areas of the installation. Unimproved range roads may be more susceptible to water and wind erosion. Some of these roads may need to be improved or hardened to help control an increase in soil transport. Maintenance techniques such as re-vegetation and re-grading may need to be employed. Maneuver and training from heavy tracked and wheeled vehicles are expected to be accommodated by Fort Bliss.

4.15.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.15.7.1 Affected Environment

A total of 61 floral species having federal or state status occur or potentially occur on WSMR. A number of priority Army species at risk are recorded on WSMR. Two are endemic to the installation and 55% of the known population of another occurs on WSMR. One federally-listed and four candidate floral species are found on the installation. In addition, 47 floral species have been designated by White Sands Environmental Stewardship as WSMR species of interest. A total of 25 faunal species having federal or state status occur or potentially occur on WSMR. There are six federal-listed species and one candidate species found on WSMR, and three federal-listed species are recorded as contiguous to the installation. Critical habitat for one

federal-listed species also occurs on the installation. These species include the Aplomado falcon (*Falco femoralis*) (as part of a Safe Harbor Program, breeding pairs of the Aplomado Falcon has been released into the wild), White Sands pupfish (*Cyprinodon tularosa*), and the Organ Mountain Colorado chipmunk (*Eutamias quadrivittatus australis*). More information on these species can be found in Appendix T of this document.

4.15.7.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. The installation anticipates only minor (low) long-term impacts on the listed species found onsite. As long as activities are conducted in areas not inhabited or utilized by the federal-listed and other status species, these actions would have very little impact on these species. Listed species and other special status species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. Avoiding or minimizing impacts to habitat essential for these species would be required to avoid the potential for these species to be listed. WSMR has identified that listing of any of these species under the Endangered Species Act would have an impact on the installation's mission. (WSMR Personnel, May 2007)

4.15.8 Wetlands

4.15.8.1 Affected Environment

White Sands Missile Range contains approximately 5,160 acres of wetlands (Army Environmental Database-Environmental Quality, (n.d)). Wetland issues are not common on White Sands due to the large area that it encompasses. Numerous ephemeral playa lakes are present. Most water is the result of runoff from the San Andres and Oscura Mountains. (INRMP, US Army, 2001)

4.15.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. There would be a minor (low) impact on the installation wetland areas as a result of growth of 1,000 to 7,000 Soldiers to WSMR. Training activities are expected to occur at Fort Bliss, relieving WSMR of any potential impacts from training on their range lands.

4.15.9 Water Resources

4.15.9.1 Affected Environment

Watersheds

The Jornada del Muerto Basin is located in the northwest and western portions of WSMR, and drains a 1,893 square-mile area, almost half of which is located within WSMR. The Tularosa Valley watershed drains most of the lands within WSMR, as more than one third of the basin lies within the installation's boundary. This watershed

receives recharge from the San Andreas and Sacramento mountain fronts with discharge to evaporation occurring in the lowest portion of the basin at Lake Lucero. Additionally, a small portion of the Jornada Draw watershed (a closed basin) lies within the installation's boundary and drains 1,268 square miles. Portions of four other watersheds fall within the WSMR extension areas, these include El Paso-Las Cruces, Elephant Butte Reservoir, Rio Grande-Albuquerque, and Western Estancia (WSMR INRMP, 2001).

Surface-Water

Surface-water resources within WSMR are limited due to low rainfall, high evaporation rates, and high soil infiltration properties. Most streams, lakes, and rainwater catchments are ephemeral; however, Salt Creek and many of the springs found on the installation are perennial.

Water Supply

WSMR's produces water via five potable water systems, the Main Post, Stallion Range Center (SRC), High Energy Laser Systems Test Facility, Small Missile Range, and the Hazardous Test Area. On-post groundwater wells are the source of water for all three systems. WSMR also obtains additional water from wells located on Fort Bliss. Groundwater production for Main Post has averaged about 2.43 million m³ (641 MG) annually. Groundwater production for the SRC averages about 35,200 m³/year (9.3 million gal/year). Other facilities on WSMR receive hauled water from the SRC and Main Post.

Wastewater

Sanitary wastewater and minor commercial discharges generated at Main Post are treated by the WSMR sewage treatment facility. The treatment facility has a design capacity of 0.47 MGD and maximum capacity of 1 MGD. The system currently operates at approximately 50% of capacity.

At SRC, the treatment system has a rated capacity of 27,000 GPD via a septic tank/evaporative lagoon system. The SRC wastewater treatment system currently operates at 20 % of capacity.

4.15.9.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT. An addition of 1,000 to 3,500 Soldiers is anticipated to have a moderate (medium) impact to WSMR. The region is currently experiencing potable water supply issues, though an increase of this size of Soldier strength would continue to elevate those issues, it is anticipated that growth could be supported with only moderate long-term water conservation impacts.

HBCT, Stryker BCT, Multiple BCTs. An addition of a HBCT is anticipated to have a significant (high) impact on WSMR and the entire region. Although water consumption would increase, there is water capacity at the water system to handle HBCT activities.

White Sands would experience water demand shortfalls if they receive a large number of Soldiers and may have to conduct additional analysis.

Both the Main Post and SRC wastewater treatment facilities are currently operating below capacity. The installation would need to revisit their Storm Water Pollution Prevention Plan to incorporate best management practices for any new training activities. The installation would likely need to consider upgrades to their water supply systems to ensure adequate supply capability is met.

4.15.10 Facilities

4.15.10.1 Affected Environment

WSMR is the largest all-overland military test range in the Western Hemisphere. The Main Cantonment is the urbanized portion of WSMR, and has been developed into a wide variety of land uses that comprise the elements necessary for a complete community. The cantonment includes an extensive infrastructure that includes a central administrative and technical complex, housing, roads, air transport facilities, a railhead; and systems for water distribution, sanitary waste, natural gas distribution, solid waste landfills, electric power, and communication networks. Specific examples of activities conducted at WSMR include acoustic tower and Future Combat Systems (FCS) testing. Infrastructure and facilities have evolved over a 50-year period and are being constantly improved and expanded to accommodate the military test and evaluation mission (US Army, August 2006). The VECs for utilities, energy, and traffic/transportation are addressed in separate sections of this PEIS.

WSMR also supports the Warrior Transition Course managed by the New Mexico National Guard. This course is designed to provide former Soldiers, Marines, Sailors, and Airmen the training required to transition into the Active Force.

4.15.10.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. There would be minor (low) environmental impacts to facilities. It is anticipated that the activities associated with an increase of 1,000 to 7,000 Soldiers would increase facilities usage within the cantonment and training and range areas. WSMR can currently accommodate a CS/CSS or Full Sustainment BDE with good planning. The addition of an IBCT, HBCT, Stryker BCT, or even multiple BCTs would increase activity within the cantonment area, and would require a reciprocal level of construction to accommodate this level of growth. Additional coordination and a review of the WSMR Real Property Master Plan may be necessary. The impacts on utilities and communications are primarily related to projected increases in population on- and off-post supporting this level of growth. These were analyzed by estimating per unit consumption on generation rates using the most recently available data, and then estimating how total consumption or generation rates would change with the changed population. The increased consumption and generation were then compared with the ability of existing infrastructure to handle those changes.

4.15.11 Energy Demand/Generation

4.15.11.1 Affected Environment

All energy requirements of White Sands Missile Range (WSMR) facilities are met by electricity, natural gas, and propane.

Natural Gas: A private utility provides natural gas to Main Post for heating and other industrial and residential uses through two high-pressure pipelines from El Paso, Texas. The distribution line to WSMR enters Main Post at Building 1794, where it is metered, reduced in pressure, and distributed. All other WSMR facilities use tank-fed propane gas for heating and other purposes. In 2000, range wide consumption of natural gas and propane was 13,873 m³ (495,478 ft³) and 11,632 m³ (415,460 ft³), respectively.

Electricity: Electric Power is provided to WSMR by several commercial electric utilities and is distributed across the installation by approximately 648 km (400 mi) of overhead and 42 km (26 mi) of underground lines. In 1999, the total quantity of electricity purchased by WSMR was 87,420,549 kWh. Portable and semi-permanent generators provide low voltage electrical power (10–700 kVA) to remote test sites across WSMR.

4.15.11.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Any level of growth as assessed by this PEIS is expected to have only a minor (low) impact on the power supply and energy demand locally or regionally. In terms of energy usage and generation, the existing energy infrastructure has sufficient excess capacity and scalability to readily absorb the addition of 1,000 to 7,000 Soldiers. While multiple BCTs may require expansion of the existing energy infrastructure, the capacity of the electrical, natural gas, and propane distribution systems are not likely to be challenged.

4.15.12 Land Use Conflicts/Compatibility

4.15.12.1 Affected Environment

WSMR is the largest all-overland military test range in the Western Hemisphere. The Installation is supported by an extensive infrastructure that includes a central administrative and technical complex, roads, air transport facilities, a railhead; and systems for water distribution, sanitary waste, natural gas distribution, solid waste landfills, electric power, and communication networks. WSMR also supports a variety of highly specialized test sites and facilities. Main Post occupies approximately 890 acres along the eastern slopes of the Organ Mountains in the southwest corner of WSMR; it serves as the center of operations for most garrison organizations and tenants (US Army, White Sands, 2006).

Other lands found within the boundary of WSMR as part of cooperative agreements include the 147,527 acre White Sands National Monument, and the 57,000 acres San Andres National Wildlife Refuge. A cooperative agreement with the U.S. Forest Service

allows co-management by WSMR and Fort Bliss of the 18,000 acre San Andreas National Wildlife Refuge.

4.15.12.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. There would be minimal (low) short and long-term environmental impacts on installation land use due to this level of growth at WSMR. The installation has sufficient land available to either build the facilities, sufficient vacant space in existing buildings, or a combination thereof to meet the unit's mission requirements. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible. The facilities required would be located within a single contiguous land unit.

IBCT, HBCT, Stryker BCT, Multiple BCTs. There is an expected moderate (medium) short- and long-term impact to installation land use due to the presence of an additional 3,500 to 7,000 Soldiers and their Family members. The installation may have sufficient land available to either build the facilities needed; however an extensive amount of construction would be likely needed to accommodate this level of growth, having an overall moderate impact to installation resources. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training areas at Fort Bliss.

4.15.13 Hazardous Materials/Hazardous Waste

4.15.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage, transport, and disposal of hazardous materials and wastes at WSMR. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO. Each installation operates under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and nonhazardous materials for toxic and hazardous ones; ensure compliance with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste. (US Army Corps of Engineers, February, 2002)

4.15.13.2 Environmental Consequences

CS/CSS. There would be minor (low) long-term environmental impacts from hazardous materials and waste. It is anticipated that WSMR would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance

with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. Moderate (medium) long-term impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 7,000. Direct beneficial and adverse impacts would be expected, which include activities associated with land transactions where the Army would continue to operate under its IRP to return contaminated lands to fully usable status. Direct adverse impacts include increased facility construction and modification. (US Army Corps of Engineers, February, 2002) Waste management programs may be updated as needed. Generation and management of hazardous materials and waste, pesticides, petroleum storage tanks, ordnance and explosives would all be higher for the HBCT and Stryker BCT. The increase in these wastes would be managed in accordance with current standards and regulations.

4.15.14 Traffic and Transportation

4.15.14.1 Affected Environment

White Sands Missile Range is located in the south-central portion of the State of New Mexico approximately 45 miles north of the City of El Paso, Texas, and approximately 20 miles east of Las Cruces, New Mexico. The region of influence (ROI) of the affected environment for traffic and transportation aspects of the proposed action includes White Sands Missile Range.

4.15.14.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. There would be a minimal (low) short- and long-term effect to traffic and transportation systems on the installation due to the presence of an additional 1,000 to 7,000 Soldiers and their Family members assigned to the installation. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute to traffic volume on the installation, however, this level of growth in the area is not expected to reduce the level of service on the installation's road network. There may be a slight increase in traffic volume during peak morning and evening hours, but it would not affect level of service or pose an increased risk to the safety of pedestrians and bicyclists. Short-term effects would come from minor road improvements that may be needed for growth at the BCT level.

4.15.15 Cumulative Effects

White Sands Missile Range has identified possible cumulative impacts to the testing and operations mission as a result of increased training on WSMR. The primary mission of White Sands is testing. If WSMR were to accommodate new units, training would likely be held at nearby Fort Bliss. Cumulative impacts would still be expected.

From the stationing of units at the installation. Air quality could be affected from the increase in traffic from tactical, non-tactical, and personal vehicles. Fugitive dust from the increased traffic may travel off the installation boundary. Construction on- and off-post would lead to short-term issues with air quality issues and noise. White Sands too would need to conduct surveys for cultural or archeological resources of the land identified to accommodate new growth. A large portion of the garrison has not been surveyed, due to the large tracts of land. Depending on the amount and location of identified resources, the installation could expect significant direct and indirect impacts to include direct impacts to undocumented resources from traffic, and indirect impacts from the vibration of traffic, and from fugitive dust.

Other cumulative issues would come from the increase in water demand from a growing on- and off-post population; however, White Sands is considering construction of a desalinization plant to reduce the pressure on the current water supply from a growing population. Regional growth would also likely have a socioeconomic impact that needs to be addressed as the schools become overcrowded. Las Cruces, a neighboring city of both WSMR and Fort Bliss currently has schools that are near or over capacity. (Conversation with David Scruggs, WSMR, 2007)

4.16 YAKIMA TRAINING CENTER, WASHINGTON

4.16.1 Introduction

Yakima Training Center (YTC), located in central Washington and east of Fort Lewis, has approximately 305,000 acres of maneuver area suited for vehicle and non-vehicular military training (Figure 4.16-1). YTC has long been supporting up to brigade level exercises for both armor and infantry units.

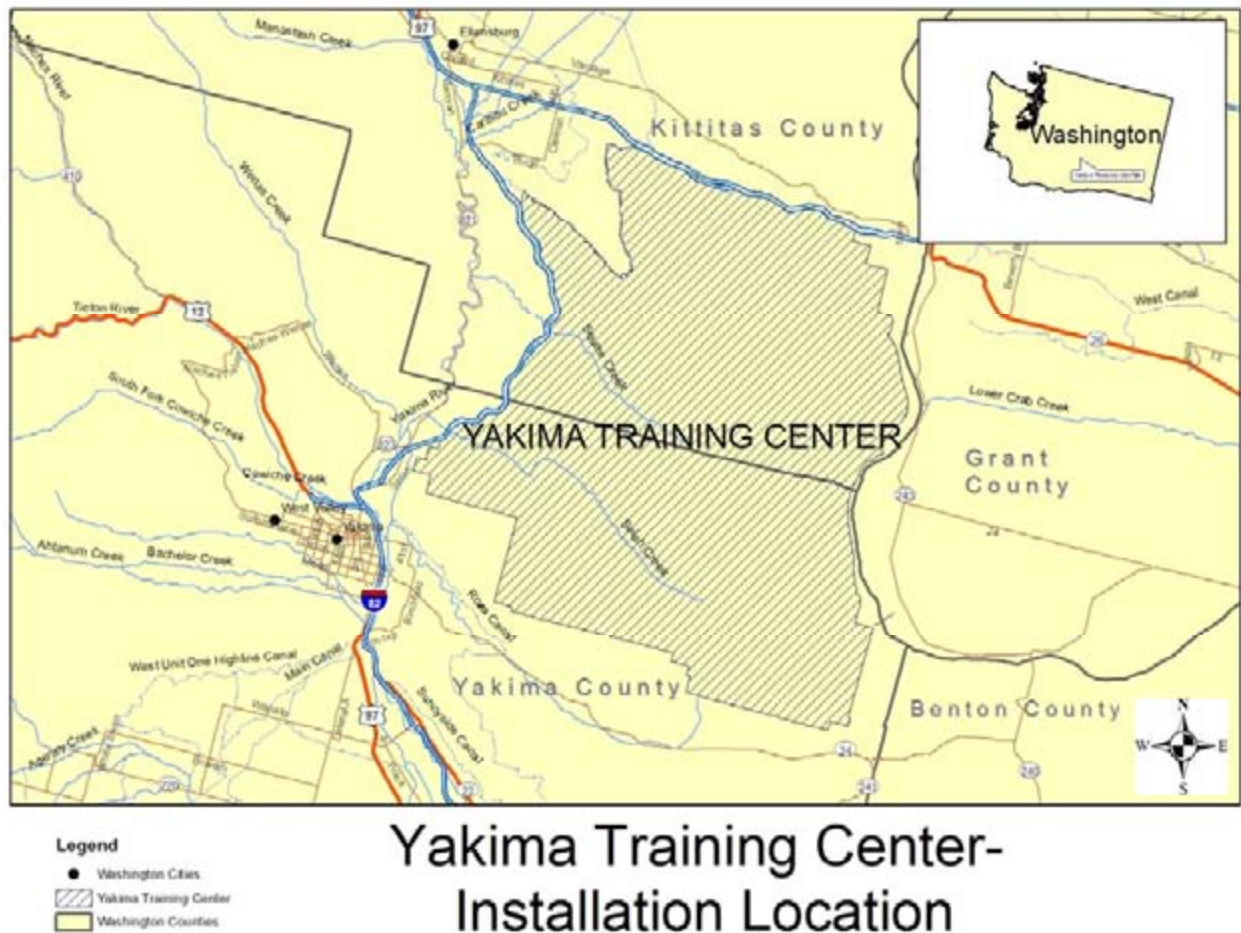


Figure 4.16-1 Yakima Training Center

The few units permanently stationed at YTC are generally small support elements that have little to no impact on the environment outside the limited cantonment area. Units from Fort Lewis, and elsewhere, deploy to YTC to conduct maneuver and live-fire training, and then return home to their respective installations. The impact of a particular training rotation at YTC varies according to the unit's training objectives.

YTC has a large, varied, and challenging maneuver area and a variety of live-fire ranges, to include large and small caliber ranges. The extent of urbanization occurring around YTC is lower compared to other installations and is not currently impacting the training mission.

Table 4.16-1 contains the YTC's VEC ratings for each of the various stationing action scenarios.

Table 4.16-1. Yakima Training Center VEC Ratings

Yakima Training Center						
VEC	CS/CSS Units (1,000 Soldiers)	Full Sust. BCT (3,000-3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Stryker BCT (4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Medium	Medium	Medium	Medium	Medium	Medium
Airspace	Very Low	Very Low	Very Low	Very Low	Very Low	Low
Cultural Resources	Very Low	Low	Medium	Medium	Medium	Medium
Noise	Very Low to Medium	Medium to Low	Low to Medium	Medium Medium	Medium Medium	Medium Medium
Soil Erosion Impacts	Low	Medium	Medium	High	High	High
Biological Resources	Medium	High	High	High	High	High
Wetlands	Low	Medium	Medium	Medium	Medium	Medium
Water Resources (biological)	Low	Medium	Low to Medium	Medium to High	Medium to High	Medium to High
Facilities	Medium	Medium	Medium	Medium	Medium	Medium
Socioeconomics	Low	High - Positive	High- Positive	High- Positive	High- Positive	High- Positive
Energy Demand/ Generation	Low	Medium	Medium	Medium	Medium	Medium
Land Use Conflict/ Compatibility	Medium	Medium	Medium	Medium	Medium	Medium
Haz Mat/ Haz Waste	Low	Medium	Medium	Medium	Medium	Medium
Traffic and Transportation	Low	Medium	Medium	Medium	Medium	Medium

4.16.2 Air Quality

4.16.2.1 Affected Environment

At YTC, the ROI for air quality is under the authority of the Washington Department of Ecology. Air quality regulation is carried out by the Central Region of Ecology in Kittitas County, and by the Yakima Regional Clean Air Authority in Yakima County. Opacity is regulated at YTC under the jurisdiction of the local air pollution control agencies.

Air quality on YTC is generally considered good, although a small strip of the western cantonment area lies within the Yakima PM₁₀ nonattainment maintenance area. Air quality on YTC can degrade rather quickly when particulate matter pollutants are generated by rangeland fires and the fugitive dust associated with maneuver training activities. However, particulate matter pollutants commonly dissipate quickly as a result of the predominantly westerly winds.

The largest stationary source of air pollution on YTC is fuel-burning equipment, which includes generators and boilers. Other sources of pollution include painting operations, a wastewater treatment plant, fuel storage, degreasing operations, and vehicle maintenance. Currently, YTC is a minor source of air pollution. An increase in emissions may result in a need to modify existing air emission approvals or obtain a Title V permit. Additionally, prior to construction a Dust Control Plan must be submitted to the Yakima Regional Clean Air Authority. The addition of new fueling facilities and paint shop facilities are required to undergo a new source review. For buildings that are considered for demolition, an Asbestos Survey must be conducted.

Because approximately 50 acres of the YTC cantonment area are within a moderate PM₁₀ nonattainment maintenance area, actions at YTC resulting in an increase to 100 tpy of particulate matter could trigger a conformity analysis. The Army will conduct further review of emissions increases to determine whether analysis and documentation is required, and will prepare a conformity analysis, as required. The closest Prevention of Significant Deterioration (PSD) Class I area to YTC is the Goat Rocks Wilderness Area, which is located approximately 60 miles to the southwest of the installation. It is not expected that PSD Class I areas would be affected by Army activities.

4.16.2.2 Environmental Consequences

CS/CSS. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of a CS/CSS unit and its 1,000 Soldiers. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality. There would be a small increase in the amount of fugitive dust and smoke produced (gunnery training, range fires). However, these impacts would be temporary and would not be expected to have significant opacity impacts outside the installation boundary.

Full Sustainment BCT. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of a Sustainment Brigade Combat Team and its 3,000 – 3,500 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a significant effect on regional air quality. Training, fuel storage and transfer, and generator usage would all contribute to emission increases of criteria pollutants on YTC. Increased VOC emissions would result from increased fuel storage and transfer to provide fuel to additional training

vehicles. These VOCs are emitted from vents on storage tanks during the transfer of fuel from the storage tank to the vehicle. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to installation boundaries that visible emissions leave the installation. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

IBCT. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of an Infantry Brigade Combat Team and its 3,500 Soldiers. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training. It is anticipated that the installation would see increases in emissions from equipment required to support the installation such as fuel storage and dispensing, boiler and incinerator operations and possible electric peak-shaving generators. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails.

HBCT, Stryker BCT. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of 3,800 – 4,000 Soldiers. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these would tend to remain localized and produce no significant impact to regional air quality.

Multiple BCTs. As stated above, the expected environmental impact on the installation and surrounding communities by the restationing of multiple Brigade Combat Teams and approximately 7,000 Soldiers is expected to be moderate (medium) regarding the long-term effect on air quality. Construction and changes to facility operations to support multiple brigades would be significant initially but should provide no sustained negative impact to regional air quality. Fugitive dust emissions remain a localized issue and should be addressed if activities are close enough to installation boundaries that visible emissions leave the installation. Exceeding particulate matter standards (PM_{2.5} and PM₁₀) is an area of particular concern for Fort Lewis as the Yakima Regional Clean Air Authority has recently issued the installation a letter regarding this issue.

4.16.3 Airspace

4.16.3.1 Affected Environment

YTC has 451 square miles of FAA-designated Special use airspace (with restricted areas), up to 55,000 feet, except for 6741H which is surface to 5,500 feet MSL. The installation has access to this airspace and it is controlled by YTC. This airspace is released to the FAA when not needed for military use (YTC Staff, 2007).

There are two types of aircraft stationed at YTC, one is for medical, and the other is seasonal stationing of aerial firefighting helicopters. YTC has one helicopter and fixed-wing aircraft landing area. The Vagabond Army Airfield (VAAF) is located near the

lower boundary of the cantonment area and is used solely for helicopters. The FAA has designated portions of the overlying airspace as special use airspace, which may be activated during special activities as restricted from nonmilitary uses. Restricted airspace over YTC includes areas located from the surface up to, but not including, 55,000 feet MSL (Fort Lewis Staff, 2007).

4.16.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Stryker BCT, Multiple BCTs. The impacts to Airspace are expected to be minimal (very low). It is anticipated that the activities associated with an increase of a CS/CSS or Full Sustainment BDE would have no impacts to airspace at the installation, and the UAVs associated with the BCTs would only minimally effect airspace operations. The multiple BCT scenarios are expected to have a slightly higher degree of effect to the installation, due to a doubling effect of growing two BCTs requiring UAV operations. The firing ranges that use airspace for artillery or other ordnance is not expected to be considerably impacted and can adequately accommodate this level of growth.

4.16.4 Cultural Resources

4.16.4.1 Affected Environment

The footprint of Yakima Training Center is the area of potential effect (APE) for cultural resources. The area surrounding YTC is primarily agricultural in nature. The cultural resources at YTC consist of prehistoric and historic resources. Two tribes still use parts of YTC for traditional purposes and this must be taken into account when analyzing cultural resource issues.

4.16.4.2 Environmental Consequences

CS/CSS. A CS/CSS unit would have minimal (very low) short and long term impacts. The large landmass of YTC combined with the small number of Soldiers and types of vehicles required for a CS/CSS, are unlikely to impact cultural resources.

Full Sustainment BCT. There would be minor (low) short and long term impacts from a Full Sustainment BDE at YTC. While there are additional Soldiers, the number of Soldiers and their types of activities should not change current impacts to YTC's cultural resources.

IBCT, HBCT, Stryker BCT, Multiple BCTs. There would be moderate (medium) short and long term impacts on cultural resources due to an IBCT. The number of personnel for an IBCT could lead to cultural resources being disturbed through pot hunting and accidental destruction via foot traffic. The two Native American tribes that continue to use YTC for traditional purposes could be negatively impacted if the plants, animals and sites that they use are no longer available to them due to destruction or degradation from additional training. The heavy tracked vehicles associated with the HBCT could lead to the inadvertent destruction of archaeological resources due to the weight and

heavy tread, degrading further already undocumented cultural artifacts. Further impacts may also come from restrictions on access being placed from the increase in training,, though if the proposed action were implemented at YTC the installation would need to conduct site-specific analysis to verify this.

4.16.5 Noise

4.16.5.1 Affected Environment

Yakima Training Center (YTC) is a 327,000 acre training facility that supports a diverse training mission to include conventional and tactical weapons delivery, armored maneuver and live-fire, artillery (and other large caliber weapons) fire, small arms capabilities, and rotary-winged and fighter aircraft maneuver. Most of the land adjacent to YTC is zoned as undeveloped, agricultural, rural residential, and recreation land. Major communities nearby the installation include Yakima, Terrace Heights, Selah, Moxee City, Ellensburg, and the Badger Pocket Area. Occasionally, weapons firing and EOD activities are audible at nearby residential areas (USACE, 1994).

4.16.5.2 Environmental Consequences

CS/CSS, Full Sustainment BCT. Noise impacts are expected to be minimal (very low) to nearby residential areas with the addition of the CS/CSS, and low with the addition of a Full Sustainment BCT. Noise from small arms firing ranges is not typically heard off the installation boundary. Impacts to biological resources in both growth scenarios are expected to have a moderate impact to biological resources. These actions may have only short-term maneuver and small arms related impacts (flushing) to bird species (including T&E species), but biological receptors would recover quickly. The need for analysis into the impacts on migratory birds should be taken into consideration as part of site-specific NEPA analysis. The INRMP would be used for guidance and best management practices to reduce potential noise impacts. New noise contours would not be developed for this action, though the IENMP would need to be reviewed.

IBCT, HBCT, Stryker BCT, Multiple BCTs. A moderate (medium) impact is expected for receptors outside YTC, and on biological receptors from restationing 3,500 to 7,000 Soldiers at YTC. An IBCT is expected to increase the amount of artillery fire on the installation, though new noise contours would not be needed and noise zones would likely remain unchanged from present conditions. For the HBCT, Stryker BCT, or multiple BCT scenarios, the need for updated noise contours would be reviewed by site-specific NEPA analysis for this action (if implemented at YTC). Noise, however, should be unchanged as they exist today.

Past actions at YTC have had significant impacts from noise to wildlife, however, the Final EA for FY2005 Stationing Actions states that wildlife at YTC have already habituated to loud noise and that actions from stationing would have a reduced impact. The highest quality of habitat remains protected from training impacts. Further growth at YTC from the proposed action may have moderate adverse impacts to biological

receptors. Many sensitive species already avoid areas of heavy live-fire training and would not be significantly impacted from the proposed action.

4.16.6 Soil Erosion

4.16.6.1 Affected Environment

The topography of Yakima Training Center varies from low plains to escarpments. Five ridges cross the installation and vary from rounded hills to mountains with slopes ranging from 8 to 60 percent. The topography is more rugged in the eastern portion of YTC where the streams drain toward the Columbia River.

There are 8 major soil groupings, and throughout the installation that consists of light silt loams forming a shallow cover over bedrock and alluvial fan material. The soils are characteristic of arid and semi-arid uplands and terraces. The soils are unsuitable for agriculture without irrigation. The majority of YTC soils are highly erodible as a result of physical properties, steep slopes, and limited vegetative cover.

4.16.6.2 Environmental Consequences

CS/CSS. There would be minor (low) impact from the vehicles in these units. They could have a slight effect in select off-road areas. The tendency for these vehicles to mostly travel on roads with limited off-road movement results in this low value.

Full Sustainment BCT and IBCT. There would be a moderate (medium) impact due to larger number of vehicles and the need to travel on unimproved roads and increased off-road use. Dismounted training and the vehicles of the IBCT may have a moderate impact on the soils at YTC. The moderate impact is also based on increased travel on unimproved roads and some increased disturbance to soils and vegetation cover due to digging and off-road vehicle movement. The condition of existing (unimproved) range roads and their ability to support for heavy truck traffic would have to be evaluated. Unimproved roads are prone to erosion, so road construction, hardening and maintenance practices would have to be reviewed. Increased off-road movement would also impact soils through disturbance to vegetation and soil surfaces.

HBCT, Stryker BCT, Multiple BCTs. The HBCT would have a more significant (high) impact on roads and off-road areas due to the number of tracked vehicles in an HBCT and the weight and mobility characteristics of the tracked vehicles; Stryker vehicles traveling off-road may have significant impacts to road erodibility characteristics as well. Flat and rolling areas (vegetation and surface crust) would show the impact from the vehicle maneuvers, turns and traction. These areas could then be prone to erosion. Off-road traffic and maneuvers would increase, which would have a significant direct impact on surface vegetation and surface crust from digging, vegetation disturbance, and displacement of soils on unimproved roads.. Conditions for potential erosion would increase.

4.16.7 Biological Resources (Vegetation and Wildlife/Threatened and

Endangered Species)

4.16.7.1 Affected Environment

YTC is home to 31 species of fauna and 22 species of flora that are listed or proposed to be listed as threatened or endangered. Of these 53 species, four are federal-listed threatened and endangered species and two are federal candidate species, one of which is a high priority Army species at risk (SAR). One federal threatened species is recorded as contiguous to the installation. More information on federally listed species can be found in Appendix T of this document.

4.16.7.2 Environmental Consequences

CS/CSS. It is anticipated that implementation of this level of Soldier strength may have a moderate (medium) impact on the listed species and SAR that are found on the installation. The threatened and endangered species recorded on the installation would continue to be managed in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the USFWS and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of any of these actions may affect any of the recorded listed species, the installation would be required to consult with the USFWS either informally or formally, depending on whether take is anticipated to occur. One of the high priority SAR, Columbia Basin Distinct Population Segment of Greater Sage-Grouse, is of great importance to the installation. If listed, the Greater Sage-Grouse would have impacts on the installation's ability to meet its mission requirements. Proactive management by the installation consisting of population monitoring, habitat protection and restoration, population genetic augmentation, and reintroductions on adjacent lands has been recognized by the USFWS in their Annual Candidate Species Review as beneficial to the species and has been influential in reducing the need for listing consideration. Due to maneuver limitations on the CS/CSS, there are no anticipated impacts to vegetation at YTC.

Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs. It is anticipated that implementation of any of these levels of Soldier strength would have a Significant (high) impact on not only the known listed species but also other special status species. Management and conservation of the species and installation habitat would continue to be implemented in accordance with the installation INRMP and any conservation measures identified in ESA, Section 7 consultation documents. However, since implementation of this action would most likely adversely affect the recorded listed species, the installation would be required to consult with the USFWS informally and formally to address and assess the impacts of the action. The installation would have to ensure that impacts to water sources would be minimized and possibly mitigated to reduce the impacts of these actions on the three listed fish populations (4 ESU's) that occur on the installation. With only two populations of Greater Sage-Grouse known to occur, implementation of any of these Soldier strengths would significantly impact the species and its habitat and exceed the threshold of impact that would warrant listing.

More intense conservation and management efforts would need to be implemented to ensure the Greater Sage-Grouse is not listed.

Vegetative cover at YTC is shrub-steppe. Impacts to vegetation are expected to be significant if training is conducted outside the current training footprint. Training impacts could include loss or degradation of vegetative cover and unique plant species; a measurable reduction in plant diversity; and the introduction of invasive plant species. Any impacts to shrub vegetation on YTC could potentially impact wildlife mortality that depends on this type of vegetative cover, including TES and migratory bird species.

4.16.8 Wetlands

4.16.8.1 Affected Environment

Yakima Training Center contains approximately 20 acres of wetlands (Army Environmental Database-Environmental Quality, (n.d)). Water, in the form of seeps and springs, plays an important role in the life cycles and management of wildlife species. (INRMP, US Army, 1998)

4.16.8.2 Environmental Consequences

CS/CSS. There would be a minor (low) impact on the installation wetlands as a result of the proposed unit maneuvering mainly on roads and hardened surfaces. Training activities would be within established training areas. Wetland areas are siber staked, restricting vehicle movement in wetland areas.

Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs. There is expected to be a moderate (medium) impact on the installation wetlands as a result of the restationing of 3,000 to 7,000 Soldiers to Yakima Training Center. Training activities would be within established training areas where wetland issues have previously been addressed. As identified with the CS/CSS, wetland areas of YTC are siber staked and as such are off limits to vehicle movement. Hardened crossings may need to be established where stream crossings are needed. Efforts would be made to avoid any impacts on wetlands by using best practices addressed by the installation INRMP. If additional training area is required then through the NEPA process locations would be selected that would, when possible, avoid wetland impacts.

4.16.9 Water Resources

4.16.9.1 Affected Environment

Watersheds Supporting Biological Resources

Surface water from YTC drains into two major basins: the Columbia River Basin to the east and the Yakima River Basin to the west. Most streams on YTC are intermittent. Discharge of suspended sediments from streams at YTC increases during infrequent high flows, over very short time periods. However, monitoring data indicate that YTC is not contributing large amounts of suspended solids compared to existing loads in the river.

Groundwater

Groundwater at YTC is stored in four principal aquifers. Although precipitation is low within the region, approximately 200 springs are present on YTC, ranging from seasonal to perennial.

Water Supply

The water supply for YTC serves three systems: the Cantonment Area system, the Yakima Research Station/Range Control system, and the Range Area system. Three potable water wells and three storage tanks are located in the Cantonment Area. Two of the wells are utilized in tandem and, along with the third well, have a production capacity of 1,500 gpm. At Yakima Research Station/Range Control, there are two wells with a combined production capacity of 525 gpm. There are nine additional potable wells and 12 non-potable wells located within the range areas of YTC. Production for the range area wells varies from 5 to 150 gpm. Finally, there are ten additional range area wells that are not developed.

Summer demand for water at YTC averages approximately 200,000 gpd. Approximately three-quarters of this water comes from the Cantonment Area systems. Water used by Soldiers during training exercises may be drawn from the Cantonment Area systems and hauled to the field, or drawn directly from one of the nine training area wells.

Water Rights

YTC asserts a Federally reserved water right for all its consumptive uses, present and future. YTC currently holds water rights claims for several of its sources.

Wastewater

There is a single wastewater treatment plant at YTC. This treatment plant, located outside the installation boundary, primarily accepts domestic wastewater. The plant has a permitted treatment capacity of 720,000 gpd. Treated wastewater is discharged into the Yakima River.

Estimated daily peak flow can reach approximately 150,000 gpd. Several of the smaller, remote structures within the cantonment area are self-contained, with individual septic tanks and drain fields. All wastewater generated outside the cantonment area is treated with the use of septic tanks, drain fields, and lagoons.

Stormwater

The stormwater drainage system serving the cantonment area at YTC consists of three detention basins, several oil/water separators, and open ditches. The drainage systems discharge into intermittent streams that then enter the Yakima River. Because of the low hydraulic gradient of vegetated channels of the drainage systems and long distances to receiving waters, storm drainage does not have considerable impacts on the Yakima River.

4.16.9.2 Environmental Consequences

CS/CSS. An addition of a CS/CSS is anticipated to have a minor (low) impact on YTC water resources. Given the existing population at YTC, the addition of a CS/CSS is expected to have a negligible impact on the watershed, water demand, and associated treatment systems.

Full Sustainment BCT, IBCT. A Sustainment BCT and IBCT is anticipated to have a moderate (medium) impact on YTC. The increase in water demand and wastewater generation could require upgrades to the existing water and wastewater treatment systems or new water/wastewater infrastructure if the footprint is in remote areas.

Additionally, because maneuver for both the IBCT and Sustainment BDE is expected to stay within the current training footprint, the increase in Soldiers may only have a minor to moderate increase in sedimentation, potentially impacting water quality for biological resources.

HBCT, Stryker BCT, Multiple BCTs. Such an addition would have a moderate (medium) impact on YTC water resources, and a high impact to biological resources. The addition of a HBCT would have a high impact on biological water resources due to upland disturbances (e.g. digging and off-road maneuver). The addition of a Stryker BCT, though not expected to travel off-road often, would still have high impacts to biological resources when maneuvering off-road. Potential erosion from the use of field-driven heavy tracked vehicles, and the wheeled Strykers, would increase sediment loading in receiving waters and degrade water quality. Effects would be moderate in the cantonment area due an increase in water demand and wastewater treatment would need to be evaluated to determine if the present facility could handle this level of increase. Such an increase would require upgrades to the installation's existing water and wastewater treatment system or new water/wastewater infrastructure if the footprint is in remote areas. The installation would also need to revise their SWP3 to incorporate best management practices for any new training activities. .

4.16.10 Facilities

4.16.10.1 Affected Environment

Yakima Training Center is a sub-installation of Fort Lewis, located in Yakima and Kittitas counties and approximately 7 miles northeast of the city of Yakima. The two major land-use areas on YTC are the cantonment and training areas. The cantonment area (1,000 acres), which includes residential, administrative, commercial, light industrial, and open spaces, is located in the southwest corner of the installation. Vagabond Army Airfield, located in the cantonment area, is used for rotary-wing aircraft (US Army, January 2005).

4.16.10.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs.

There are expected to be moderate (medium) environmental impacts to facilities from any level of growth. It is anticipated that growth of 1,000 to 7,000 Soldiers and their unit equipment would require renovation of some existing facilities and construction of new facilities within the cantonment area. The level of activity in the cantonment area would be proportionate to the level of growth expected. The addition of an HBCT or Stryker BCT would likely result in a considerable increase in facilities use within the cantonment requiring renovation and an increased level of new construction to meet the unique mission requirements of this number of Soldiers and their heavier tracked vehicles or Stryker vehicles and other unit equipment. The establishment of an HBCT or Stryker BCT at YTC is not expected to exceed the capacity of the installation to accommodate the proposed action. Increased activities within the training and range areas would be expected to cause long-term impacts due to increased human presence, as well as construction and training activities within the range and training areas. The installation RPMP would need to be updated.

4.16.11 Energy Demand/Generation

4.16.11.1 Affected Environment

Electricity. Pacific Power and Light is the primary supplier of electric power to Yakima Training Center. The Kittitas Public Utility District provides electric power for the MPRC and the Doris site. The annual electricity consumption for the installation for FY 2003 was 9,409 megawatt hours.

Heating. Heating energy at YTC is provided primarily by interruptible natural gas, with diesel fuel as a backup. During FY03, natural gas consumption by YTC totaled 412,142 MMBtu. No backup sources of fuel were used during FY03. Heat energy is currently being updated in the cantonment area. The conversions consist of individual natural gas forced air systems and currently 50-60% of the installation has been converted.

4.16.11.2 Environmental Consequences

CS/CSS. The likely impact of an additional CS/CSS unit to the local community and the natural environment is minor (low). In terms of energy usage and generation, YTC's existing energy infrastructure has sufficient excess capacity to readily absorb the addition of a CS/CSS unit.

Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs. There is expected to be a moderate (medium) impact to the installation's energy supply. The current energy infrastructure at YTC was designed to support a relatively small cantonment area, with the bulk of the installation reserved for field training operations and live-fire ranges. Accommodating a Full Sustainment BDE would likely entail a high

capital investment to expand the existing energy infrastructure and total delivery capacity in order to meet the new demand. That said, the VEC impact rating of an additional Full Sustainment BDE on YTC is moderate. The size and scope of the HBCT, Stryker BCT and Multiple BCTs differ somewhat from the Full Sustainment BCT and IBCT in terms of increased number of Soldiers and attendant facilities, resulting in a potentially higher energy use profile. The likely impact of an additional HBCT on the existing energy infrastructure, the local community and the natural environment is moderate.

4.16.12 Land Use Conflicts/Compatibility

4.16.12.1 Affected Environment

YTC lies in Yakima and Kittitas Counties. It is bounded by Interstate 90 and Badger Pocket to the north, the Columbia River to the east, the Yakima Ridge to the south, and Interstate 82 to the west. YTC was established in 1942 as an anti-aircraft firing range. The major land uses at YTC are the cantonment area (approximately 1,000 acres) and training areas (approximately 326,000 acres), which include Selah Airstrip and Vagabond Army Airfield. The cantonment area is located in the southwestern corner of the installation and includes light-industrial facilities and open spaces. The Yakima Nation and Wanapum Band use the land for traditional resource collecting and religious purposes (U.S. Department of the Army, 1995).

4.16.12.2 Environmental Consequences

CS/CSS, Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs.

There would be moderate (medium) short and long-term environmental impacts on installation land use due to the presence of an additional 1,000 to 7,000 Soldiers and their Family members assigned to the installation. The installation has sufficient land available to build the facilities needed for this unit. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units.

4.16.13 Hazardous Materials/Hazardous Waste

4.16.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage and transport of hazardous materials and wastes at YTC. This includes hazardous materials and wastes from aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO. Waste for disposal (both hazardous and nonhazardous) is transported offsite to permitted disposal facilities. Much like Fort Lewis, YTC operates as a permitted large quantity hazardous waste generator. YTC has several plans in place to help manage hazardous materials and waste including a Pollution Prevention Plan; Installation Spill Contingency Plan; Spill Prevention, Control, and a Countermeasures Plan.

4.16.13.2 Environmental Consequences

CS/CSS. There would be minor (low) long-term environmental impacts from hazardous materials and waste. It is anticipated that YTC would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BCT, IBCT, HBCT, Stryker BCT, Multiple BCTs. Moderate (medium) short- and long-term environmental impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 7,000. Direct beneficial and adverse impacts would be expected. Materials used, stored, and handled would increase; and existing procedures, regulations, and facilities would need to be updated to meet the associated requirements. This would include the need for additional staffing to manage waste associated with the increase of units stationed at YTC. Overall, all waste management programs may need to be updated as needed. Many projects involve the use, generation, and storage of hazardous materials and wastes during facility demolition, renovation, or construction. The demand for additional storage capacity would have to be met at the local level at the installation.

4.16.14 Traffic and Transportation

4.16.14.1 Affected Environment

Major roads in the area include I-82 an east-west interstate highway that serves the City of Yakima, town of Selah and the cantonment area of Yakima Training Center. Other major routes in the area include US Routes 12 and 97, and Washington State Routes 821 and 823.

4.16.14.2 Environmental Consequences

CS/CSS. There is expected to be minor (low) short and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their Family members assigned to the installation. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the installation, and is not expected to reduce the level of service (LOS) on the installation's road network. There may be a slight increase in traffic volume during peak morning and evening hours, but it would not affect either level of service or pose an increased risk to the safety of pedestrians and bicyclists.

Full Sustainment BCT, IBCT, HBCT, Stryker BCT, and Multiple BCTs. There would be moderate (medium) short and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 7,000 Soldiers and their Family members assigned to the installation. The increase in POVs in the cantonment area may cause the installation to conduct a traffic study.

4.16.15 Cumulative Effects

Yakima Training Center has a number of planned constructions at or near the installation in the foreseeable future which include the following:

- YTC is currently planning construction of a Digital Multipurpose Range Complex for FY2008, to enhance the current training capability.
- To accommodate growth from BRAC2005, the installation is also planning a FY2008 Armed Forces Reserve Center;
- (BRAC2005 Action) FY2010 Sniper Field Fire Range;
- (BRAC2005 Action) FY2011 Multipurpose Machine Gun Range;
- (BRAC2005 Action) FY2011 Aviation Gunnery Range;
- Gas exploration and drilling; and
- FY2013 Planned construction of a new Fire Station.

Outside the installation boundary, YTC has identified the following projects (E-mail from John McDonald, YTC Personnel, 13 July 2007):

- Black Rock Reservoir. To meet shortfalls in adequate water supply to support both a growing population in the Yakima Basin, and to support a declining Chinook Salmon fishery, the U.S. Bureau of Reclamation is proposing an off-stream reservoir roughly 20 miles to the east of the City of Yakima. Water would be pumped from the Columbia River and would deliver approximately 500,000 acre feet of water to the Yakima River Basin. The impacts and benefits analysis of this study is currently unavailable⁷;
- Kittitas County has recently received approval to construct a wind farm on approximately a 500-acre site. The construction zone runs along the Columbia River. This project is still in the development and planning phase; impacts have not yet been determined⁸; and
- Gas exploration and drilling.

Short-term minor cumulative impacts are expected from periodic range construction in conjunction with construction of new facilities to accommodate potential growth, and with impacts expected from training. The installation anticipates cumulative impacts to soil erosion, air quality, and threatened and endangered species. Short-term impacts

⁷ http://www.co.benton.wa.us/yakima_basin.htm

⁸ <http://kvnews.com/articles/2007/07/13/news/doc4697bdf5ac292799035142.txt>

would expect to be mitigable. The excess vehicles in the training areas and cantonment area from construction and training would likely increase siltation, degrading the water quality and having indirect impacts to threatened and endangered species. Fugitive dust or opacity may also have short-term adverse effects from both activities at the installation.

Water demand on the installation from growth may be more significantly impacted from construction of the Black Rock Reservoir. This project could have a high negative impact to the installation. Although the reservoir has been identified as a potential solution to many of the region's water issues, much of the water supply would benefit the local fishery and local agricultural irrigation requirements. The Black Rock Reservoir Study Final Report (Washington Infrastructure Services, May 2002) identifies zero growth at Yakima Training Center (as a regional water consumer) through the year 2020. Without anticipating any growth at the installation, water consumption estimates would have grossly underestimated the potential for impacts to the new water supply system.

4.17 YUMA PROVING GROUND, ARIZONA
4.17.1 Introduction

Yuma Proving Ground, located in southwestern Arizona has approximately 838,174 acres of varied and rugged terrain (Figure 4.17-1). There are no units permanently stationed at YPG, its mission is one of testing Army equipment, materials and other items. It has a few ranges, but they are for test purposes.



Figure 4.17-1 Yuma Proving Ground

Table 4.17-1 contains the YPG's VEC ratings for each of the various stationing action scenarios.

Table 4.17-1. Yuma Proving Ground VEC Ratings

Yuma Proving Grounds					
VEC	CS/CSS Units (1,000 Soldiers)	Full Sustainment BDE (3,000- 3,500 Soldiers)	IBCT (3,500 Soldiers)	HBCT (3,800 – 4,000 Soldiers)	Multiple BCTs (7,000 Soldiers)
Air Quality	Medium	Medium	Medium	Medium	Medium
Airspace	Low	Low	Low	Low	Low
Cultural Resources	Medium	High	High	High	High
Noise	Low	Low	Low	Medium	Medium
Soil Erosion Impacts	Low	Medium	Medium	High	High
Biological Resources	Medium	Medium	High	High	High
Wetlands	Low	Low	Low	Low	Low
Water Resources	Medium	High	High	High	High
Facilities	Medium	Medium	High	High	High
Socioeconomics	High	High	High	High	High
Energy Demand/ Generation	Low	Medium	Medium	Medium	Medium
Land Use Compatibility	Low	Low	Medium	Medium	Medium
Haz Mat/ Haz Waste	Low	Low	Low	Low	Low
Traffic and Transportation	Medium	High	High	High	High

4.17.2 Air Quality

4.17.2.1 Affected Environment

At Yuma Proving Ground (YPG), the ROI for air quality includes the installation and La Paz and Yuma counties, Arizona. Air quality is generally good and the ROI, with one exception, is in attainment for EPA's NAAQS. The extreme southwestern portion of YPG falls within the Yuma County nonattainment area for PM₁₀. In most cases, PM₁₀ emissions are the result of low soil moisture, low humidity, and wind. Installation activities have been listed as minor contributions to the area.

USAG Yuma Proving Ground is a major source and has a Title V Permit application under review by Arizona Department of Environmental Quality. To date, the installation has not been evaluated for the ability to obtain a synthetic "minor" status. If obtained,

any changes to what are now their routine operation will have a significant affect(s) to their source status (not considered a major source for air pollutants). Since YPG is partially located in a nonattainment area there is a requirement to consider conformity analyses when changing installation activities affecting air emissions. The CAA's Prevention of Significant Deterioration requirements are not expected to be triggered by the installation's activities.

4.17.2.2 Environmental Consequences

Short-term intermittent minor adverse impacts would be expected within the ROI as a result of construction activities, training exercises, and increased automobile use. Heavy construction equipment and trucks would emit minor amounts of NO_x, PM-10, CO, SO_x, and VOCs. These affects, though possibly significant at the moment, are not considered to have a long-term impact on regional air quality.

CS/CSS. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of a CS/CSS unit and its 1,000 Soldiers. It is assumed that the resulting increases in air emissions are directly proportional to the increase in population at the facility. In general, combustion and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations that would not result in any sustained impacts on regional air quality. There would be a small increase in the amount of fugitive dust and smoke produced (gunnery training, range fires) however, these impacts would be temporary and would not be expected to have major opacity impacts outside the installation boundary.

Full Sustainment BDE. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of a Sustainment Brigade Combat Team and its 3,000 – 3,500 Soldiers. Any construction related emissions also have the potential to produce localized, short-term elevated air pollutant concentrations but these are not anticipated to have a significant effect on regional air quality. Training, fuel storage and transfer, and generator usage would all contribute to emission increases of criteria pollutants on YPG. Increased VOC emissions would result from increased fuel storage and transfer to provide fuel to additional training vehicles. These VOCs are emitted from vents on storage tanks during the transfer of fuel from the storage tank to the vehicle. Combustion emissions resulting from training would be primarily from mobile sources and be widely distributed both spatially and temporally. Fugitive dust emissions remain a localized issue and should be addressed as an opacity issue if activities are close enough to installation boundaries that visible emissions leave the installation. Given the wide distribution of emissions, it is not anticipated that regional air quality would be significantly affected.

IBCT. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of an Infantry Brigade Combat Team and its 3,500 Soldiers. It is anticipated the emissions resulting from stationary sources required for facility operations to support the influx of Soldiers and their Families would have greater, long-term impacts than those resulting from training. It is anticipated that

the installation would see increases in emissions from equipment required to support the installation such as fuel storage and dispensing, boiler and incinerator operations and possible electric peak-shaving generators. Additionally, it is anticipated that more training/operations would occur away from established roads and tank trails.

HBCT. There would be an expected moderate (medium) impact on the installation and surrounding communities by the restationing of a Heavy Brigade Combat Team and its 3,800 – 4,000 Soldiers. Though the facility can expect increased emissions from military vehicles and generators used to support training events as well as increase in fugitive dust, these would tend to remain localized and produce no significant impact to regional air quality.

Multiple BCTs. As stated above, the expected environmental impact on the installation and surrounding communities by the restationing of multiple Brigade Combat Teams and approximately 7,000 Soldiers is expected to be moderate (medium) regarding the long-term effect on air quality. Construction and changes to facility operations to support multiple brigades would be significant initially but should provide no sustained negative impact to regional air quality.

4.17.3 Airspace

4.17.3.1 Affected Environment

Airspace at YPG is used primarily to test fixed- and rotary-winged aircraft, firing munitions, and air delivery of personnel, cargo, and equipment. YPG airspace extends beyond the installation boundary into lands adjacent to the western border, including more than 171,000 acres of airspace rights over the Kofa National Wildlife Refuge. Airspace is often also shared with the Marine Corps Air Station, Yuma. YPG activates restricted military airspace when required. Restricted airspace is often used to conduct artillery firing missions including long-range artillery firing from remote locations. Other training activities that account for airspace over Yuma include the Military Free Fall School, air support, assault training, and radar and laser tracker use (indirectly) (Yuma, July 2001).

4.17.3.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There would be minor (low) long-term environmental impacts to airspace and minor short- and long-term direct adverse impacts from UAV operations. It is anticipated that the activities associated with the CS/CSS or Full Sustainment BDE would not affect airspace as no UAVs or artillery is associated with these scenarios. Increased or new activities from BCTs would have to be scheduled to coordinate with existing mission activities. Future new systems or modifications to existing systems from the stationing of an additional BCT could also affect airspace use, resulting in greater demand for exclusive military use of the resource. Construction or modification of airfields and training and maneuver areas could result in changes to existing airspace use.

4.17.4 Cultural Resources

4.17.4.1 Affected Environment

The affected environment for Yuma Proving Ground is the footprint of the installation. Located in Arizona, this area has a wealth of prehistoric and historic archaeological resources. The installation has more than 1,900 identified sites and the installation has only surveyed approximately 10 percent of its total area.

4.17.4.2 Environmental Consequences

CS/CSS. A CS/CSS unit at YPG could have moderate (medium) long term impacts on cultural resources. The number of Soldiers, the equipment required for a CS/CSS and the remoteness of the area could impact archaeological resources. Souvenir and pot hunting are not unheard of at remote installations. The fact that very little of YPG has been surveyed means that any actions on previously undisturbed land would require cultural resource surveys and consultation, with the State Historic Preservation Officer and federally recognized Native American tribes, before training can commence.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There is an expected significant (high) long-term impact from training to cultural resources relating to the 3,500 to 7,000 additional Soldiers stationed at Yuma Proving Ground. The higher personnel count increases the odds that cultural and archaeological resources would be impacted from both accidental and intentional means. The additional Soldiers, via foot traffic from the IBCT, could lead to inadvertently disturbing surface archaeological sites and buried archaeological resources. The heavy tracked vehicles of a HBCT would have a higher occurrence of impact to previously undiscovered archaeological resources.

4.17.5 Noise

4.17.5.1 Affected Environment

The noise environment from Yuma Proving Ground (YPG) is largely generated from artillery firing and the resultant ground penetration from shells, and noise from low-flying aircraft. High speed aircraft periodically use the airspace leading to Yuma, though relatively few jets are flown from the installation. Previous land use studies have shown that the noise generated from YPG is generally compatible. However, there are some residential areas adjacent to the main administrative area of the installation. The nearest town to YPG is Quartzsite, located in La Paz County. The population of Quartzsite changes drastically due to vacationers during winter months and civilians unknowingly camping on the installation thinking they are on BLM land. Hidden Shores RV Village (BLM concession) is located immediately northwest of the YPG Main Administrative Area. BLM also has two Long Term Visitor Areas (LTVA) north of YPG's Cibola Range (between the installation boundary and Quartzsite), which on average receive 250,000 winter visitors annually.

4.17.5.2 Environmental Consequences

CS/CSS. There is a minor (low) impact associated with stationing a CS/CSS at Yuma Proving Ground. The level of small arms training and maneuver associated with this action is largely insignificant when compared with the installation's current operational testing mission. There is no significant impact to wildlife from noise; and there is no noise-sensitive T&E species observed near the installation (USAEC 2006). Noise from this action is not expected to be experienced outside the installation boundary.

Full Sustainment BDE. There is an overall minor (low) impact from noise to the natural environment and to local residential communities. The small arms range is located in an unpopulated area, thus no noise impacts are expected to off-post receptors. No new noise contours would need to be developed. Noise management practices for maneuver would need to be reviewed in the installation's INRMP and IENMP.

IBCT. There would be a minor (low) impact from noise associated with the proposed action. Noise generated from maneuver would be similar to that of the Full Sustainment BDE. No new noise contours would need to be developed for associated artillery fire that is expected to accompany this action.

HBCT. There is an expected moderate (medium) impact from noise to residential areas on- or nearby the installation. The installation would need to conduct a new noise study to determine if the action is compatible with existing noise zones; however the noise levels associated with the impact are similar to that of the current mission.

Multiple BCTs. There would be an expected moderate (medium) impact from noise to Yuma Proving Ground and surrounding areas. As with the HBCT a noise study would be recommended and the current IENMP would need to be updated.

4.17.6 Soil Erosion

4.17.6.1 Affected Environment

Yuma Proving Ground is located in southwestern Arizona near the Colorado River, and covering more than 1,300 square miles of the Sonoran Desert and is situated in the basin and range physiographic province. The original high mountains have, over time, been worn down by wind and water erosion, filling the basin with sediments from erosion. The ranges surrounding Yuma are composed of igneous rocks including extrusive volcanic rock and intrusive granite and crystalline rock, sedimentary, and metamorphic rock. Sand dunes are visible features along the base of some mountains.

The soils on Yuma are characterized by the presence of cryptogamic crusts, desert pavement, and vegetation. Military activities may disrupt the natural balance of this soil; driving on unsurfaced roads, tracked and wheeled vehicle maneuver, artillery explosions in impact areas, landing helicopters in open-terrain, and other maneuver training. Once the natural stability of the soil is disturbed soil erosion can be very rapid. Other sources of erosion at Yuma occur from wind and precipitation transporting loose soils to low-laying areas (Yuma Proving Ground, 2001).

4.17.6.2 Environmental Consequences

CS/CSS. There are overall minor (low) impacts expected from training and maneuver activities associated with the CS/CSS. Small arms ranges may see a minor increase in berm maintenance, but is not expected to exceed any maintenance thresholds. Other Soldier movements would likely be contained to improved surfaces and already disturbed range areas.

Full Sustainment BDE and IBCT. Moderate (medium) impacts to soil erodibility are expected. An increase of up to 3,500 Soldiers, including additional artillery fire from the IBCT, may displace soils in already disturbed areas. Any new construction associated with this level of increase may also increase the erodibility of soils. Unimproved range roads may be more susceptible to water and wind erosion. These roads may need to be improved or hardened to help control an increase in soil transport. Maintenance techniques such as re-vegetation and re-grading may need to be employed.

HBCT and Multiple BCTs. Significant (high) impacts are expected. Increased erosion and soil stability is anticipated from both tracked and wheeled vehicle maneuver and Soldier movement, even in disturbed range areas. As with the Full Sustainment BDE and IBCT, new construction is expected to displace soil in localized areas and unimproved roadways may need to be improved. Contamination from munitions use (residue) associated with large caliber weapon fire may result in increased soil transport due to the loss of biomass and nutrients that would otherwise keep soil integrity and thus, stability. Maintenance techniques outlined in the installation's ITAM program, including techniques to reverse the erosion process (e.g., road closures and re-vegetation), may need to be re-visited to promote the sustainable use of Yuma's range lands.

4.17.7 Biological Resources (Vegetation and Wildlife/Threatened and Endangered Species)

4.17.7.1 Affected Environment

Yuma Proving Ground (YPG) does not record any federal-listed species as occurring onsite or contiguous to them. One priority species at risk (SAR), the Sonoran Desert Tortoise, does occur on the installation, as well as a variety of other sensitive species.

The following table lists the species documented in the Heritage Data Management System for the YPG and its immediately surrounding area (7 September, 2007). These species are monitored by the installation and the Arizona State Game and Fish Department. Table 1, below, was provided by the State of Arizona Game and Fish Department.

Table 1. Species documented in the Heritage Data Management System for the YPG on September 7, 2007.

NAME	COMMON NAME	FWS	BLM	AGFD
<i>Antrozous pallidus</i>	Pallid Bat			
Bat Colony				
Bat Foraging Area	High Netting Concentration			
<i>Chaetodipus spinatus</i>	Spiny Pocket Mouse			
<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	C		WSC
<i>Gopherus agassizii</i> (Sonoran Population)	Sonoran Desert Tortoise	SC		WSC
<i>Haliaeetus leucocephalus</i> (wintering pop.)	Bald Eagle			WSC
<i>Lasiurus xanthinus</i>	Western Yellow Bat			WSC
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		WSC
<i>Myotis velifer</i>	Cave Myotis	SC	S	
<i>Nyctinomops femorosaccus</i>	Pocketed Free-tailed Bat		S	
<i>Stillingia spinulosa</i>	Spiny Sand Spurge			
<i>Uma scoparia</i>	Mojave Fringe-toed Lizard			WSC

FWS = Fish and Wildlife Service

C = Candidate Species

SC = Species of Concern

BLM = Bureau of Land Management

S = Sensitive Species

AGFD = Arizona Game and Fish Department

WSC = Wildlife of Special Concern

4.17.7.2 Environmental Consequences

CS/CSS, Full Sustainment BDE. There is an anticipated moderate (medium) impact to vegetation and to the installation's sensitive species. YPG covers a high percentage of habitats for the species that are managed and monitored. The conservation and management programs contained within the installation's INRMP would continue to be implemented to ensure that the population and habitat of the SAR and other special status species would be healthy and viable. However, disturbance to desert pavement surfaces can negatively affect vegetation in washes as pavement surfaces act to direct precipitation into washes creating zero riparian habitat within an otherwise sparse landscape.

IBCT, HBCT and Multiple BCTs. The installation expects Significant (high) adverse impacts from the stationing of one or more Brigade Combat Teams at YPG. Vegetation on much of the installation is sparse. The clearing of vegetation to accommodate construction for a BCT in the range areas could have significant adverse impacts to habitat, including wildlife found in washes. Movement of large vehicles used for construction would likely disturb or displace larger mammals, especially feral equines who trail through the area. Construction impact are likely to be short-term and temporary. The increase in light and heavy vehicles from maneuver and training would likely have long-term adverse impacts to biological resources. Wildlife may be redistributed throughout the range areas. An increase in sedimentation to waterways

may have impacts to wildlife depending on the installations surface water supply for hunting and areas of shelter (U.S. Army Garrison Yuma, October 2006).

4.17.8 Wetlands

4.17.8.1 Affected Environment

Yuma Proving Ground contains approximately 5 acres of wetlands (Army Environmental Database-Environmental Quality, (n.d)). Due to the relatively small number of wetlands, training has little to no impact on wetlands.

4.17.8.2 Environmental Consequences

CS/CSS, Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There is an expected minor (low) impact on the installation wetlands as a result of the restationing 1,000 to 7,000 Soldiers to Yuma Proving Ground. Training activities would be limited to established training areas. Efforts would be made to avoid any impacts on wetlands by using the installations wetland planning level survey's/ GIS mapping. Because of the small number of wetlands, a substantial increase in the number of Soldiers should have little effect on wetlands.

4.17.9 Water Resources

4.17.9.1 Affected Environment

Water Supply

Water is supplied to Cibola Region, South Cibola Range; Kofa Region, Kofa Firing Range; and Laguna Region, Materiel Test Area, Laguna Army Airfield, and Main Administrative Area. Groundwater wells are the primary source of water. Of the 15 wells located on the installation, 11 are in use. The 11 wells supply water to six water systems.

Yuma Proving Ground has the capacity to pump 10,718 acre feet of water annually with the addition of two wells drilled in the Main Administrative Area. Based on the increased mission and number of people residing and working at YPG, a projected use of over 1,900 acre feet will be required from wells and the Colorado River by 2006.

An electro dialysis reversal unit provides potable water to the Main Administrative Area in the Laguna Region, and a reverse osmosis system provides drinking water to the Castle Dome Annex (light armored vehicle test area) in the Cibola Region. Water is not readily available in the northern part of the installation, especially the North Cibola Range. Surveys conducted in this region indicate there are two possible sites from which water production could be expected; however, no drilling has been performed to confirm this possibility. Bottled drinking water is also supplied to many other areas of the installation.

The city of Yuma uses Colorado River water exclusively. Current use is approximately 30,000 acre feet.

Wastewater Treatment

Yuma Proving Ground operates six wastewater facilities. Lagoons collect domestic sewage and brine waste from water treatment plants. Waste is discharged into septic tanks or specially designed evaporative lagoons.

Stormwater

Surface runoff from storm events is drained into the Colorado and Gila rivers. Infrequent rainfall produces localized flash-flooding and temporary surface water, especially during thunderstorms in August and September. Rainfall averages 3.5 inches per year, and the evaporation pan rate is 107 inches per year. Most of the year, desert washes are dry, but during heavy rainstorms, these washes drain surface water.

4.17.9.2 Environmental Consequences

CS/CSS. A moderate (medium) impact is anticipated with this action to on YPG. The addition of a CS/CSS would increase water demand for consumption. The installation may need to incorporate water conservation measures. Impact to watershed is expected to be minimal. Any new construction/land disturbance over one acre would require a stormwater construction permit.

Full Sustainment BDE. This addition would significantly (high) impact YPG. The addition of a BDE would increase water demand for consumption and vehicle washing. The installation may need to incorporate water conservation measures. New groundwater wells may be required in remote areas to support BDE activities. Any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

IBCT. This action would significantly (high) impact water resources at YPG. The addition of an IBCT would increase water demand for consumption and vehicle washing. The installation may need to incorporate water conservation measures. New groundwater wells may be required in remote areas to support IBCT activities. Any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

HBCT. An addition of a HBCT would significantly (high) impact YPG. Such an action would increase water demand for consumption and washing of field-driven heavy-tracked vehicles. The installation may need to incorporate water conservation measures. New groundwater wells would most likely be required in remote areas to support HBCT activities. The installation may need to construct a new washing system to manage the heavy-tracked vehicles. Any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification

and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

Multiple BCTs. Multiple BCTs would significantly (high) impact YPG. Such an action would greatly increase water demand for consumption and washing of field-driven heavy-tracked vehicles. The installation may need to incorporate water conservation measures. New groundwater wells would most likely be required in remote areas to support multiple BCT activities. The installation may need to construct a new washing system to manage the heavy-tracked vehicles. Any new construction/land disturbance over one acre would require a stormwater construction permit which would entail identification and implementation of mitigation strategies to reduce impacts associated with stormwater runoff during and after construction.

4.17.10 Facilities

4.17.10.1 Affected Environment

There are five functional units of Yuma Proving Grounds (YPG) within which a variety of testing, training and administrative activities are performed. Although there are a number of isolated, miscellaneous buildings and structures located across the installation, the four principal cantonments of YPG are the Laguna Army Airfield, the Yuma Test Center, the Main Administrative Area, and the complex of buildings associated with the Kofa Firing Range.

The Main Administrative Area, also known as the cantonment area, is a fenced complex comprising 965 acres. This area contains general support functions, such as base housing, commissary, Post Exchange, medical services, and Morale, Welfare, and Recreation services. Administration services and facility maintenance support are also located in the cantonment area. Constructed miles apart, these cantonments were developed and situated in response to operational safety requirements (US Army, January 2006). Currently, YPG does not have much buildable land within the Main Administrative Area.

The Materiel Test Area, also known as the mobility test area, is approximately 964 acres. This area houses the command group, Materiel Test Directorate, and related test mission personnel. This area includes several buildings and facilities that provide support to the Automotive Division and Combat Systems Division test missions.

Laguna Army Airfield (LAAF) can accommodate the C-5A Galaxy and smaller aircraft. LAAF has office space, an aircraft wash facility, the fire and crash rescue department, 33,000 square feet of hangar and maintenance space, and 64,000 gallons of fuel storage. It is used for paraSoldier training and aviation testing activities.

Castle Dome Heliport is approximately twelve kilometers north of LAAF and is an aviation facility for special or large helicopter programs. Castle Dome Heliport maintains 37,809 square feet of hangar space; 11,600 square feet of office space; and a 12,000-gallon fuel tank. The Castle Dome Heliport is used for aviation testing

activities. The Air Cargo Complex stores and supports testing of hazardous items, including ammunition loads of 5,000 lbs, net explosive weight or less. It includes a parachute pack/maintenance and airdrop rigging facility, which contains office and maintenance space. Air drop tests and other air cargo are loaded onto aircraft here.

The area west of Firing Front Road is referred to as Kofa Firing Front. This area provides logistical support for Kofa Firing Range. Facilities include test vehicle and equipment maintenance facilities, a fire and emergency response station, engineering and administrative support offices, communication networks, storage areas, climatic and environmental test chambers, and target fabrication facilities.

4.17.10.2 Environmental Consequences

CS/CSS. There would be moderate (medium) environmental impacts to facilities. It is anticipated that the activities associated with an increase of 1,000 Soldiers would not considerably increase activities within the cantonment and training areas despite the lack of buildable space within the Main Administrative Area. Activities within the training and range areas would be limited to existing firing ranges and roadways. These activities would have to be scheduled to coordinate with existing mission and testing activities. A review of the real property management plan (RPMP) would help determine if YPG could sustain a CS/CSS. Additional socioeconomic, utilities, and housing studies may be required as well.

Full Sustainment BDE. There would be moderate (medium) short- and long-term environmental impacts to facilities. Additional Soldier strength of 3,000 to 3,500 would be reflected through increased facility usage within the cantonment areas. Increased activities within the training and range areas would be expected to cause long-term impacts due to a greater human presence, as well as construction and training activities within the range and training areas. The YPG RPMP and other studies including, but not limited to, socioeconomic and housing capabilities would require a review to determine if implementation of the ACP at this level was feasible.

IBCT. Fielding an IBCT would result in significant (high) short- and long-term environmental impacts to facilities. Since there is not much buildable space within the Main Administrative area of YPG, the addition of an IBCT may increase usage beyond current carrying capacity. However, modification of the installation RPMP and other planning documents and studies such may be able to accommodate fielding an IBCT. One option might be to study the feasibility of new construction at the Materiel Test Facility and Castle Dome Heliport to support an IBCT.

HBCT. Significant (high) short- and long-term environmental impacts to facilities are expected if a HBCT were fielded at YPG. The addition of an HBCT would likely result in a major increase in facilities use within the cantonment especially since there is not much buildable space within the Main Administrative Area. The establishment of an HBCT at YPG may exceed the capacity of the installation to accommodate the proposed action. The installation RPMP and other planning documents identified by the

installation would need to be re-evaluated to determine if a HBCT can be supported. New construction in the developed areas other than the Main Administrative Area may be required. If identified by the installation, additional coordination with state and/or federal agencies and consultation may be necessary for activities associated with an HBCT.

Multiple BCTs. The establishment of multiple BCTs at YPG would also result in significant (high) short- and long-term environmental impacts to facilities. The lack of buildable space available within the Main Administrative Area of YPG would be a factor in fielding multiple BCTs at YPG. It is unlikely that the current installation RPMP could accommodate this iteration of the proposed action unless additional socioeconomic, business analysis, and environmental studies of YPG and surrounding communities are performed. Feasibility studies for construction at the other developed areas of YPG would be recommended.

4.17.11 Energy Demand/Generation

4.17.11.1 Affected Environment

Yuma Proving Ground (YPG) receives grid electric power from four separate commercial sources, the primary source being the Western Area Power Administration, which provides power from hydroelectric stations on the Colorado River at the Davis and Parker Dams. As of 2001, the YPG electrical distribution system enjoyed a 100 percent excess system capacity relative to nominal demand. YPG has no other commercial-scale source of energy.

4.17.11.2 Environmental Consequences

CS/CSS. The likely impact of an additional CS/CSS unit to the local community and the natural environment is minor (low). In terms of energy usage and generation, YPG's existing energy infrastructure has sufficient excess capacity to readily absorb the addition of a CS/CSS unit.

Full Sustainment BDE, IBCT, HBCT, Multiple BCTs. There is an expected moderate (medium) impact to the installation's energy supply from this level of growth. The current energy infrastructure at YPG was designed to support a relatively small cantonment area, with the bulk of the installation reserved for large-scale equipment and ordnance testing activities and various live-fire ranges. Accommodating a Full Sustainment BDE or an additional BCT would likely entail a high capital investment to expand the existing energy infrastructure and total delivery capacity in order to meet the new demand. The addition of multiple, permanently-based BCTs would likely require extensive construction and expansion of the existing energy infrastructure and fundamental energy delivery capacity. However, the current supply should be adequate to accommodate this level of growth.

4.17.12 Land Use Conflicts/Compatibility

4.17.12.1 Affected Environment

YPG encompasses 838,174 acres, of which 837,764 acres are controlled by the Army. There are 410 acres of patented mines that are neither leased nor controlled by the Army. In addition, the installation leases 7,562 acres of state-owned land, and 320 acres of privately-owned land. Off-post land available to YPG totals 612 acres. This land, available under various use permit arrangements, consists of about 40 acres at the Blaisdell Railroad Siding Site and 40 acres of electric transmission line and other easements.

The land base of YPG is dedicated to military testing and evaluation that requires most land to be reserved for firing ranges, impact areas, mobility test courses, and drop zones. These types of activities require large open areas with associated safety and buffer zones. Compared to the enormous size of the military operation areas, the four cantonment areas of the Laguna Region (i.e., Main Administrative Area, Materiel Test Area, Laguna Army Airfield, and Kofa Firing Front) use only a small portion of the land. With few exceptions, real estate under the control of YPG has the potential for military use.

A land use study found that YPG activity is generally compatible with surrounding land use. The scattering of facilities, which is common to all built-up areas, has created vast open spaces. Land use plans should consider open spaces. Land use designations ensure only compatible activities develop in these open spaces. Civilian use of the installation does not include mining. Hunting is only permitted within designated areas. Yuma Proving Ground is officially closed to any other civilian use of the range. There are small parcels of land leased from the State throughout the installation. The leases of these sections specify that YPG may use the land to conduct activities consistent with the intended military use of the installation (Yuma Proving Ground, 2001).

4.17.12.2 Environmental Consequences

CS/CSS. There would be minor (low) short and long-term environmental impacts on installation land use due to the presence of an additional 1,000 Soldiers and their Family members assigned to the installation. The installation has sufficient land available to either build the facilities, sufficient vacant space in existing buildings, or a combination thereof to meet the unit's mission requirements. Additionally, the land, or existing facilities, are located such that surrounding facilities are compatible with the additional CS/CSS unit. The facilities required for a CS/CSS would be located within a single contiguous land unit.

Full Sustainment BDE. There would be minor (low) short and long-term environmental impacts on installation land use due to the presence of an additional 3,000 to 3,500 Soldiers. The installation has sufficient land available to either build the facilities needed for this unit, or would have sufficient vacant space in buildings that would be suitable for the units' mission. Additionally, the land, or existing facilities, are located

such that surrounding facilities are compatible with the additional BDE. The facilities for a BDE would likely be located within a single contiguous land unit.

IBCT. There would be moderate (medium) short and long-term environmental impacts on installation land use due to the presence of an additional 3,500 Soldiers and their Family members. The installation may not have sufficient land available to either build the facilities needed for this unit, or may not have sufficient vacant space in existing buildings suitable for the unit's mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities may not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges. Since designated hunting areas are located in areas not extensively utilized for testing mission, likely establishment of maneuver areas within designated hunting areas may impact hunter (public) access. The additional units would likely pose a scheduling conflict for training activities to occur at the installation.

HBCT. There would be moderate (medium) short- and long-term environmental impacts on installation land use due to the presence of an additional 3,800 to 4,000 Soldiers and their Families assigned to the installation. The moderate negative impacts of stationing a HBCT would be similar to that of stationing an IBCT at the installation. The additional units would likely pose a scheduling conflict for training activities to occur at the installation.

Multiple BCTs. There would be moderate (medium) short- and long-term environmental impacts on installation land use due to the presence of an additional 7,000, or more Soldiers and their Families assigned to the installation. The installation may not have sufficient land available to either build the facilities needed for these units, or would not have sufficient vacant space in buildings suitable for the units' mission. Building new facilities may require the installation to re-zone existing land uses, or re-use/remodel facilities in areas not compatible with land uses associated with tactical units. Existing land and/or facilities would not be contiguous and located such that tactical vehicles would need to travel extensively within the cantonment area to reach training ranges. The additional units would likely pose a scheduling conflict for training activities to occur at the installation.

4.17.13 Hazardous Materials/Hazardous Waste

4.17.13.1 Affected Environment

The affected environment for these proposed actions include the use, storage, transport, and disposal of hazardous materials and wastes at YPG. This includes hazardous materials and wastes from USTs and aboveground storage tanks; pesticides; LBP; asbestos; PCBs; radon; and UXO. Each installation operates under a Hazardous Waste Management Program that manages hazardous waste to promote the protection of public health and the environment. Army policy is to substitute nontoxic and nonhazardous materials for toxic and hazardous ones; ensure compliance

with local, state, and federal hazardous waste requirements; and ensure the use of waste management practices that comply with all applicable requirements pertaining to generation, treatment, storage, disposal, and transportation of hazardous wastes. The program reduces the need for corrective action through controlled management of solid and hazardous waste. (US Army Corps of Engineers, February, 2002)

4.17.13.2 Environmental Consequences

CS/CSS. There would be minor (low) long-term environmental impacts from hazardous materials and waste. It is anticipated that YPG would minimally increase its storage and use of hazardous chemicals during training exercises and installation maintenance with an increase of 1,000 Soldiers. Waste collection, storage, and disposal processes would remain mostly unchanged, and current waste management programs would continue.

Full Sustainment BDE. Minor (low) short- and long-term environmental impacts from hazardous materials and waste would be expected with an increased Soldier strength of 3,000 to 3,500. An increase in the use of hazardous chemicals may be seen in the cantonment and training and range areas. Demolition, renovation, and construction would most likely result in an increase in the generation of asbestos, lead-contaminated wastes, and other hazardous waste, as well as an increase in the use of pesticides due to the addition of Family housing and other facilities. The increase in these wastes would result in no adverse impacts because the wastes would be managed in accordance with current standards and regulations. The hazardous waste disposal facilities would be adequate to manage the increase in hazardous waste. Waste management programs may be updated as needed.

IBCT. There would be minor (low) short- and long-term environmental impacts from hazardous materials and waste associated with the addition of an IBCT. The volume and type of hazardous waste would be the same as described under the Full Sustainment BDE, with similar environmental impacts as well.

HBCT. As with the IBCT, there would be minor (low) short- and long-term environmental impacts from hazardous materials and wastes. The volume of hazardous waste would be slightly higher than the IBCT, but existing procedures would be adequate to ensure that the increases do not adversely affect the environment. Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at YPG and expanded training activities.

Multiple BCTs. The establishment of multiple BCTs at YPG would also result in minor (low) short- and long-term environmental impacts from hazardous materials and waste. Generation and management of hazardous materials and waste, pesticides, petroleum storage tanks, ordnance and explosives would all be higher than with the other actions, but would continue to be managed in accordance with current procedures and regulations. Waste management plans would be updated as needed to incorporate mission activities associated with the new units stationed at YPG and expanded training activities.

4.17.14 Traffic and Transportation

4.17.14.1 Affected Environment

Yuma Proving Ground is located near the Arizona-California Border, approximately 20 miles north of the city of Yuma, Arizona. The region of influence (ROI) of the affected environment for traffic and transportation aspects of the proposed action includes Yuma Proving Ground, and the southeastern portion of Yuma County. Major road routes in the region include US Route 95, a north-south arterial route.

4.17.14.2 Environmental Consequences

CS/CSS. There would be moderate (medium) short and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 1,000 Soldiers and their Family members assigned to the installation. Spread across the ROI, this population would have de minimis impact on the overall traffic congestion in the neighboring communities. This additional population may contribute nominally to traffic volume on the installation, and is not expected to reduce the level of service (LOS) on the installation's road network. There may be a slight increase in traffic volume during peak morning and evening hours. The population increase may have a minor to moderate increase of risk to the safety of pedestrians and bicyclists.

Full Sustainment BDE, IBCT, HBCT, or Multiple BCTs. There would be significant (high) short and long-term environmental impacts on traffic and transportation systems on the installation due to the presence of an additional 3,000 to 4,000 Soldiers. As more Soldiers are assigned to the installation, an increasing percentage of married Soldiers, and unmarried Soldiers with a grade of E-6 (Staff Sergeant) and higher would reside in off-post housing. The increase in off-post traffic would contribute a decrease in service in the road network leading to the installation, particularly during peak morning and afternoon travel periods. This level of increase in population would also have a major impact on the traffic volume on the installation.

4.17.15 Cumulative Effects

Yuma Proving Ground does not anticipate significant cumulative effects from any increase of Soldiers at the installation, no matter which type of unit is considered. Through proper planning and communication, any potential impacts from growth would be readily addressed and could be supported by the installation's mission. Additionally, encroachment is not currently a major issue at Yuma, and installation personnel anticipate that even with growth, encroachment will continue to stay manageable and reasonable.

4.18 SOCIOECONOMIC IMPACT ANALYSIS

Analysis of Socioeconomic Effects for Army Growth and Force Structure Realignment Alternatives

The proposed action is fully articulated in Section 2 of this PEIS. In summary, it involves the stationing of tactical Army military units at prospective locations (installations) in the Continental U.S. (CONUS). This PEIS concentrates on the stationing of 5 such “notional” units at the following 17 major Army installations:

- Fort Benning
- Fort Bliss
- Fort Bragg
- Fort Campbell
- Fort Carson
- Fort Drum
- Fort Knox
- Fort Hood
- Fort Hunter Liggett
- Fort Irwin
- Fort Lewis
- Fort Riley
- Fort Polk
- Fort Stewart
- White Sands Missile Range
- Yakima Training Center
- Yuma Proving Ground

- This programmatic analysis of socioeconomic affects includes four major components:
- (1) the use of the Economic Impact Forecast System (EIFS) (Huppertz, Claire E.; Bloomquist, Kim M.; Barbehenn, Jacinda M.; EIFS 5.0 Economic Impact Forecast System, User's Reference Manual; USACERL Technical Report TA-94/03; July 1994), and the Rational Threshold Value (RTV) technique (Webster, R.D.; and Shannon, E.; The Rational Threshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts; USACERL Technical Report TR N-49/ADA055561; 1978).
 - (2) installation evaluation of important Valued Environmental Components (VECs) (Email from Rick Williams (AEC), 20 April, 2007). These evaluations are “programmatic” in nature—intended to identify the relative severity and significance of likely socioeconomic impacts from the stationing of notional units at the subject locations (installations).
 - (3) the analysis of accompanying (previous, current, and future) stationing actions at the affected installations (Email from Teresa Garnett (AEC), 26 April, 2007).
 - (4) existing published and draft NEPA documents (when available) (Email from Rick Williams (AEC), 30 April, 2007) from the affected installations.

The EIFS and RTV analyses are uniformly applied, using the same assumptions and methodologies among the various installations. As such, the results do present a comparative ranking of various alternatives (each alternative defined as a unit size and a location (the multi-county (or multi-parish in Louisiana) region of influence (ROI) that comprises the regional economic community). Using these analyses, accompanied by the other readily available data, programmatic stationing decisions can be made, consistent with the informed decision making mandated by NEPA and 32 CFR Part 651.

Some data was not yet available at this programmatic level. For example, the increase in local expenditures and increased construction in support of these stationing decisions are not available at this time. If preliminary decisions indicate a specific course of action, additional analyses can be performed using EIFS (or some other regional economic model), once the additional case-specific data has been developed (using a “tiered” process consistent with NEPA).

Complete documentation of the EIFS model, its development, and applicable theoretical underpinnings is available in numerous publications; and these are identified and synopsised in Appendix A, in a brief presentation of the overall theoretical basis of the model and supporting tools. EIFS is a location quotient/ export base model, while the RTV technique was developed to measure the regional significance of projected economic change, using the yearly Bureau of Economic Analysis (BEA) time series data on employment, income, and population to evaluate historical trends in the ROI to measure the “resilience” of the local community. The combined use of EIFS and the RTV technique meets the two pronged approach for significance determinations, intensity and context (CEQ, 1992).

To effect these analyses, the inputs to the EIFS model must be estimated. The normal EIFS inputs include:

- Number of affected (moving) civilians and their salaries
- Number of affected (moving) military employees and their salaries
- Percentage of affected military employees living on-post
- Changes in local procurement, contracting, and purchases
- Definition of the multi-county region of influence (ROI)

This data has often proven difficult to obtain (particularly if the decision making is at an early stage), as the actual numbers depend upon numerous unknown factors. To simplify, this programmatic analysis will focus only on military strength, as associated civilian strengths would not be large, and these stationing analyses focus entirely on tactical military units.

To establish the Soldier strength for these notional units, the following data was used to develop the 5 “notional” units (6 units if the Stryker BCT is included) for this programmatic analysis (Email from Rick Williams (AEC), 20 April, 2007):

CS/ CSS	1,000 Soldiers
Full SBCT	3,000-3,500 Soldiers
IBCT	3,500 Soldiers
HBCT	3,800 to 4,000 Soldiers
Multiple BCTs	7,000 Soldiers
Stryker BCT	4,000 Soldiers

For practical purposes, the analysis of the Full Sustainment BDE, IBCT, HBCT, and Stryker BCT can be done using a Soldier strength of 4,000 Soldiers. This simplification will produce a conservative (maximum) estimate of socioeconomic effects, and any introduced errors will fall well within the accuracy of any regional economic modeling techniques.

The grade distribution (within the units) was derived from the following data (Email from Michael Ackerman (AEC), 2 January, 2007).

MPC	GRADE	2-25 ID (SBCT)	2-2 ID (IBCT)	DELTA
OFFICER	O6	1	1	0
	O5	7	9	2
	O4	30	32	2
	O3	119	102	-17
	O2	147	131	-16
OFFICER Total		304	275	-29
WARRANT	W4	1	2	1
	W3	12	4	-8
	W2	20	24	4
WARRANT Total		33	30	-3
ENLISTED	E9	13	12	-1
	E8	42	46	4
	E7	168	158	-10
	E6	368	341	-27
	E5	855	618	-237
	E4	1362	1114	-248
	E3	860	854	-6
ENLISTED Total		3668	3143	-525
TOTAL		4005	3448	-557

These following tables illustrate the calculation of average salary for the Stryker and IBCT units, using mid-point (within grade) salary and housing allowance averages:

Table 4.18 -2. Stryker BCT Average Salary Calculation

Grade	No.	Mo. Salary	Total Salary	% On-post	Average BAH	Housing Expend	Salary + Housing	
O6	1	6414	6414	0.5	2600	1300	7714	
O5	7	6110	42770	0.5	2039	7136.5	49906.5	
O4	30	5882	176460	0.5	1856	27840	204300	
O3	119	5228	622132	0.5	1628	96866	718998	
O2	147	3936	578592	0.5	1387	101944.5	680536.5	
E9	13	4203	54639	0.5	1628	10582	65221	
E8	42	3606	151452	0.5	1519	31899	183351	
E7	168	3250	546000	0.5	1429	120036	666036	
E6	368	2928	1077504	0.5	1388	255392	1332896	
E5	855	2582	2207610	0.5	1239	529672.5	2737282.5	
E4	1362	2062	2808444	0.5	1151	783831	3592275	
E3	860	1729	1486940	0.5	1148	493640	1980580	
W4	1	4574	4574	0.5	1636	818	5392	
W3	12	4123	49476	0.5	1587	9522	58998	
W2	20	3755	75100	0.5	1497	14970	90070	
Totals	4005						12373556.5	
							Average Monthly Salary + BAH	3089.527216
							Average Yearly Salary +BAH for Stryker BCT	37074

BAH is the Basic Housing Allowance afforded to personnel living off post. The higher "accompanied" value was used.

Source: <http://usmilitary.about.com/housingallowance>

Monthly salary was obtained from attachments in an Email from Michael Ackerman (AEC), 3 January 07.

Mid-point values (within each grade) were used.

Table 4.18-3. IBCT Average Salary Calculation

Grade	No.	Mo. Salary	Total Salary	% On-post	Average BAH	Housing Expend	Salary + Housing
O6	1	6414	6414	0.5	2600	1300	7714
O5	9	6110	54990	0.5	2039	9175.5	64165.5
O4	32	5882	188224	0.5	1856	29696	217920
O3	102	5228	533256	0.5	1628	83028	616284
O2	131	3936	515616	0.5	1387	90848.5	606464.5
E9	12	4203	50436	0.5	1628	9768	60204
E8	46	3606	165876	0.5	1519	34937	200813
E7	158	3250	513,500	0.5	1429	112891	626391
E6	341	2928	998448	0.5	1388	236654	1235102
E5	618	2582	1595676	0.5	1239	382851	1978527
E4	1114	2062	2297068	0.5	1151	641107	2938175
E3	854	1729	1476566	0.5	1148	490196	1966762
W4	2	4574	9148	0.5	1636	1636	10784
W3	4	4123	16492	0.5	1587	3174	19666
W2	24	3755	90120	0.5	1497	17964	108084
Totals	3448						10657056
							Average Monthly Salary + BAH
							3090.793503
							Average Yearly Salary +BAH for IBCT
							37089

BAH is the Basic Housing Allowance afforded to personnel living off post. The higher "accompanied" value was used.

Source: <http://usmilitary.about.com/housingallowance>

Monthly salary was obtained from attachments in an Email from Michael Ackerman (AEC), 3 January 07.

Mid-point values (within each grade) were used.

As indicated in the tables, 50% of the personnel were estimated as on-post, and housing allowances are taken from those afforded to "accompanied" personnel. The mid-range salary estimates reflect approximately 14 years of military service. If additional information is obtained to refine such estimates, additional analyses can be done.

As illustrated in the two tables, the estimates of average salary are very close for the Stryker BCT and the IBCT. For all practical purposes, the value of \$37,100 per year can be effectively used for the SBCT and the IBCT notional units. This same value can be used for the Multiple BCT, the IBCT, and the HBCT, given that the composition of these notional units will be similar. For the CS/CSS notional units, the same composition is also assumed, as the composition of these units is still being determined. If these assumptions are proven wrong in the future, a supplemental NEPA analysis will be performed consistent with 32 CFR Part 651.

Once input data, describing the nature of the proposed “notional actions”, has been determined, the EIFS region of influence (ROI), a multi-county (or multi-parish in the case of Fort Polk) determination, must be defined. The following table presents the ROI for each subject installation:

Table 4.18-4 Installation ROI by County

Installation	Counties in the Region of Influence (ROI)
Fort Benning*	Chattahoochee, Muscogee, Harris, and Marion, GA; Russell, AL
Fort Bliss*	El Paso, TX; Dona Ana and Otero, NM
Fort Bragg*	Cumberland, Lee, Moore, Hoke, and Harnett, NC
Fort Campbell*	Christian and Trigg, KY; Montgomery and Stewart, TN
Fort Carson*	El Paso, Fremont, Pueblo, and Teller, CO
Fort Drum*	Jefferson, Lewis, and St Lawrence, NY
Fort Knox*	Bullitt, Hardin, Meade, Breckinridge, Floyd, Grayson, Harrison, Larue, Nelson, and Spenser, KY
Fort Hood*	Bell and Coryell, TX
Fort Hunter Liggett*	Monterey and San Luis Obispo, CA
Fort Irwin	San Bernardino, CA
Fort Lewis*	Pierce and Thurston, WA
Fort Riley*	Clay, Geary, Riley, Dickinson, Morris, Ottawa, Pottawatomie, and Wabaunsee, KS
Fort Polk	Beauregard, Rapides, and Vernon, LA
Fort Stewart*	Liberty, Long, Bryan, Chatham, and Tattnall, GA
White Sands Missile Range*	El Paso, TX; Dona Ana, Sierra, Socorro, and Otero, NM
Yakima Training Center*	Kittitas, WA; Yakima, WA
Yuma Proving Ground	Yuma, AZ; Imperial, CA

* These ROIs were verified specifically for these analyses.

The estimated inputs were used to produce EIFS reports (model results) for changes in total business volume, employment, income, and population. These are best shown as percentages (of the activity in the total ROI), and can be compared to the RTVs for that variable. The following EIFS documentation is provided for each installation; detailing the inputs, documenting projected changes, and evaluating the potential significance of the predicted change, based on the RTV technique. Additional determinations are provided to identify issues that indicate a need for more detailed, site-specific analyses.

The following results summarize the EIFS analyses for the respective installations, oriented according to three levels of Soldier strength:

- 1,000 Soldiers representing the CS/CSS unit size
- 4,000 Soldiers representing the Full SBCT, IBCT, and HBCT unit sizes
(This also represents a Stryker BCT unit for Fort Bliss)
- 7,000 Soldiers representing the Multiple BCT units

The results present the percentage change in business volume, income, employment, and population for the alternative “notional” units; as well as the respective RTVs for those local economic variables. For each installation, the relative effects of these unit sizes can be evaluated. Any EIFS projections that exceed the RTV thresholds are “bolded”, indicating a significant change that should be accommodated through additional planning analysis, or mitigations.

Fort Benning (detailed in Appendix B)

<u>Soldier Strength</u>	<u>1,000</u>	<u>4,000</u>	<u>7,000</u>	<u>RTV</u>
Business volume	0.24	0.97	1.71	6.89
Income	0.69	2.74	4.81	6.93
Employment	0.72	2.89	5.07	5.25
Population	0.89	3.54	6.21	3.13

Fort Bliss (detailed in Appendix C)

<u>Soldier Strength</u>	<u>1,000</u>	<u>4,000</u>	<u>7,000</u>	<u>RTV</u>
Business volume	0.15	0.59	1.04	4.74
Income	0.28	1.13	1.99	5.0
Employment	0.30	1.22	2.15	4.01
Population	0.27	1.11	1.95	1.29

Fort Bragg (detailed in Appendix D)

<u>Soldier Strength</u>	<u>1,000</u>	<u>4,000</u>	<u>7,000</u>	<u>RTV</u>
Business volume	0.22	0.89	1.55	8.90
Income	0.35	1.41	2.46	8.66
Employment	0.42	1.68	2.94	6.40
Population	0.47	1.87	3.27	2.16

Fort Campbell (detailed in Appendix E)

<u>Soldier Strength</u>	<u>1,000</u>	<u>4,000</u>	<u>7,000</u>	<u>RTV</u>
Business volume	0.45	1.78	3.12	11.65
Income	0.90	3.60	6.30	12.19
Employment	0.98	3.95	6.92	11.52

Population	1.11	4.44	7.78	7.69
Fort Carson (detailed in Appendix F)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.13	0.53	0.93	5.56
Income	0.26	1.07	1.88	5.55
Employment	0.31	1.22	2.14	3.98
Population	0.36	1.45	2.55	3.13
Fort Drum (detailed in Appendix H)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.44	1.77	3.10	4.01
Income	0.84	3.37	5.91	4.32
Employment	0.98	3.92	6.87	5.38
Population	0.98	3.93	6.88	3.20
Fort Knox (detailed in Appendix I)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.45	1.78	3.12	4.48
Income	0.63	2.53	4.43	5.26
Employment	0.82	3.28	5.75	3.92
Population	0.74	2.98	5.23	3.88
Fort Hood (detailed in Appendix J)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.33	1.35	2.37	9.89
Income	0.67	2.67	4.67	10.27
Employment	0.70	2.81	4.91	6.30
Population	0.81	3.26	5.72	8.08
Fort Hunter Liggett (detailed in Appendix K)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.14	0.57	1.0	5.02
Income	0.26	1.05	1.85	7.19
Employment	0.36	1.44	2.52	3.14
Population	0.41	1.62	2.84	1.53
Fort Irwin (detailed in Appendix L)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.05	0.20	0.35	4.07
Income	0.12	0.50	0.88	4.31
Employment	0.18	0.73	1.27	3.58
Population	0.15	0.61	1.08	3.54
Fort Lewis (detailed in Appendix M)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.11	0.45	0.78	5.01
Income	0.19	0.77	1.35	4.96
Employment	0.28	1.13	1.98	2.79
Population	0.29	1.15	2.02	1.97
Fort Riley (detailed in Appendix N)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.63	2.53	4.44	7.24

Income	1.22	4.89	8.97	8.57
Employment	0.63	2.53	8.75	4.43
Population	1.59	6.34	11.11	6.24
Fort Polk (detailed in Appendix O)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.42	1.68	2.95	4.17
Income	0.96	3.87	6.77	4.49
Employment	1.13	4.53	7.92	5.20
Population	1.18	4.74	8.29	4.12
Fort Stewart (detailed in Appendix P)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.27	1.08	1.89	5.12
Income	0.54	2.16	3.80	4.72
Employment	0.60	2.40	4.22	4.24
Population	0.70	2.80	4.91	3.46
White Sands Missile Range (detailed in Appendix Q)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.12	0.50	0.88	4.70
Income	0.27	1.09	1.91	4.94
Employment	0.29	1.16	2.03	3.83
Population	0.26	1.07	1.88	1.21
Yakima Training Center (detailed in Appendix R)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.32	1.28	2.24	3.99
Income	0.88	3.54	6.21	6.32
Employment	0.98	3.95	6.92	7.58
Population	1.14	4.58	8.02	1.39
Yuma Proving Ground (detailed in Appendix S)				
Soldier Strength	1,000	4,000	7,000	RTV
Business volume	0.38	1.51	2.65	4.09
Income	0.83	3.34	5.86	13.98
Employment	0.92	3.66	6.41	4.46
Population	0.88	3.53	6.17	3.82

All of these projected impacts represent an increase in economic activity, generally viewed as a positive influence (or effect) within the economic region. The RTV technique indicates the maximum percentage change that an ROI has undergone, according to the historical record of the Bureau of Economic Analysis (BEA). As such, it can facilitate a dialog with community representatives, establishing a common historical frame of reference—obtained from the detailed information contained in the Appendices. In many cases, these changes will prove acceptable to the affected community (as economic growth is normally encouraged), in spite of the results of the RTV analysis. In other cases, the affected community will express apprehension over the projected changes, and can use the RTV to establish a level of acceptable growth, beyond which additional planning will potentially be required.

These analyses indicate that the business volume, income, and employment effects are generally triggered only by the larger (Multiple BCT) units, and, even then, the effects are not beyond those that a community will likely accept (and appreciate in the interest of economic growth). These are shown as “bolded figures”, and, after community review, will likely prove less controversial. Controversy will likely occur only in cases where recent economic growth contributes to a cumulative demand for economic resources (employees, etc.) in the local region (community). This situation has been identified by Fort Riley in the socioeconomic VEC scores ((Email from Rick Williams (AEC), 20 April, 2007). Also, in practical terms, many of these effects will span multiple years, not a single year as the model analyses and the RTV technique assumes. This will spread these effects and dissipate their severity. In addition, unprecedented expansion can be mitigated (for these three variables) by additional employment and income in the region, often manifested through overtime employment and other short-term adjustments, and other generally positive regional responses.

The population estimates, however, represent a different case of significance. As shown, none of the smaller (CS/CSS) unit sizes (1,000 Soldiers) individually trigger the RTV threshold, but the many of the intermediate (Full SBCT, IBCT, and HBCT (and Stryker BCT for Bliss) unit sizes (4,000 Soldiers) and almost all the larger (Multiple BCT) unit sizes (7,000 Soldiers) appear potentially significant. These population estimates often precipitate increased demands for government services. These indirect (secondary) effects can be approximated using the following general demand factors:

Example Facility/Infrastructure Demand Factors

This table provides "demand factors" that can be used to anticipate the need for additional services as a result of population increases. These estimated demands will vary from community to community and should be verified with local officials and planners when possible. In cases where the range may be significant, they are noted.

<u>Water/Wastewater:</u>	102 to 278 gallons per day (gpd) per capita depends on location & includes industrial/commercial demand 100-150 gpd per capita is a good planning figure domestic consumption only
<u>Health Care:</u>	4.5 hospital beds per 1,000 population
<u>Library:</u>	1 library per 40,000- 60,000 residents 400-500 sq. ft. per 1,000 population
<u>Law Enforcement:</u>	1.7 personnel (policeman, etc.) per 1,000 population range varies from 1.68 to 2.89 (city of 500,000)
<u>Fire Protection:</u>	1.43 firemen per 1,000 population range varies from 1.29 to 1.72
<u>Schools:</u>	0.18 to 1.17 students per individual or Family dwelling unit (1.17 single Family 1.46 duplex 1.28 townhome

0.31	mobile home
0.40	garden apartment
0.18	high rise)

Transportation: 6 to 10 average daily trips (ADT) per dwelling unit for apartments
7 to 15 ADT per dwelling unit for single Family homes

Open Space: 7-25 acres per 1,000 population

Parks: neighborhood parks (5-20 acres): 2.5 acres per 1,000 population
district parks (20-100 acres): 2.5 acres per 1,000 population
large parks (100+ acres): 5.0 acres per 1,000 population
regional parks (250+ acres): 20.0 acres per 1,000 population

Taken from Environmental Impact Analysis Handbook by John Rau and David Wooten, McGraw-Hill, 1980, ISBN 0-07-051217-5

In the case of many such services, these can be developed over time, and such demands can be met. In the case of school (educational) services, however, this demand for services requires some significant planning and infrastructure development (with associated timelines). This impact can be particularly acute (significant) when schools are already stressed. The following subset of the previous summary impact table, concentrating on population impacts, is provided for further analysis:

	<u>Soldier Strength</u>				RTV
	1,000	4,000	7,000	RTV	
Fort Benning		0.89	3.54	6.21	3.13
Fort Bliss	0.27	1.11	1.95	1.29	
Fort Bragg	0.47	1.87	3.27	2.16	
Fort Campbell	1.11	4.44	7.78	7.69	
Fort Carson	0.36	1.45	2.55	3.13	
Fort Drum	0.98	3.93	6.88	3.20	
Fort Knox	0.74	2.98	5.23	3.88	
Fort Hood	0.81	3.26	5.72	8.08	
Fort Hunter Liggett	0.41	1.62	2.84	1.53	
Fort Irwin	0.15	0.61	1.08	3.54	
Fort Lewis	0.29	1.15	2.02	1.97	
Fort Riley	1.59	6.34	11.11	6.24	
Fort Polk	1.18	4.74	8.29	4.12	
Fort Stewart	0.70	2.80	4.91	3.10	
White Sands		0.26	1.07	1.88	1.29
Yakima Training Center	1.14	4.58	8.02	1.39	
Yuma Proving Ground	0.88	3.53	6.17	3.82	

Using the RTV approach for the analysis of direct environmental effects on population, none of the smaller unit sizes ((CS/CSS) trigger the RTV threshold; while the intermediate size units (Full SBCT, IBCT, and HBCT (and Stryker BCT for Bliss)) trigger the thresholds in 39% of the analyses; and 83% trigger the thresholds for analysis of the

larger (Multiple BCT) unit sizes; to be expected with the much larger Multiple BCT size. As with the other regional economic variables, these effects will be mitigated by longer implementation timelines (an inevitable practical mitigation). However, the population thresholds (as designed into the RTV approach) require more consideration, as the timelines required for expanded government services (especially schools) can be critical.

Installation VEC evaluations (Email from Rick Williams (AEC), 20 April, 2007) can be used to further evaluate the severity of these issues. These results of these evaluations are add to the EIFS/RTV results for the population variable in the following table, illustrating the socioeconomic VEC score and highlighting cases where school impacts were emphasized.

	Soldier Strength & VEC Scores for Socioeconomic Effects							RTV
	1,000 VEC	4,000 VEC	7,000 VEC	RTV	1,000 VEC	4,000 VEC	7,000 VEC	
Fort Benning	0.89	M*	3.54	M/H*	6.21	H*	3.13	
Fort Bliss	0.27	H*	1.11	H*	1.95	H*	1.29	
Fort Bragg	0.47	M*	1.68	M*	3.27	H*	2.16	
Fort Campbell	1.11	M*	4.44	H*	7.78	H*	7.69	
Fort Carson	0.36	L	1.45	M	2.55	H	3.13	
Fort Drum	0.98	L	3.93	M	6.88	H	3.20	
Fort Knox	0.74	L*	2.98	M*	5.23	H*	3.88	
Fort Hood	0.81	VL	3.26	VL/L	5.72	L	8.08	
Fort Hunter Liggett	0.41	L	1.62	M	2.84	M	1.53	
Fort Irwin	0.15	L	0.61	L	1.08	L	3.54	
Fort Lewis	0.29	M*	1.15	H*	2.02	H*	1.97	
Fort Riley	1.59	L	6.34	H	11.11	H	6.24	
Fort Polk	1.18	M	4.74	M	8.29	H	4.12	
Fort Stewart	0.70	L*	2.80	M*	4.91	H*	3.46	
White Sands	0.26	L	1.07	L	1.88	L	1.21	
Yakima Training Center	1.14	L	4.58	H+	8.02	H+	1.39	
Yuma Proving Ground	0.88	H*	3.53	H*	6.17	H*	3.82	

- VL-very low impact
- L- low impact
- M- medium impact
- H- high impact
- VH- very high impact
- * concerns over schools
- + positive impact
- NA – no data available

This table reflects, for direct population effects and indirect population effects, a summary of both the analytical tool (EIFS results and the RTVs) and the subjective

evaluations of the installations. As such, it represents a combination of analytical and subjective analysis; one based on historical trends in the ROI (reflecting the resiliency of the local community) and one reflecting noted (by each installation) stresses in the community. Further installation collaboration can refine and strengthen these evaluations.

Other accompanying (previous, current, and future) stationing actions provide some insight into Army-induced socioeconomic cumulative effects. As previously discussed, these EIFS projections indicate the likely socioeconomic effects of military stationing (excluding civilian employee and procurement/construction effects, which cannot be estimated at this programmatic level). The severity of these direct effects must also be evaluated against the cumulative socioeconomic effects that occur through other Army actions. These actions include both discretionary actions and non-discretionary actions associated with Base Realignment and Closure (BRAC). Three information sources can be used to capture any major discretionary or non-discretionary actions in the affected communities. For non-discretionary BRAC actions, Appendix B of the BRAC Commission announcement was used (to establish the net BRAC changes in the ROI); and, for discretionary actions, and “Future Installation State as of 26 March, 2007” and “The PUAL Roll-up as of 26 March 2007” (Email from Teresa Garnett (AEC), 26 April, 2007) was used. This information is summarized in the following table:

4.18-4. BRAC Changes Within the ROI

Installation	Future State				PUAL				BRAC >300	
	Off	WO		Enl	Civ	Completed		Pending		
		Total	>300			Total	>300			
Benning		90	20	662	32	(410)	1; (1)	1214		
Bliss	861	49	8899	(379)	1071	1	7565		2936	
Bragg	979	86	4362	0	1640	15; (10)	3787	5	0	
Campbell	(40)	(98)	(383)	(1)	244	1; (2)	(766)	(1)		
Carson	no information available									
Drum	62	8	930	0	299		771		0	
Knox	no information available									
Hood	638	222	8408	128	7451	10;(4)	1855	3;(2)		
Hunter Liggett	no information available									
Irwin	11	6	(92)	0	(100)		25	1	0	
Lewis	no information available									
Riley	no information available									
Polk	no information available									
Stewart		(8)	(33)	306	0	1194	(2)	1459	0	
White Sands	(10)	0	19	(56)	(47)		0	1		
Yakima	no information available									
Yuma	0	0	0	0	0	0	1	0		

Installation	BRAC Net Change in the ROI	
	Mil	Civ
Benning		853
Bliss	11,248	147
Bragg	(743)	1055
Campbell	(360)	9
Carson	4674	222

Drum	(9)	0
Knox	(4867)	1739
Hood	(73)	(118)
Hunter Liggett	15	(33)
Irwin	-	-
Lewis	(110)	(54)
Riley	2415	440
Polk	-	-
Stewart	17	21
White Sands	11,248	147
Yakima	-	-
Yuma	0	5

A review of these tables can indicate where the Army-induced cumulative effects are more likely to occur. Installations are highlighted (bolded) in the table if the data indicates (1) a large net positive military or civilian employee growth, (2) a large number of past or pending actions (minor or greater than 300) is indicated. Net negative reductions are not highlighted but may mitigate the effects of these analyses (reducing the net predicted effects). These potential mitigations are indicated at Forts Campbell, Knox and Hood.

In all cases, the timing of this proposed action (relative to other planned stationing actions) is critical. In some cases, these other actions may be completed; while, in other cases, this proposed action may encompass (or replace) those already identified at the affected installations. In such cases, the socioeconomic effects may be (at least partially) evaluated in existing or ongoing NEPA analyses; and may be reflected in some of the NEPA documents analyzed in the following paragraphs. If this proposed action introduces new units in addition to those covered in the PUAL, Future State, or BRAC summaries; further case-specific analysis of cumulative socioeconomic effects will be required.

A review of recent (published and draft) NEPA documents (Email from Rick Williams (AEC), 30 April, 2007), using a database (of NEPA documents) developed in support of this PEIS. This review provided a “sanity check” for the three previous components of this analysis, and led to the following general observations:

- (1) The EIFS/RTV analysis is consistent with previous such NEPA analyses. Small unit actions (units of approximately 1,000 Soldier units) can be accommodated, although short-term impacts will require management (mitigation). The larger units (at the 4,000 and 7,000 Soldier level) will be potentially significant at those installations where population RTVs are exceeded and where other stationing actions are underway.
- (2) Environmental Justice (EJ) considerations appear minor. While minority populations and low income populations exist near the affected installations, such impacts are limited primarily to noise impacts, and most of these are minor and acceptable. While some short-term economic impacts may occur, these will be mitigated over time, and will likely provide net positive benefit over the long term. If these proposed actions utilize existing training and facility infrastructure,

and are consistent with their existing use, no additional analysis is likely required. Similarly, if similar planned actions have been analyzed under NEPA, these may adequately address potential socioeconomic and EJ issues (an installation determination).

(3)

The applicable NEPA documents are referenced in the following Installation Summaries.

Installation Summaries

The following composite table presents the total measure of socioeconomic effects, including the EIFS/RTV analyses, the installation socioeconomic VEC scores, and the analysis of cumulative Army actions. The table has been grouped to illustrate the relationships between the installations and to highlight those that require no additional analysis.

	Soldier Strength - VEC Scores – Cumulative Issues								
	1,000	VEC	4,000	VEC	7,000	VEC	RTV	Cumulative	
Fort Benning	0.89	M*	3.54	M/H*	6.21	H*	3.13	*	
Fort Bragg	0.47	M*	1.87	M*	3.27	H*	2.16	*	
Fort Campbell	1.11	M*	4.44	H*	7.78	H*	7.69	m	
Fort Drum	0.98	M*	3.93	H*	6.88	H*	3.20	*	
Fort Knox		0.74	L*	2.98	M*	5.23	H*	3.88	m
Fort Hunter Liggett		0.41	L	1.62	M	2.84	M	1.53	
Fort Riley		1.59	L	6.34	H	11.11	H	6.24	*
Fort Polk		1.18	M	4.74	M	8.29	H	4.12	
Fort Stewart	0.70	L*	2.80	M*	4.91	H*	3.46	*	
Yuma Proving Ground	0.88	H*	3.53	H*	6.17	H*	3.82		
Fort Bliss		0.27	H*	1.11	H*	1.95	H*	1.29	*
White Sands	0.26	L	1.07	L	1.88	L	1.21	*	
Fort Carson	0.36	L	1.45	M	2.55	H	3.13	*	
Fort Lewis	0.29	M*	1.15	H*	2.02	H*	1.97		
Yakima Training Center	1.14	L	4.58	H+	8.02	H+	1.39		
Fort Hood		0.81	VL	3.26	VL/L	5.72	L	8.08	*, m
Fort Irwin		0.15	L	0.61	L	1.08	L	3.54	

* indicates cumulative Army-induced cumulative effects
 m indicates offsetting reductions in strength that may partially mitigate impacts

Fort Benning effects appear potentially significant, given the predicted impact level of both intermediate (Full SBCT, IBCT, and HBCT) and large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (Medium/High and High, respectively), particularly given the accompanying large number of indicated

actions and total net change in installation strength. Installation concerns focus specifically on school impacts.

The results of recent Fort Benning NEPA analyses (*Draft EIS for BRAC 2005 and Transformation Activities at Fort Benning, Georgia*, April, 2007) support these conclusions. No significant EJ issues were identified.

Fort Bragg effects appear potentially significant, given the predicted impact level of large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (High), particularly given the accompanying large number of indicated actions and total net change in installation strength. Installation concerns focus specifically on school impacts.

No recent NEPA analyses for Fort Bragg have yet been located for the types of unit stationing actions in this proposed action. While NEPA analyses exist, they apply to smaller actions.

Fort Campbell effects appear potentially significant, given the predicted impact level of large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (High). Installation concerns focus specifically on school impacts, and concerns over the current impacts of Modularity. Some mitigating activities are on-going at the installation, particularly pending actions that may somewhat reduce net Soldier strength in the long term, particularly if they occur during or prior to pending unit relocations as part of this proposed action.

No recent NEPA analyses for Fort Campbell have yet been located for the types of unit stationing actions in this proposed action. While NEPA analyses exist, they apply to smaller actions.

Fort Drum effects appear potentially significant, given the predicted impact level of both intermediate (Full SBCT, IBCT, and HBCT) and large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (High), particularly given the accompanying large number of indicated actions and total net change in installation strength. The installation indicates 3 existing BCTs, currently in rotation. Though these Soldiers are in deployment rotation, socioeconomic effects (from Families desiring services) remain present (at least partially) in spite of the rotations.

The results of recent Fort Drum NEPA analyses (*Environmental Assessment for Army Transformation Implementation at Fort Drum, New York*, April, 2005) support these conclusions. Some impacts on the local housing supplies were noted. No significant EJ issues were identified.

Fort Knox effects appear potentially significant, given the predicted impact level of large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (High). Installation concerns focus specifically on school impacts. Some mitigating activities are on-going at the installation, particularly pending actions such as

the Armor School move in FY11 (as indicated in the installation VEC survey). These mitigations will, however, be ineffective unless they occur before (or during) any projected new unit increases as part of this proposed action.

The results of recent Fort Knox NEPA analyses (*Environmental Assessment of Implementation of BRAC Recommendations and Other Army Transformation Activities at Fort Knox, Kentucky* August, 2006) support these conclusions. No significant EJ issues were identified.

Fort Hunter Liggett effects appear potentially significant, given the predicted impact level of both intermediate (Full SBCT, IBCT, and HBCT) and large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (Medium).

The results of recent Fort Hunter Liggett NEPA analyses (*Environmental Assessment and Finding of No Significant Impact of Construction and Operation of Military Qualification Ranges at Fort Hunter Liggett, Monterrey, California*, October, 2006) support these conclusions. No significant socioeconomic or EJ issues were identified. These analyses dealt only with the use of training facilities and temporary Soldier presence at the facility. If permanent party Soldier stationing is anticipated at Fort Hunter Liggett, additional analyses will be required.

Fort Riley effects appear potentially significant, given the predicted impact level of both intermediate (Full SBCT, IBCT, and HBCT) and large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (High), particularly given the accompanying large number of indicated actions and total net change in installation strength. Installation concerns focus specifically on the stresses already created by BRAC and IGPBS actions, and resultant demands on contractor supply and local labor pools. These concerns will be further complicated if new construction is required by any anticipated (proposed action) unit additions.

The results of recent Fort Riley NEPA analyses (*Environmental Assessment of the Modular Reorganization of Forces at Fort Riley, Kansas*) support these conclusions. No significant EJ issues were identified. Socioeconomic issues were identified, but are considered beneficial in the long term.

Fort Polk effects appear potentially significant, given the predicted impact level of both intermediate (Full SBCT, IBCT, and HBCT) and large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (Medium and High, respectively). The installation also indicates an existing IBCT and JBCT, as well as other Soldier level increases.

The results of recent Fort Polk NEPA analyses (*Final EIS for 2nd Army Cavalry Regiment Transformation and Installation Mission Support, Joint Readiness Training Center (JRTC) and Fort Polk, Louisiana, and Long Term Military Training Use of*

Kisatchie National Forest Lands, January, 2004) support these conclusions. No significant EJ issues were identified.

Fort Stewart effects appear potentially significant, given the predicted impact level of large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (High), particularly given the accompanying large number of indicated actions and total net change in installation strength. Installation concerns focus specifically on school impacts.

No recent NEPA analyses for Fort Stewart have yet been located for the types of unit stationing actions in this proposed action. While NEPA analyses exist, they apply to smaller actions.

Yuma Proving Ground effects appear potentially significant, given the predicted impact level of large (Multiple BCT) unit sizes when compared to the RTVs and installation VEC scores (High). Installation concerns focus specifically on school impacts.

The results of recent Yuma Proving Ground NEPA analyses (*EA for the Joint Experimentation Range Complex 2 at U.S. Army Yuma Proving Ground*, August, 2006) support these conclusions. No significant EJ issues were identified, those noise and dust impacts were discussed. These analyses dealt only with the use of training facilities and temporary Soldier presence at the facility. If permanent party Soldier stationing, at the medium (4,000 Soldier) or large (7,000 Soldier) range, is anticipated at Yuma Proving Ground as part of this proposed action, additional analyses will be required.

Fort Bliss and White Sands Missile Range (WSMR) share much of the same ROI, and should be jointly considered. Both exhibit potentially significant impacts for the large (Multiple BCT) unit sizes when compared to the RTVs and installation socioeconomic VEC scores (High for Fort Bliss, though Low for WSMR). Both installations voice concerns over school impacts. The significance of Army-induced socioeconomic effects is magnified by the large Soldier increases associated with the BRAC actions, in addition to other discretionary Army actions that are underway or pending. If both were chosen for additional BCT stationing under this proposed action, the impacts would be potentially very significant, and require detailed mitigation planning. Fort Bliss and WSMR have also indicated the need for additional Environmental Justice (EJ) analysis.

The results of recent Fort Bliss NEPA analyses (*Fort Bliss Texas and New Mexico Mission and Master Plan Final Supplemental Programmatic EIS*, March, 2007) and WSMR NEPA analyses (*Environmental Assessment for Proposed Training Ranges at White Sands Missile Range, New Mexico*, August, 2006) support these conclusions. No significant EJ issues were identified, though noise issues were discussed at Fort Bliss. The WSMR analysis concentrated on the construction and operation of training facilities.

If permanent party Soldier stationing, at the medium (4,000 Soldier) or large (7,000 Soldier) range, is anticipated at WSMR as part of this proposed action, additional analyses will be required.

Fort Carson The predicted impacts of all notional units at Fort Carson appear within RTV significance thresholds, but installation socioeconomic VEC scores are Medium for intermediate (Full SBCT, IBCT, and HBCT) unit sizes and High for large (Multiple BCT) unit sizes. In addition, Fort Carson impacts from BRAC actions are already underway, adding to Army-induced cumulative effects. If Fort Carson were chosen for additional BCT stationing under this proposed action, the additional incremental impacts at Fort Carson would also require additional analyses, once details become available.

The results of recent Fort Carson NEPA analyses (*Final EA for Construction of FY06 Facilities at Fort Carson, Colorado*, December, 2005) support these conclusions. No significant EJ issues were identified.

Fort Lewis and Yakima Training Center (YTC) also have different ROIs, but are interdependent. Fort Lewis EIFS and RTV analyses indicate significant (though marginal) impacts from large (Multiple BCT) unit sizes, and installation socioeconomic VEC scores are high for both intermediate (Full SBCT, IBCT, and HBCT) unit sizes and High for large (Multiple BCT) unit sizes. Fort Lewis expresses concerns for schools at all potential stationing levels, with the exception of stationing scenario 1 (1,000 Soldiers). It has been noted in this analysis that the trend of school populations is decreasing through 2013 which is being taken into consideration. The YTC EIFS/RTV analyses indicate significant impacts for both intermediate (Full SBCT, IBCT, and HBCT) unit sizes and large (Multiple BCT) unit sizes, The installation socioeconomic VEC scores indicate High (though positive) scores for both levels of stationing; probably reflecting the opportunity for improved schools in the YTC ROI. If significant Soldier and Family presence at YTC is anticipated, the impacts will be significant, as reflected by the EIFS/RTV comparisons, even for a small (CS/CSS) unit sizes. If Fort Lewis provides some of these functions, impacts will be dramatically lower and probably fall well below the significance (RTV) threshold. However, any major construction at YTC will likely produce significant impacts, though site specific analysis will be required once the size of a construction program is known. If both were chosen for additional BCT stationing under this proposed action, the additional incremental impacts at Fort Lewis would also require additional analyses, once details become available.

The results of recent Fort Lewis and YTC NEPA analyses (*Final EA for Stationing Regimental Aviation Assets at Fort Lewis and Yakima Training Center, Washington*, January, 2006 and *Final EA for Fiscal Year Stationing actions at Fort Lewis and Yakima Training Center, Washington*, August, 2006) support these conclusions. No significant socioeconomic or EJ issues were identified. YTC analysis concentrated on the construction and operation of training facilities. If permanent party Soldier stationing, at the medium (4,000 Soldier) or large (7,000 Soldier) range, is anticipated at YTC as part of this proposed action, additional analyses will be required.

Fort Hood direct effects (associated with this proposed action) appear well within the EIFS/RTV significance thresholds, though cumulative Army-induced effects (associated with planned expansions and pending unit moves) may be significant, depending on timing of the stationing actions. Installation socioeconomic VECS are scored Low.

The results of recent Fort Hood NEPA analyses (*Environmental Assessment for Transformation to Modular Brigades and Construction of Support Facilities at Fort Hood, Texas*, September, 2004) support these conclusions. No significant socioeconomic or EJ issues were identified, though short-term adverse school impacts were identified.

Fort Irwin direct effects (associated with this proposed action) appear well within the EIFS/RTV significance thresholds. In addition, installation socioeconomic VECS are scored Low.

The results of recent Fort Irwin NEPA analyses (*Supplemental Final EIS for the Proposed Addition of Maneuver Training Land at Fort Irwin, California*, August, 2005) support these conclusions. The socioeconomic effects concentrated primary on the conversion of land ownership. No significant EJ issues were identified.

Summary Conclusions

The following table is a summary presentation of identified impacts at the 17 candidate installations for the applicable notional units. Direct impacts and Army-induced cumulative impacts are scored as follows:

Table 4.18-5 Summary Presentation of Identified Impacts

	CS/CSS	FSBDE	IBCT	HBCT	StrBCT	MultBCTs	Comments
Benning	I/I	MS/S	MS/S	MS/S	N	S/S	schools
Bragg	I/I	MS/MS	MS/MS	MS/MS	N	S/S	schools
Campbell	I/I	I/MI	I/MI	I/MI	N	S/S	schools
Drum	I/I	MS/MS	MS/MS	MS/MS	N	S/S	schools
Knox	I/I	I/MI	I/MI	I/MI	N	S/S	schools
Hunter Liggett	I/I	MS/MS	MS/MS	MS/MS	N	S/S	
Riley	I/I	MS/S	MS/S	MS/S	N	S/S	schools, labor pool
Polk	I/I	S/S	S/S	S/S	N	S/S	
Stewart	I/I	I/MI	I/MI	I/MI	N	S/S	schools
YPG	I/I	MI/MI	MI/MI	MI/MI	N	S/S	schools
Bliss	I/S	I/S	I/S	I/S	I/S	S/S	schools/EJ
WSMR	I/S	I/S	I/S	I/S	N	S/S	schools/EJ
Both Selected	S/S	S/S	S/S	S/S	S/S	S/S	schools/EJ
Carson	I/I	I/S	I/S	I/S	N	I/S	
Lewis	I/I	I/I	I/I	I/I	N	MS/MS	schools
YTC	MI/MS	S/S	S/S	S/S	N	S/S	schools
Combined	*	*	*	*	N	*	schools

Fort Hood	I/I	I/MI	I/MI	I/MI	N	I/MS
Fort Irwin	I/I	I/I	I/I	I/I	N	I/MI

- I insignificant impact
- MI just below the significance threshold
- MS just over the significance threshold
- S significant impact
- N not applicable
- * requires additional analysis and information

As shown, numerous unit moves can have potentially significant impacts on the local communities. Given the consistent identification of schools as a local concern, and the long timeframes required to develop school infrastructures, the following tables can be used to facilitate further coordination and mitigation at the local level. The values in this table were derived from Army statistics, by grade, on the marital status of Army Soldiers, the number of children that Soldiers have, and other Army wide statistics (Email from Jeff Springer (AEC), 23 April 2007). The grade distribution for a Stryker brigade was used to develop a distribution of children for the affected Soldiers (approximately 4,000 Soldiers). Assuming the same distribution for the smaller units (1,000 Soldiers) and the larger units (7,000 Soldiers), the original distribution was proportionately altered to produce the distributions shown.

Table 4.18-6. Distribution of Children for the affected Soldiers

	1,000 Soldiers	4,000 Soldiers	7,000 Soldiers
Total Children	401	1605	2809
1 yr old	72	287	503
2 yr old	33	132	230
3 yr old	32	130	227
4 yr old	30	122	213
5 yr old	28	112	196
6 yr old	26	104	181
7 yr old	24	95	166
8 yr old	22	87	152
9 yr old	19	77	134
10 yr old	17	70	122
11 yr old	16	64	112
12 yr old	15	59	103
13 yr old	13	53	92
14 yr old	12	49	86
15 yr old	10	40	71
16 yr old	9	36	63
17 yr old	8	30	53
18 yr old	6	24	41
19+ yr old	9	36	63

Depending on the actual decisions associated with this proposed action, these estimates can be used for coordination with local communities. The smaller distribution (for 1,000 Soldiers) can be used for any CS/CSS units; the medium distribution (4,000 Soldiers) can be used for the Full Sustainment BDE, IBCT, HBCT, and Stryker BCT; and the larger distribution (7,000 Soldiers) can be used for a Multiple BCT. While these tables represent the general, nation-wide distribution of school-age dependents associated with a given military grade distribution within the units (Email from Jeff Springer (AEC), 23 April 2007), and will not provide perfect estimates, they can be used for planning purposes in coordination with potentially affected school systems. .

In summary, the intermediate and large unit sizes will likely create significant impacts in the affected communities (ROIs). These communities will likely view most of these impacts as a positive opportunity to stimulate economic growth, but stresses will likely be encountered as populations grow, and will require resolution. The scheduling of these actions (unit moves) can provide an effective mitigation technique. If strength increases can be offset by planned strength reductions, or timelines for the strength increases (particularly for the Multiple BCTs) can be extended over multiple years, these effects can be readily mitigated. However, when decisions appear eminent, collaboration with affected communities must commence early (once final decisions are contemplated). As the major issues surround school impacts, applicable coordination should commence as soon as possible, and Army/DoD assistance programs should be implemented or developed.

These conclusions will require installation review and verification/modification, once stationing decisions are made at a programmatic level.

4.19 Unavoidable Adverse Environmental Effects

In the inherent nature of Army growth and force structure realignment, adverse environmental effects associated with the proposed action are likely and are unavoidable. The influx of new CS/CSS units and BCTs increases the use of vehicles and equipment on the installation and within the training areas. In addition, construction of new or renovation of existing facilities to support growth and force structure realignment directly and indirectly affect the associated natural and social environment.

This PEIS had identified variations in the impacts from each of the unit stationing scenarios at 17 potential installation locations. Each potential installation and the surrounding environment would be affected by growth and force structure realignment by some degree, and in many situations, would be lessened in severity though site-specific mitigation measures. Site-specific analysis will be tiered from this PEIS and performed at various installation locations to determine effects and their significance, and the potential for appropriate mitigation.

4.20 Irreversible or Irretrievable Commitments of Resources

This PEIS addresses the growth and realignment associated with the overarching Army Transformation effort and results in the same commitments of resources, as stated in the Army's *Programmatic Environmental Impact Statement for Army Transformation*:

“Maintaining national defense preparedness in today’s world and for the foreseeable future is, by its very nature, an activity that is consumptive of the earth’s resources and one that can damage human and natural environments to varying degrees. Although some activities associated with implementation of Army Transformation might locally result in significant adverse environmental effects, as described above, none would be undertaken without prior analysis as required by the NEPA or without reasonable efforts to appropriately mitigate such effects. Recycling and reuse may enable partial retrieval of some materials used in new systems (e.g., aluminum, steel, etc.). Commitments of energy and other resources, although intentionally minimized for economy as well as conservation, should be considered irreversible and irretrievable. Land and natural resources (flora, fauna, water) would be used by the Army with short-term goals of sound stewardship and minimal damage and with a long-term goal of sustainability and the avoidance of irreversibility (USACE, 2002).”

4.21 Short-term uses of Man’s Environment and Maintenance and Enhancement of Long-term Productivity

The Army has long recognized that it must ensure that its Soldiers today and its Soldiers of the future have the land, water, and air resources to train; a healthy environment in which to live; and the support of the local communities and the American people. The Army’s Strategy for the Environment establishes a long-range vision that enables the Army to meet its mission today and into the future. Sustainability is the foundation for the Strategy and connects activities of today with those of tomorrow with sound business and environmental practices.

While remaining true to its primary mission – to defend the United States, its people, its land, and its heritage – the Army is continually evolving to meet global challenges. Maintenance and enhancement of long-term productivity are met through the goals of the Army Strategy through sustainability. Sustainability is reached by simultaneously meeting current as well as future mission requirements worldwide, safeguarding human health, improving quality of life, and enhancing the natural environment (Army Strategy for the Environment).

Sustainability is a key core value in the Army’s Strategy for the Environment. Sustainable practices such as water conservation, greater fuel efficiency, and use of renewable energy allows the Army to travel further, deploy longer, and reduce dependence on traditional supply lines and reduce its impact on natural resources. Sustainability further enhances the Army’s business Transformation by eliminating waste, driving innovation, and promoting collaboration across the entire Army. The Army, while remaining strong to ensure the defense of the Nation, also maintains good stewardship of the environment to preserve it for future generations (Army Earth Day Message, 2007).

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6.0 ACRONYM LIST

A

AAF – Army Airfield
AAFES – Air Force Exchange Service
ACP- Army Campaign Plan
ACSIM – Army Chief of Staff for Installation Management
ACUBs – Army Compatible Use Buffer
ADA- Air Defense Artillery
AFB- Air Force Base
AFF – Army Field Fire
AMF- Army Modular Force
APCD – Air Pollution Control District
APE – Area of Potential Effect
APOE – Aerial Port of Embarkation
AQCC – Air Quality Control Center
AQCR – Air Quality Control Regions
AR – Army Regulation
ARAC – Army Radar Approach Control
ARC – Armored Cavalry Regiment
ARF – Automatic Rifle Fire
ARFORGEN- Army Force Generation
ARPA – Archeological Resources Protection Act
ASP – Ammunition Storage Point
ATC – Air Traffic Control Center
ATEC- Army Test and Evaluation Command
ATTACC- Army Training and Testing Area Carrying Capacity

B

BAA – Butts Army Airfield
BAAF- Biggs Army Airfield
BAX – Battle Area Complex
BCT- Brigade Combat Team
BDE – Brigade
BEA – Bureau of Economic Analysis
BfSB – Battlefield Surveillance Brigade
BLM – Bureau of Land Management
BLORA - BeltonLake Outdoor Recreation Center
BMP – Best Management Practices
BO – Biological Opinion
BRAC- Base Realignment and Closure

C

CAA – Clean Air Act
CAAF – Campbell Army Airfield

CAB – Combat Air Brigade
CACTF – Combined Arms Collective Training Facility
CAL – Combat Assault Landing Strip
CALFEX- Combined Arms Live-Fire Exercise
CAP – Criteria Air Pollutants
CC – Compliance-Related Cleanup
CCA – Candidate Conservation Agreement
CEQ- Council on Environmental Quality
CERL- Construction Engineering Research Laboratory
CFR – Code of Federal Regulations
CHPPM- U.S. Army Center for Health Promotion and Preventative Medicine
CIG – Colorado Interstate Gas
CLFXs – Convoy Live-fire Exercises
CO – Carbon Monoxide
CONUS – Continental United States
CP 08 – Command Plan 08
CPQC – Combat Pistol Qualification Course
CRM – Cultural Resource Manager
CS- Combat Service
CSA – Chief of Staff of the Army
CSB – Combat Support Brigade
CSB HQD – Combat Support Battalion, Headquarters
CSS- Combat Service Support
CSTC – Combat Support Training Center
CTC – Combat Training Center
CWA – Clean Water Act

D

DA – Department of the Army
DANC – Development Authority of the North County
DECAM – Directorate of Environmental Compliance and Management
DEIS – Draft Environmental Impact Statement
DMPRC – Digital Multi-purpose Range Complex
DMPTR – Digital Multi-purpose Training Range
DNR – Department of Natural Resources
DoD – Department of Defense
DOL – Directorate of Logistics
DOT – Department of Transportation
DPW – Department of Public Works
DRMO – Defense Reutilization and Marketing Office
DTA- Donnelly Training Area

E

EA- Environmental Assessment
EAC – Early Action Compact
EIFS – Economic Impact Forecast System

EIS – Environmental Impact Statement
ECM- Environmental Climate Model
EFI- Efficient Facilities Initiative
EMD – Environmental Management Division
ENG – Engineers
EOD- Explosive Ordnance Detachment
EPA – Environmental Protective Agency
EPACT – Energy Policy Act
EPD – Environmental Protection Division
EPEC – El Paso Electric Company
EPGC – El Paso Gas Company
EPWU – El Paso Water Utility
ERDC- Environmental Research and Development Center
ESA – Endangered Species Act
ESMP = Endangered Species Management Plan

F

FA – Field Artillery
FAA – Federal Aviation Administration
FCS- Future Combat Systems
FEIS – Final Environmental Impact Statement
FHL- Fort Hunter Liggett
FM – Field Manual
FMTV- Family of Moderate Tactical Vehicle
FOB – Forward Operations Base
FORSCOM – United States Army Forces Command
FR – Federal Register
FSWB – Fort Stewart Wetland Bank
FSI- Finding of Significant Impacts
FY – Fiscal Year

G

GCR – Guaranteed Capacity Rate
GDPR- Global Defense Posture Realignment
GIG- Global Information Grid
GIS- Geographic Information System
GPM – Gallons per Minute
GWOT- Global War on Terror

H

HAAF – Hunter Army Airfield
HAP – Hazardous Air Pollutants
HBCT- Heavy Brigade Combat Team
HET – Heavy Equipment Transports
HEMTT- Heavy Expanded Mobility Tactical Truck
HET- Heavy Equipment Transport

HMMWV- High Mobility Multipurpose Wheeled Vehicle
HQDA TISG – Headquarters, Department of the Army-Training Integration Support Group
HVAC – Heating Ventilation and Air Conditioning
HWFS – Hazardous Waste Storage Facility
HWRO – Hazardous Waste and Recycling Office

I

IBCT- Infantry Brigade Combat Team
ICRMP – Integrated Cultural Resources Management Plan
ICUZ- Installation Compatible Use Zones
IED- Improvised Explosive Device
IENMP- Integrated Environmental Noise Management Plan
IGPBS- Integrated Global Presence and Basing Strategy
IMA- Installation Management Agency (see IMCOM)
IMCOM- Installation Management Command
INRMP- Integrated Natural Resources Management Plan
IONMP – Installation Operational Noise Management Plan
IPBC – Infantry Platoon Battle Course
IRP – Installation Restoration Program
ISR- Intelligence, Surveillance, Reconnaissance
ITAM – Integrated Training Area Management
ITC- Installation Training Capacity
IUA – Intensive Use Area
IWTF – Industrial Waste Treatment Facility

J

JFC- Joint Force Commander
JHSV- Joint High Speed Vessel
JLUS – Joint Land Use Study
JRTC – Joint Readiness Training Center
JTF- Joint Task Force

K

KFC – Thousand Cubic Feet
KD – Known Distance
kVA – Kilovolt - amperes

L

LAAF – Laguna Army Airfield
LBP – Lead Based Point
LFX- Live-Fire Exercises
LM- Lifecycle Management
LOS – Line of Service
LPG – Liquid Propane Gas
LUA – Limited Use Area

LUPZ- Land Use Planning Zones

M

MAAF – Marshall Army Airfield
MAC – Military Airlift Command
MAINT – Maintenance
MBUAPCD - Monterey Bay Unified Air Pollution Control District
MCS- Mobility Capabilities Study
ME – Maneuver Enhancement
MEB – Maneuver Enhancement Brigade
METL- Mission Essential Task List
MGD – Million Gallons per Day
MGS- Mobile Gun System
MI – Military Intelligence
MILCON – Military Construction
MILES- Multiple Integrated Laser Engagement System
MIM – Maneuver Impact Mile
mm- millimeter
MMBtu- One million British Thermal Units
MMRP – Military Munitions Response Program
MOA – Memorandum of Agreement
MOU – Memorandum of Understanding
MOUT – Military Operations Urban Team
MP- Military Police
MPMG – Multi-purpose Machine Gun Range
MPRC- Multi-Purpose Range Complex
MPTR- Multi-Purpose Training Range
MRE – Mission Rehearsal Exercise
MRF – Modified Record Pire Range
MS4 – Municipal Separate Storm Sewer System
MSA – Metropolitan Statistical Area
MSFA – Modular Support Forces Analysis
MSL – Mean Sea Level
MSO – Mexican Spotted Owl
MTR – Military Training Routes
MVA – Megavolt amperes
MW – Megawatts
MWH – Megawatts -hours

N

NAAQS- National Ambient Air Quality Standards
NAGPRA – Native American Graves Protection and Restoration Act
NCDOT – North Carolina Department of Transportation
NDAA – National Defense Authorization Act
NDS- National Defense Strategy
NEPA- National Environmental Policy Act of 1969

NFWWTP – North Fort Wastewater Treatment Plant
NHPA – National Historic Preservation Act
NKA- Now Known As
NMFS – National Marine Fisheries Service
NOA – Notice of Availability
NOI – Notice of Intent
NOTAM – Notice to Airmen
NPDES – National Pollution Discharge Elimination System
NSR – New Source Review
NSS- National Security Strategy
NTA – Northern Training Area
NZ – Noise Zone

O

OA- Operational Availability
OCONUS- outside the continental U.S.
ODS – Ozone Depleting Substance
OEF- Operation Enduring Freedom
OIF- Operation Iraqi Freedom

P

P – Provisional
P2 – Pollution Prevention
PAL – Privatization of Army Lodging
PCB – Polychlorinated Biphenyls
PCMS- Piñon Canyon Maneuver Site
PEIS- Programmatic Environmental Impact Statement
PM – Particulate Matter
POM- Program Objective Memorandum
POTW – Publicly-Owned Treatment Works
PSCAA - Puget Sound Clean Air Agency
PSD – Prevention of Significant Deterioration
PSDR – Personnel Services Delivery Redesign
PTE – Potential to Emit
PUAL- Pending Unit Action List
PWBC – Public Works Business Center
PX – Post Exchange
PY – Program Year

Q

QDR- Quadrennial Defense Review
QM – Quarter Master
QTR – Qualification Training Range

R

RCI – Residential Communities Initiative

RCRA – Resource Conservation And Recovery Act
RCW- Red-cockaded Woodpecker
RGAAF – Robert Gray Army Airfield
ROD- Record of Decision
ROI – Region of Influence
RONA – Record of Non-Applicability
RPMP – Real Property Management Plan
RTLP –Ranges and Training Land Program
RTV- Rational Threshold Value

S

SAR – Species at Risk
Stryker BCT- Stryker Brigade Combat Team
SEIS – Supplemental Environmental Impact Statement
SFF – Sniper Field Fire Range
SFG – Special Forces Group
SFWWTP – South Fort Wastewater Treatment Plant
SHORAD- Short Range Air Defense System
SHPO – State Historic Preservation Office
SIG – Signal
SIP – State Implementation Plan
SIRRA – Sustainable Installations Regional Resource Assessment
SLUA – Special Limited Use Area
SOAR – Special Operations Aviation Regiment
SOCOM- U.S. Special Operations Command
SPOE – Seaport of Embarkation
SRC – Stallion Range Center
STRATCOM- U.S. Strategic Command
STX- situational training exercises
SUA – Special Use Airspace
SWP3 – Storm Water Pollution Prevention Plan

T

T&E Species- Threatened and Endangered Species
TAA – Total Army Analysis
TC – Army Training Circular
TCEQ – Texas Commission on Environmental Quality
TDS – Total Dissolver Fluids
TMDL – Total Maximum Daily Load
TPDES – Texas Pollutant Discharge Elimination System
TPY – Tons per Year
TSAT- Transformational Satellite
TSC – Training Support Center
TSD – Treatment, Storage and Disposal
TUAV – Tactical Unmanned Aerial Vehicle
TWGSS- Tank Weapons Gunnery Simulation System

U

UA – Unit of Action
UAC – Urban Assault Corse
UAS – Unmanned Aerial System
UAV- Unmanned Aerial Vehicle
USACE- U.S. Army Corps of Engineers
USFWS – U.S. Fish and Wildlife Service
USGS – U.S. Geological Service
UST – Underground Storage Tank
UXO – Unexploded Ordnance

V

VAAF – Vagabond Army Airfield
VEC- Valued Environmental Component
VOC – Volatile Organic Compounds

W

WBAMC – William Beaumont Army Medical Center
WS DOE – Washington State Department of Ecology
WSAAF – Wheeler-Sacks Army Airfield
WSMR- White Sands Missile Range
WTP – Water Treatment Plant
WWTP – Wastewater Treatment Plant

Y

YPG- Yuma Proving Ground
YTA- Yakima Training Area
YTC- Yakima Training Center

7.0 LIST OF CONTRIBUTORS AND PREPARERS

Table 7-1 Installation and Program Office Personnel Contacted

Contact Name	Installation, Affiliation or Program Office	Position
Herb Abel	Fort Riley	NEPA Coordinator
Michael Ackerman	Army Environmental Command	Environmental Protection Specialist
Rebecca Anderson	Yuma Proving Grounds	NEPA Coordinator
Armor Brown	Force Management Division, G3	Chief
John Brown	Fort Benning	NEPA Coordinator
Patrick Chauvey	Fort Benning	NEPA Coordinator
Walter Christensen	Fort Bliss	NEPA Coordinator
Carol Coleman	Yuma Proving Grounds	NEPA Coordinator
Robert DiMichele	Army Environmental Command	Chief, Public Affairs Office
Edward Dunn	White Sands Missile Range	Army Test & Evaluation Command
Randy English	Yuma Proving Ground	Conservation Manager
Wayne Fariss	Fort Polk	NEPA Coordinator
Scott Farley	Army Environmental Command	Office of Counsel
Teresa Garnett	Booz Allen Hamilton	NEPA Support
Emile Gillin	Fort Bragg	NEPA Coordinator
George Harris	Fort Stewart	NEPA Coordinator
Michael Hasty	Fort Knox	NEPA Coordinator
Edward Hill	FORSCOM	NEPA Manager
Bill Van Hoesen	Fort Lewis	NEPA Coordinator
Gary Houston	Fort Hunter Liggett	NEPA Coordinator
David Howlett	U.S. Army Environmental Law Division	Office of the Judge Advocate General
Malou Kelley	Fort Hunter Liggett	NEPA Coordinator
Melissa Kendrick	Fort Stewart	NEPA Coordinator
Ryan Long	Fort Irwin	NEPA Coordinator

Contact Name	Installation, Affiliation or Program Office	Position
Scott McDonald	Yakima Training Center	NEPA Specialist
Emily Moldenhauer	Booz Allen Hamilton	Geographic Information Systems
Peter Nissen	Yakima Training Center	NEPA Coordinator
Deb Owings	Fort Carson	NEPA Coordinator
Amber Preston	Fort Hood	NEPA Coordinator
Micky Quillman	Fort Irwin	NEPA Coordinator
Roberto I. Ramos	Booz Allen Hamilton	NEPA Support
Robin Renn	Piñon Canyon Maneuver Training Site for Fort Carson	NEPA Coordinator
Charles Ruerup	Yuma Proving Grounds	NEPA Coordinator
Cait Schadock	Fort Drum	NEPA Coordinator
David Scruggs	White Sands Missile Range	NEPA Coordinator
Denean Summers	Fort Hood	NEPA Coordinator
Paul Thies, Ph.D	Army Environmental Command	Chief, Environmental Planning Branch
Rick Williams	Booz Allen Hamilton	NEPA Support
Beth Willis-Stevenson	Fort Stewart	NEPA Coordinator
Ron Webster	Booz Allen Hamilton/ASE. Inc.	Economist/Socioeconomics
Gordon Weith	Booz Allen Hamilton	Training Support
Gene Zirkle	Fort Campbell	NEPA/Wildlife Program Manager

8.0 COMMENTS AND RESPONSES

This section contains the comments submitted to the Army on the August 24, 2007 *Draft Programmatic Environmental Impact Statement (PEIS) for Army Growth and Force Structure Realignment* and the Army's responses to those comments.

We have received comments from Federal and State agencies, non-governmental organizations, and members of the general public. We have reproduced and slightly re-formatted those comments to enable our providing a response following each separate suggestion or observation. Comments are presented in normal typeface. Our responses are presented in italicized typeface, *like this*. The original copies of the comments are filed in the administrative record maintained for preparation of the PEIS.

Certain of the comments have prompted us to revise the text of the PEIS. Our responses indicate those occasions. On our own accord, we have also made a few changes to the text to correct typographical and other minor errors (e.g., replacement of "principal" with "principle"). Additionally, each of the comments are coded so that the reader may easily locate the full-text of the comment in Appendix Y of this PEIS.

Comment Number	Comment	Commenter	Army Response
<i>Federal Government</i>			
Y-1	Please indicate that funding allocated for integrated natural resources management plans (INRMPs) are a must-fund commitment necessary to maintain environmental compliance.	Gregory Hogue, Regional Environmental Officer, United States Department of the Interior, Atlanta, GA	<i>Responding to this comment is outside the scope of this document at a programmatic level. Case-by-case assessments of funding allocation will be made as site-specific NEPA efforts are completed.</i>
Y-2	Inadequacy of INRMPs at the following installations: Fort Riley, Fort Drum, and White Sands Missile Range (WSMR).	Gregory Hogue, Regional Environmental Officer, United States Department of the Interior, Atlanta, GA	<i>INRMPS will be updated in connection with appropriate NEPA analysis on a case-by-case basis as required.</i>
Y-3	Please include a listing of all special status species for Fort Drum in the PEIS.	Gregory Hogue, Regional Environmental Officer, United States Department of the Interior, Atlanta, GA	<i>The Army feels that the species identified in Appendix S (Threatened and Endangered Species, and Species of Concern) is adequate for programmatic level analysis and better suited to consistent evaluation. Site-specific NEPA analysis would include more detailed descriptions of species, if required.</i>
Y-4	Your description of proposed activities is inadequate. I do not know what is intended for Fort Lewis.	State of Washington Department of Ecology	<i>The Army has conducted analysis at the programmatic level, which is more general in its approach. A more detailed description and evaluation of impacts would follow in a site-specific</i>

		(Bernard Brady)	<i>NEPA document as decisions related to the PEIS are made, and if additional analysis is determined to be required at Fort Lewis.</i>
State Government Comments Received			
Y-5	The Army inadequately analyzes potential impacts to wildlife and vegetation at Yuma Proving Ground and fails to recognize items identified in the current integrated natural resource management plan (INRMP).	State of Arizona, Department of Game and Fish	<i>The Army has revised Section 4.17.7 of this PEIS and discussion of vegetation and wildlife impacts.</i>
Y-6	Land use compatibility with land based recreation are not adequately captured in conjunction with proposed military training activities.	State of Arizona, Department of Game and Fish	<i>The Army has revised Section 4.17.12 Land Use.</i>
Y-7	Yuma Proving Ground is a testing installation. The Army did not adequately address the level of increase in military activities (training or construction) in the Draft PEIS required to support training activities.	State of Arizona, Department of Game and Fish	<i>The significance of conclusions were based upon data provided by environmental professionals directly responsible for managing and monitoring the condition of VECs at their specific installations. More detailed site-specific analysis under NEPA would be prepared at those CONUS locations implementing the programmatic decision.</i>
Y-8	The PEIS does not adequately address the stationing of Troops in Alaska.	Jim Whitaker, Mayor, Fairbanks Northstar Borough	<i>The Army acknowledges that Military Planners at Headquarters are proposing actions that may result in the stationing of more than 1,000 Soldiers at installations in Alaska. However, the scope of the Proposed Action and alternatives is limited to CONUS Army installations. Therefore, this proposal will not result in any decision to station additional Soldiers at Alaska, or anywhere outside the Continental United States. In response to your comment, the Army has clarified the scope of analysis in Section 1.5 of this PEIS. The proposals to station Soldiers in Alaska (and other</i>

			<i>locations outside the Continental United States) are separate actions that will be considered in separate Army decision making processes including NEPA analysis. We have added additional text to Alternatives 1 and 2 in Section 3 to clarify this issue.</i>
Y-9	Potential growth at Fort Richardson.	Jim Whitaker, Mayor, Fairbanks Northstar Borough	<i>Thank you for your comment. This programmatic EIS does not consider stationing a Stryker BCT or other units outside of the Continental United States. Your comments with regards to growth of CS/CSS units have been noted.</i>
Y-10	Fort Wainwright's inclusion in the PEIS analysis.	Jim Whitaker, Mayor, Fairbanks Northstar Borough	<i>The Army acknowledges that Military Planners at Headquarters are proposing actions that may result in the stationing of more than 1,000 Soldiers at installations in Alaska. However, the scope of the Proposed Action and alternatives is limited to CONUS Army installations. Therefore, this proposal will not result in any decision to station additional Soldiers at Alaska, or anywhere outside the Continental United States. In response to your comment, the Army has clarified the scope of analysis in Section 1.5 of this PEIS. The proposals to station Soldiers in Alaska (and other locations outside the Continental United States) are separate actions that will be considered in separate Army decision making processes including NEPA analysis. We have added additional text to Alternatives 1 and 2 in Section 3 to clarify this issue.</i>
Y-11	PEIS related stationing actions and Growth of the Army in the Commonwealth of Virginia.	Commonwealth of Virginia	<i>There are no stationing actions over 1,000 Soldiers established as the threshold for analysis in the PEIS affecting the Commonwealth of</i>

			<i>Virginia. Therefore, analysis is outside the scope of this document. Appropriate actions will be taken at the installation level to conduct NEPA analysis.</i>
Y-12	State of Kansas preparation to receive additional units stationed as part of the growth and realignment of the Army.	Kathleen Sebelius, Governor of the State of Kansas	<i>Thank you for your continued support to Fort Riley and the military mission. Our partnership with the State of Kansas is an important element of installation sustainability and strengthening Soldier and Family readiness.</i>
Y-13	Question the evaluation of school system capacity in the Fort Drum area.	Elliott Spitzer, Governor of the State of New York	<i>Thank you for your comment, the Army has received the information that you have provided, and has updated Section 4.6.15 and Section 4.18 to incorporate the latest information you have provided. Our partnership with the State of New York is an important element of installation sustainability and strengthening Soldier and Family readiness.</i>
Y-14	Question the evaluation of school system capacity in the Fort Drum area.	Manuel J. Rivera, Deputy Secretary for Education	<i>Thank you for your comment, the Army has received the information that you have provided, and has updated Section 4.6.15 and Section 4.18 to incorporate the latest information you have provided. Our partnership with the State of New York is an important element of installation sustainability and strengthening Soldier and Family readiness.</i>
Y-15	Question the evaluation of school system capacity in the Fort Drum area.	Keith B. Caughlin, Chair, Fort Drum Regional Liaison Organization	<i>Thank you for your comment, the Army has received the information that you have provided, and has updated Section 4.6.15 and Section 4.18 to incorporate the latest information you have provided.</i>
Y-16	Fort Drum area availability of Family housing and	Keith B.	<i>Thank you for your comment and additional</i>

	preparation to receive additional units stationed as part of the growth and realignment of the Army.	Caughlin, Chair, Fort Drum Regional Liaison Organization	<i>information. The availability of Family housing at Fort Drum has been considered in Section 4.6.15 of this PEIS.</i>
Y-17	Support of the assignment and stationing of a fourth brigade to Fort Drum.	Major General Joseph J. Taluto, Adjutant General, NYARNG	<i>Thank you for your continued support to Fort Drum and the military mission. Our partnership with the State of New York is an important element of installation sustainability and strengthening Soldier and Family readiness.</i>
Y-18	Maneuver acreage available at Fort Knox.	Brigadier General (Ret) James E. Shane, Executive Director, Kentucky Commission on Military Affairs	<i>The Army has re-evaluated its assessment of maneuver land acreage at Fort Knox based upon your comment. Our data is in accordance with the 2004 Operational Range Inventory Data Collection. The results of this are the latest and most detailed source of data available to the Army and have been used in both Draft and Final PEIS. No changes have therefore been made to the Draft PEIS.</i>
Y-19	Hazardous material assessment at Fort Knox.	Brigadier General (Ret) James E. Shane, Executive Director, Kentucky Commission on Military Affairs	<i>Impacts associated with hazardous material have been re-assessed. Changes have been made to the Final PEIS in Section 4.10.13 and the executive summary.</i>
Y-20	State of Louisiana preparation to receive additional units stationed as part of the growth and realignment of the Army, and support of additional land acquisition for military use.	Louisiana Congressional Delegation	<i>Thank you for your continued support to Fort Polk and the military mission. Our partnership with the State of Louisiana is an important element of installation sustainability and strengthening Soldier and Family readiness.</i>

Y-21	State of Louisiana Department of Transportation preparation to support for growth at Fort Polk.	Nicholas F. Verret, Jr., PE District Engineer Administrator, Louisiana Department of Transportation and Development	<i>Thank you for your support to Fort Polk and to the military mission. Changes have been made to the Final PEIS in Section 4.12.15.</i>
Y-22	Concerns over impacts to the John Wayne Pioneer Trail from growth at Yakima Training Center.	Jim Harris, Eastern Regional Manager, Washington State Parks and Recreation Commission	<i>Thank you for your comment, the Army has considered the information you provided. More detailed site-specific analysis under NEPA would be prepared at those CONUS locations implementing the programmatic decision.</i>
Y-23	Support for growth at Fort Polk	Rhonda M Plummer, Secretary/ Treasurer, Police Jury of Vernon Parish	<i>Thank you for your support to Fort Polk and to the military mission. The Army values a partnership with the State of Louisiana and considers it as an important element of installation sustainability and strengthening Soldier and Family readiness.</i>
Y-24	Concerns over school overcrowding at Fort Lewis.	Arthur Himmler, Superintendent, Steilacoom Historical School District #1	<i>Thank you for your concern. According to our socioeconomic analysis in Section 4.18 of this PEIS, Fort Lewis indicated that significant effects would occur to schools at any increase in Soldier (and Family) growth from the stationing of a Brigade Combat Team, or even a moderate effect to local schools or even from an increase in 1,000 Soldiers.</i>
Y-25	Considerations for growth at Yakima Training Center.	Yakima Regional Clean Air	<i>Thank you for your comments. The requirements for construction/demolition were added to the PEIS</i>

		Authority	to Section 4.16.2.
Y-26	Expected impacts from Army growth to the Fort Lewis region of influence. Concern over PEIS discussion of school capacity.	Gary Brackett, Manager, Business and Trade Development, Tacoma-Pierce County Chamber	Thank you for your comments. The Army has conducted analysis at the programmatic level, which is more general in its approach. A more detailed description and evaluation of impacts would follow in a site-specific NEPA document as decisions related to the PEIS are made, and if additional analysis is determined to be required at Fort Lewis. Thank you for your comments, the Army has made adjustments to discussion of socioeconomics in Section 4.18 to capture population trends of school aged children demographics.
Non-Governmental Organizations			
Y-27	AOPA would like the Army to consider the selection of stationing alternatives to preserve general use airspace. AOPA opposes the following six installations being considered for growth and realignment to the extent that they affect special use (SUA) airspace permits or general use aviation; Fort Bliss, TX; Fort Bragg, NC; Fort Carson, CO; Fort Drum, NY; Fort Lewis, WA; and WSMR, NM.	AOPA	<i>The Army has reviewed its assessment of affects to airspace in the PEIS. We have chosen not to make any additional changes, but we are aware of your concerns. The concerns identified in your letter provided no new or significant information with regard to this issue that have not already been addressed within this PEIS. As site-specific analysis is conducted, the Army will continue to work closely with the FAA, and will provide more analysis at those installations requiring further SUA consideration within their NEPA documentation.</i>
Y-28	1. Every alternative in the PEIS with the exception of the No Action Alternative would increase the number of Soldiers stationed at Hawaii. 2. Impacts analysis is flawed because the PEIS	Earthjustice	<i>1. The Army acknowledges that Military Planners at Headquarters are proposing actions that may result in the stationing of more than 1,000 Soldiers at U.S. Army Garrison, Hawaii, including all troop stationing sites within Hawaii. However, the scope</i>

<p>only considers significant impacts.</p> <p>3. The PEIS fails to take a “hard look” at the actual impacts of stationing actions, and draws conclusory statements with the respect to significance.</p> <p>4. The actions being considered under alternatives 1 and 2 do not match the stationing scenarios, they are over generalized by the Army.</p> <p>5. Prior to completion of the PEIS for the permanent stationing of the 2/25th SBCT, the Army may not take action that would limit the choice of reasonable alternatives.</p> <p>6. The DPEIS identifies Fort Bliss, Fort Carson, WSMR, Fort Lewis, and Yakima Training Center for the potential stationing of a Stryker BCT. Why are these installations not considered in the EIS for the permanent stationing of the 2/25th SBCT?</p>	<p><i>of the Proposed Action and alternatives is limited to CONUS Army installations. Therefore, this proposal will not result in any decision to station additional Soldiers at U.S. Army Garrison, Hawaii, or anywhere outside the Continental United States. In response to your comment, the Army has clarified the scope of analysis in Section 1.5 of this PEIS. The proposals to station Soldiers in Hawaii (and other locations outside the Continental United States) are separate actions that will be considered in separate Army decision making processes including NEPA analysis. We have added additional text to Alternatives 1 and 2 in Section 3 to clarify this issue.</i></p> <p><i>2. While the executive summary of the PEIS discloses only those significant impacts for each installation, Section 4 assesses all intensity of impacts across all seventeen installations within Continental United States and their Valued Environmental Components. Therefore, the Army made no changes in the Final PEIS in response to this comment.</i></p> <p><i>3. In response to your comment, the Army has added an explanation of the decision making process in Section 1.7 of this PEIS. The analysis of impacts is done at a programmatic level and provides the Headquarters decision maker with necessary information concerning environmental impacts that would likely result from the stationing of different types of units at each installation. The significance of conclusions were based upon data</i></p>
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		<p><i>provided by environmental professionals directly responsible for managing and monitoring the condition of VECs at their specific installations. Of course, more detailed site-specific analysis under NEPA would be prepared at those CONUS locations implementing the programmatic decision.</i></p> <p><i>4. In response to your comment, the Army has added an explanation of the decision making process in Section 1.7 of this PEIS. The analysis of impacts is done at a programmatic level and provides the Headquarters decision maker with necessary information concerning environmental impacts that would likely result from the stationing of different types of units at each installation. The PEIS describes the number of Soldiers and types of equipment and vehicles for each type of BCT. It is not reasonable to define a standard equipment, vehicle, and Troop set for the hundreds of different combinations of CS/CSS units and their specific support functions.</i></p> <p><i>5. This proposal does not include any action or sub-action that would preclude reasonable stationing alternatives for the stationing of the 2/25th SBCT. Those alternatives have been identified, and are being considered in a separate "on-going" environmental impact statement.</i></p> <p><i>6. Those installations have been determined not to be reasonable alternatives for the stationing of the 2/25th. Clarification for that has been discussed in the EIS (Draft Environmental Impact</i></p>
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			<i>Statement for the Permanent Stationing of the 2/25th Stryker Brigade Combat Team) you referenced. However, for further clarification, the stationing of the 2/25th SBCT following its return from its upcoming deployment will require that the SBCT has the necessary training and support facilities. Because of this requirement, the 2/25th SBCT will either need to be stationed in Hawaii, or in the place of an Infantry BCT that would be exchanged with Hawaii. Fort Carson, CO is the only location of those listed that meets this criteria.</i>
Y-29	The PEIS is inadequate and precludes meaningful disclosure and analysis of impacts to the Pinon Canyon Maneuver Site. The PEIS fails to take a “hard look” at potential environmental, archeological, historical, and socioeconomic impacts specific to Pinon Canyon Maneuver Site.	Merrill, Anderson, and Harris, LLC. Attorneys at Law (On behalf of Not 1 More Acre!)	<i>The Army has added an explanation of the decision making process in Section 1.7 of this PEIS. The analysis of impacts is done at a programmatic level and provides the Headquarters decision maker with necessary information concerning environmental impacts that would likely result from the stationing of different types of units at each installation. The significance of conclusions were based upon data provided by environmental professionals directly responsible for managing and monitoring the condition of VECs at their specific installations. Of course, more detailed site-specific analysis under NEPA would be prepared at those CONUS locations implementing the programmatic decision.</i>
Y-30	The PEIS fails to account for all cumulative impacts at Pinon Canyon Maneuver Site.	Merrill, Anderson, and Harris, LLC. Attorneys at Law (On behalf of Not 1 More Acre!)	<i>The Army has revised the discussion of potential cumulative effects at the PCMS in response to this comment. Please see Section 4.5.15 of this PEIS.</i>

Y-31	The PEIS contains no detailed information about frequency, duration, and types of training activities.	Merrill, Anderson, and Harris, LLC. Attorneys at Law (On behalf of Not 1 More Acre!)	<i>The description of training activities is done at a programmatic level and provides the Headquarters decision maker with necessary information concerning environmental impacts that would likely result from the stationing of different types of units at each installation. The general descriptions of training activity frequency, duration, and types of training activities are detailed in Section 2.3 of this PEIS. The Army feels that this is the appropriate level of discussion for training activities within this programmatic document, and no changes have been made to the Final PEIS.</i>
Y-32	Disagree with significance conclusions for Valued Environmental Components identified at Fort Hunter Liggett, CA.	Ventana Wilderness Alliance	<i>The significance of conclusions were based upon data provided by environmental professionals directly responsible for managing and monitoring the condition of VECs at their specific installations. More detailed site-specific analysis under NEPA would be prepared at those CONUS locations implementing the programmatic decision.</i>
Y-33	Ventana Wilderness Alliance supports the No Action Alternative for Fort Hunter Liggett, CA.	Ventana Wilderness Alliance	<i>The Army has noted this comment.</i>
Y-34	Extend the comment period for the Draft PEIS to March 31, 2008 to allow for the gathering of more data and submission of corrections with regards to Fort Hunter Liggett.	Ventana Wilderness Alliance	<i>The Army has a critical and near-term need to balance mission and force sustainability requirements. Delaying the Final PEIS is not in line with meeting the purpose and need for the Proposed Action. Therefore the Army is unable to extend the comment period.</i>
Public Comments			
Y-35	Suitability of Fort Wainwright for PEIS stationing actions.	James Dodson, CEO, Fairbanks	<i>The Army acknowledges that Military Planners at Headquarters are proposing actions that may</i>

		Economic Development Corporation	<i>result in the stationing of more than 1,000 Soldiers at installations in Alaska. However, the scope of the Proposed Action and alternatives is limited to CONUS Army installations. Therefore, this proposal will not result in any decision to station additional Soldiers at Alaska, or anywhere outside the Continental United States. In response to your comment, the Army has clarified the scope of analysis in Section 1.5 of this PEIS. The proposals to station Soldiers in Alaska (and other locations outside the Continental United States) are separate actions that will be considered in separate Army decision making processes including NEPA analysis. We have added additional text to Alternatives 1 and 2 in Section 3 to clarify this issue.</i>
Y-36	Concern over Army growth at Fort Hunter Liggett, CA, with emphasis on Native American Archeological sites.	Frances J. Balcomb	<i>Thank you, the Army has considered your comment.</i>
Y-37	Concerns over stationing at Fort Stewart, GA.	Robert L. Chestnutt	<i>The Army has noted this comment.</i>
Y-38	Support for growth at Fort Polk, LA.	Fran Fookes	<i>Thank you for your comment. The Army will consider your comment as part of the decision making process.</i>
Y-39	Expression over intent to enlist in the military.	Jared J. Marks	<i>The Army has noted this comment.</i>
Y-40	Concerns about inadequacy of Fort Hood housing.	B. VanLeer	<i>Thank you very much for your comment. The Army is considering current and future availability of housing as a part of the decision making process for the stationing of Soldiers to ensure Soldiers are afforded a high quality of life.</i>
Y-41	Concerns over infrastructure at Yuma Proving	Harold Parkes	<i>Thank you very much for your comment. The</i>

	Grounds.		<i>Army is considering current and future garrison infrastructure as a part of the decision making process for the stationing of Soldiers to ensure Soldiers can accomplish the mission they are assigned.</i>
Y-42	Concerns over socioeconomic analysis and calculations in the Draft PEIS.	Jim Kock	<i>Thank you for your comment, the Army uses a standardized economic impact forecasting system (EIFS) model that has been used to generate the analysis for each of the installations evaluated. The Army has found this model to be adequate for its analysis.</i>
Y-43	Discussion of school population at Fort Drum.	Jim Kock	<i>Thank you for your comment, the Army has received the information that you have provided, and has updated Section 4.6.15 and Section 4.18 to incorporate the latest information you have provided. Our partnership with the State of New York is an important element of installation sustainability and strengthening Soldier and Family readiness.</i>
Y-44	The District is in the midst of adding to its infrastructure to meet the increasing demand it foresees as a result of the Army's recent modularity Transformation. Over the past 20 years we have added in excess of \$100 Million in infrastructure to meet the needs of a growing presence at Drum. The current \$40,693,800 effort is along a similar path and shows the District's commitment to providing a quality education. We respectfully request that any reference to "further overcrowding" or "overcrowding" in general be deleted from the final report.	Jim Kock	<i>The Army has further investigated the issue and has made the recommended changes.</i>
Y-45	Availability of employment for spouses	Shelley Hoss	<i>Thank you for your comment. The Army will take</i>

			<i>your comment into consideration during the decision making process.</i>
Y-46	Concerns over training impacts to the community surrounding Fort Drum.	Renee Grigg	<i>Thank you for your concern. The Army is taking into consideration the current force structure and available resources (and the associated impacts from training) at each installation and uses this information to make sound stationing decisions that support National Security and National Defense strategy, Solider and Family Quality of Life, and responsible environmental management.</i>
Y-47	Concerns over stationing at Fort Riley	Shawn Marsteller	<i>Thank you for your concern. The Army is taking into consideration the current force structure and available resources (and the associated impacts from training) at each installation and uses this information to make sound stationing decisions that support National Security and National Defense strategy, Solider and Family Quality of Life, and responsible environmental management.</i>
Y-48	Concerns over adding Soldiers to Fort Hood, Texas (preference for adding to north Fort Hood).	Andrea Pearson	<i>Thank you for your concern. The Army is taking into consideration the current force structure and available resources (and the associated impacts from training) at each installation and uses this information to make sound stationing decisions that support National Security and National Defense strategy, Solider and Family Quality of Life, and responsible environmental management.</i>
Y-49	Concerns over growth at Clarksville, TN (Fort Campbell).	Tracy Eby	<i>As part of the Army's analysis, evaluation has been conducted at a programmatic level. If stationing decisions are made that impact Fort Campbell, more detailed assessments of traffic and traffic solutions will be assessed in site-specific NEPA analysis. Thank you for your comment.</i>

Y-50	Support for Army growth at Yuma Proving Ground.	Dan Raymond	<i>Thank you for your comment. The Army will consider your comment as part of the decision making process.</i>
Y-51	Reserve installations considered for Growth in the PEIS.	MAJ Bruce Revers	<i>The Army has considered all sites that fulfill the requirements of the proposed action. Fort Hunter Liggett is the only Army Reserve installation which as been considered in this document.</i>
Y-52	Support for stationing at Shaw Air Force Base, SC.	Patrick Lewis	<i>The Army has considered all sites that fulfill the requirements of the proposed action. Unfortunately, Shaw Air Force Base is not one of them, thank you for taking the time to comment.</i>
Y-53	Support for Florida and Camp Blanding as a stationing location for Grow the Force.	Donald Hoskins	<i>The Army has considered all sites that fulfill the requirements of the proposed action. Unfortunately, Camp Blanding is not one of locations chosen in this PEIS, thank you for taking the time to comment.</i>
Y-54	Concerns over reinstatement of the Draft	Sandra Lewis	<i>The Army apologizes for any confusion created by the announcement of the Draft Environmental Impact Statement. We can assure you this does not refer to a military draft, but rather simply references the fact that the Environmental Impact Statement was not a Final document, and was in draft form.</i>
Y-55	Opposition to Army Growth.	Guenter Monkowski	<i>The Army appreciates your interest in this document and welcomes all comments.</i>
Y-56	Support for stationing at Fort Polk, LA.	Marilyn Stewart	<i>Thank you for your comment. The Army will consider your comment as part of the decision making process.</i>
Y-57	Support for stationing at Fort Polk, LA.	Nancy L Thiels	<i>Thank you for your comment. The Army will consider your comment as part of the decision making process.</i>

Y-58	The presence of Ft. Polk in Louisiana has been mutually successful for many decades for both the US Armed services and our state. Many of the people who have worked and lived there have stayed in our area and succeeded in finding employment after their military tenure, and raised their families in a safe environment. I am in full support of further expansion in our state for this project, and look forward to continued commitment to the project.	Von Hatley	<i>Thank you for your comment. The Army will consider your comment as part of the decision making process.</i>
Y-59	Support for the socioeconomic benefits from growth at Fort Polk.	Terry Conner	<i>Thank you for your comment. The Army will consider your comment as part of the decision making process.</i>
Y-60	Support for Growth at Fort Polk	Several Members of the Fort Polk Community	<i>Thank you for your comments and for your support. The Army will consider your comments as part of the decision making process.</i>

Appendix A -The Economic Impact Forecast System (EIFS) and the Hierarchical Approach.

The Model:

The Economic Impact Forecast System (EIFS) (Huppertz, Claire E.; Bloomquist, Kim M.; Barbehenn, Jacinda M.; EIFS 5.0 Economic Impact Forecast System, User's Reference Manual; USACERL Technical Report TA-94/03; July 1994.) has been a mainstay of Army NEPA practice since its initial development and implementation in the mid-70s. EIFS provides a mechanism to estimate impacts, and ascertain the "significance" of projected impacts, using the Rational Threshold Value (RTV) technique. This analysis and determination can be readily documented, and if significance thresholds are not exceeded, the analysis can be completed. EIFS was designed to address NEPA applications, providing a "two-tier" approach to the process; (1) a simple and quick aggregate model (sufficient to ascertain the overall magnitude of impacts) and (2) a more detailed, sophisticated input-output (I-O) model to further analyze impacts that appear significant, in NEPA terms, and worthy of additional expenditures and analyses. This "two-tier" approach is consistent with the two common levels of NEPA analysis, the Environmental Assessment (EA) and the Environmental Impact Statement (EIS). EIFS has facilitated efficient and effective completion of such analyses for approximately 3 decades.

Complete documentation of the model, its development, and applicable theoretical underpinnings is available in numerous publications:

- Huppertz, Claire E.; Bloomquist, Kim M.; Barbehenn, Jacinda M.; EIFS 5.0 Economic Impact Forecast System, User's Reference Manual; USACERL Technical Report TA-94/03; July 1994.
- Isard, W., Methods of Regional Analysis, MIT Press, 1960.
- Isard, W. and Langford, T., Regional Input-Output Study: Recollections, Reflections, and Diverse Notes on the Philadelphia Experience, MIT Press, 1971.
- Isserman, A., "The Location Quotient Approach to Estimating Regional Economic Impacts", AIP Journal, January, 1977, pp. 33-41.
- Isserman, A., "Estimating Export Activity in a Regional Economy: A Theoretical and Empirical Analysis of Alternative Methods", International Regional Science Review, Vol. 5, 1980, pp. 155-184.
- Leigh, R., "The Use of Location Quotients in Urban Economic Base Studies", Land Economics, Vol 46, May, 1970, pp 202-205.
- Mathur, V.K. and Rosen, H.S., "Regional Employment Multiplier: A new Approach", Land Economics, Vol 50, 1974, pp 93-96.
- Mayer, W. and Pleeter, S., "A Theoretical Justification for the Use of Location Quotients", Regional Science and Urban Economics, Vol 5, 1975, pp 343-355.
- Robinson, D.P., Hamilton, J.W., Webster, R.D., and Olson, M.J., Economic Impact Forecast System (EIFS) II: User's Manual, Updated Edition, Technical Report N-69/ADA144950, U.S. Army Construction Engineering Research Lab (USACERL), 1984.
- Robinson, D.P. and Webster, R.D., Enhancements to the Economic Impact Forecast System (EIFS), Technical Report N-175/ADA142652, USACERL, April, 1984.
- Rogers, Claudia and Webster, Ron, "Qualitative Answers to Quantitative Questions", Impact Assessment, IAIA, Vol.12, No.1, 1999.
- Thompson, W., A Preface to Urban Economics, Johns Hopkins Press, 1965.
- Tiebout, C., The Community Economic Base, New York Committee for Economic Development, 1962.
- USACERL, "Methods for Evaluating the Significance of Impacts: The RTV and FSI Profiles"; USACERL EIFS Tutorial; July 1987.

- U.S. Army, Department of the Army, DA Pamphlet 200-2, "Economic Impact Forecast System-User Instructions", 1980.
- U.S. Army, "Base Realignment and Closure "How-To" Manual for Compliance with the National Environmental Policy Act", revised and published as official Department of Army Guidance, 1995.
- U.S. Army, Army Regulation 5-20, "Commercial Activities"
- U.S. Army, Department of the Army, DA Pamphlet 200-2, "Economic Impact Forecast System-User Instructions", 1980
- Webster, R.D. and Shannon, E.; The Rational Threshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts; USACERL Technical Report TR N-49/ADA055561; 1978.
- Webster, R.D., Hamilton, J.W., and Robinson, D.P., "The Two-Tier Concept for Economic Analysis: Introduction and User Instructions", USACERL Technical Report N-127/ADA118855.

These efforts reflect development of a tool for specific NEPA application, following the successful NEPA litigation referenced in the Introduction. As EIFS has been used for Army NEPA analyses, the results of EIFS analyses have been reviewed by stakeholder (affected community) representatives, and, as a result of BRAC application, twice reviewed by the Government Accounting Office (GAO). During such reviews, the analyses and resultant decisions were upheld, and EIFS was lauded as a uniform (non-arbitrary and non-capricious) approach to such requirements. Drawing from a national, uniform database, and using a common, systematic approach, EIFS allowing the improved comparison of project alternatives (the heart of NEPA analysis), and provides comparable analyses across the U.S.

NEPA Process Improvement:

Since NEPA was implemented, it has been commonly criticized as expensive and time-consuming. While these criticisms have been often justified, the President's Council on Environmental Quality (CEQ) has actively promoted NEPA process improvements; first in the publication of the CEQ NEPA regulations (CEQ, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, Reprint, 40 CFR Parts 1500-1508, Executive Office of the President, Council on Environmental Quality, 1992.), and, more recently, through a NEPA anniversary introspective (CEQ, The National Environmental Policy Act: A Study of its Effectiveness After Twenty-five Years, Executive Office of the President, Council on Environmental Quality, January, 1997.) and the formal CEQ NEPA Task Force (CEQ, The NEPA Task Force Report to the Council on Environmental Quality: Modernizing NEPA Implementation; September, 2003.). All three CEQ initiatives call for more "focus" on NEPA documents, eliminating the analyses of minor or unimportant issues, and focusing, instead, on those issues that should be part of an informed agency decision. The use of EIFS, and the "two-tier" approach is consistent with these CEQ recommendations.

Determining Significance:

While EIFS was being developed, communities began to question the rationale for determining the significance of socioeconomic impacts. USACERL was directed to develop a defensible procedure for such a determination, resulting in the Rational Threshold Value (RTV) technique (Webster, R.D.; and Shannon, E.; The Rational Threshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts; USACERL Technical Report TR N-49/ADA055561; 1978). This technique relies on the yearly Bureau of Economic Analysis (BEA) time series data on employment, income, and population to evaluate historical trends within a subject community (region); and uses those trends to measure the "resilience" of the local community to

change, or its ability to accommodate such change. This approach has worked well when communicating with affected communities. The combined use of RTV with the EIFS model meet the two pronged approach for significance determinations, intensity and context (CEQ, 1992)

The initial EIFS implementation (USACERL, 1975) included the analysis of numerous variables: business volume, personal income, employment, government revenues and expenditures, income and employment distribution, local housing impacts, regional economic stability, school system impacts, government bond obligations, population, welfare and dependency, social control, and aesthetic considerations. The selection of these variables was based on the predictive capability of forecasting techniques and data availability. Over some 30 years of practice, pragmatism and sufficiency led to the use of sales volume, employment, personal income, and population as indicators of impacts (as a "first tier" approximation of effects). These effects can also be readily evaluated (and significance determined) using the BEA time series data. Population, important in its own right, is also a valuable indicator of other factors (e.g., impact on local government revenues and expenditures, housing, local school systems, and the change in welfare and dependency), as impacts on such variables are driven, to a large extent, by a population change.

Using BEA time series data is used to analyze the four variables for the ROI, the RTV model produces thresholds for assessing the magnitude of impacts. The RTV technique is simple, starting with a straight line between the first year of record and the last year of record for that variable, establishing the average rate of change over time. Then, each yearly deviation from that growth rate is calculated and converted to a percentage. The largest historical changes (both increase and decrease) are used to define significance thresholds. The following figure illustrates the RTV concept:

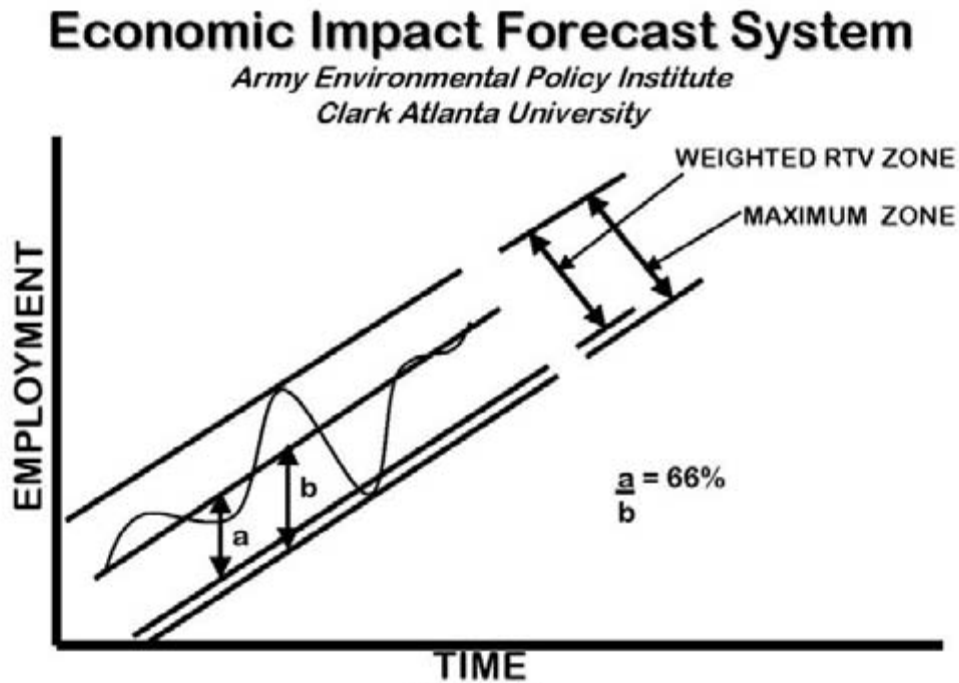


Figure 10
 Visual Depiction of the RTV Technique

A "factor of safety" is applied to negative thresholds, as shown in the figure, to produce a conservative analysis; while 100% of the maximum positive thresholds is used; as indicated below:

	<u>Increase</u>	<u>Decrease</u>
Total sales volume	100 percent	75 percent
Total employment	100 percent	66 percent
Personal Income	100 percent	66 percent
Total population	100 percent	50 percent

The maximum positive historical fluctuation is used because of the positive connotations generally associated with economic growth. While economic growth can produce unacceptable impacts and the "smart growth" concept is increasingly favored, the effects of reductions and closures are usually much more controversial. These adjustments, while arbitrary, are sensible. The negative sales volume threshold is adjusted by 75%, as sales volume impacts can be absorbed by such factors as the manipulation of inventory, new equipment, etc; and the impacts on individual workers or proprietors is indirect, if at all. Changes in employment and income, however, are impacts that immediately affect individuals; thus they are adjusted by 66%. Population is extremely important, as an indicator of other social issues, and is thus adjusted by 50%.

To adjust dollar amounts for inflation (to create "constant dollars" prior to calculations), the Consumer Price Index (CPI) is used for appropriate years, and all dollar values are adjusted to 1987 equivalents.

The main strength of the RTV approach stems from its reliance on data for each individual ROI. This approach addressed previous criticism of more simple approaches that applied arbitrary criteria to all communities. This approach establishes unique criteria, representative of local community patterns, and, while a community may not completely agree, a common frame of reference is established. Critics of the RTV technique have questioned the arbitrary selection of the maximum allowable deviations to indicate impact significance, but the process has proven workable over the years.

Appendix B - Fort Benning EIFS Analysis

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Army Growth Fort Benning

STUDY AREA

13053 Chattahoochee, GA
 13145 Harris, GA
 13197 Marion, GA
 13215 Muscogee, GA
 01113 Russell, AL

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

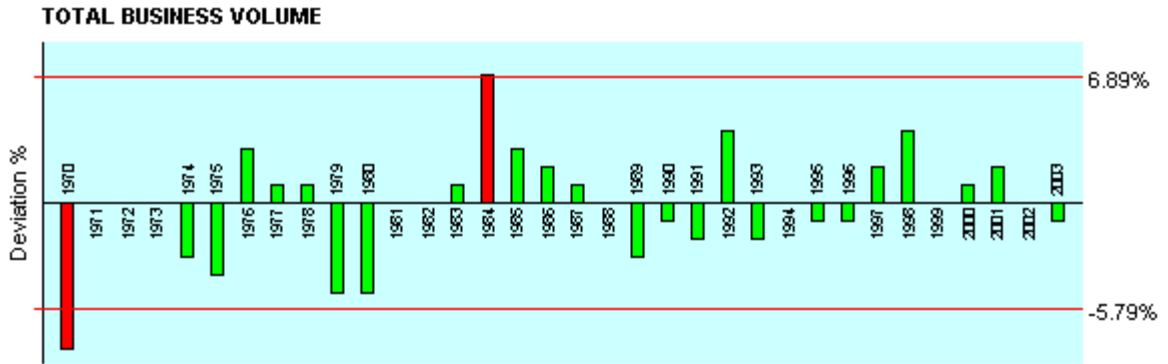
Multiplier	2.27	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$105,129,800	
Sales Volume - Total	\$187,909,200	1.71%
Income - Direct	\$259,700,000	
Income - Induced	\$17,682,870	
Income - Total	\$277,382,900	4.81%
Employment - Direct	7453	
Employment - Induced	575	
Employment - Total	8027	5.07%
Local Population	17430	
Local Off-base Population	8715	6.21%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	6.89 %	6.93 %	5.25 %	3.13 %
Negative RTV	-5.79 %	-5.19 %	-9.4 %	-2.12 %

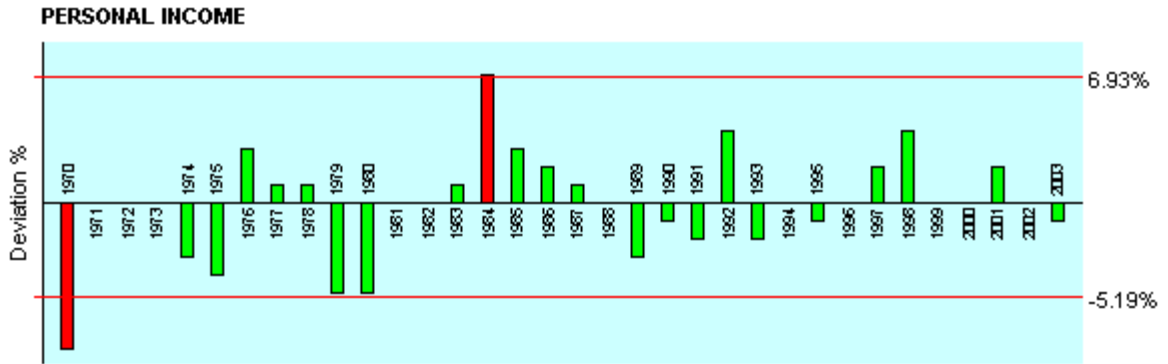
RTV DETAILED

SALES VOLUME



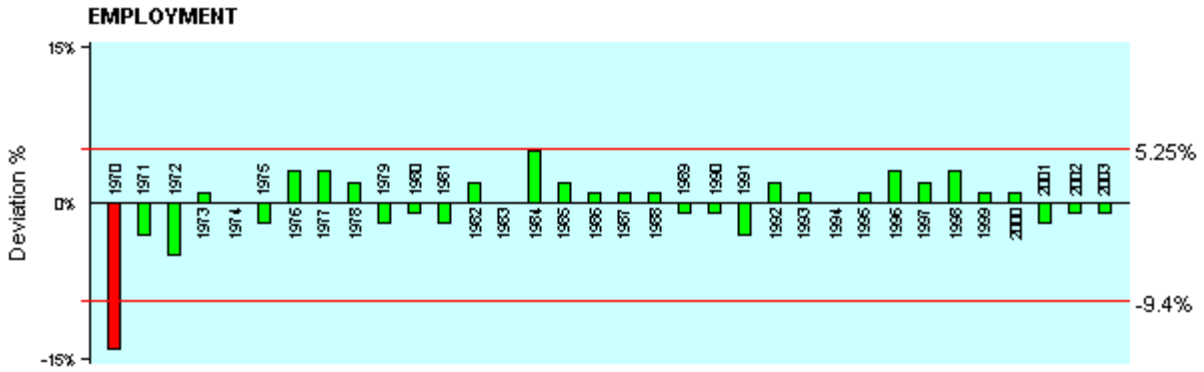
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1630920	8578639	0	-206979	0
1970	1637694	8155716	-422923	-629902	-7.72
1971	1756276	8377437	221720	14741	0.18
1972	1854652	8568492	191056	-15923	-0.19
1973	2022992	8800015	231523	24544	0.28
1974	2242660	8768801	-31215	-238194	-2.72
1975	2415464	8671516	-97285	-304264	-3.51
1976	2683888	9125219	453703	246724	2.7
1977	2956918	9432568	307349	100370	1.06
1978	3273672	9690069	257501	50522	0.52
1979	3529272	9387864	-302206	-509185	-5.42
1980	3913012	9156448	-231415	-438394	-4.79
1981	4384896	9339828	183380	-23599	-0.25
1982	4788360	9576720	236892	29913	0.31
1983	5104044	9901845	325125	118146	1.19
1984	5837040	10856894	955049	748070	6.89
1985	6312708	11362874	505980	299001	2.63
1986	6708988	11807819	444944	237965	2.02
1987	7127768	12117206	309387	102408	0.85
1988	7547136	12301832	184626	-22353	-0.18
1989	7819154	12197880	-103951	-310930	-2.55
1990	8231060	12264279	66399	-140580	-1.15
1991	8618364	12238077	-26203	-233182	-1.91
1992	9385002	12951303	713226	506247	3.91
1993	9595482	12857946	-93357	-300336	-2.34
1994	1,0006736	13008757	150811	-56168	-0.43
1995	10349064	13143311	134554	-72425	-0.55
1996	10796576	13279788	136477	-70502	-0.53
1997	11510452	13812542	532754	325775	2.36
1998	12267748	14598620	786078	579099	3.97
1999	12745548	14784836	186216	-20763	-0.14
2000	13455754	15070444	285609	78630	0.52
2001	14325930	15615264	544819	337840	2.16
2002	14752204	15784858	169595	-37384	-0.24
2003	15069434	15822906	38047	-168932	-1.07

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	819613	4311164	0	-103374	0
1970	822770	4097395	-213770	-317144	-7.74
1971	882190	4208046	110652	7278	0.17
1972	931996	4305822	97775	-5599	-0.13
1973	1018269	4429470	123649	20275	0.46
1974	1127002	4406578	-22892	-126266	-2.87
1975	1212141	4351586	-54992	-158366	-3.64
1976	1348870	4586158	234572	131198	2.86
1977	1482290	4728505	142347	38973	0.82
1978	1643112	4863612	135106	31732	0.65
1979	1773119	4716497	-147115	-250489	-5.31
1980	1962162	4591459	-125037	-228411	-4.97
1981	2203956	4694426	102967	-407	-0.01
1982	2404824	4809648	115222	11848	0.25
1983	2558793	4964058	154410	51036	1.03
1984	2927351	5444873	480814	377440	6.93
1985	3161996	5691593	246720	143346	2.52
1986	3358831	5911543	219950	116576	1.97
1987	3570842	6070431	158889	55515	0.91
1988	3782883	6166099	95668	-7706	-0.12
1989	3919080	6113765	-52334	-155708	-2.55
1990	4123180	6143538	29773	-73601	-1.2
1991	4320874	6135641	-7897	-111271	-1.81
1992	4702491	6489438	353796	250422	3.86
1993	4808508	6443401	-46037	-149411	-2.32
1994	5016649	6521644	78243	-25131	-0.39
1995	5183571	6583135	61491	-41883	-0.64
1996	5410617	6655059	71924	-31450	-0.47
1997	5767795	6921354	266295	162921	2.35
1998	6147485	7315507	394153	290779	3.97
1999	6393221	7416136	100629	-2745	-0.04
2000	6740100	7548912	132776	29402	0.39
2001	7178431	7824490	275578	172204	2.2
2002	7385101	7902058	77568	-25806	-0.33
2003	7551657	7929240	27182	-76192	-0.96

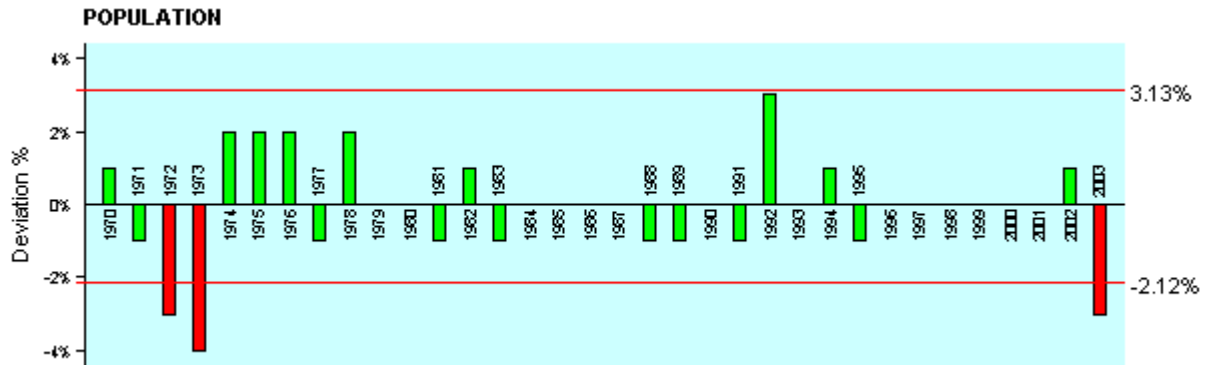
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	139152	0	-677	0
1970	122621	-16531	-17208	-14.03
1971	120023	-2598	-3275	-2.73
1972	115159	-4864	-5541	-4.81
1973	116479	1320	643	0.55
1974	117041	562	-115	-0.1
1975	114969	-2072	-2749	-2.39
1976	119817	4848	4171	3.48
1977	124512	4695	4018	3.23
1978	127463	2951	2274	1.78
1979	126219	-1244	-1921	-1.52
1980	125917	-302	-979	-0.78
1981	123860	-2057	-2734	-2.21
1982	126492	2632	1955	1.55
1983	126598	106	-571	-0.45
1984	134330	7732	7055	5.25
1985	137507	3177	2500	1.82
1986	140127	2620	1943	1.39
1987	142697	2570	1893	1.33
1988	145067	2370	1693	1.17
1989	143682	-1385	-2062	-1.44
1990	142848	-834	-1511	-1.06
1991	139456	-3392	-4069	-2.92
1992	143157	3701	3024	2.11
1993	145775	2618	1941	1.33
1994	147023	1248	571	0.39
1995	148522	1499	822	0.55
1996	153823	5301	4624	3.01
1997	158404	4581	3904	2.46
1998	163536	5132	4455	2.72
1999	165080	1544	867	0.53
2000	167205	2125	1448	0.87
2001	165280	-1925	-2602	-1.57

2002	163828	-1452	-2129	-1.3
2003	162834	-994	-1671	-1.03

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	251025	0	-759	0
1970	254664	3639	2880	1.13
1971	253660	-1004	-1763	-0.7
1972	246940	-6720	-7479	-3.03
1973	237599	-9341	-10100	-4.25
1974	244309	6710	5951	2.44
1975	249515	5206	4447	1.78
1976	255031	5516	4757	1.87
1977	253528	-1503	-2262	-0.89
1978	259685	6157	5398	2.08
1979	260109	424	-335	-0.13
1980	259921	-188	-947	-0.36
1981	259295	-626	-1385	-0.53
1982	263318	4023	3264	1.24
1983	261838	-1480	-2239	-0.86
1984	262983	1145	386	0.15
1985	264556	1573	814	0.31
1986	266407	1851	1092	0.41
1987	267567	1160	401	0.15
1988	266586	-981	-1740	-0.65
1989	265634	-952	-1711	-0.64
1990	266931	1297	538	0.2
1991	266314	-617	-1376	-0.52
1992	275715	9401	8642	3.13
1993	277655	1940	1181	0.43
1994	280889	3234	2475	0.88
1995	279663	-1226	-1985	-0.71
1996	279725	62	-697	-0.25
1997	280896	1171	412	0.15

1998	280686	-210	-969	-0.35
1999	280899	213	-546	-0.19
2000	282122	1223	464	0.16
2001	283096	974	215	0.08
2002	286161	3065	2306	0.81
2003	277580	-8581	-9340	-3.36

Appendix C - Fort Bliss EIFS Analysis

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Army Growth Fort Bliss

STUDY AREA

35013 Dona Ana, NM
 35035 Otero, NM
 48141 El Paso, TX

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	0

FORECAST OUTPUT

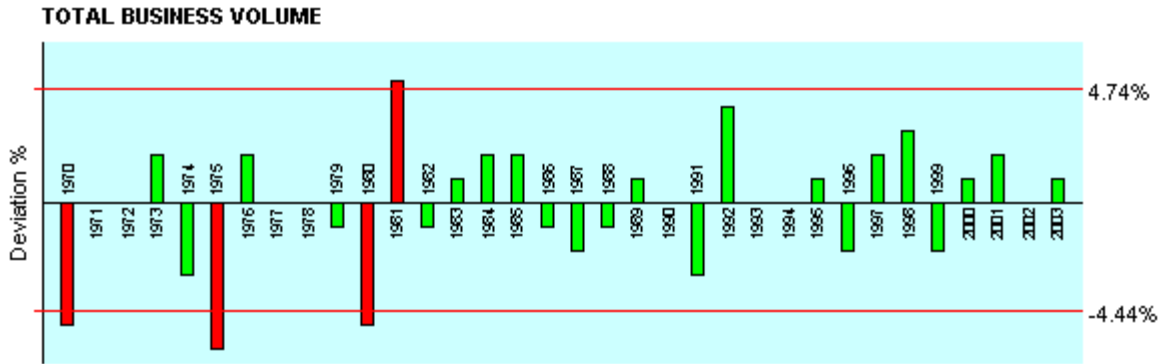
Multiplier	2.39	
Sales Volume - Direct	\$105,827,800	
Sales Volume - Induced	\$147,100,600	
Sales Volume - Total	\$252,928,300	1.04%
Income - Direct	\$259,700,000	
Income - Induced	\$26,765,360	
Income - Total	\$286,465,300	1.99%
Employment - Direct	7702	
Employment - Induced	976	
Employment - Total	8678	2.15%
Local Population	17430	
Local Off-base Population	17430	1.95%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	4.74 %	5 %	4.01 %	1.29 %
Negative RTV	-4.44 %	-4.33 %	-4.21 %	-1.62 %

RTV DETAILED

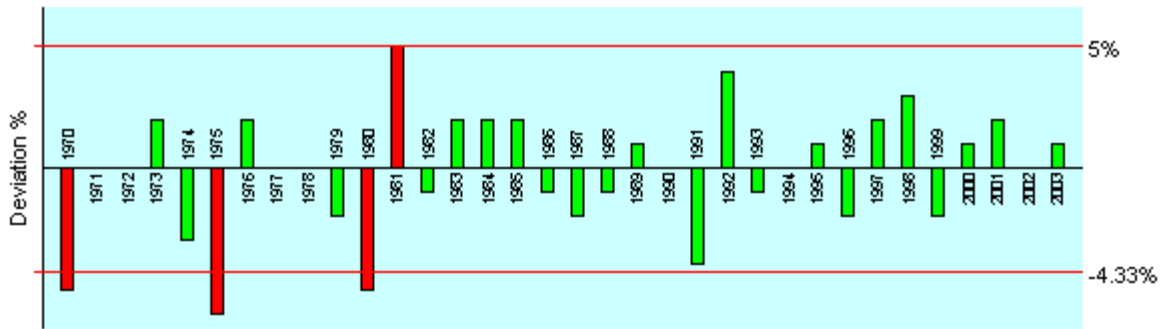
SALES VOLUME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	2634708	13858564	0	-775392	0
1970	2794104	13914638	56074	-719318	-5.17
1971	3074718	14666405	751767	-23625	-0.16
1972	3340384	15432574	766169	-9223	-0.06
1973	3799646	16528460	1095886	320494	1.94
1974	4295372	16794905	266444	-508948	-3.03
1975	4620548	16587767	-207137	-982529	-5.92
1976	5189662	17644851	1057083	281691	1.6
1977	5760616	18376365	731514	-43878	-0.24
1978	6480950	19183612	807247	31855	0.17
1979	7399830	19683548	499936	-275456	-1.4
1980	8296632	19414119	-269429	-1044821	-5.38
1981	9950134	21193785	1779667	1004275	4.74
1982	10862602	21725204	531419	-243973	-1.12
1983	11773176	22839961	1114757	339365	1.49
1984	12983506	24149321	1309360	533968	2.21
1985	14063594	25314469	1165148	389756	1.54
1986	14703584	25878308	563839	-211553	-0.82
1987	15397108	26175084	296776	-478616	-1.83
1988	16379742	26698979	523896	-251496	-0.94
1989	17822690	27803396	1104417	329025	1.18
1990	19240320	28668077	864680	89288	0.31
1991	20054450	28477319	-190758	-966150	-3.39
1992	21993684	30351284	1873965	1098573	3.62
1993	23135286	31001283	649999	-125393	-0.4
1994	24396860	31715918	714635	-60757	-0.19
1995	25763304	32719396	1003478	228086	0.7
1996	26819988	32988585	269189	-506203	-1.53
1997	28585462	34302554	1313969	538577	1.57
1998	30279482	36032584	1730029	954637	2.65
1999	31196676	36188144	155561	-619831	-1.71
2000	33441720	37454726	1266582	491190	1.31
2001	35896856	39127573	1672847	897455	2.29
2002	37370118	39986026	858453	83061	0.21
2003	39045032	40997284	1011257	235865	0.58

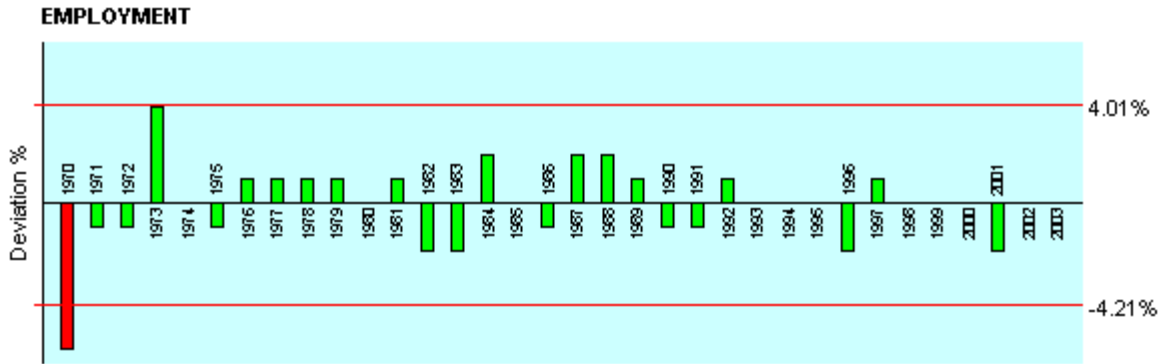
INCOME

PERSONAL INCOME



Year	Value	Adj. Value	Change	Deviation	%Deviation
1969	1339691	7046775	0	-389269	0
1970	1418354	7063403	16628	-372641	-5.28
1971	1558400	7433568	370165	-19104	-0.26
1972	1696395	7837345	403777	14508	0.19
1973	1926011	8378148	540803	151534	1.81
1974	2184783	8542502	164354	-224915	-2.63
1975	2336704	8388767	-153734	-543003	-6.47
1976	2628796	8937906	549139	159870	1.79
1977	2912376	9290479	352573	-36696	-0.39
1978	3271696	9684220	393741	4472	0.05
1979	3720264	9895902	211682	-177587	-1.79
1980	4170980	9760093	-135809	-525078	-5.38
1981	5015864	10683790	923697	534428	5
1982	5463861	10927722	243932	-145337	-1.33
1983	5943154	11529719	601997	212728	1.85
1984	6541883	12167902	638184	248915	2.05
1985	7089555	12761199	593297	204028	1.6
1986	7426183	13070082	308883	-80386	-0.62
1987	7776094	13219360	149278	-239991	-1.82
1988	8271561	13482644	263285	-125984	-0.93
1989	9013767	14061477	578832	189563	1.35
1990	9736106	14506798	445321	56052	0.39
1991	10126018	14378946	-127852	-517121	-3.6
1992	11126373	15354395	975449	586180	3.82
1993	11674835	15644279	289884	-99385	-0.64
1994	12294496	15982845	338566	-50703	-0.32
1995	13007501	16519526	536681	147412	0.89
1996	13508523	16615483	95957	-293312	-1.77
1997	14418275	17301930	686447	297178	1.72
1998	15285783	18190082	888152	498883	2.74
1999	15752526	18272930	82848	-306421	-1.68
2000	16823640	18842477	569547	180278	0.96
2001	18093019	19721391	878914	489645	2.48
2002	18818797	20136113	414722	25453	0.13
2003	19686846	20671188	535076	145807	0.71

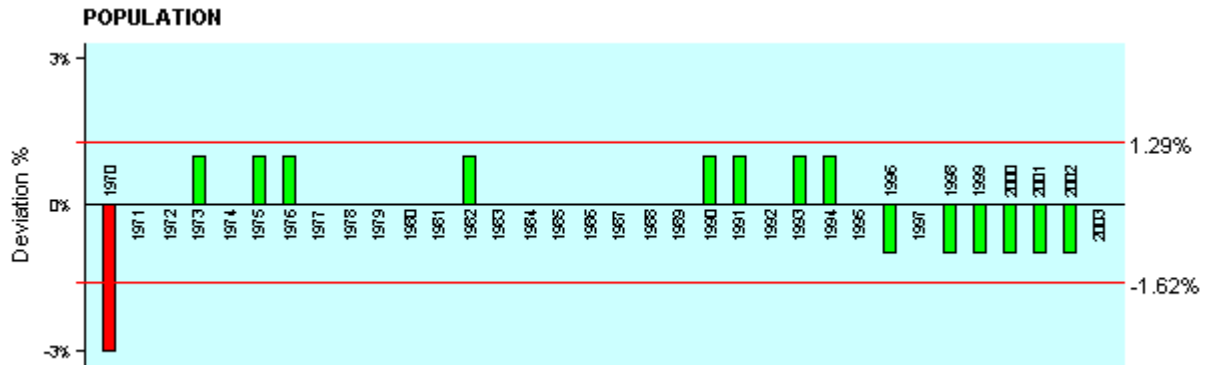
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	200881	0	-6920	0
1970	195525	-5356	-12276	-6.28
1971	201228	5703	-1217	-0.6
1972	206123	4895	-2025	-0.98
1973	221933	15810	8890	4.01
1974	228575	6642	-278	-0.12
1975	233935	5360	-1560	-0.67
1976	242588	8653	1733	0.71
1977	250860	8272	1352	0.54
1978	260276	9416	2496	0.96
1979	270114	9838	2918	1.08
1980	276776	6662	-258	-0.09
1981	286190	9414	2494	0.87
1982	288627	2437	-4483	-1.55
1983	288815	188	-6732	-2.33
1984	300363	11548	4628	1.54
1985	307548	7185	265	0.09
1986	311968	4420	-2500	-0.8
1987	325384	13416	6496	2
1988	337801	12417	5497	1.63
1989	348202	10401	3481	1
1990	353222	5020	-1900	-0.54
1991	357542	4320	-2600	-0.73
1992	369184	11642	4722	1.28
1993	377786	8602	1682	0.45
1994	385646	7860	940	0.24
1995	393964	8318	1398	0.35
1996	394384	420	-6500	-1.65
1997	403771	9387	2467	0.61
1998	412172	8401	1481	0.36
1999	420341	8169	1249	0.3
2000	429107	8766	1846	0.43
2001	428794	-313	-7233	-1.69

2002	437027	8233	1313	0.3
2003	443083	6056	-864	-0.19

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	473822	0	-13526	0
1970	472094	-1728	-15254	-3.23
1971	484736	12642	-884	-0.18
1972	497231	12495	-1031	-0.21
1973	517408	20177	6651	1.29
1974	533437	16029	2503	0.47
1975	553054	19617	6091	1.1
1976	569539	16485	2959	0.52
1977	583030	13491	-35	-0.01
1978	598302	15272	1746	0.29
1979	611443	13141	-385	-0.06
1980	625462	14019	493	0.08
1981	642148	16686	3160	0.49
1982	661376	19228	5702	0.86
1983	676615	15239	1713	0.25
1984	691237	14622	1096	0.16
1985	705442	14205	679	0.1
1986	721529	16087	2561	0.35
1987	736660	15131	1605	0.22
1988	751258	14598	1072	0.14
1989	766410	15152	1626	0.21
1990	783922	17512	3986	0.51
1991	802461	18539	5013	0.62
1992	819721	17260	3734	0.46
1993	842512	22791	9265	1.1
1994	861423	18911	5385	0.63
1995	874780	13357	-169	-0.02
1996	882898	8118	-5408	-0.61
1997	895673	12775	-751	-0.08

1998	904565	8892	-4634	-0.51
1999	911189	6624	-6902	-0.76
2000	918736	7547	-5979	-0.65
2001	925711	6975	-6551	-0.71
2002	933838	8127	-5399	-0.58
2003	947218	13380	-146	-0.02

Appendix D - Fort Bragg EIFS Analysis

EIFS REPORT

PROJECT NAME

Army Growth Fort Bragg

STUDY AREA

37051 Cumberland, NC
 37085 Harnett, NC
 37093 Hoke, NC
 37105 Lee, NC
 37125 Moore, NC

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

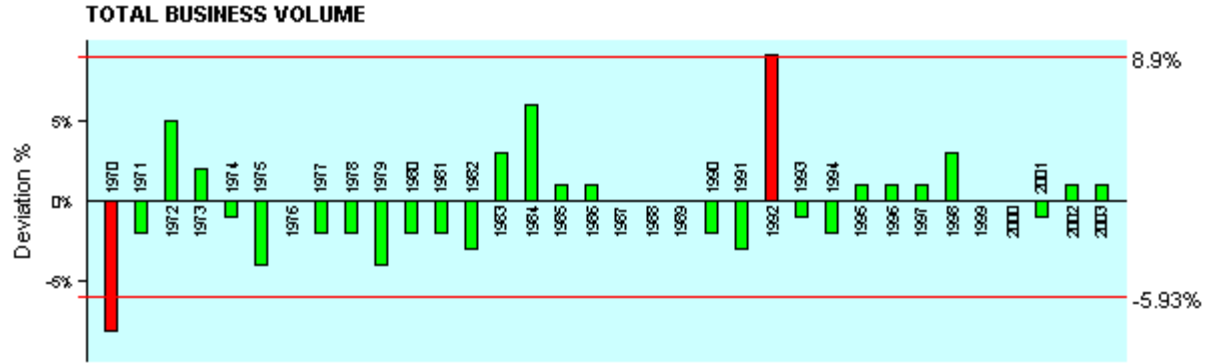
Multiplier	2.41	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$116,718,900	
Sales Volume - Total	\$199,498,300	1.55%
Income - Direct	\$259,700,000	
Income - Induced	\$22,447,530	
Income - Total	\$282,147,500	2.46%
Employment - Direct	7597	
Employment - Induced	842	
Employment - Total	8439	2.94%
Local Population	17430	
Local Off-base Population	8715	3.27%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	8.9 %	8.66 %	6.4 %	2.16 %
Negative RTV	-5.93 %	-5.15 %	-7.34 %	-0.68 %

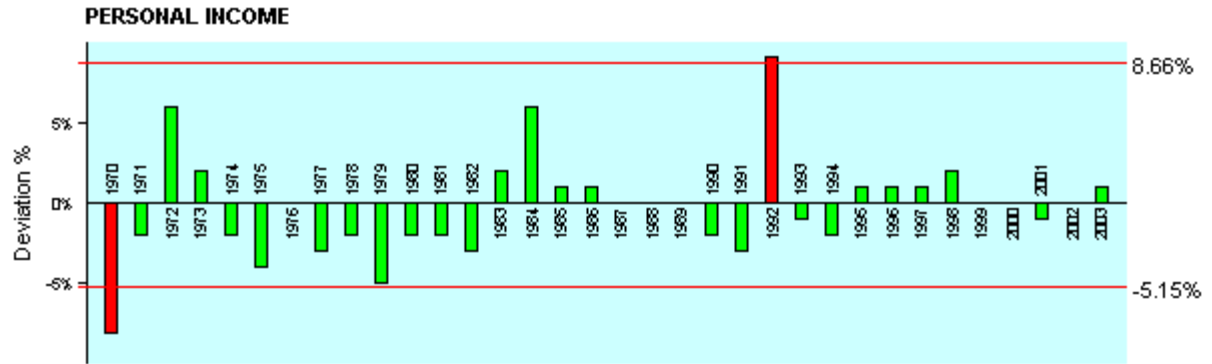
RTV DETAILED

SALES VOLUME



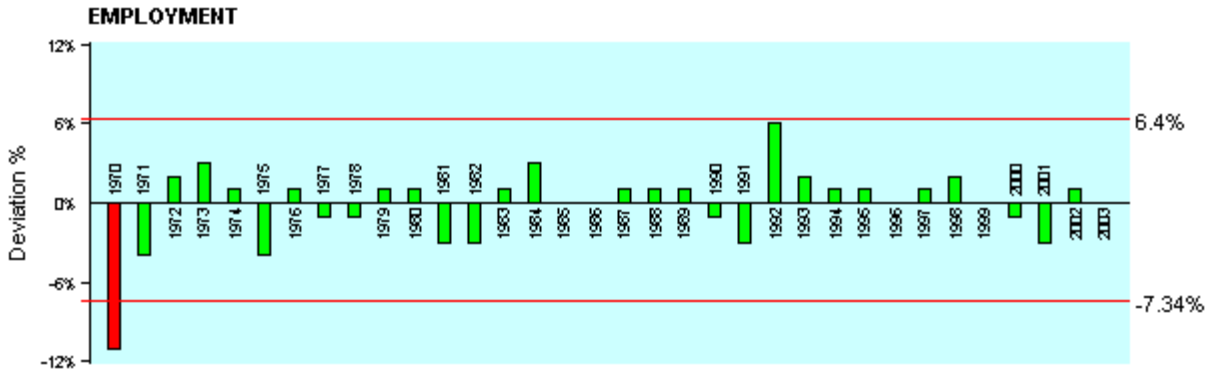
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1959794	10308516	0	-613107	0
1970	2032370	10121203	-187314	-800421	-7.91
1971	2203638	10511353	390151	-222956	-2.12
1972	2544538	11755766	1244412	631305	5.37
1973	2886968	12558311	802545	189438	1.51
1974	3331012	13024257	465946	-147161	-1.13
1975	3652276	13111671	87414	-525693	-4.01
1976	4041842	13742263	630592	17485	0.13
1977	4405430	14053322	311059	-302048	-2.15
1978	4864054	14397600	344278	-268829	-1.87
1979	5415004	14403911	6311	-606796	-4.21
1980	6271572	14675478	271568	-341539	-2.33
1981	7033546	14981453	305974	-307132	-2.05
1982	7595016	15190032	208579	-404528	-2.66
1983	8381810	16260711	1070679	457572	2.81
1984	9636132	17923206	1662494	1049387	5.85
1985	10420086	18756155	832949	219842	1.17
1986	11066682	19477360	721206	108099	0.55
1987	11767006	20003910	526550	-86557	-0.43
1988	12591052	20523415	519505	-93602	-0.46
1989	13513368	21080854	557439	-55668	-0.26
1990	14226700	21197783	116929	-496178	-2.34
1991	14977074	21267445	69662	-543445	-2.56
1992	17403532	24016874	2749429	2136322	8.9
1993	18225622	24422333	405459	-207648	-0.85
1994	18953344	24639347	217014	-396093	-1.61
1995	20054064	25468661	829314	216207	0.85
1996	21357402	26269604	800943	187836	0.72
1997	22595504	27114605	845000	231893	0.86
1998	23973826	28528853	1414248	801141	2.81
1999	25034760	29040322	511469	-101638	-0.35
2000	26551888	29738115	697793	84686	0.28
2001	27582894	30065354	327240	-285867	-0.95
2002	28869750	30890632	825278	212171	0.69
2003	30254522	31767248	876616	263509	0.83

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1017750	5353365	0	-302748	0
1970	1054795	5252879	-100486	-403234	-7.68
1971	1138091	5428694	175815	-126933	-2.34
1972	1312764	6064970	636276	333528	5.5
1973	1499765	6523978	459008	156260	2.4
1974	1720006	6725223	201246	-101502	-1.51
1975	1879587	6747717	22494	-280254	-4.15
1976	2074469	7053195	305477	2729	0.04
1977	2248686	7173308	120114	-182634	-2.55
1978	2477277	7332740	159432	-143316	-1.95
1979	2733160	7270206	-62534	-365282	-5.02
1980	3166808	7410331	140125	-162623	-2.19
1981	3560873	7584659	174329	-128419	-1.69
1982	3847075	7694150	109491	-193257	-2.51
1983	4222744	8192123	497973	195225	2.38
1984	4873744	9065164	873040	570292	6.29
1985	5273192	9491746	426582	123834	1.3
1986	5596429	9849715	357969	55221	0.56
1987	5955250	10123925	274210	-28538	-0.28
1988	6382838	10404026	280101	-22647	-0.22
1989	6858013	10698500	294474	-8274	-0.08
1990	7246225	10796875	98375	-204373	-1.89
1991	7612900	10810318	13443	-289305	-2.68
1992	8816461	12166716	1356398	1053650	8.66
1993	9244096	12387089	220372	-82376	-0.67
1994	9616971	12502062	114974	-187774	-1.5
1995	10162487	12906358	404296	101548	0.79
1996	10824925	13314658	408299	105551	0.79
1997	11451252	13741502	426845	124097	0.9
1998	12104724	14404622	663119	360371	2.5
1999	12635695	14657406	252785	-49963	-0.34
2000	13416054	15025980	368574	65826	0.44
2001	13940655	15195314	169333	-133415	-0.88
2002	14482738	15496530	301216	-1532	-0.01
2003	15190051	15949554	453024	150276	0.94

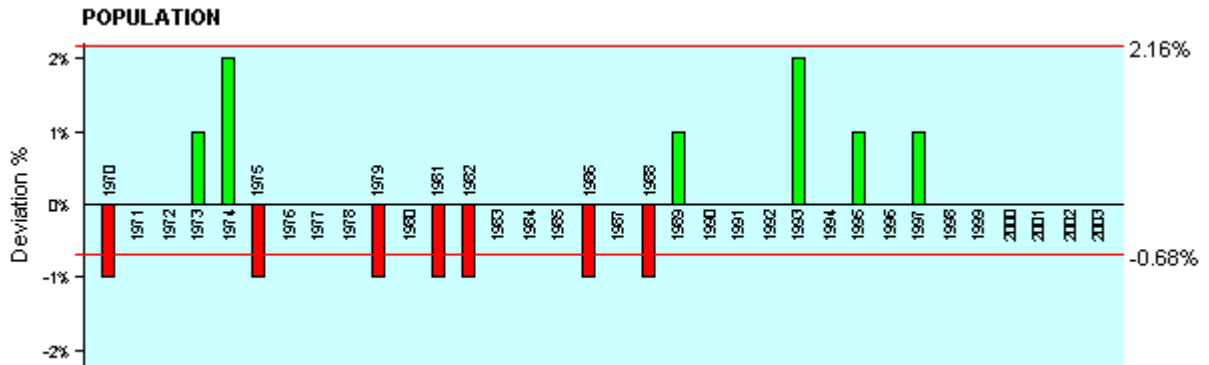
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	179235	0	-3725	0
1970	164904	-14331	-18056	-10.95
1971	161910	-2994	-6719	-4.15
1972	168711	6801	3076	1.82
1973	177713	9002	5277	2.97
1974	183596	5883	2158	1.18
1975	179462	-4134	-7859	-4.38
1976	184368	4906	1181	0.64
1977	187124	2756	-969	-0.52
1978	189349	2225	-1500	-0.79
1979	194871	5522	1797	0.92
1980	200244	5373	1648	0.82
1981	198812	-1432	-5157	-2.59
1982	196816	-1996	-5721	-2.91
1983	202328	5512	1787	0.88
1984	212056	9728	6003	2.83
1985	216192	4136	411	0.19
1986	220320	4128	403	0.18
1987	226731	6411	2686	1.18
1988	232478	5747	2022	0.87
1989	238329	5851	2126	0.89
1990	239172	843	-2882	-1.2
1991	235802	-3370	-7095	-3.01
1992	255905	20103	16378	6.4
1993	263593	7688	3963	1.5
1994	269363	5770	2045	0.76
1995	277025	7662	3937	1.42
1996	280358	3333	-392	-0.14
1997	287491	7133	3408	1.19
1998	296229	8738	5013	1.69
1999	301141	4912	1187	0.39
2000	303283	2142	-1583	-0.52
2001	299292	-3991	-7716	-2.58

2002	304883	5591	1866	0.61
2003	309600	4717	992	0.32

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	344901	0	-6489	0
1970	348053	3152	-3337	-0.96
1971	353897	5844	-645	-0.18
1972	359577	5680	-809	-0.22
1973	368055	8478	1989	0.54
1974	382821	14766	8277	2.16
1975	387078	4257	-2232	-0.58
1976	393279	6201	-288	-0.07
1977	401716	8437	1948	0.48
1978	407314	5598	-891	-0.22
1979	408246	932	-5557	-1.36
1980	415585	7339	850	0.2
1981	419332	3747	-2742	-0.65
1982	422446	3114	-3375	-0.8
1983	428087	5641	-848	-0.2
1984	434689	6602	113	0.03
1985	440496	5807	-682	-0.15
1986	443633	3137	-3352	-0.76
1987	449696	6063	-426	-0.09
1988	451778	2082	-4407	-0.98
1989	461565	9787	3298	0.71
1990	467709	6144	-345	-0.07
1991	474636	6927	438	0.09
1992	481392	6756	267	0.06
1993	496111	14719	8230	1.66
1994	504917	8806	2317	0.46
1995	514286	9369	2880	0.56
1996	522420	8134	1645	0.31
1997	532281	9861	3372	0.63

1998	538343	6062	-427	-0.08
1999	546133	7790	1301	0.24
2000	552877	6744	255	0.05
2001	557295	4418	-2071	-0.37
2002	564786	7491	1002	0.18
2003	572021	7235	746	0.13

Appendix E - Fort Campbell EIFS Analysis

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Army Growth Fort Campbell

STUDY AREA

21047 Christian, KY
 21221 Trigg, KY
 47125 Montgomery, TN
 47161 Stewart, TN

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

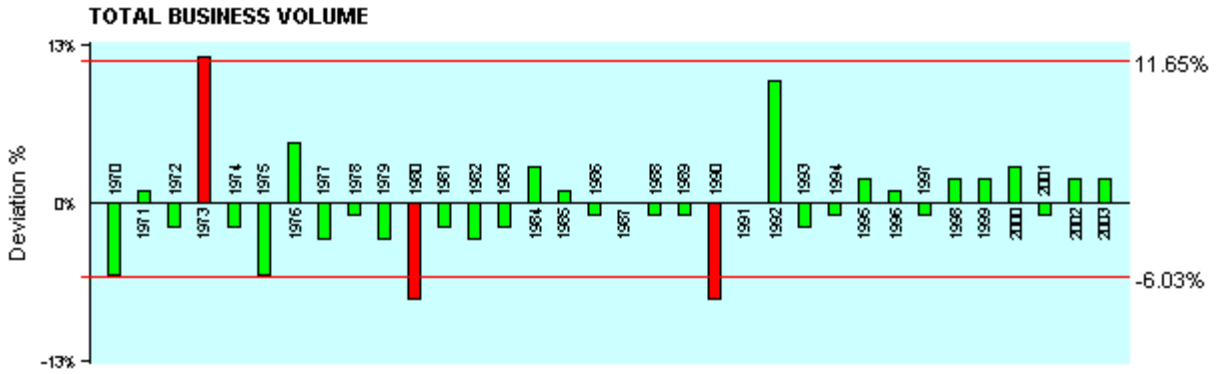
Multiplier	1.95	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$78,640,410	
Sales Volume - Total	\$161,419,800	3.12%
Income - Direct	\$259,700,000	
Income - Induced	\$14,130,740	
Income - Total	\$273,830,800	6.3%
Employment - Direct	7571	
Employment - Induced	543	
Employment - Total	8114	6.92%
Local Population	17430	
Local Off-base Population	8715	7.78%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	11.65 %	12.19 %	11.52 %	7.69 %
Negative RTV	-6.03 %	-6.81 %	-5.23 %	-1.57 %

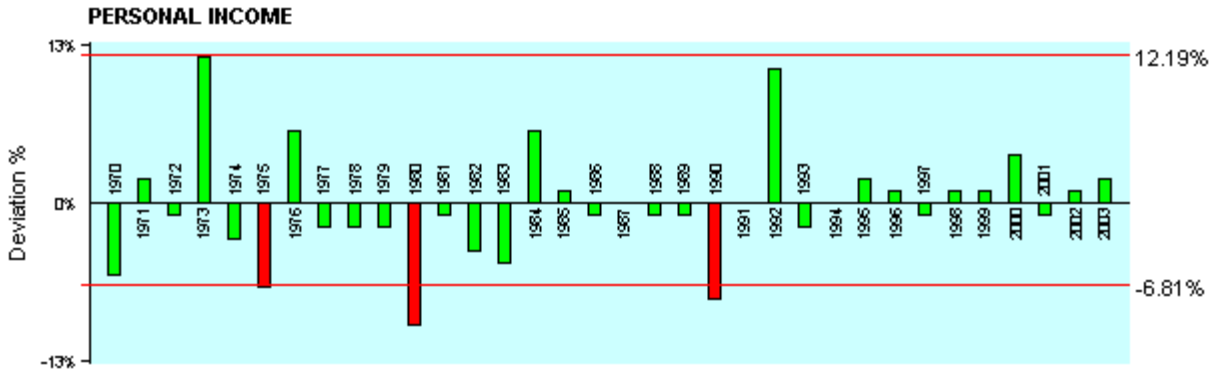
RTV DETAILED

SALES VOLUME



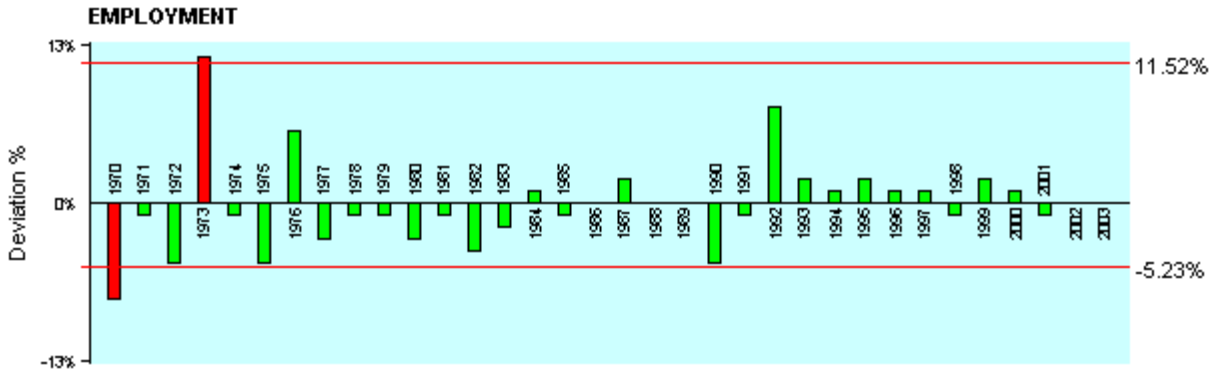
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	764030	4018798	0	-254261	0
1970	810410	4035842	17044	-237217	-5.88
1971	910404	4342627	306785	52524	1.21
1972	980268	4528838	186211	-68050	-1.5
1973	1244508	5413610	884772	630511	11.65
1974	1421374	5557572	143963	-110298	-1.98
1975	1532072	5500138	-57434	-311695	-5.67
1976	1790016	6086054	585916	331655	5.45
1977	1925778	6143232	57177	-197084	-3.21
1978	2140384	6335537	192305	-61956	-0.98
1979	2398184	6379169	43633	-210628	-3.3
1980	2623902	6139931	-239239	-493,500	-8.04
1981	2945266	6273417	133486	-120775	-1.93
1982	3159500	6319000	45583	-208678	-3.3
1983	3313892	6428950	109950	-144311	-2.24
1984	3703692	6888867	459917	205656	2.99
1985	3996896	7194413	305546	51285	0.71
1986	4197186	7387047	192635	-61626	-0.83
1987	4501558	7652649	265601	11340	0.15
1988	4798394	7821382	168734	-85527	-1.09
1989	5108482	7969232	147850	-106411	-1.34
1990	5129648	7643176	-326056	-580317	-7.59
1991	5541366	7868740	225564	-28697	-0.36
1992	6551612	9041225	1172485	918224	10.16
1993	6793100	9102754	61529	-192732	-2.12
1994	7160186	9308242	205488	-48773	-0.52
1995	7683120	9757562	449321	195060	2
1996	8230834	10123926	366363	112102	1.11
1997	8600620	10320744	196818	-57443	-0.56
1998	9049076	10768400	447656	193395	1.8
1999	9646784	11190269	421869	167608	1.5
2000	10538734	11803382	613113	358852	3.04
2001	10941558	11926298	122916	-131345	-1.1
2002	11581700	12392419	466121	211860	1.71
2003	12302792	12917932	525513	271252	2.1

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	399381	2100744	0	-124921	0
1970	422217	2102641	1897	-123024	-5.85
1971	476651	2273625	170985	46064	2.03
1972	515193	2380192	106566	-18355	-0.77
1973	655859	2852987	472795	347874	12.19
1974	738518	2887605	34619	-90302	-3.13
1975	784126	2815012	-72593	-197514	-7.02
1976	918023	3121278	306266	181345	5.81
1977	1001988	3196342	75064	-49857	-1.56
1978	1099259	3253807	57465	-67456	-2.07
1979	1242360	3304678	50871	-74050	-2.24
1980	1330407	3113152	-191525	-316446	-10.16
1981	1507787	3211586	98434	-26487	-0.82
1982	1610233	3220466	8880	-116041	-3.6
1983	1641075	3183686	-36780	-161702	-5.08
1984	1884256	3504716	321031	196110	5.6
1985	2028626	3651527	146811	21890	0.6
1986	2120090	3731358	79832	-45089	-1.21
1987	2276071	3869321	137962	13041	0.34
1988	2423059	3949586	80265	-44656	-1.13
1989	2591024	4041997	92411	-32510	-0.8
1990	2594493	3865795	-176203	-301124	-7.79
1991	2796656	3971252	105457	-19464	-0.49
1992	3319740	4581241	609990	485069	10.59
1993	3431115	4597694	16453	-108468	-2.36
1994	3622662	4709461	111766	-13154	-0.28
1995	3872875	4918551	209091	84170	1.71
1996	4160587	5117522	198971	74050	1.45
1997	4344722	5213666	96144	-28777	-0.55
1998	4547014	5410947	197280	72359	1.34
1999	4821607	5593064	182117	57196	1.02
2000	5305387	5942033	348969	224048	3.77
2001	5492924	5987287	45254	-79667	-1.33
2002	5790414	6195743	208456	83535	1.35
2003	6164741	6472978	277235	152314	2.35

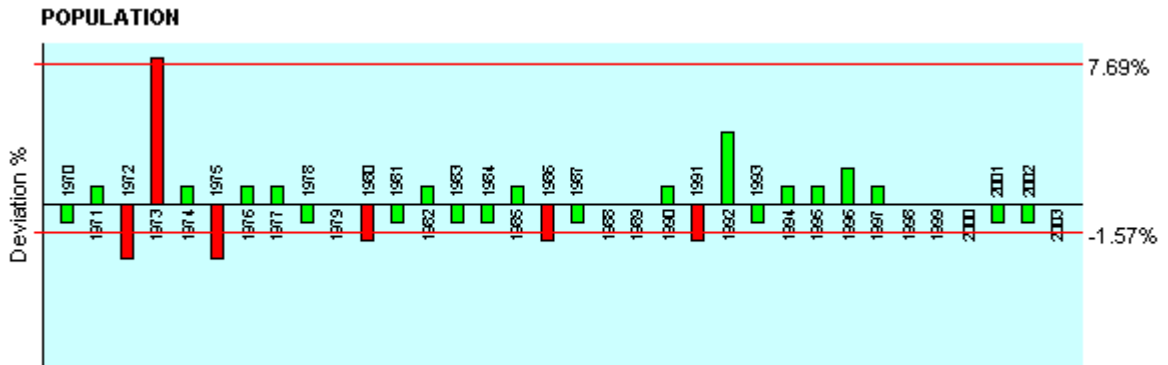
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	70679	0	-1728	0
1970	67160	-3519	-5247	-7.81
1971	67997	837	-891	-1.31
1972	66675	-1322	-3050	-4.57
1973	77310	10635	8907	11.52
1974	78458	1148	-580	-0.74
1975	76094	-2364	-4092	-5.38
1976	82729	6635	4907	5.93
1977	81992	-737	-2465	-3.01
1978	83280	1288	-440	-0.53
1979	83762	482	-1246	-1.49
1980	82965	-797	-2525	-3.04
1981	83777	812	-916	-1.09
1982	82211	-1566	-3294	-4.01
1983	82540	329	-1399	-1.69
1984	84933	2393	665	0.78
1985	86126	1193	-535	-0.62
1986	87604	1478	-250	-0.29
1987	91052	3448	1720	1.89
1988	92467	1415	-313	-0.34
1989	94164	1697	-31	-0.03
1990	91543	-2621	-4349	-4.75
1991	92030	487	-1241	-1.35
1992	101617	9587	7859	7.73
1993	105024	3407	1679	1.6
1994	107992	2968	1240	1.15
1995	112061	4069	2341	2.09
1996	114419	2358	630	0.55
1997	117174	2755	1027	0.88
1998	118272	1098	-630	-0.53
1999	123050	4778	3050	2.48
2000	126061	3011	1283	1.02
2001	126780	719	-1009	-0.8

2002	128810	2030	302	0.23
2003	131143	2333	605	0.46

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	134366	0	-2911	0
1970	135674	1308	-1603	-1.18
1971	139678	4004	1093	0.78
1972	138363	-1315	-4226	-3.05
1973	153046	14683	11772	7.69
1974	158160	5114	2203	1.39
1975	156167	-1993	-4904	-3.14
1976	159985	3818	907	0.57
1977	165292	5307	2396	1.45
1978	166124	832	-2079	-1.25
1979	168638	2514	-397	-0.24
1980	168672	34	-2877	-1.71
1981	169914	1242	-1669	-0.98
1982	174812	4898	1987	1.14
1983	175305	493	-2418	-1.38
1984	176266	961	-1950	-1.11
1985	180704	4438	1527	0.85
1986	180129	-575	-3486	-1.94
1987	181228	1099	-1812	-1
1988	183356	2128	-783	-0.43
1989	186014	2658	-253	-0.14
1990	190352	4338	1427	0.75
1991	189761	-591	-3502	-1.85
1992	200158	10397	7486	3.74
1993	201941	1783	-1128	-0.56
1994	207171	5230	2319	1.12
1995	211843	4672	1761	0.83
1996	219461	7618	4707	2.14
1997	223972	4511	1600	0.71

1998	226773	2801	-110	-0.05
1999	229368	2595	-316	-0.14
2000	232606	3238	327	0.14
2001	233333	727	-2184	-0.94
2002	234212	879	-2032	-0.87
2003	236240	2028	-883	-0.37

Appendix F - Fort Carson EIFS Analysis

EIFS REPORT

PROJECT NAME Army Growth Fort Carson

STUDY AREA

08041	El Paso, CO
08043	Fremont, CO
08101	Pueblo, CO
08119	Teller, CO

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

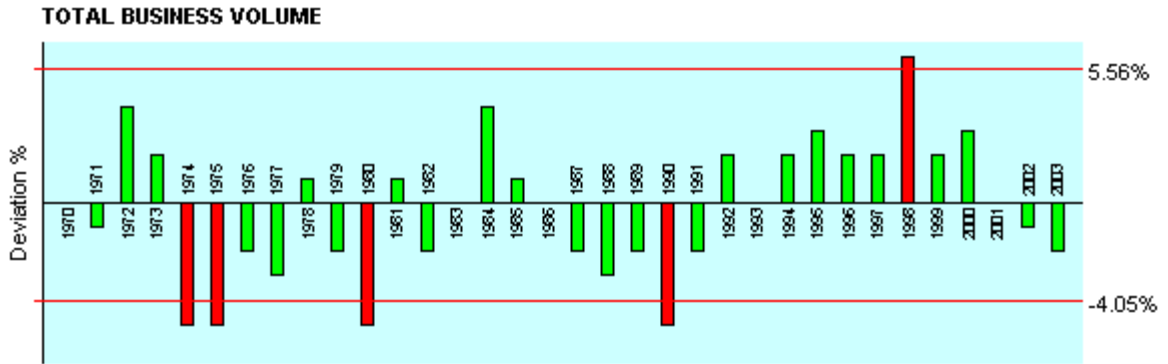
Multiplier	2.93	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$159,764,200	
Sales Volume - Total	\$242,543,600	0.93%
Income - Direct	\$259,700,000	
Income - Induced	\$33,258,690	
Income - Total	\$292,958,700	1.88%
Employment - Direct	7550	
Employment - Induced	1062	
Employment - Total	8613	2.14%
Local Population	17430	
Local Off-base Population	8715	2.55%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	5.56 %	5.55 %	3.98 %	3.13 %
Negative RTV	-4.05 %	-3.69 %	-3.98 %	-1.6 %

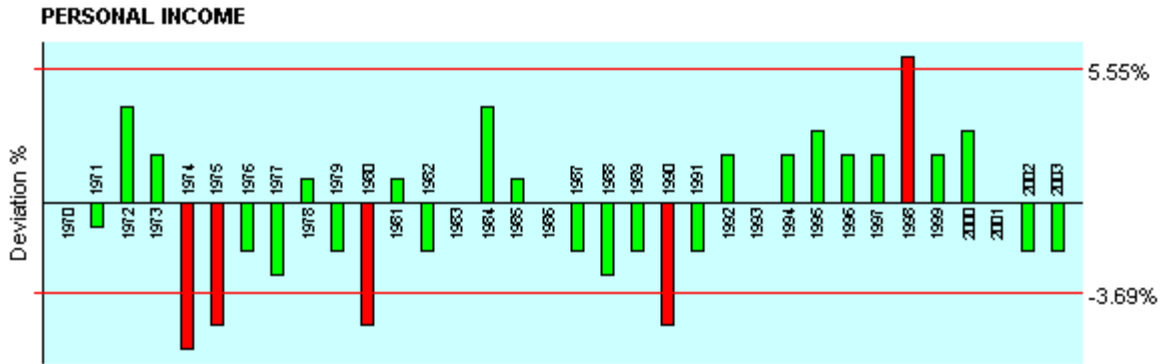
RTV DETAILED

SALES VOLUME



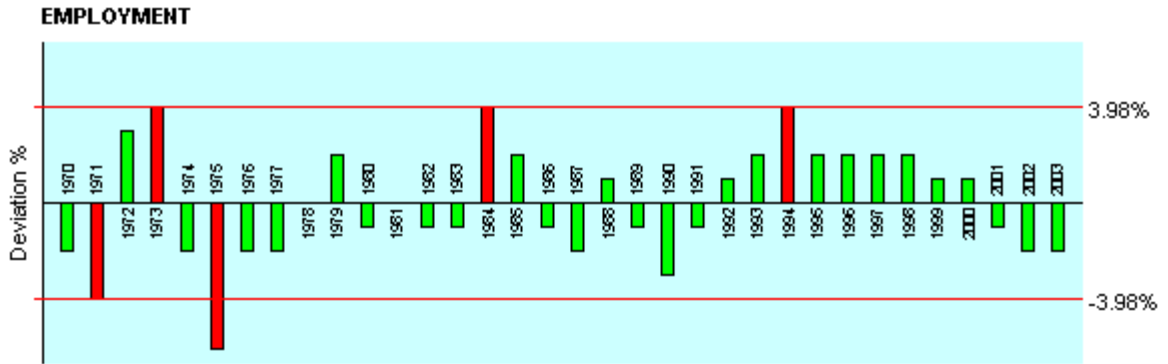
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	2386978	12555504	0	-969017	0
1970	2713280	13512134	956630	-12387	-0.09
1971	3009628	14355926	843791	-125226	-0.87
1972	3468384	16023934	1668009	698992	4.36
1973	3994436	17375797	1351863	382846	2.2
1974	4455170	17419715	43918	-925099	-5.31
1975	4859856	17446883	27168	-941849	-5.4
1976	5313994	18067580	620697	-348320	-1.93
1977	5798468	18497113	429533	-539484	-2.92
1978	6617490	19587770	1090657	121640	0.62
1979	7601086	20218889	631118	-337899	-1.67
1980	8630562	20195515	-23374	-992391	-4.91
1981	10025098	21353459	1157944	188927	0.88
1982	10906198	21812396	458937	-510080	-2.34
1983	11755854	22806357	993961	24944	0.11
1984	13376262	24879847	2073491	1104474	4.44
1985	14571598	26228876	1349029	380012	1.45
1986	15472016	27230748	1001872	32855	0.12
1987	16284564	27683759	453011	-516006	-1.86
1988	17139884	27938011	254252	-714765	-2.56
1989	18191072	28378072	440061	-528956	-1.86
1990	18764110	27958524	-419548	-1388565	-4.97
1991	19890532	28244555	286032	-682985	-2.42
1992	21534216	29717218	1472663	503646	1.69
1993	22819230	30577768	860550	-108467	-0.35
1994	24656764	32053793	1476025	507008	1.58
1995	26927428	34197834	2144040	1175023	3.44
1996	29070220	35756371	1558537	589520	1.65
1997	31117788	37341346	1584975	615958	1.65
1998	34088416	40565215	3223869	2254852	5.56
1999	36693468	42564423	1999208	1030191	2.42
2000	40267152	45099210	2534787	1565770	3.47
2001	42147296	45940553	841342	-127675	-0.28
2002	43211810	46236637	296084	-672933	-1.46
2003	44258198	46471108	234471	-734546	-1.58

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1201100	6317786	0	-482905	0
1970	1363001	6787745	469959	-12946	-0.19
1971	1510233	7203811	416066	-66839	-0.93
1972	1741942	8047772	843961	361056	4.49
1973	2009010	8739194	691421	208516	2.39
1974	2235459	8740645	1451	-481454	-5.51
1975	2440980	8763118	22474	-460431	-5.25
1976	2669535	9076419	313301	-169604	-1.87
1977	2909181	9280287	203868	-279037	-3.01
1978	3316915	9818068	537781	54876	0.56
1979	3805541	10122739	304671	-178234	-1.76
1980	4322380	10114369	-8370	-491275	-4.86
1981	5019929	10692449	578080	95175	0.89
1982	5459747	10919494	227045	-255860	-2.34
1983	5885861	11418570	499076	16171	0.14
1984	6695074	12452838	1034267	551362	4.43
1985	7289661	13121390	668552	185647	1.41
1986	7740875	13623940	502550	19645	0.14
1987	8152294	13858900	234960	-247945	-1.79
1988	8578819	13983475	124575	-358330	-2.56
1989	9103146	14200908	217433	-265472	-1.87
1990	9391670	13993588	-207319	-690224	-4.93
1991	9949575	14128396	134808	-348097	-2.46
1992	10774766	14869177	740781	257876	1.73
1993	11417447	15299379	430202	-52703	-0.34
1994	12325641	16023333	723954	241049	1.5
1995	13457169	17090605	1067271	584366	3.42
1996	14528432	17869971	779367	296462	1.66
1997	15554206	18665047	795076	312171	1.67
1998	17037091	20274138	1609091	1126186	5.55
1999	18339929	21274318	1,000179	517274	2.43
2000	20119271	22533584	1259266	776361	3.45
2001	21064062	22959828	426244	-56661	-0.25
2002	21585222	23096188	136360	-346545	-1.5
2003	22113773	23219462	123274	-359631	-1.55

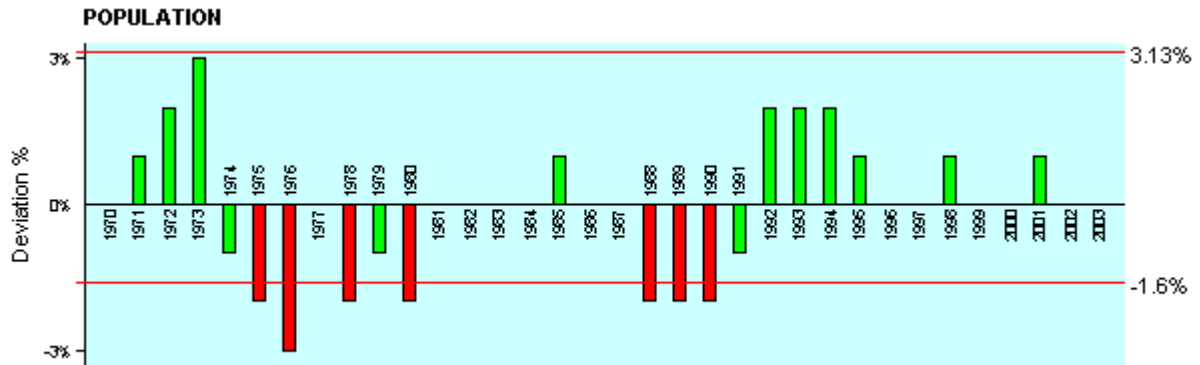
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	165178	0	-7851	0
1970	169931	4753	-3098	-1.82
1971	171716	1785	-6066	-3.53
1972	185343	13627	5776	3.12
1973	200754	15411	7560	3.77
1974	203546	2792	-5059	-2.49
1975	199552	-3994	-11845	-5.94
1976	204198	4646	-3205	-1.57
1977	208826	4628	-3223	-1.54
1978	217334	8508	657	0.3
1979	229501	12167	4316	1.88
1980	234230	4729	-3122	-1.33
1981	241614	7384	-467	-0.19
1982	245995	4381	-3470	-1.41
1983	251552	5557	-2294	-0.91
1984	270158	18606	10755	3.98
1985	282894	12736	4885	1.73
1986	289192	6298	-1553	-0.54
1987	292088	2896	-4955	-1.7
1988	301667	9579	1728	0.57
1989	305779	4112	-3739	-1.22
1990	305126	-653	-8504	-2.79
1991	311196	6070	-1781	-0.57
1992	322265	11069	3218	1
1993	335483	13218	5367	1.6
1994	356630	21147	13296	3.73
1995	370724	14094	6243	1.68
1996	386926	16202	8351	2.16
1997	402358	15432	7581	1.88
1998	416717	14359	6508	1.56
1999	427290	10573	2722	0.64
2000	439363	12073	4222	0.96
2001	442139	2776	-5075	-1.15

2002	439869	-2270	-10121	-2.3
2003	439970	101	-7750	-1.76

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	371114	0	-11287	0
1970	382239	11125	-162	-0.04
1971	397619	15380	4093	1.03
1972	419290	21671	10384	2.48
1973	444495	25205	13918	3.13
1974	450051	5556	-5731	-1.27
1975	452884	2833	-8454	-1.87
1976	449808	-3076	-14363	-3.19
1977	458850	9042	-2245	-0.49
1978	463101	4251	-7036	-1.52
1979	471594	8493	-2794	-0.59
1980	474996	3402	-7885	-1.66
1981	485389	10393	-894	-0.18
1982	496558	11169	-118	-0.02
1983	509902	13344	2057	0.4
1984	520298	10396	-891	-0.17
1985	536670	16372	5085	0.95
1986	550178	13508	2221	0.4
1987	563907	13729	2442	0.43
1988	564705	798	-10489	-1.86
1989	565904	1199	-10088	-1.78
1990	565405	-499	-11786	-2.08
1991	573030	7625	-3662	-0.64
1992	593203	20173	8886	1.5
1993	614598	21395	10108	1.64
1994	640695	26097	14810	2.31
1995	658973	18278	6991	1.06
1996	671900	12927	1640	0.24
1997	684724	12824	1537	0.22

1998	700515	15791	4504	0.64
1999	715177	14662	3375	0.47
2000	728181	13004	1717	0.24
2001	746726	18545	7258	0.97
2002	758331	11605	318	0.04
2003	766156	7825	-3462	-0.45

Appendix G - Fort Drum EIFS Analysis

EIFS REPORT

PROJECT NAME Army Growth Fort Drum

STUDY AREA
 36045 Jefferson, NY
 36049 Lewis, NY
 36089 St. Lawrence, NY

FORECAST INPUT

Change In Local Expenditures	\$0	
Change In Civilian Employment	0	
Average Income of Affected Civilian	\$0	
Percent Expected to Relocate	0	
Change In Military Employment	7,000	
Average Income of Affected Military	\$37,100	
Percent of Military Living On-post	50	

FORECAST OUTPUT

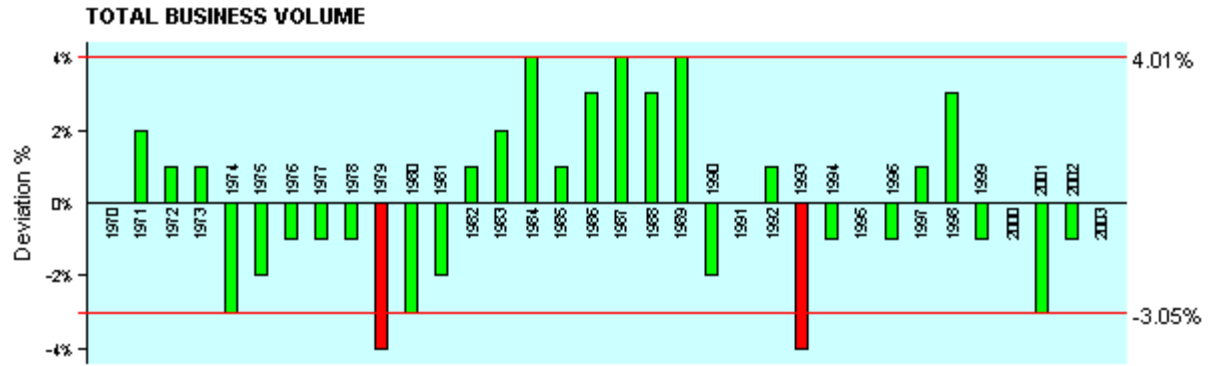
Multiplier	1.93	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$76,984,820	
Sales Volume - Total	\$159,764,200	3.1%
Income - Direct	\$259,700,000	
Income - Induced	\$14,979,200	
Income - Total	\$274,679,200	5.91%
Employment - Direct	7611	
Employment - Induced	568	
Employment - Total	8179	6.87%
Local Population	17430	
Local Off-base Population	8715	6.88%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	4.01 %	4.32 %	5.38 %	3.2 %
Negative RTV	-3.05 %	-2.74 %	-3.16 %	-0.87 %

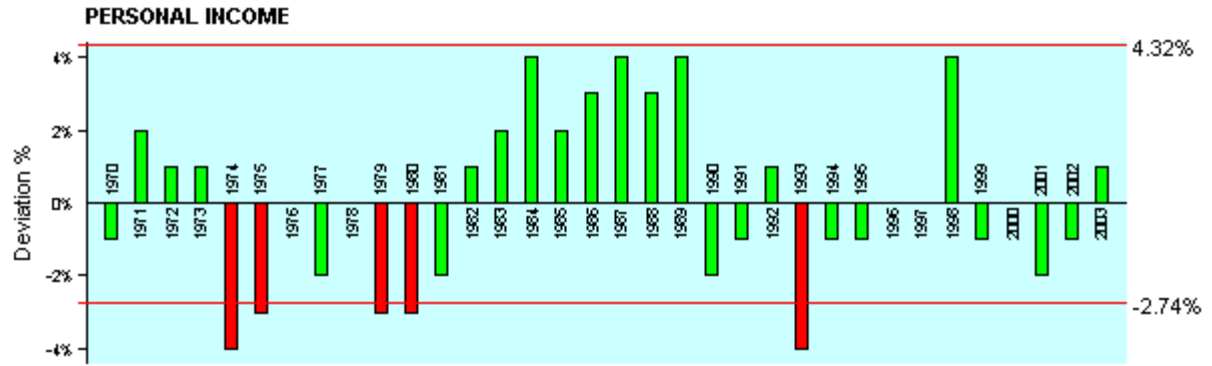
RTV DETAILED

SALES VOLUME



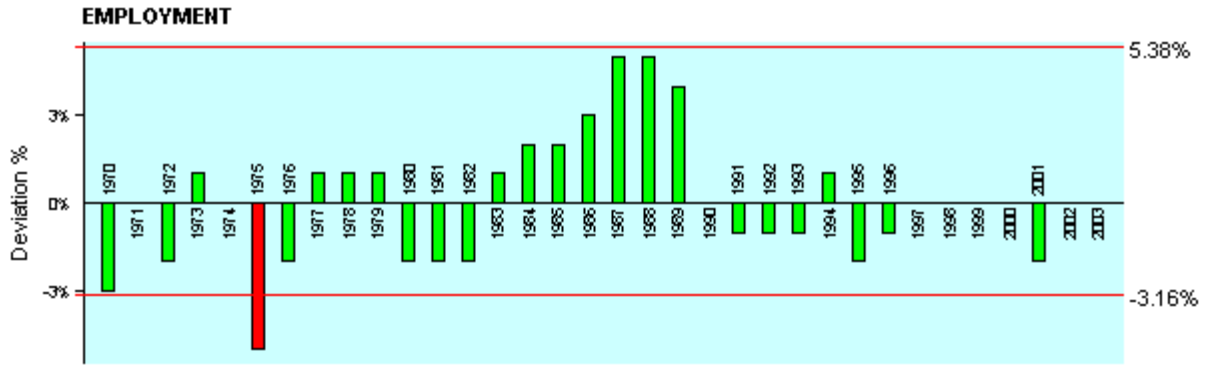
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1272866	6695275	0	-147313	0
1970	1368908	6817162	121887	-25426	-0.37
1971	1489050	7102768	285607	138294	1.95
1972	1579772	7298547	195778	48465	0.66
1973	1725026	7503863	205316	58003	0.77
1974	1906762	7455439	-48424	-195737	-2.63
1975	2069510	7429541	-25899	-173212	-2.33
1976	2214342	7528763	99222	-48091	-0.64
1977	2378500	7587415	58652	-88661	-1.17
1978	2581838	7642240	54825	-92488	-1.21
1979	2828022	7522539	-119702	-267015	-3.55
1980	3175234	7430048	-92491	-239804	-3.23
1981	3493158	7440427	10379	-136934	-1.84
1982	3818996	7637992	197565	50252	0.66
1983	4107642	7968825	330833	183520	2.3
1984	4533722	8432723	463897	316584	3.75
1985	4823434	8682181	249458	102145	1.18
1986	5159542	9080794	398613	251300	2.77
1987	5655162	9613775	532981	385668	4.01
1988	6185802	10082857	469082	321769	3.19
1989	6822396	10642938	560080	412768	3.88
1990	7104720	10586033	-56905	-204218	-1.93
1991	7526212	10687221	101188	-46125	-0.43
1992	7932948	10947468	260247	112934	1.03
1993	7955870	10660866	-286602	-433915	-4.07
1994	8224604	10691985	31119	-116194	-1.09
1995	8497070	10791279	99294	-48019	-0.44
1996	8842672	10876487	85208	-62105	-0.57
1997	9258282	11109938	233452	86139	0.78
1998	9750378	11602950	493011	345698	2.98
1999	10017680	11620509	17559	-129754	-1.12
2000	10538442	11803055	182546	35233	0.3
2001	10684604	11646218	-156837	-304150	-2.61
2002	10888016	11650177	3959	-143354	-1.23
2003	11286900	11851245	201068	53755	0.45

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	670827	3528550	0	-69681	0
1970	718263	3576950	48400	-21281	-0.59
1971	778096	3711518	134568	64887	1.75
1972	823973	3806755	95237	25556	0.67
1973	896726	3900758	94003	24322	0.62
1974	980482	3833685	-67073	-136754	-3.57
1975	1057557	3796630	-37055	-106736	-2.81
1976	1138271	3870121	73492	3811	0.1
1977	1205301	3844910	-25211	-94892	-2.47
1978	1317191	3898885	53975	-15706	-0.4
1979	1444269	3841756	-57130	-126811	-3.3
1980	1618219	3786632	-55123	-124804	-3.3
1981	1770989	3772207	-14426	-84107	-2.23
1982	1935560	3871120	98913	29232	0.76
1983	2074112	4023777	152657	82976	2.06
1984	2292416	4263894	240116	170435	4
1985	2446894	4404409	140515	70834	1.61
1986	2624407	4618956	214547	144866	3.14
1987	2879182	4894609	275653	205972	4.21
1988	3129977	5101863	207253	137572	2.7
1989	3464735	5404987	303124	233443	4.32
1990	3608019	5375948	-29038	-98719	-1.84
1991	3796493	5391020	15072	-54609	-1.01
1992	4016867	5543276	152256	82575	1.49
1993	4023995	5392153	-151123	-220804	-4.09
1994	4151798	5397337	5184	-64497	-1.19
1995	4274722	5428897	31560	-38121	-0.7
1996	4478551	5508618	79721	10040	0.18
1997	4644115	5572938	64320	-5361	-0.1
1998	4914776	5848583	275645	205964	3.52
1999	5053611	5862189	13605	-56076	-0.96
2000	5305791	5942486	80297	10616	0.18
2001	5393078	5878455	-64031	-133712	-2.27
2002	5481962	5865699	-12756	-82437	-1.41
2003	5683228	5967389	101690	32009	0.54

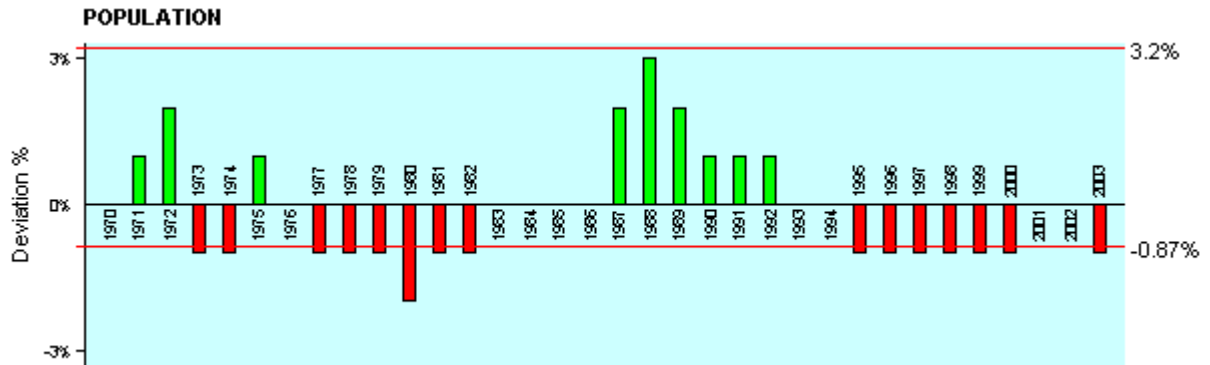
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	84981	0	-1083	0
1970	83897	-1084	-2167	-2.58
1971	84691	794	-289	-0.34
1972	84462	-229	-1312	-1.55
1973	86609	2147	1064	1.23
1974	87661	1052	-31	-0.04
1975	84753	-2908	-3991	-4.71
1976	83835	-918	-2001	-2.39
1977	85368	1533	450	0.53
1978	87679	2311	1228	1.4
1979	89589	1910	827	0.92
1980	88794	-795	-1878	-2.12
1981	87778	-1016	-2099	-2.39
1982	87093	-685	-1768	-2.03
1983	89071	1978	895	1
1984	91711	2640	1557	1.7
1985	94371	2660	1577	1.67
1986	98028	3657	2574	2.63
1987	103927	5899	4816	4.63
1988	110979	7052	5969	5.38
1989	116427	5448	4365	3.75
1990	117890	1463	380	0.32
1991	117957	67	-1016	-0.86
1992	117583	-374	-1457	-1.24
1993	117066	-517	-1600	-1.37
1994	119197	2131	1048	0.88
1995	118310	-887	-1970	-1.67
1996	118255	-55	-1138	-0.96
1997	119004	749	-334	-0.28
1998	119957	953	-130	-0.11
1999	121082	1125	42	0.03
2000	122400	1318	235	0.19
2001	121393	-1007	-2090	-1.72

2002	122313	920	-163	-0.13
2003	122899	586	-497	-0.4

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	224487	0	-763	0
1970	225176	689	-74	-0.03
1971	227735	2559	1796	0.79
1972	232340	4605	3842	1.65
1973	230735	-1605	-2368	-1.03
1974	229509	-1226	-1989	-0.87
1975	232174	2665	1902	0.82
1976	232980	806	43	0.02
1977	232564	-416	-1179	-0.51
1978	231540	-1024	-1787	-0.77
1979	230477	-1063	-1826	-0.79
1980	227295	-3182	-3945	-1.74
1981	225914	-1381	-2144	-0.95
1982	224709	-1205	-1968	-0.88
1983	224772	63	-700	-0.31
1984	225876	1104	341	0.15
1985	226820	944	181	0.08
1986	227645	825	62	0.03
1987	232220	4575	3812	1.64
1988	240682	8462	7699	3.2
1989	247576	6894	6131	2.48
1990	250579	3003	2240	0.89
1991	253006	2427	1664	0.66
1992	255682	2676	1913	0.75
1993	256899	1217	454	0.18
1994	258746	1847	1084	0.42
1995	257042	-1704	-2467	-0.96
1996	255830	-1212	-1975	-0.77
1997	253173	-2657	-3420	-1.35

1998	251879	-1294	-2057	-0.82
1999	251197	-682	-1445	-0.58
2000	250305	-892	-1655	-0.66
2001	251060	755	-8	0
2002	251743	683	-80	-0.03
2003	251202	-541	-1304	-0.52

Appendix H - Fort Knox EIFS Analysis

EIFS REPORT

PROJECT NAME

Army Growth Fort Knox

STUDY AREA

- 21027 Breckinridge, KY
- 21029 Bullitt, KY
- 21071 Floyd, KY
- 21085 Grayson, KY
- 21093 Hardin, KY
- 21097 Harrison, KY
- 21123 Larue, KY
- 21163 Meade, KY
- 21179 Nelson, KY
- 21215 Spencer, KY

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

Multiplier	2.29	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$106,785,400	
Sales Volume - Total	\$189,564,800	3.12%
Income - Direct	\$259,700,000	
Income - Induced	\$20,682,440	
Income - Total	\$280,382,400	4.43%
Employment - Direct	7604	
Employment - Induced	779	
Employment - Total	8382	5.75%
Local Population	17430	
Local Off-base Population	8715	5.23%

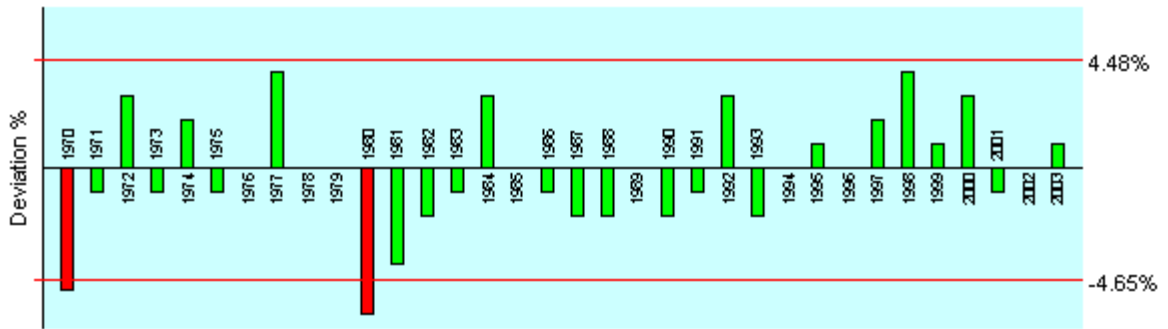
RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	4.48 %	5.26 %	3.92 %	3.88 %
Negative RTV	-4.65 %	-4.5 %	-5.37 %	-1.61 %

RTV DETAILED

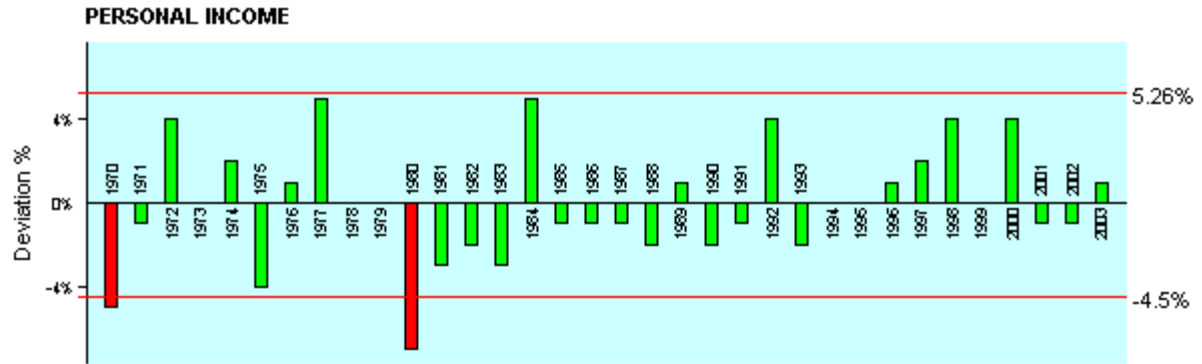
SALES VOLUME

TOTAL BUSINESS VOLUME



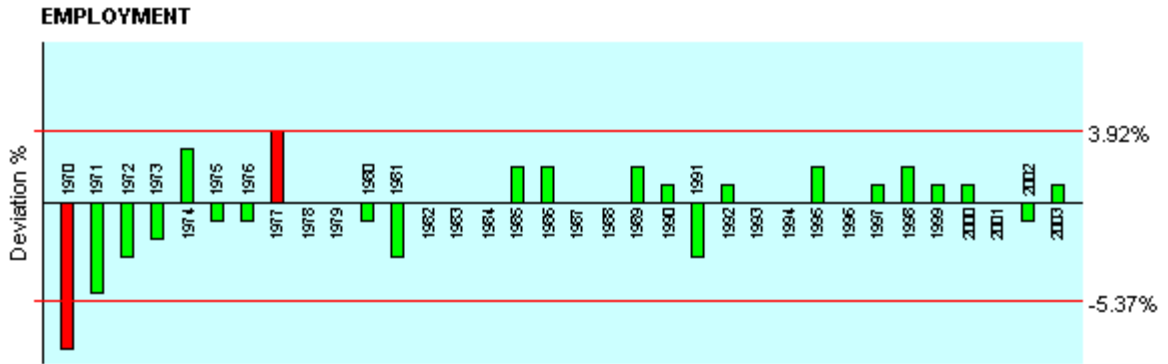
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1312052	6901394	0	-328031	0
1970	1388284	6913654	12261	-315770	-4.57
1971	1499128	7150841	237186	-90845	-1.27
1972	1667928	7705827	554987	226956	2.95
1973	1824428	7936262	230434	-97597	-1.23
1974	2148094	8399048	462786	134755	1.6
1975	2416760	8676168	277121	-50910	-0.59
1976	2656834	9033236	357067	29036	0.32
1977	3070192	9793912	760677	432646	4.42
1978	3436808	10172952	379039	51008	0.5
1979	3944306	10491854	318902	-9129	-0.09
1980	4354098	10188589	-303265	-631296	-6.2
1981	4731854	10078849	-109740	-437771	-4.34
1982	5125458	10250916	172067	-155964	-1.52
1983	5421092	10516918	266002	-62029	-0.59
1984	5997302	11154982	638063	310032	2.78
1985	6373474	11472253	317271	-10760	-0.09
1986	6620494	11652069	179816	-148215	-1.27
1987	6919862	11763765	111696	-216335	-1.84
1988	7301098	11900790	137024	-191007	-1.6
1989	7812698	12187809	287019	-41012	-0.34
1990	8226916	12258105	70296	-257735	-2.1
1991	8770040	12453457	195352	-132679	-1.07
1992	9578978	13218990	765533	437502	3.31
1993	9929946	13306128	87138	-240893	-1.81
1994	10476526	13619484	313356	-14675	-0.11
1995	11045878	14028265	408781	80750	0.58
1996	11711192	14404766	376501	48470	0.34
1997	12539348	15047218	642451	314420	2.09
1998	13526078	16096033	1048815	720784	4.48
1999	14238284	16516409	420377	92346	0.56
2000	15556838	17423659	907249	579218	3.32
2001	16105176	17554642	130983	-197048	-1.12
2002	16703328	17872561	317919	-10112	-0.06
2003	17507126	18382482	509921	181890	0.99

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	702704	3696223	0	-156442	0
1970	734028	3655459	-40764	-197206	-5.39
1971	789390	3765390	109931	-46511	-1.24
1972	882493	4077118	311727	155285	3.81
1973	969305	4216477	139359	-17083	-0.41
1974	1142456	4467003	250526	94084	2.11
1975	1242649	4461110	-5893	-162335	-3.64
1976	1365857	4643914	182804	26362	0.57
1977	1583782	5052265	408351	251909	4.99
1978	1758137	5204086	151821	-4621	-0.09
1979	2014957	5359786	155700	-742	-0.01
1980	2208942	5168924	-190861	-347303	-6.72
1981	2429878	5175640	6716	-149726	-2.89
1982	2626613	5253226	77586	-78856	-1.5
1983	2701544	5240995	-12231	-168673	-3.22
1984	3062929	5697048	456053	299611	5.26
1985	3229693	5813447	116399	-40043	-0.69
1986	3344412	5886165	72718	-83724	-1.42
1987	3509411	5965999	79834	-76608	-1.28
1988	3695235	6023233	57234	-99208	-1.65
1989	3988484	6222035	198802	42360	0.68
1990	4196702	6253086	31051	-125391	-2.01
1991	4472501	6350951	97865	-58577	-0.92
1992	4893853	6753517	402566	246124	3.64
1993	5055331	6774144	20626	-135816	-2
1994	5320753	6916979	142835	-13607	-0.2
1995	5554413	7054105	137126	-19316	-0.27
1996	5917141	7278083	223979	67537	0.93
1997	6325644	7590773	312689	156247	2.06
1998	6791500	8081885	491112	334670	4.14
1999	7097878	8233538	151653	-4789	-0.06
2000	7829574	8769123	535584	379142	4.32
2001	8069091	8795309	26186	-130256	-1.48
2002	8315069	8897124	101815	-54627	-0.61
2003	8734933	9171680	274556	118114	1.29

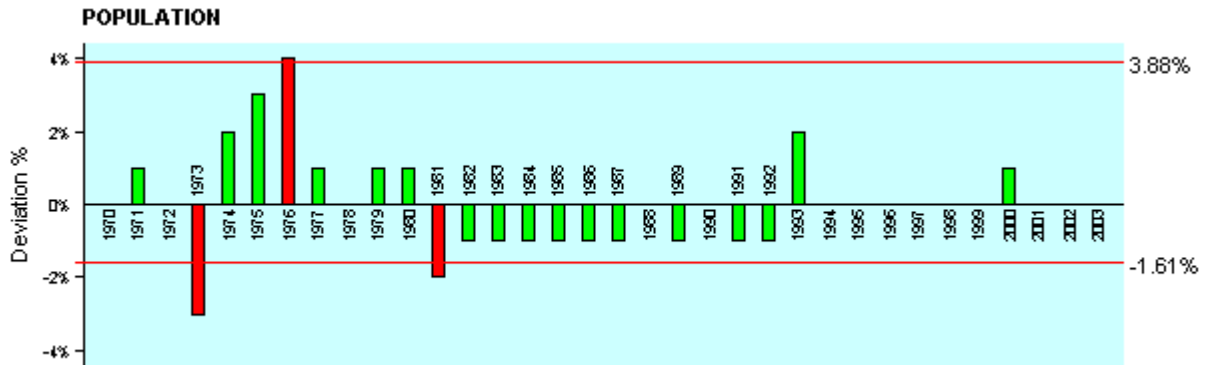
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	112099	0	-1398	0
1970	105068	-7031	-8429	-8.02
1971	101216	-3852	-5250	-5.19
1972	99715	-1501	-2899	-2.91
1973	99009	-706	-2104	-2.13
1974	103348	4339	2941	2.85
1975	103586	238	-1160	-1.12
1976	104310	724	-674	-0.65
1977	110026	5716	4318	3.92
1978	111836	1810	412	0.37
1979	113088	1252	-146	-0.13
1980	113619	531	-867	-0.76
1981	111271	-2348	-3746	-3.37
1982	112676	1405	7	0.01
1983	114323	1647	249	0.22
1984	115968	1645	247	0.21
1985	119324	3356	1958	1.64
1986	122775	3451	2053	1.67
1987	124216	1441	43	0.03
1988	125806	1590	192	0.15
1989	129468	3662	2264	1.75
1990	132463	2995	1597	1.21
1991	130212	-2251	-3649	-2.8
1992	133200	2988	1590	1.19
1993	134584	1384	-14	-0.01
1994	136471	1887	489	0.36
1995	140833	4362	2964	2.1
1996	142336	1503	105	0.07
1997	145894	3558	2160	1.48
1998	150643	4749	3351	2.22
1999	153435	2792	1394	0.91
2000	156731	3296	1898	1.21
2001	158700	1969	571	0.36

2002	158266	-434	-1832	-1.16
2003	161042	2776	1378	0.86

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	242113	0	-3367	0
1970	244870	2757	-610	-0.25
1971	250443	5573	2206	0.88
1972	252637	2194	-1173	-0.46
1973	248008	-4629	-7996	-3.22
1974	257482	9474	6107	2.37
1975	267779	10297	6930	2.59
1976	282082	14303	10936	3.88
1977	288391	6309	2942	1.02
1978	290508	2117	-1250	-0.43
1979	295570	5062	1695	0.57
1980	302012	6442	3075	1.02
1981	300538	-1474	-4841	-1.61
1982	300104	-434	-3801	-1.27
1983	301329	1225	-2142	-0.71
1984	302502	1173	-2194	-0.73
1985	303707	1205	-2162	-0.71
1986	303138	-569	-3936	-1.3
1987	303264	126	-3241	-1.07
1988	305176	1912	-1455	-0.48
1989	305204	28	-3339	-1.09
1990	307191	1987	-1380	-0.45
1991	306044	-1147	-4514	-1.47
1992	307674	1630	-1737	-0.56
1993	317924	10250	6883	2.16
1994	322602	4678	1311	0.41
1995	326888	4286	919	0.28
1996	329120	2232	-1135	-0.34
1997	333447	4327	960	0.29

1998	338234	4787	1420	0.42
1999	343262	5028	1661	0.48
2000	348851	5589	2222	0.64
2001	352334	3483	116	0.03
2002	356205	3871	504	0.14
2003	359942	3737	370	0.1

Appendix I - Fort Hood EIFS Analysis

EIFS REPORT

PROJECT NAME
Army Growth Fort Hood

STUDY AREA
48027 Bell, TX
48099 Coryell, TX

FORECAST INPUT

Change In Local Expenditures	\$0	
Change In Civilian Employment	0	
Average Income of Affected Civilian	\$0	
Percent Expected to Relocate	0	
Change In Military Employment	7,000	
Average Income of Affected Military	\$37,100	
Percent of Military Living On-post	50	

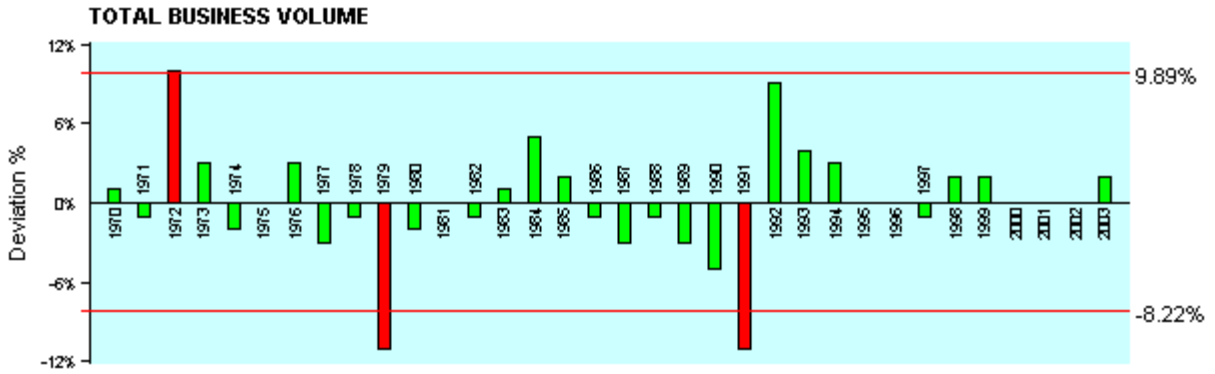
FORECAST OUTPUT

Multiplier	1.91	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$75,329,230	
Sales Volume - Total	\$158,108,600	2.37%
Income - Direct	\$259,700,000	
Income - Induced	\$16,798,520	
Income - Total	\$276,498,500	4.67%
Employment - Direct	7648	
Employment - Induced	590	
Employment - Total	8238	4.91%
Local Population	17430	
Local Off-base Population	8715	5.72%

RTV SUMMARY

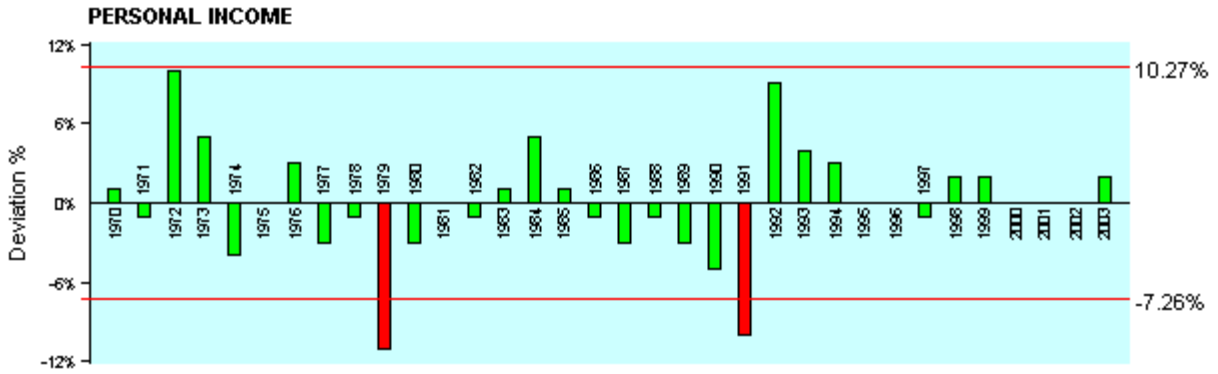
	Sales Volume	Income	Employment	Population
Positive RTV	9.89 %	10.27 %	6.3 %	8.08 %
Negative RTV	-8.22 %	-7.26 %	-7.06 %	-2.07 %

RTV DETAILED
SALES VOLUME



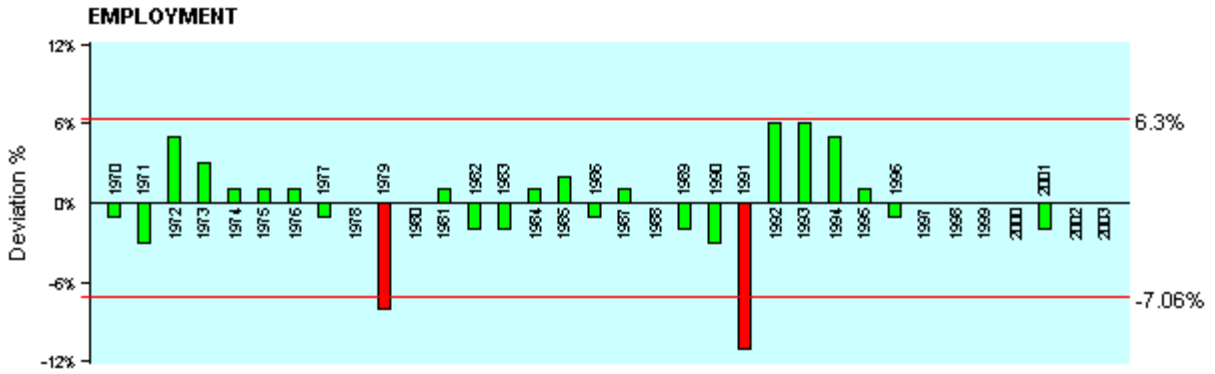
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	993652	5226610	0	-337167	0
1970	1123650	5595777	369167	32000	0.57
1971	1236782	5899450	303673	-33494	-0.57
1972	1498016	6920834	1021384	684217	9.89
1973	1727174	7513207	592373	255206	3.4
1974	1977202	7730860	217653	-119514	-1.55
1975	2243088	8052686	321826	-15341	-0.19
1976	2539786	8635272	582586	245419	2.84
1977	2741212	8744466	109194	-227973	-2.61
1978	3030586	8970535	226068	-111099	-1.24
1979	3153376	8387980	-582554	-919721	-10.96
1980	3645566	8530624	142644	-194523	-2.28
1981	4151208	8842073	311449	-25718	-0.29
1982	4538818	9077636	235563	-101604	-1.12
1983	4908564	9522614	444978	107811	1.13
1984	5589766	10396965	874351	537184	5.17
1985	6057948	10904306	507342	170175	1.56
1986	6335296	11150121	245815	-91352	-0.82
1987	6570418	11169711	19590	-317577	-2.84
1988	6973304	11366486	196775	-140392	-1.24
1989	7264852	11333169	-33316	-370483	-3.27
1990	7486552	11154962	-178207	-515374	-4.62
1991	7317522	10390881	-764081	-1101248	-10.6
1992	8535432	11778896	1388015	1050848	8.92
1993	9419978	12622771	843874	506707	4.01
1994	10231526	13300984	678213	341046	2.56
1995	10766086	13672929	371945	34778	0.25
1996	11429324	14058069	385139	47972	0.34
1997	11822890	14187468	129399	-207768	-1.46
1998	12468086	14837022	649554	312387	2.11
1999	13303932	15432561	595539	258372	1.67
2000	14078708	15768153	335592	-1575	-0.01
2001	14712726	16036871	268718	-68449	-0.43
2002	15295974	16366692	329821	-7346	-0.04
2003	16216634	17027466	660774	323607	1.9

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	500731	2633845	0	-168348	0
1970	566959	2823456	189611	21263	0.75
1971	623610	2974620	151164	-17184	-0.58
1972	758192	3502847	528227	359879	10.27
1973	886980	3858363	355516	187168	4.85
1974	990533	3872984	14621	-153727	-3.97
1975	1127879	4049086	176102	7754	0.19
1976	1274988	4334959	285874	117526	2.71
1977	1367663	4362845	27886	-140462	-3.22
1978	1517367	4491406	128561	-39787	-0.89
1979	1580454	4204008	-287399	-455747	-10.84
1980	1820276	4259446	55438	-112910	-2.65
1981	2085262	4441608	182162	13814	0.31
1982	2274733	4549466	107858	-60490	-1.33
1983	2454705	4762128	212662	44314	0.93
1984	2796983	5202388	440261	271913	5.23
1985	3025708	5446274	243886	75538	1.39
1986	3163757	5568212	121938	-46410	-0.83
1987	3288961	5591234	23021	-145327	-2.6
1988	3487932	5685329	94095	-74253	-1.31
1989	3637814	5674990	-10339	-178687	-3.15
1990	3744642	5579517	-95473	-263821	-4.73
1991	3664909	5204171	-375346	-543694	-10.45
1992	4272023	5895392	691221	522873	8.87
1993	4717406	6321324	425932	257584	4.07
1994	5121134	6657474	336150	167802	2.52
1995	5381946	6835071	177597	9249	0.14
1996	5718570	7033841	198770	30422	0.43
1997	5922692	7107230	73389	-94959	-1.34
1998	6236792	7421782	314552	146204	1.97
1999	6670695	7738006	316224	147876	1.91
2000	7049586	7895536	157530	-10818	-0.14
2001	7362024	8024606	129070	-39278	-0.49
2002	7658286	8194366	169760	1412	0.02
2003	8120028	8526029	331663	163315	1.92

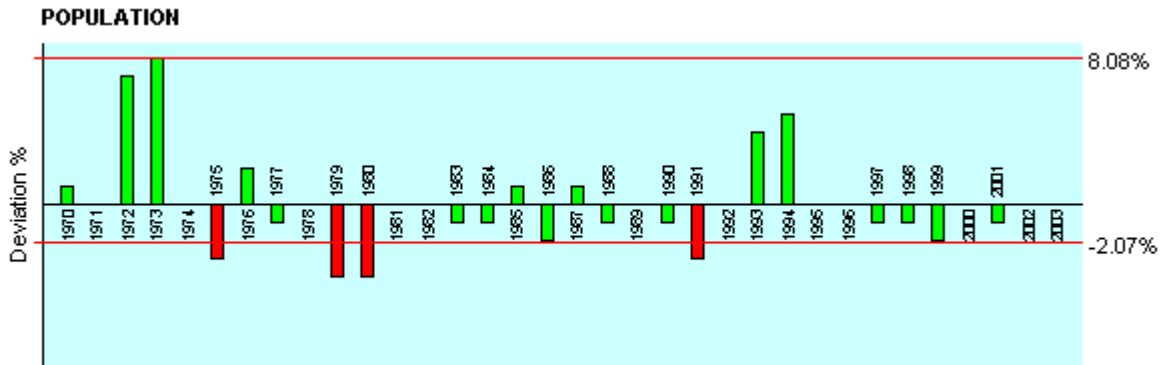
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	84726	0	-2786	0
1970	86316	1590	-1196	-1.39
1971	86442	126	-2660	-3.08
1972	93496	7054	4268	4.56
1973	98802	5306	2520	2.55
1974	102754	3952	1166	1.13
1975	106868	4114	1328	1.24
1976	111181	4313	1527	1.37
1977	113194	2013	-773	-0.68
1978	116131	2937	151	0.13
1979	110602	-5529	-8315	-7.52
1980	113513	2911	125	0.11
1981	117055	3542	756	0.65
1982	117268	213	-2573	-2.19
1983	118004	736	-2050	-1.74
1984	122335	4331	1545	1.26
1985	127105	4770	1984	1.56
1986	128966	1861	-925	-0.72
1987	132960	3994	1208	0.91
1988	135282	2322	-464	-0.34
1989	135614	332	-2454	-1.81
1990	134485	-1129	-3915	-2.91
1991	124192	-10293	-13079	-10.53
1992	135178	10986	8200	6.07
1993	147246	12068	9282	6.3
1994	158650	11404	8618	5.43
1995	163607	4957	2171	1.33
1996	165386	1779	-1007	-0.61
1997	167943	2557	-229	-0.14
1998	171296	3353	567	0.33
1999	174157	2861	75	0.04
2000	176506	2349	-437	-0.25
2001	176450	-56	-2842	-1.61

2002	179630	3180	394	0.22
2003	182230	2600	-186	-0.1

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	153274	0	-4896	0
1970	160303	7029	2133	1.33
1971	164506	4203	-693	-0.42
1972	182540	18034	13138	7.2
1973	203911	21371	16475	8.08
1974	209172	5261	365	0.17
1975	208269	-903	-5799	-2.78
1976	217154	8885	3989	1.84
1977	219762	2608	-2288	-1.04
1978	223925	4163	-733	-0.33
1979	219993	-3932	-8828	-4.01
1980	215958	-4035	-8931	-4.14
1981	220807	4849	-47	-0.02
1982	226549	5742	846	0.37
1983	229601	3052	-1844	-0.8
1984	231777	2176	-2720	-1.17
1985	239632	7855	2959	1.23
1986	240129	497	-4399	-1.83
1987	246347	6218	1322	0.54
1988	248996	2649	-2247	-0.9
1989	252860	3864	-1032	-0.41
1990	255995	3135	-1761	-0.69
1991	252206	-3789	-8685	-3.44
1992	257110	4904	8	0
1993	272288	15178	10282	3.78
1994	292778	20490	15594	5.33
1995	296903	4125	-771	-0.26
1996	301687	4784	-112	-0.04
1997	304561	2874	-2022	-0.66

1998	307900	3339	-1557	-0.51
1999	308150	250	-4646	-1.51
2000	313915	5765	869	0.28
2001	315281	1366	-3530	-1.12
2002	319346	4065	-831	-0.26
2003	324649	5303	407	0.13

Appendix J - Fort Hunter Liggett EIFS Analysis

EIFS REPORT

PROJECT NAME

Army Growth Fort Hunter Liggett

STUDY AREA

06053 Monterey, CA
06079 San Luis Obispo, CA

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

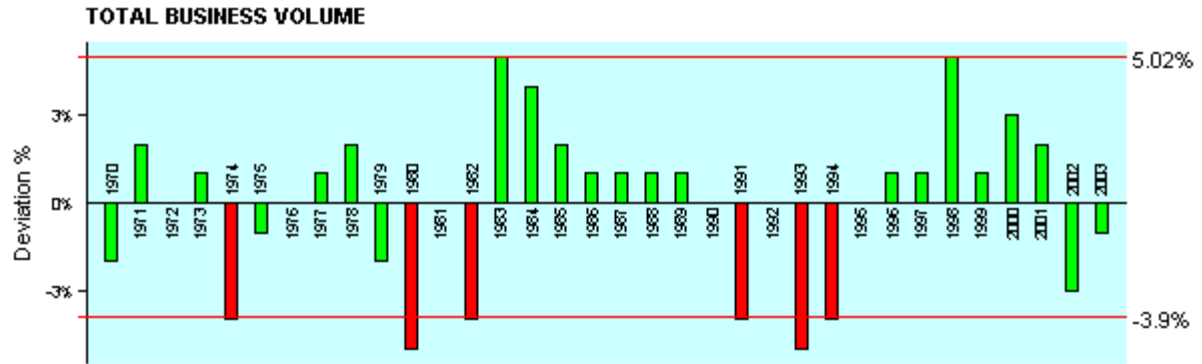
Multiplier	2.41	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$116,718,900	
Sales Volume - Total	\$199,498,300	1%
Income - Direct	\$259,700,000	
Income - Induced	\$20,829,320	
Income - Total	\$280,529,300	1.85%
Employment - Direct	7513	
Employment - Induced	723	
Employment - Total	8235	2.52%
Local Population	17430	
Local Off-base Population	8715	2.84%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	5.02 %	7.19 %	3.14 %	1.53 %
Negative RTV	-3.9 %	-3.58 %	-2.54 %	-2.13 %

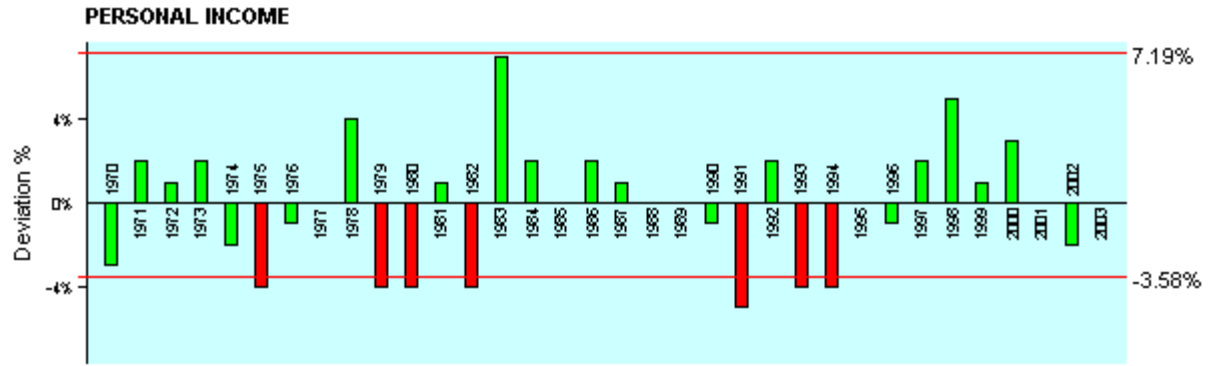
RTV DETAILED

SALES VOLUME



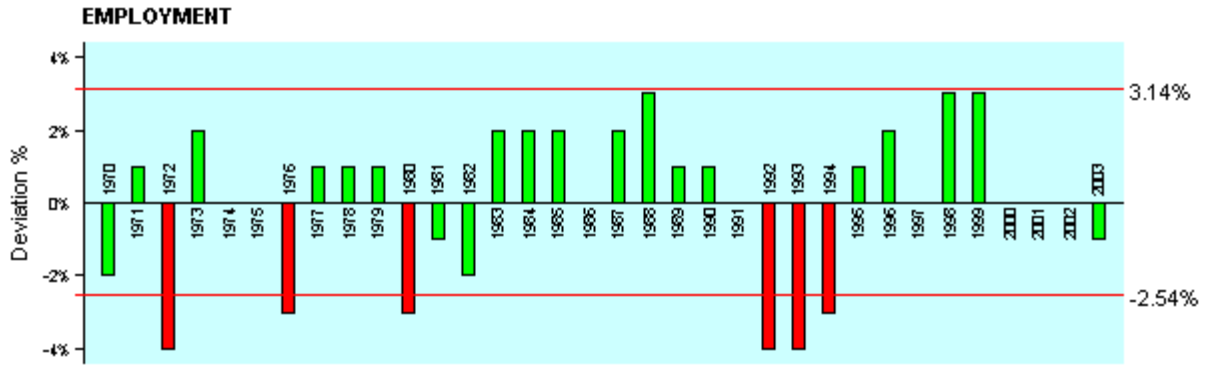
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	2713154	14271190	0	-757811	0
1970	2960980	14745680	474490	-283321	-1.92
1971	3304510	15762513	1016832	259021	1.64
1972	3567266	16480769	718256	-39555	-0.24
1973	4017892	17477830	997061	239250	1.37
1974	4478470	17510818	32988	-724824	-4.14
1975	5037796	18085688	574870	-182941	-1.01
1976	5525512	18786741	701053	-56758	-0.3
1977	6161992	19656754	870014	112203	0.57
1978	7055088	20883060	1226306	468495	2.24
1979	7946600	21137956	254896	-502915	-2.38
1980	8894568	20813289	-324667	-1082478	-5.2
1981	10161390	21643761	830472	72661	0.34
1982	10805962	21611924	-31837	-789648	-3.65
1983	12138162	23548034	1936110	1178299	5
1984	13628668	25349322	1801288	1043477	4.12
1985	14763242	26573836	1224513	466702	1.76
1986	15756078	27730697	1156862	399051	1.44
1987	16958408	28829294	1098596	340785	1.18
1988	18279176	29795057	965763	207952	0.7
1989	19792020	30875551	1080494	322683	1.05
1990	21145714	31507114	631563	-126248	-0.4
1991	21889842	31083576	-423538	-1181349	-3.8
1992	23166898	31970319	886744	128933	0.4
1993	23231902	31130749	-839571	-1597382	-5.13
1994	23655940	30752722	-378027	-1135838	-3.69
1995	24860488	31572820	820098	62287	0.2
1996	26495886	32589940	1017120	259309	0.8
1997	28131506	33757807	1167867	410056	1.21
1998	30537544	36339677	2581870	1824059	5.02
1999	32374574	37554506	1214828	457017	1.22
2000	35240262	39469093	1914588	1156777	2.93
2001	37465976	40837914	1368820	611009	1.5
2002	37717812	40358059	-479855	-1237666	-3.07
2003	38851970	40794568	436510	-321301	-0.79

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1486388	7818401	0	-401480	0
1970	1604495	7990385	171984	-229496	-2.87
1971	1798009	8576503	586118	184638	2.15
1972	1968671	9095260	518757	117277	1.29
1973	2226434	9684988	589728	188248	1.94
1974	2526139	9877203	192216	-209264	-2.12
1975	2754970	9890342	13139	-388341	-3.93
1976	2988214	10159928	269585	-131895	-1.3
1977	3318041	10584551	424623	23143	0.22
1978	3861064	11428749	844199	442719	3.87
1979	4275897	11373886	-54863	-456343	-4.01
1980	4825120	11290781	-83105	-484585	-4.29
1981	5546148	11813295	522514	121034	1.02
1982	5887460	11774920	-38375	-439855	-3.74
1983	6762734	13119704	1344784	943304	7.19
1984	7415148	13792175	672471	270991	1.96
1985	7905863	14230553	438378	36898	0.26
1986	8514436	14985407	754854	353374	2.36
1987	9169155	15587564	602156	200676	1.29
1988	9776578	15935822	348259	-53221	-0.33
1989	10461806	16320417	384595	-16885	-0.1
1990	11157203	16624232	303815	-97665	-0.59
1991	11381843	16162217	-462015	-863495	-5.34
1992	12310286	16988195	825978	424498	2.5
1993	12514948	16770030	-218164	-619644	-3.69
1994	12737313	16558507	-211523	-613003	-3.7
1995	13417712	17040494	481987	80507	0.47
1996	14091295	17332293	291799	-109681	-0.63
1997	15126118	18151342	819049	417569	2.3
1998	16398978	19514784	1363442	961962	4.93
1999	17420636	20207938	693154	291674	1.44
2000	18898164	21165944	958006	556526	2.63
2001	19750951	21528537	362593	-38887	-0.18
2002	20003934	21404209	-124327	-525807	-2.46
2003	20828770	21870208	465999	64519	0.3

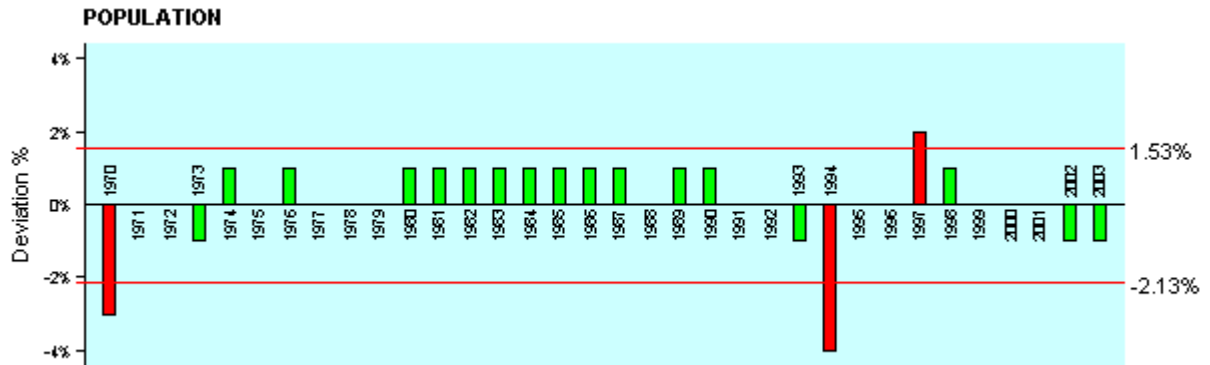
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	171487	0	-5897	0
1970	173441	1954	-3943	-2.27
1971	181079	7638	1741	0.96
1972	180152	-927	-6824	-3.79
1973	190249	10097	4200	2.21
1974	195667	5418	-479	-0.24
1975	201354	5687	-210	-0.1
1976	201894	540	-5357	-2.65
1977	210713	8819	2922	1.39
1978	219247	8534	2637	1.2
1979	227469	8222	2325	1.02
1980	227530	61	-5836	-2.56
1981	230226	2696	-3201	-1.39
1982	230609	383	-5514	-2.39
1983	240421	9812	3915	1.63
1984	250813	10392	4495	1.79
1985	260718	9905	4008	1.54
1986	266066	5348	-549	-0.21
1987	277457	11391	5494	1.98
1988	292138	14681	8784	3.01
1989	301019	8881	2984	0.99
1990	309222	8203	2306	0.75
1991	314450	5228	-669	-0.21
1992	309033	-5417	-11314	-3.66
1993	304276	-4757	-10654	-3.5
1994	300126	-4150	-10047	-3.35
1995	307756	7630	1733	0.56
1996	319237	11481	5584	1.75
1997	326293	7056	1159	0.36
1998	342950	16657	10760	3.14
1999	357893	14943	9046	2.53
2000	363883	5990	93	0.03
2001	369606	5723	-174	-0.05

2002	376319	6713	816	0.22
2003	377880	1561	-4336	-1.15

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	357776	0	-8849	0
1970	354515	-3261	-12110	-3.42
1971	362031	7516	-1333	-0.37
1972	369624	7593	-1256	-0.34
1973	375104	5480	-3369	-0.9
1974	389069	13965	5116	1.31
1975	397432	8363	-486	-0.12
1976	410202	12770	3921	0.96
1977	420180	9978	1129	0.27
1978	430043	9863	1014	0.24
1979	437732	7689	-1160	-0.27
1980	449192	11460	2611	0.58
1981	461563	12371	3522	0.76
1982	472804	11241	2392	0.51
1983	485063	12259	3410	0.7
1984	499024	13961	5112	1.02
1985	513350	14326	5477	1.07
1986	528346	14996	6147	1.16
1987	540613	12267	3418	0.63
1988	550208	9595	746	0.14
1989	563186	12978	4129	0.73
1990	575811	12625	3776	0.66
1991	584700	8889	40	0.01
1992	593708	9008	159	0.03
1993	594372	664	-8185	-1.38
1994	578591	-15781	-24630	-4.26
1995	584856	6265	-2584	-0.44
1996	595191	10335	1486	0.25
1997	613395	18204	9355	1.53

1998	627909	14514	5665	0.9
1999	639747	11838	2989	0.47
2000	650878	11131	2282	0.35
2001	659125	8247	-602	-0.09
2002	663633	4508	-4341	-0.65
2003	667495	3862	-4987	-0.75

Appendix K - Fort Irwin EIFS Analysis

EIFS REPORT

PROJECT NAME

Army Growth Fort Irwin

STUDY AREA

06071 San Bernardino, CA

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

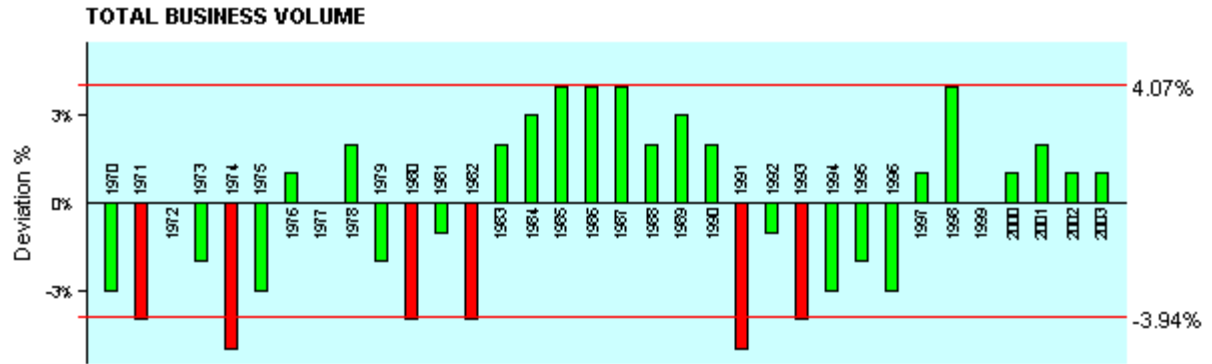
Multiplier	1.95	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$78,640,410	
Sales Volume - Total	\$161,419,800	0.35%
Income - Direct	\$259,700,000	
Income - Induced	\$13,349,370	
Income - Total	\$273,049,400	0.88%
Employment - Direct	7481	
Employment - Induced	457	
Employment - Total	7938	1.27%
Local Population	17430	
Local Off-base Population	8715	1.08%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	4.07 %	4.31 %	3.58 %	3.54 %
Negative RTV	-3.94 %	-3.44 %	-3.92 %	-2.25 %

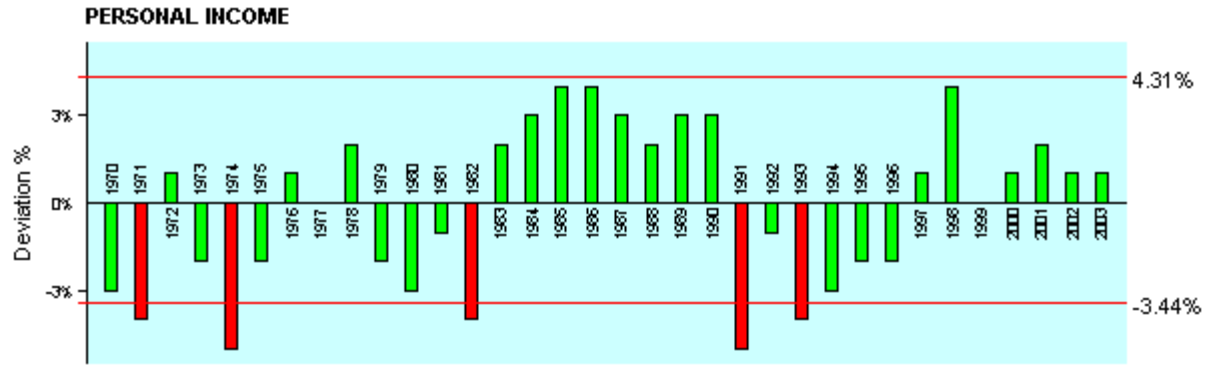
RTV DETAILED

SALES VOLUME



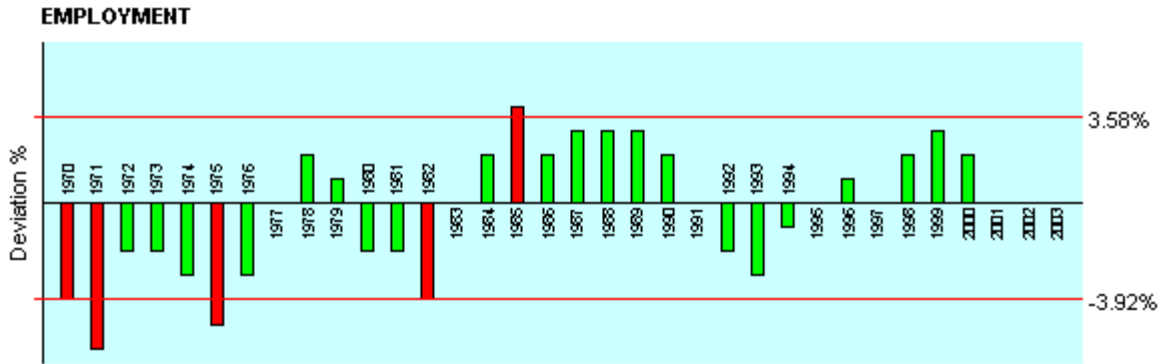
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	4808276	25291532	0	-1955923	0
1970	5325216	26519576	1228044	-727879	-2.74
1971	5754840	27450587	931011	-1024912	-3.73
1972	6389230	29518243	2067656	111733	0.38
1973	7072858	30766932	1248690	-707233	-2.3
1974	7950680	31087159	320227	-1635696	-5.26
1975	8977648	32229756	1142598	-813325	-2.52
1976	10179626	34610728	2380972	425049	1.23
1977	11464858	36572897	1962169	6246	0.02
1978	13281762	39314016	2741118	785196	2
1979	15272400	40624584	1310568	-645355	-1.59
1980	17511724	40977434	352850	-1603073	-3.91
1981	20045408	42696719	1719285	-236638	-0.55
1982	21471104	42942208	245489	-1710434	-3.98
1983	23548540	45684168	2741960	786037	1.72
1984	26513196	49314545	3630377	1674454	3.4
1985	29691046	53443883	4129338	2173415	4.07
1986	32691662	57537325	4093442	2137519	3.72
1987	36272460	61663182	4125857	2169934	3.52
1988	39830600	64923878	3260696	1304773	2.01
1989	44106544	68806209	3882331	1926408	2.8
1990	48702516	72566749	3760540	1804617	2.49
1991	50197280	71280138	-1286611	-3242534	-4.55
1992	52371280	72272366	992229	-963694	-1.33
1993	53353440	71493610	-778757	-2734680	-3.83
1994	54641184	71033539	-460070	-2415993	-3.4
1995	56475040	71723301	689762	-1266161	-1.77
1996	58385056	71813619	90318	-1865605	-2.6
1997	61908564	74290277	2476658	520735	0.7
1998	66503224	79138837	4848560	2892637	3.66
1999	70190224	81420660	2281823	325900	0.4
2000	75279584	84313134	2892474	936551	1.11
2001	80565960	87816896	3503762	1547839	1.76
2002	84715776	90645880	2828984	873061	0.96
2003	89284592	93748822	3102941	1147018	1.22

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	2439763	12833153	0	-976493	0
1970	2703137	13461622	628469	-348024	-2.59
1971	2908806	13875005	413382	-563111	-4.06
1972	3243903	14986832	1111827	135334	0.9
1973	3589611	15614808	627976	-348517	-2.23
1974	4036202	15781550	166742	-809751	-5.13
1975	4563503	16382976	601426	-375067	-2.29
1976	5179170	17609178	1226202	249709	1.42
1977	5833535	18608977	999799	23306	0.13
1978	6731867	19926326	1317350	340857	1.71
1979	7698282	20477430	551104	-425389	-2.08
1980	8872751	20762237	284807	-691686	-3.33
1981	10144635	21608073	845835	-130658	-0.6
1982	10882308	21764616	156543	-819950	-3.77
1983	11909510	23104449	1339833	363340	1.57
1984	13395339	24915331	1810881	834388	3.35
1985	15031619	27056914	2141584	1165091	4.31
1986	16545424	29119946	2063032	1086539	3.73
1987	18329332	31159864	2039918	1063425	3.41
1988	20082940	32735192	1575328	598835	1.83
1989	22276212	34750891	2015699	1039206	2.99
1990	24606270	36663342	1912452	935959	2.55
1991	25310136	35940393	-722949	-1699442	-4.73
1992	26388596	36416262	475869	-500624	-1.37
1993	26841012	35966956	-449306	-1425799	-3.96
1994	27529488	35788334	-178622	-1155115	-3.23
1995	28374516	36035635	247301	-729192	-2.02
1996	29449680	36223106	187471	-789022	-2.18
1997	31179596	37415515	1192409	215916	0.58
1998	33523752	39893265	2477750	1501257	3.76
1999	35314520	40964843	1071578	95085	0.23
2000	37772136	42304792	1339949	363456	0.86
2001	40431224	44070034	1765242	788749	1.79
2002	42460540	45432778	1362744	386251	0.85
2003	44771824	47010415	1577637	601144	1.28

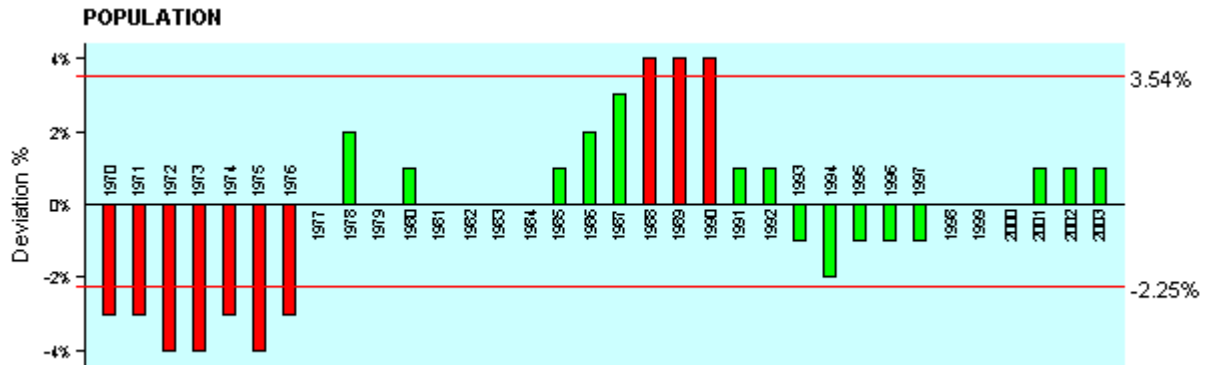
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	243210	0	-15157	0
1970	247450	4240	-10917	-4.41
1971	248085	635	-14522	-5.85
1972	257251	9166	-5991	-2.33
1973	267393	10142	-5015	-1.88
1974	273578	6185	-8972	-3.28
1975	274274	696	-14461	-5.27
1976	281191	6917	-8240	-2.93
1977	297424	16233	1076	0.36
1978	318322	20898	5741	1.8
1979	337033	18711	3554	1.05
1980	345910	8877	-6280	-1.82
1981	352766	6856	-8301	-2.35
1982	352103	-663	-15820	-4.49
1983	366573	14470	-687	-0.19
1984	388038	21465	6308	1.63
1985	418169	30131	14974	3.58
1986	443108	24939	9782	2.21
1987	470474	27366	12209	2.6
1988	501471	30997	15840	3.16
1989	531623	30152	14995	2.82
1990	555328	23705	8548	1.54
1991	572532	17204	2047	0.36
1992	573410	878	-14279	-2.49
1993	569642	-3768	-18925	-3.32
1994	578895	9253	-5904	-1.02
1995	593968	15073	-84	-0.01
1996	613389	19421	4264	0.7
1997	626701	13312	-1845	-0.29
1998	656700	29999	14842	2.26
1999	693537	36837	21680	3.13
2000	722006	28469	13312	1.84
2001	739628	17622	2465	0.33

2002	755620	15992	835	0.11
2003	773690	18070	2913	0.38

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	671688	0	-34014	0
1970	682857	11169	-22845	-3.35
1971	693604	10747	-23267	-3.35
1972	696255	2651	-31363	-4.5
1973	704268	8013	-26001	-3.69
1974	713868	9600	-24414	-3.42
1975	719939	6071	-27943	-3.88
1976	734488	14549	-19465	-2.65
1977	769670	35182	1168	0.15
1978	823881	54211	20197	2.45
1979	856803	32922	-1092	-0.13
1980	902956	46153	12139	1.34
1981	932934	29978	-4036	-0.43
1982	966760	33826	-188	-0.02
1983	996565	29805	-4209	-0.42
1984	1027817	31252	-2762	-0.27
1985	1072242	44425	10411	0.97
1986	1124169	51927	17913	1.59
1987	1192197	68028	34014	2.85
1988	1271189	78992	44978	3.54
1989	1352911	81722	47708	3.53
1990	1437315	84404	50390	3.51
1991	1492824	55509	21495	1.44
1992	1534977	42153	8139	0.53
1993	1549427	14450	-19564	-1.26
1994	1558854	9427	-24587	-1.58
1995	1576773	17919	-16095	-1.02
1996	1596584	19811	-14203	-0.89
1997	1618438	21854	-12160	-0.75

1998	1646304	27866	-6148	-0.37
1999	1681601	35297	1283	0.08
2000	1719107	37506	3492	0.2
2001	1765578	46471	12457	0.71
2002	1808893	43315	9301	0.51
2003	1862195	53302	19288	1.04

Appendix L - Fort Lewis EIFS Analysis

EIFS REPORT

PROJECT NAME

Army Growth Fort Lewis

STUDY AREA

53053 Pierce, WA
53067 Thurston, WA

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

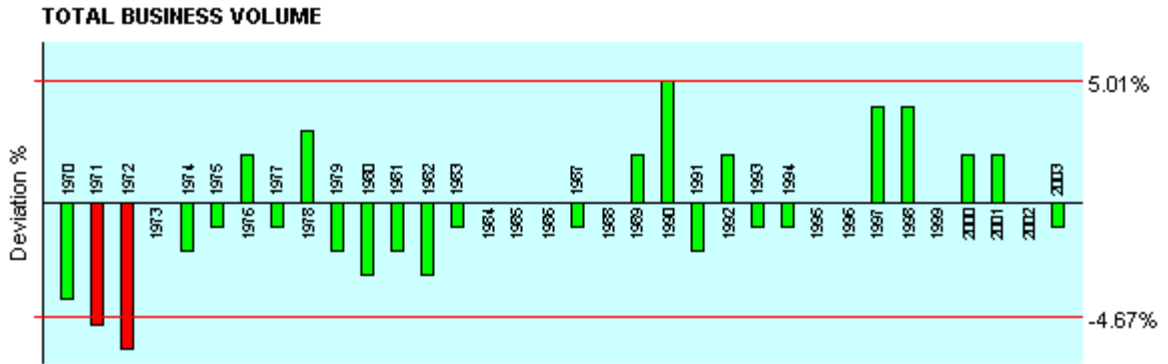
Multiplier	2.43	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$118,374,500	
Sales Volume - Total	\$201,153,900	0.78%
Income - Direct	\$259,700,000	
Income - Induced	\$22,808,140	
Income - Total	\$282,508,100	1.35%
Employment - Direct	7531	
Employment - Induced	759	
Employment - Total	8290	1.98%
Local Population	17430	
Local Off-base Population	8715	2.02%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	5.01 %	4.96 %	2.79 %	1.97 %
Negative RTV	-4.67 %	-4.06 %	-7.1 %	-2.54 %

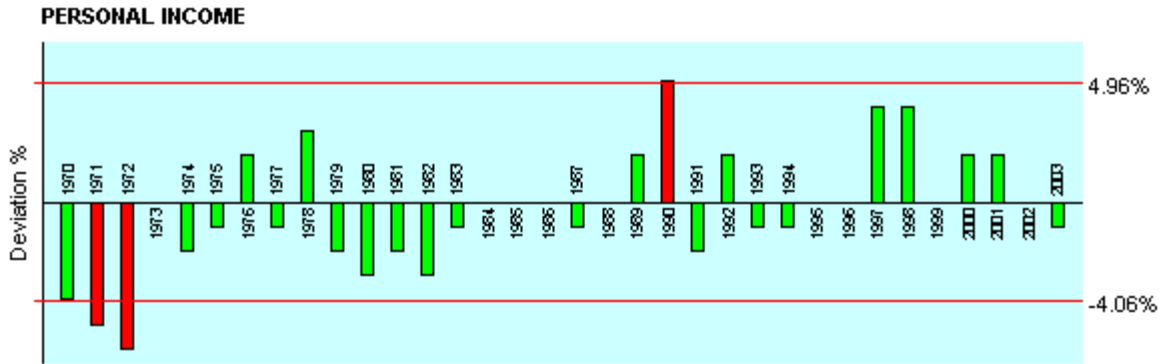
RTV DETAILED

SALES VOLUME



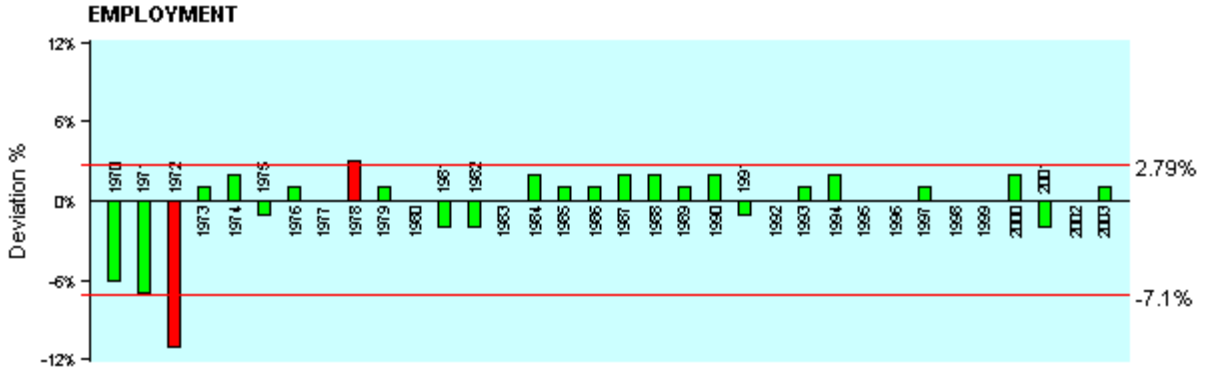
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	3663956	19272409	0	-1193327	0
1970	3939364	19618033	345624	-847703	-4.32
1971	4165340	19868672	250639	-942688	-4.74
1972	4291438	19826444	-42228	-1235555	-6.23
1973	4819374	20964277	1137833	-55494	-0.26
1974	5539580	21659758	695481	-497846	-2.3
1975	6281812	22551705	891947	-301380	-1.34
1976	7107766	24166404	1614699	421372	1.74
1977	7855838	25060123	893719	-299608	-1.2
1978	9101606	26940754	1880631	687304	2.55
1979	10344594	27516620	575866	-617461	-2.24
1980	11891616	27826381	309761	-883566	-3.18
1981	13418212	28580792	754410	-438917	-1.54
1982	14437904	28875808	295016	-898311	-3.11
1983	15309530	29700488	824680	-368647	-1.24
1984	16636302	30943522	1243034	49707	0.16
1985	17859598	32147276	1203755	10428	0.03
1986	18961960	33373050	1225773	32446	0.1
1987	20085014	34144524	771474	-421853	-1.24
1988	21629048	35255348	1110824	-82503	-0.23
1989	23734096	37025190	1769842	576515	1.56
1990	27003196	40234762	3209572	2016245	5.01
1991	28534742	40519334	284572	-908755	-2.24
1992	30924834	42676271	2156937	963610	2.26
1993	32503888	43555210	878939	-314388	-0.72
1994	33971710	44163223	608013	-585314	-1.33
1995	35895070	45586739	1423516	230189	0.5
1996	38181346	46963056	1376317	182990	0.39
1997	41710204	50052245	3089189	1895862	3.79
1998	44639550	53121064	3068820	1875493	3.53
1999	46894924	54398112	1277047	83720	0.15
2000	50904218	57012724	2614612	1421285	2.49
2001	54246640	59128838	2116113	922786	1.56
2002	56233638	60169993	1041155	-152172	-0.25
2003	58132228	61038839	868847	-324480	-0.53

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1848106	9721038	0	-596213	0
1970	1983704	9878846	157808	-438405	-4.44
1971	2095463	9995359	116513	-479700	-4.8
1972	2161606	9986620	-8739	-604952	-6.06
1973	2439573	10612143	625523	29310	0.28
1974	2797070	10936544	324401	-271812	-2.49
1975	3167073	11369792	433248	-162965	-1.43
1976	3580564	12173918	804126	207913	1.71
1977	3956082	12619902	445984	-150229	-1.19
1978	4583753	13567909	948007	351794	2.59
1979	5209534	13857360	289452	-306761	-2.21
1980	5976305	13984554	127193	-469020	-3.35
1981	6742200	14360886	376332	-219881	-1.53
1982	7252786	14505572	144686	-451527	-3.11
1983	7686427	14911668	406096	-190117	-1.27
1984	8350786	15532462	620794	24581	0.16
1985	8963188	16133738	601276	5063	0.03
1986	9517554	16750895	617157	20944	0.13
1987	10074840	17127228	376333	-219880	-1.28
1988	10848494	17683045	555817	-40396	-0.23
1989	11911863	18582506	899461	303248	1.63
1990	13543521	20179846	1597340	1001127	4.96
1991	14309461	20319435	139588	-456625	-2.25
1992	15510801	21404905	1085471	489258	2.29
1993	16307276	21851750	446844	-149369	-0.68
1994	17041089	22153416	301666	-294547	-1.33
1995	18002766	22863513	710097	113884	0.5
1996	19151333	23556140	692627	96414	0.41
1997	20917815	25101378	1545238	949025	3.78
1998	22388361	26642150	1540772	944559	3.55
1999	23522972	27286648	644498	48285	0.18
2000	25509714	28570880	1284232	688019	2.41
2001	27190294	29637420	1066541	470328	1.59
2002	28177359	30149774	512354	-83859	-0.28
2003	29131884	30588478	438704	-157509	-0.51

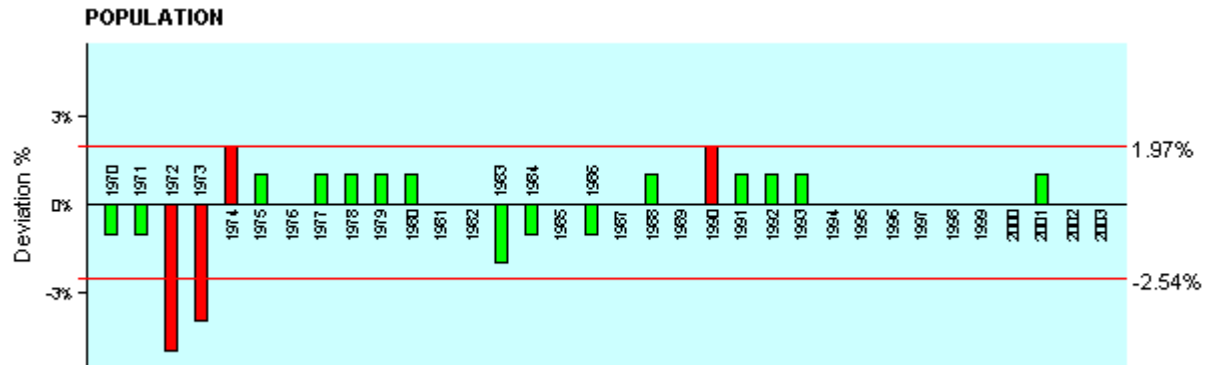
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	228586	0	-6707	0
1970	221639	-6947	-13654	-6.16
1971	214229	-7410	-14117	-6.59
1972	199756	-14473	-21180	-10.6
1973	208471	8715	2008	0.96
1974	218722	10251	3544	1.62
1975	222393	3671	-3036	-1.37
1976	231301	8908	2201	0.95
1977	237065	5764	-943	-0.4
1978	250776	13711	7004	2.79
1979	259576	8800	2093	0.81
1980	266857	7281	574	0.22
1981	268975	2118	-4589	-1.71
1982	270812	1837	-4870	-1.8
1983	278219	7407	700	0.25
1984	290647	12428	5721	1.97
1985	301190	10543	3836	1.27
1986	310905	9715	3008	0.97
1987	325169	14264	7557	2.32
1988	340252	15083	8376	2.46
1989	351281	11029	4322	1.23
1990	363854	12573	5866	1.61
1991	366136	2282	-4425	-1.21
1992	371569	5433	-1274	-0.34
1993	381779	10210	3503	0.92
1994	397854	16075	9368	2.35
1995	402729	4875	-1832	-0.45
1996	408668	5939	-768	-0.19
1997	418982	10314	3607	0.86
1998	426601	7619	912	0.21
1999	433284	6683	-24	-0.01
2000	447546	14262	7555	1.69
2001	446861	-685	-7392	-1.65

2002	453020	6159	-548	-0.12
2003	463339	10319	3612	0.78

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	480736	0	-13734	0
1970	490236	9500	-4234	-0.86
1971	497542	7306	-6428	-1.29
1972	486504	-11038	-24772	-5.09
1973	480906	-5598	-19332	-4.02
1974	504564	23658	9924	1.97
1975	525732	21168	7434	1.41
1976	536948	11216	-2518	-0.47
1977	553549	16601	2867	0.52
1978	574491	20942	7208	1.25
1979	592365	17874	4140	0.7
1980	614079	21714	7980	1.3
1981	629458	15379	1645	0.26
1982	642085	12627	-1107	-0.17
1983	645741	3656	-10078	-1.56
1984	655589	9848	-3886	-0.59
1985	666902	11313	-2421	-0.36
1986	676604	9702	-4032	-0.6
1987	690832	14228	494	0.07
1988	711355	20523	6789	0.95
1989	725934	14579	845	0.12
1990	753533	27599	13865	1.84
1991	774147	20614	6880	0.89
1992	795467	21320	7586	0.95
1993	813388	17921	4187	0.51
1994	825394	12006	-1728	-0.21
1995	840833	15439	1705	0.2
1996	852493	11660	-2074	-0.24
1997	864644	12151	-1583	-0.18

1998	881050	16406	2672	0.3
1999	897535	16485	2751	0.31
2000	912334	14799	1065	0.12
2001	930995	18661	4927	0.53
2002	948451	17456	3722	0.39
2003	961440	12989	-745	-0.08

Appendix M - Fort Riley EIFS Analysis

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Army Growth Fort Riley

STUDY AREA

- 20027 Clay, KS
- 20041 Dickinson, KS
- 20061 Geary, KS
- 20127 Morris, KS
- 20143 Ottawa, KS
- 20149 Pottawatomie, KS
- 20161 Riley, KS
- 20197 Wabaunsee, KS

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

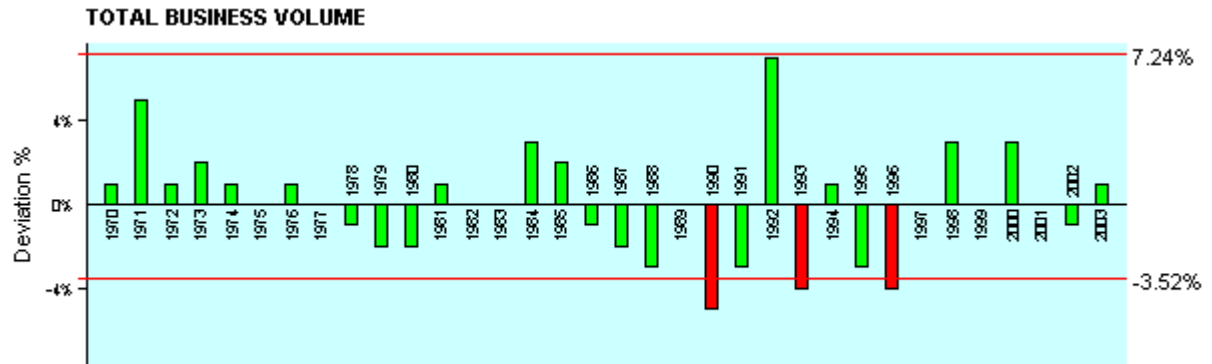
Multiplier	2.19	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$98,507,460	
Sales Volume - Total	\$181,286,800	4.44%
Income - Direct	\$259,700,000	
Income - Induced	\$18,652,730	
Income - Total	\$278,352,700	8.97%
Employment - Direct	7563	
Employment - Induced	670	
Employment - Total	8233	8.75%
Local Population	17430	
Local Off-base Population	8715	11.11%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.24 %	8.57 %	4.43 %	6.24 %
Negative RTV	-3.52 %	-3.16 %	-3.24 %	-2.08 %

RTV DETAILED

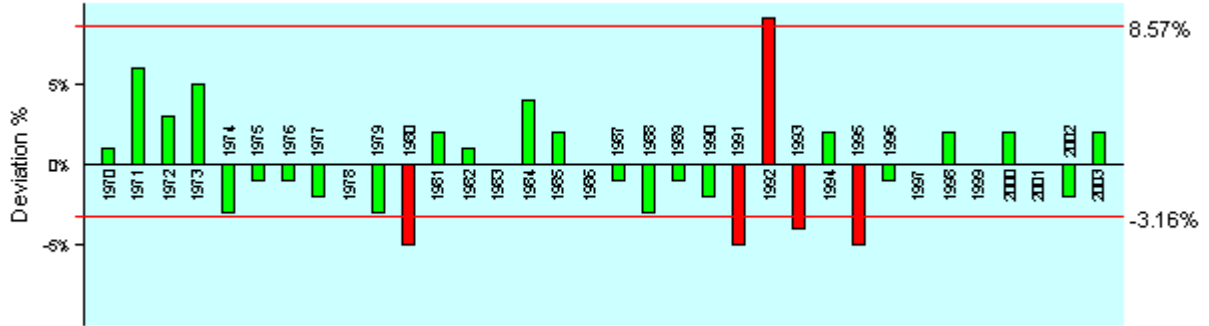
SALES VOLUME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	903828	4754135	0	-1,00073	0
1970	985118	4905888	151752	51679	1.05
1971	1106028	5275754	369866	269793	5.11
1972	1176830	5436955	161201	61128	1.12
1973	1295314	5634616	197661	97588	1.73
1974	1474216	5764185	129569	29496	0.51
1975	1632176	5859512	95327	-4746	-0.08
1976	1774498	6033293	173781	73708	1.22
1977	1931370	6161070	127777	27704	0.45
1978	2104278	6228663	67593	-32480	-0.52
1979	2324024	6181904	-46759	-146832	-2.38
1980	2622994	6137806	-44098	-144171	-2.35
1981	2944620	6272041	134235	34162	0.54
1982	3187486	6374972	102931	2858	0.04
1983	3350944	6500831	125859	25786	0.4
1984	3673934	6833517	332686	232613	3.4
1985	3914550	7046190	212673	112600	1.6
1986	4035936	7103247	57057	-43016	-0.61
1987	4164060	7078902	-24345	-124418	-1.76
1988	4279572	6975702	-103200	-203273	-2.91
1989	4537350	7078266	102564	2491	0.04
1990	4601678	6856500	-221766	-321839	-4.69
1991	4774460	6779733	-76767	-176840	-2.61
1992	5374266	7416487	636754	536681	7.24
1993	5416396	7257971	-158516	-258589	-3.56
1994	5704466	7415806	157835	57762	0.78
1995	5737210	7286257	-129549	-229622	-3.15
1996	5794996	7127845	-158412	-258485	-3.63
1997	6037256	7244707	116862	16789	0.23
1998	6349426	7555817	311110	211037	2.79
1999	6602954	7659427	103610	3537	0.05
2000	7135574	7991843	332416	232343	2.91
2001	7415764	8083183	91340	-8733	-0.11
2002	7564854	8094394	11211	-88862	-1.1
2003	7863508	8256683	162290	62217	0.75

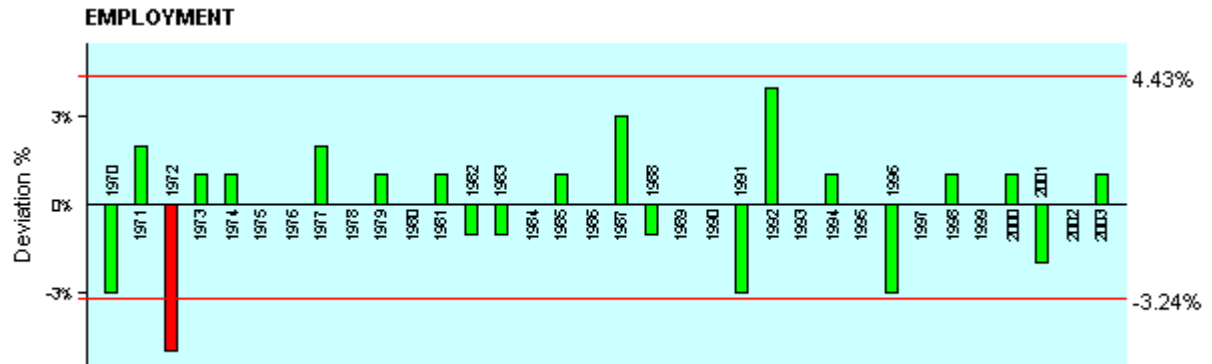
INCOME

PERSONAL INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	481217	2531201	0	-46147	0
1970	520882	2593992	62791	16644	0.64
1971	589892	2813785	219792	173645	6.17
1972	639920	2956430	142646	96499	3.26
1973	728967	3171006	214576	168429	5.31
1974	797932	3119914	-51092	-97239	-3.12
1975	870989	3126851	6936	-39211	-1.25
1976	925522	3146775	19924	-26223	-0.83
1977	979926	3125964	-20811	-66958	-2.14
1978	1076833	3187426	61462	15315	0.48
1979	1184101	3149709	-37717	-83864	-2.66
1980	1305417	3054676	-95033	-141180	-4.62
1981	1480333	3153109	98434	52287	1.66
1982	1613365	3226730	73621	27474	0.85
1983	1686587	3271979	45249	-898	-0.03
1984	1862738	3464693	192714	146567	4.23
1985	1986931	3576476	111783	65636	1.84
1986	2055282	3617296	40821	-5326	-0.15
1987	2135893	3631018	13722	-32425	-0.89
1988	2183793	3559583	-71436	-117583	-3.3
1989	2284988	3564581	4999	-41148	-1.15
1990	2381452	3548363	-16218	-62365	-1.76
1991	2420601	3437253	-111110	-157257	-4.58
1992	2760916	3810064	372811	326664	8.57
1993	2755670	3692598	-117466	-163613	-4.43
1994	2927017	3805122	112524	66377	1.74
1995	2896143	3678102	-127020	-173167	-4.71
1996	2992839	3681192	3090	-43057	-1.17
1997	3102476	3722971	41779	-4368	-0.12
1998	3230994	3844883	121912	75765	1.97
1999	3353161	3889667	44784	-1363	-0.04
2000	3585235	4015463	125796	79649	1.98
2001	3737350	4073712	58248	12101	0.3
2002	3762963	4026370	-47341	-93488	-2.32
2003	3948892	4146337	119966	73819	1.78

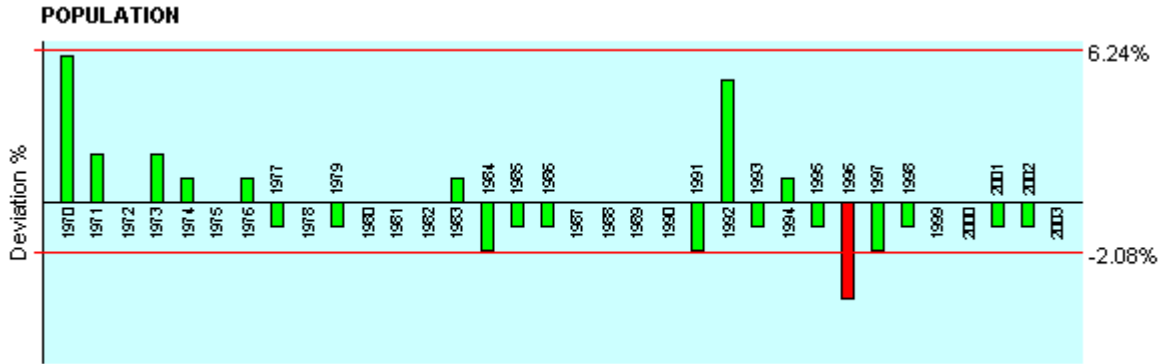
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	77289	0	-613	0
1970	75854	-1435	-2048	-2.7
1971	77698	1844	1231	1.58
1972	74695	-3003	-3616	-4.84
1973	76133	1438	825	1.08
1974	77206	1073	460	0.6
1975	77628	422	-191	-0.25
1976	78309	681	68	0.09
1977	80602	2293	1680	2.08
1978	81598	996	383	0.47
1979	83011	1413	800	0.96
1980	83680	669	56	0.07
1981	85326	1646	1033	1.21
1982	85051	-275	-888	-1.04
1983	84830	-221	-834	-0.98
1984	85217	387	-226	-0.27
1985	86299	1082	469	0.54
1986	86654	355	-258	-0.3
1987	89629	2975	2362	2.64
1988	88998	-631	-1244	-1.4
1989	89373	375	-238	-0.27
1990	89894	521	-92	-0.1
1991	87984	-1910	-2523	-2.87
1992	92704	4720	4107	4.43
1993	92948	244	-369	-0.4
1994	94140	1192	579	0.62
1995	95061	921	308	0.32
1996	93100	-1961	-2574	-2.76
1997	94098	998	385	0.41
1998	95623	1525	912	0.95
1999	96640	1017	404	0.42

2000	97788	1148	535	0.55
2001	96837	-951	-1564	-1.62
2002	97167	330	-283	-0.29
2003	98735	1568	955	0.97

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	136623	0	-512	0
1970	146259	9636	9124	6.24
1971	149577	3318	2806	1.88
1972	150427	850	338	0.22
1973	154521	4094	3582	2.32
1974	156410	1889	1377	0.88
1975	157102	692	180	0.11
1976	158847	1745	1233	0.78
1977	157088	-1759	-2271	-1.45
1978	158283	1195	683	0.43
1979	157909	-374	-886	-0.56
1980	157712	-197	-709	-0.45
1981	158869	1157	645	0.41
1982	159770	901	389	0.24
1983	162372	2602	2090	1.29
1984	160448	-1924	-2436	-1.52
1985	159463	-985	-1497	-0.94
1986	158810	-653	-1165	-0.73
1987	159251	441	-71	-0.04
1988	159952	701	189	0.12
1989	160126	174	-338	-0.21
1990	160338	212	-300	-0.19
1991	157386	-2952	-3464	-2.2
1992	165374	7988	7476	4.52
1993	163518	-1856	-2368	-1.45
1994	165592	2074	1562	0.94
1995	165214	-378	-890	-0.54

1996	159123	-6091	-6603	-4.15
1997	156952	-2171	-2683	-1.71
1998	156529	-423	-935	-0.6
1999	156341	-188	-700	-0.45
2000	156174	-167	-679	-0.43
2001	154772	-1402	-1914	-1.24
2002	153818	-954	-1466	-0.95
2003	154550	732	220	0.14

Appendix N - Fort Polk EIFS Analysis

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Army Growth Fort Polk

STUDY AREA

22011 Beauregard, LA
 22079 Rapides, LA
 22115 Vernon, LA

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

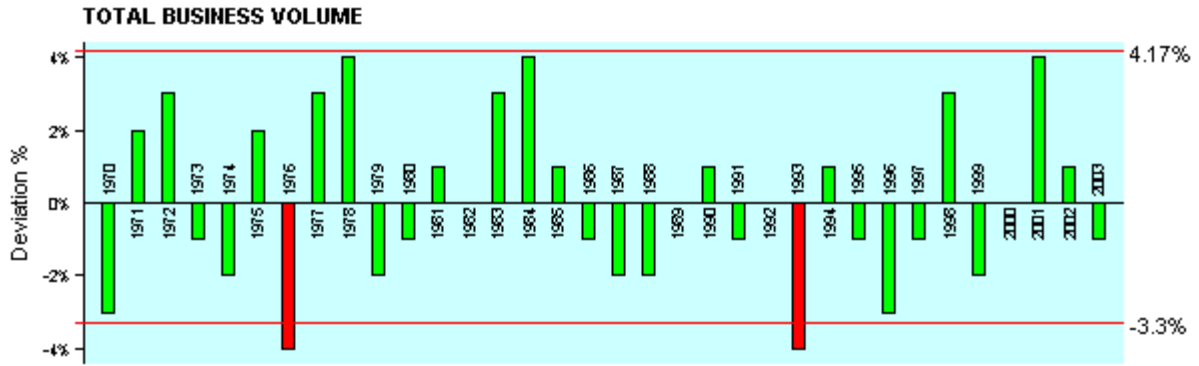
Multiplier	2.02	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$84,434,960	
Sales Volume - Total	\$167,214,300	2.95%
Income - Direct	\$259,700,000	
Income - Induced	\$17,216,580	
Income - Total	\$276,916,600	6.77%
Employment - Direct	7582	
Employment - Induced	593	
Employment - Total	8175	7.92%
Local Population	17430	
Local Off-base Population	8715	8.29%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	4.17 %	4.49 %	5.2 %	4.12 %
Negative RTV	-3.3 %	-2.59 %	-5.46 %	-3.14 %

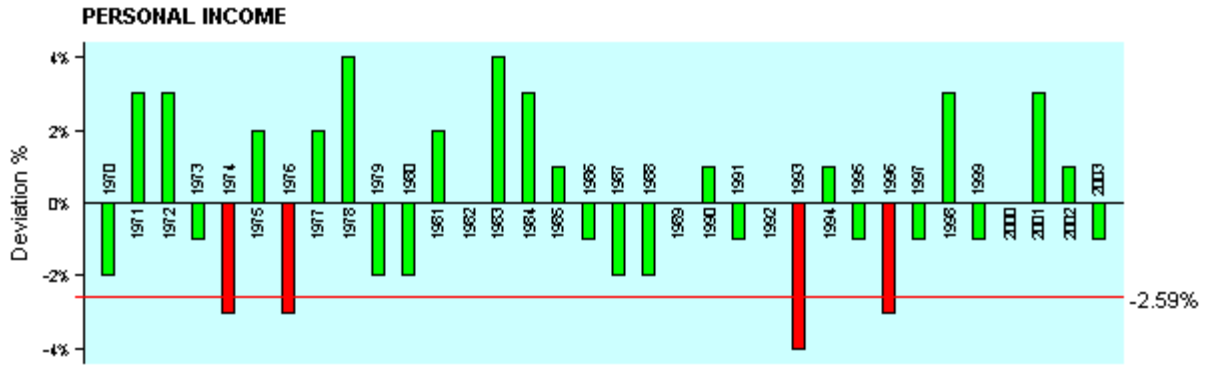
RTV DETAILED

SALES VOLUME



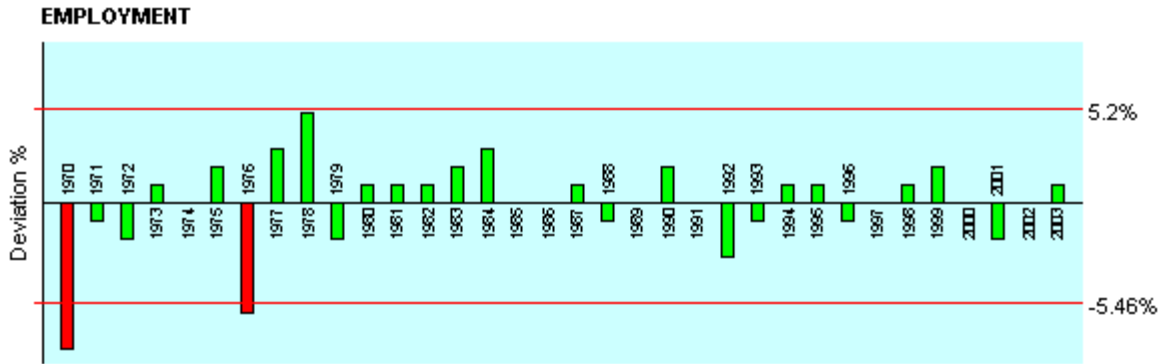
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1097026	5770357	0	-156924	0
1970	1160816	5780864	10507	-146417	-2.53
1971	1272948	6071962	291098	134174	2.21
1972	1383546	6391983	320021	163097	2.55
1973	1490004	6481517	89535	-67389	-1.04
1974	1657004	6478886	-2632	-159556	-2.46
1975	1893032	6795985	317099	160175	2.36
1976	1958708	6659607	-136378	-293302	-4.4
1977	2197134	7008857	349250	192326	2.74
1978	2526128	7477339	468481	311557	4.17
1979	2805878	7463635	-13703	-170627	-2.29
1980	3236076	7572418	108782	-48142	-0.64
1981	3677464	7832998	260580	103656	1.32
1982	3989658	7979316	146318	-10606	-0.13
1983	4322114	8384901	405585	248661	2.97
1984	4771628	8875228	490327	333403	3.76
1985	5070990	9127782	252554	95630	1.05
1986	5237442	9217898	90116	-66808	-0.72
1987	5415570	9206469	-11429	-168353	-1.83
1988	5604670	9135612	-70857	-227781	-2.49
1989	5983538	9334319	198707	41783	0.45
1990	6443992	9601548	267229	110305	1.15
1991	6809502	9669493	67945	-88979	-0.92
1992	7092520	9787678	118185	-38739	-0.4
1993	7144622	9573793	-213884	-370808	-3.87
1994	7525478	9783121	209328	52404	0.54
1995	7724946	9810681	27560	-129364	-1.32
1996	7892116	9707303	-103379	-260303	-2.68
1997	8132824	9759389	52086	-104838	-1.07
1998	8608576	10244205	484817	327893	3.2
1999	8829214	10241888	-2317	-159241	-1.55
2000	9284340	10398461	156573	-351	0
2001	10041654	10945403	546942	390018	3.56
2002	10459236	11191383	245980	89056	0.8
2003	10726392	11262712	71329	-85595	-0.76

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	555713	2923050	0	-77941	0
1970	588889	2932667	9617	-68324	-2.33
1971	648090	3091389	158722	80781	2.61
1972	704649	3255478	164089	86148	2.65
1973	762281	3315922	60444	-17497	-0.53
1974	841034	3288443	-27479	-105420	-3.21
1975	956166	3432636	144193	66252	1.93
1976	998460	3394764	-37872	-115813	-3.41
1977	1113317	3551481	156717	78776	2.22
1978	1283851	3800199	248718	170777	4.49
1979	1428340	3799384	-815	-78756	-2.07
1980	1622521	3796699	-2685	-80626	-2.12
1981	1847170	3934472	137773	59832	1.52
1982	2001477	4002954	68482	-9459	-0.24
1983	2182420	4233895	230941	153,000	3.61
1984	2397635	4459601	225706	147765	3.31
1985	2548621	4587518	127917	49976	1.09
1986	2631170	4630859	43341	-34600	-0.75
1987	2723553	4630040	-819	-78760	-1.7
1988	2830648	4613956	-16084	-94025	-2.04
1989	3013393	4700893	86937	8996	0.19
1990	3237895	4824464	123570	45629	0.95
1991	3413959	4847822	23358	-54583	-1.13
1992	3573105	4930885	83063	5122	0.1
1993	3598640	4822178	-108707	-186648	-3.87
1994	3790419	4927545	105367	27426	0.56
1995	3888262	4938093	10548	-67393	-1.36
1996	3975919	4890380	-47712	-125653	-2.57
1997	4091767	4910120	19740	-58201	-1.19
1998	4323341	5144776	234655	156714	3.05
1999	4438347	5148483	3707	-74234	-1.44
2000	4665011	5224812	76330	-1611	-0.03
2001	5038790	5492281	267469	189528	3.45
2002	5238151	5604822	112540	34599	0.62
2003	5381878	5650972	46150	-31791	-0.56

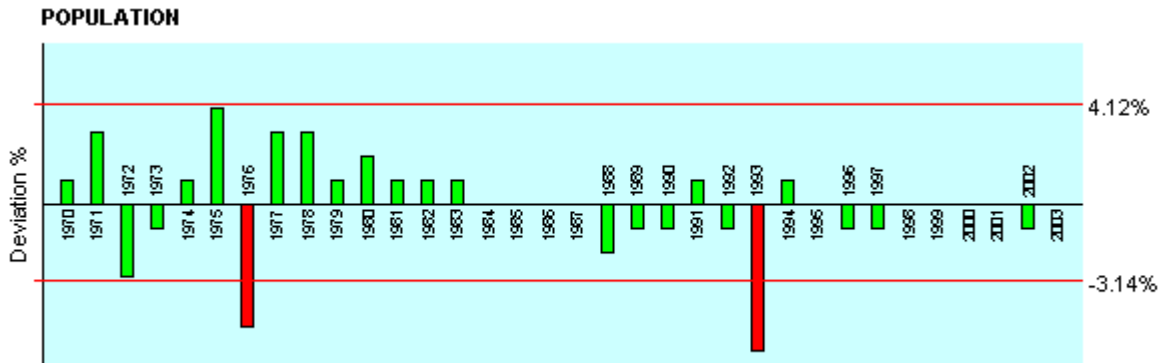
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	92158	0	-486	0
1970	85665	-6493	-6979	-8.15
1971	85409	-256	-742	-0.87
1972	84038	-1371	-1857	-2.21
1973	85444	1406	920	1.08
1974	85565	121	-365	-0.43
1975	87736	2171	1685	1.92
1976	83042	-4694	-5180	-6.24
1977	85739	2697	2211	2.58
1978	90954	5215	4729	5.2
1979	89944	-1010	-1496	-1.66
1980	91358	1414	928	1.02
1981	92551	1193	707	0.76
1982	93526	975	489	0.52
1983	95676	2150	1664	1.74
1984	99145	3469	2983	3.01
1985	99680	535	49	0.05
1986	99703	23	-463	-0.46
1987	101039	1336	850	0.84
1988	1,00063	-976	-1462	-1.46
1989	100578	515	29	0.03
1990	102756	2178	1692	1.65
1991	103280	524	38	0.04
1992	101100	-2180	-2666	-2.64
1993	100119	-981	-1467	-1.47
1994	101206	1087	601	0.59
1995	103111	1905	1419	1.38
1996	102813	-298	-784	-0.76
1997	103227	414	-72	-0.07
1998	104920	1693	1207	1.15
1999	107633	2713	2227	2.07
2000	108289	656	170	0.16
2001	106483	-1806	-2292	-2.15

2002	107488	1005	519	0.48
2003	109169	1681	1195	1.09

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	193567	0	-511	0
1970	195404	1837	1326	0.68
1971	201174	5770	5259	2.61
1972	195241	-5933	-6444	-3.3
1973	194580	-661	-1172	-0.6
1974	197959	3379	2868	1.45
1975	206999	9040	8529	4.12
1976	197547	-9452	-9963	-5.04
1977	204191	6644	6133	3
1978	211568	7377	6866	3.25
1979	214219	2651	2140	1
1980	219494	5275	4764	2.17
1981	223284	3790	3279	1.47
1982	226170	2886	2375	1.05
1983	229729	3559	3048	1.33
1984	230712	983	472	0.2
1985	230350	-362	-873	-0.38
1986	230553	203	-308	-0.13
1987	230448	-105	-616	-0.27
1988	227238	-3210	-3721	-1.64
1989	224571	-2667	-3178	-1.42
1990	223645	-926	-1437	-0.64
1991	226312	2667	2156	0.95
1992	225337	-975	-1486	-0.66
1993	212519	-12818	-13329	-6.27
1994	214123	1604	1093	0.51
1995	213779	-344	-855	-0.4
1996	212268	-1511	-2022	-0.95
1997	210330	-1938	-2449	-1.16

1998	210345	15	-496	-0.24
1999	211142	797	286	0.14
2000	212004	862	351	0.17
2001	211802	-202	-713	-0.34
2002	211186	-616	-1127	-0.53
2003	211468	282	-229	-0.11

Appendix O - Fort Stewart EIFS Analysis

EIFS REPORT

PROJECT NAME

Army Growth Fort Stewart

STUDY AREA

13029 Bryan, GA
 13051 Chatham, GA
 13109 Evans, GA
 13179 Liberty, GA
 13183 Long, GA
 13267 Tattnall, GA

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

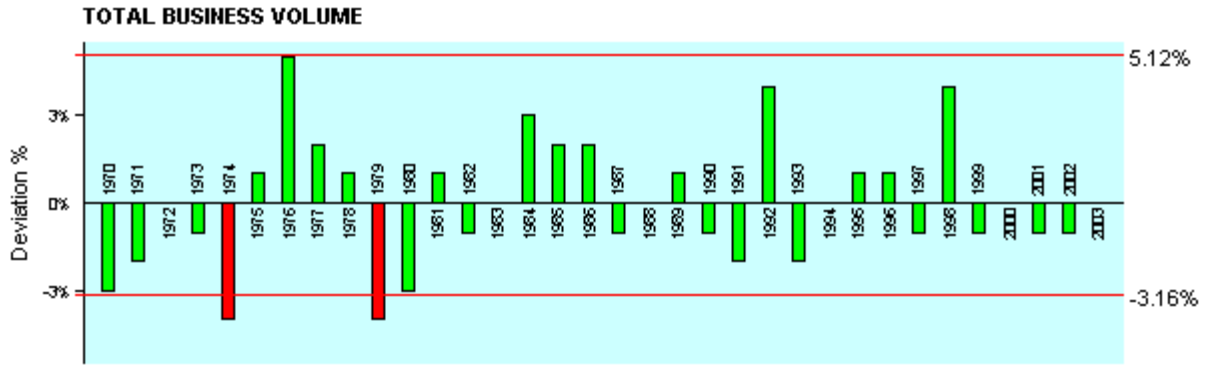
Multiplier	2.7	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$140,724,900	
Sales Volume - Total	\$223,504,300	1.89%
Income - Direct	\$259,700,000	
Income - Induced	\$27,455,150	
Income - Total	\$287,155,100	3.8%
Employment - Direct	7575	
Employment - Induced	978	
Employment - Total	8553	4.22%
Local Population	17430	
Local Off-base Population	8715	4.91%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	5.12 %	4.72 %	4.24 %	3.46 %
Negative RTV	-3.16 %	-2.9 %	-3.18 %	-1.34 %

RTV DETAILED

SALES VOLUME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1424240	7491502	0	-367814	0
1970	1529912	7618962	127459	-240355	-3.15
1971	1635010	7798998	180036	-187778	-2.41
1972	1772580	8189320	390322	22508	0.27
1973	1950004	8482517	293198	-74616	-0.88
1974	2172050	8492716	10198	-357616	-4.21
1975	2501932	8981936	489220	121406	1.35
1976	2898450	9854730	872794	504980	5.12
1977	3283634	10474792	620062	252248	2.41
1978	3713922	10993209	518417	150603	1.37
1979	4111054	10935404	-57805	-425619	-3.89
1980	4680558	10952506	17102	-350712	-3.2
1981	5366908	11431514	479008	111194	0.97
1982	5841360	11682720	251206	-116608	-1
1983	6196906	12021998	339278	-28536	-0.24
1984	6896118	12826779	804782	436968	3.41
1985	7456814	13422265	595486	227672	1.7
1986	7956370	14003211	580946	213132	1.52
1987	8384442	14253551	250340	-117474	-0.82
1988	8933890	14562241	308689	-59125	-0.41
1989	9678288	15098129	535889	168075	1.11
1990	10229950	15242626	144496	-223318	-1.47
1991	10762734	15283082	40457	-327357	-2.14
1992	11801878	16286592	1003509	635695	3.9
1993	12179642	16320720	34129	-333685	-2.04
1994	12866030	16725839	405119	37305	0.22
1995	13541378	17197550	471711	103897	0.6
1996	14466372	17793638	596088	228274	1.28
1997	14931602	17917922	124285	-243529	-1.36
1998	15955410	18986938	1069016	701202	3.69
1999	16578260	19230782	243844	-123970	-0.64
2000	17523282	19626076	395294	27480	0.14
2001	18145998	19779138	153062	-214752	-1.09
2002	18676700	19984069	204931	-162883	-0.82
2003	19395234	20364996	380927	13113	0.06

Appendix P - White Sands Missile Range EIFS Analysis

EIFS REPORT

PROJECT NAME

Army Growth White Sands Missile Range

STUDY AREA

35013 Dona Ana, NM
 35035 Otero, NM
 35051 Sierra, NM
 35053 Socorro, NM
 48141 El Paso, TX

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

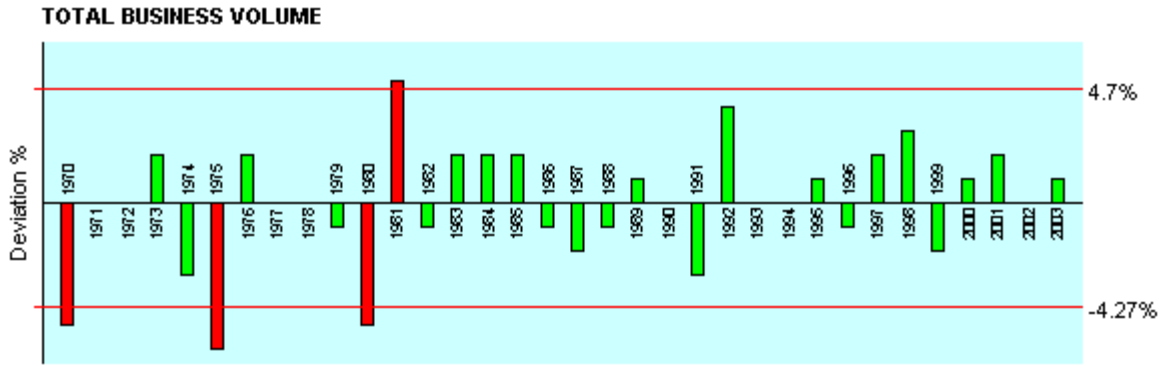
Multiplier	2.62	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$134,102,600	
Sales Volume - Total	\$216,882,000	0.88%
Income - Direct	\$259,700,000	
Income - Induced	\$24,487,370	
Income - Total	\$284,187,400	1.91%
Employment - Direct	7552	
Employment - Induced	894	
Employment - Total	8445	2.03%
Local Population	17430	
Local Off-base Population	8715	1.88%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	4.7 %	4.94 %	3.83 %	1.21 %
Negative RTV	-4.27 %	-4.17 %	-4.17 %	-1.59 %

RTV DETAILED

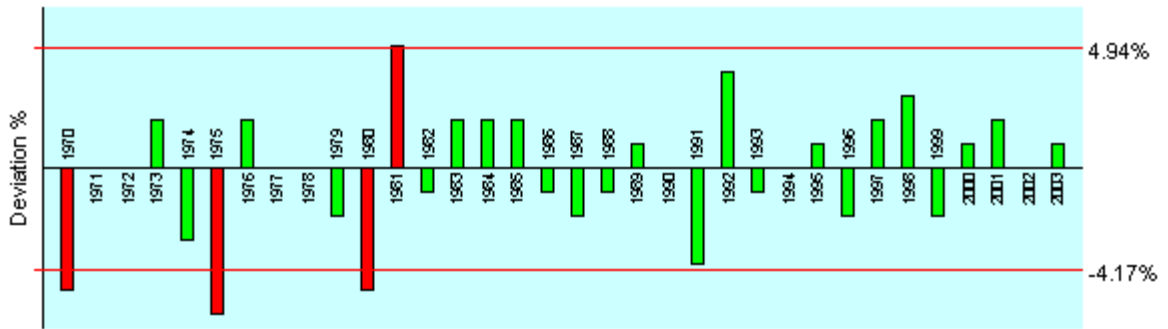
SALES VOLUME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	2709878	14253958	0	-798145	0
1970	2875102	14318008	64050	-734095	-5.13
1971	3159692	15071731	753723	-44422	-0.29
1972	3435662	15872758	801028	2883	0.02
1973	3904054	16982635	1109876	311731	1.84
1974	4418040	17274536	291902	-506243	-2.93
1975	4763040	17099314	-175223	-973368	-5.69
1976	5350778	18192645	1093332	295187	1.62
1977	5936342	18936931	744286	-53859	-0.28
1978	6681140	19776174	839243	41098	0.21
1979	7627760	20289842	513667	-284478	-1.4
1980	8565896	20044197	-245645	-1043790	-5.21
1981	10267534	21869847	1825651	1027506	4.7
1982	11202490	22404980	535133	-263012	-1.17
1983	12142440	23556334	1151354	353209	1.5
1984	13378118	24883299	1326966	528821	2.13
1985	14493310	26087958	1204659	406514	1.56
1986	15160336	26682191	594233	-203912	-0.76
1987	15872480	26983216	301025	-497120	-1.84
1988	16881094	27516183	532967	-265178	-0.96
1989	18374926	28664885	1148701	350556	1.22
1990	19806650	29511908	847024	48879	0.17
1991	20651566	29325224	-186685	-984830	-3.36
1992	22625282	31222889	1897665	1099520	3.52
1993	23814272	31911124	688235	-109910	-0.34
1994	25123926	32661104	749979	-48166	-0.15
1995	26545020	33712175	1051072	252927	0.75
1996	27650408	3401,0002	297826	-500319	-1.47
1997	29458118	35349742	1339740	541595	1.53
1998	31202010	37130392	1780650	982505	2.65
1999	32128856	37269473	139081	-659064	-1.77
2000	34429622	38561177	1291704	493559	1.28
2001	36950830	40276405	1715228	917083	2.28
2002	38464048	41156531	880127	81982	0.2
2003	40180022	42189023	1032492	234347	0.56

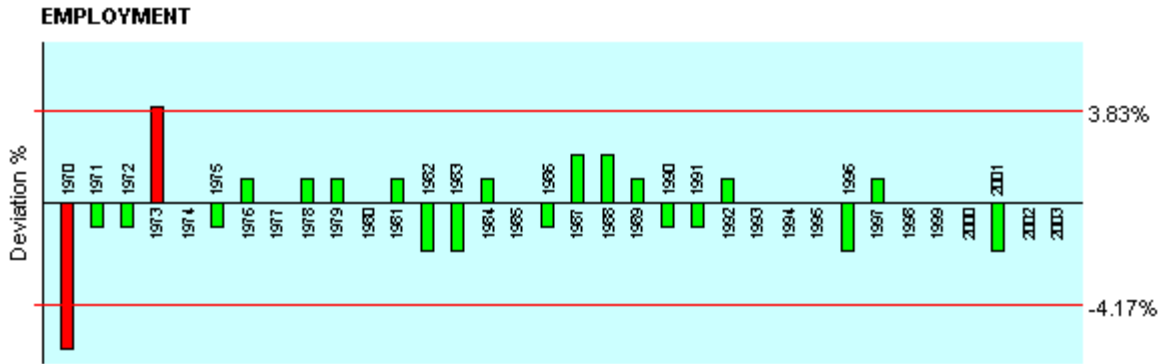
INCOME

PERSONAL INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1381704	7267763	0	-400347	0
1970	1461617	7278853	11090	-389257	-5.35
1971	1604077	7651447	372595	-27752	-0.36
1972	1747524	8073561	422114	21767	0.27
1973	1982764	8625023	551463	151116	1.75
1974	2249713	8796378	171354	-228993	-2.6
1975	2411750	8658182	-138195	-538542	-6.22
1976	2714177	9228202	570019	169672	1.84
1977	3007399	9593603	365401	-34946	-0.36
1978	3382510	10012230	418627	18280	0.18
1979	3844591	10226612	214382	-185965	-1.82
1980	4311557	10089043	-137569	-537916	-5.33
1981	5180373	11034194	945151	544804	4.94
1982	5635855	11271710	237516	-162831	-1.44
1983	6128214	11888735	617025	216678	1.82
1984	6741641	12539452	650717	250370	2
1985	7310530	13158954	619502	219155	1.67
1986	7658487	13478937	319983	-80364	-0.6
1987	8018397	13631275	152338	-248009	-1.82
1988	8529902	13903740	272465	-127882	-0.92
1989	9300105	14508164	604424	204077	1.41
1990	10030061	14944791	436627	36280	0.24
1991	10440088	14824925	-119866	-520213	-3.51
1992	11456230	15809597	984672	584325	3.7
1993	12033272	16124584	314987	-85360	-0.53
1994	12671950	16473535	348951	-51396	-0.31
1995	13407831	17027945	554410	154063	0.9
1996	13935223	17140324	112379	-287968	-1.68
1997	14865502	17838602	698278	297931	1.67
1998	15761619	18756327	917724	517377	2.76
1999	16233338	18830672	74345	-326002	-1.73
2000	17329576	19409125	578453	178106	0.92
2001	18639059	20316574	907449	507102	2.5
2002	19378625	20735129	418554	18207	0.09
2003	20266588	21279917	544789	144442	0.68

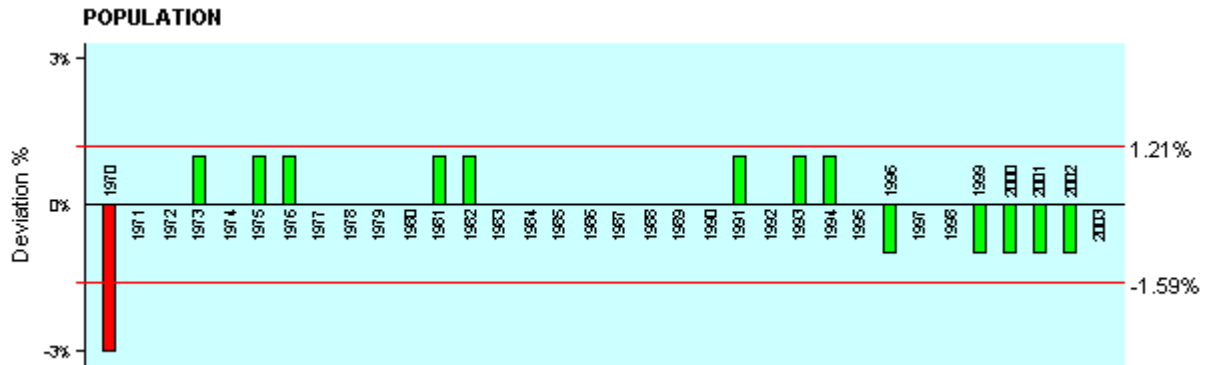
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	206538	0	-7108	0
1970	201142	-5396	-12504	-6.22
1971	206678	5536	-1572	-0.76
1972	211856	5178	-1930	-0.91
1973	227688	15832	8724	3.83
1974	234653	6965	-143	-0.06
1975	240340	5687	-1421	-0.59
1976	249250	8910	1802	0.72
1977	257591	8341	1233	0.48
1978	267252	9661	2553	0.96
1979	277555	10303	3195	1.15
1980	284449	6894	-214	-0.08
1981	294426	9977	2869	0.97
1982	296401	1975	-5133	-1.73
1983	296783	382	-6726	-2.27
1984	308421	11638	4530	1.47
1985	315869	7448	340	0.11
1986	320432	4563	-2545	-0.79
1987	334195	13763	6655	1.99
1988	347136	12941	5833	1.68
1989	358096	10960	3852	1.08
1990	363132	5036	-2072	-0.57
1991	367496	4364	-2744	-0.75
1992	379168	11672	4564	1.2
1993	388137	8969	1861	0.48
1994	396238	8101	993	0.25
1995	404961	8723	1615	0.4
1996	405654	693	-6415	-1.58
1997	415212	9558	2450	0.59
1998	423669	8457	1349	0.32
1999	431904	8235	1127	0.26
2000	440947	9043	1935	0.44
2001	440538	-409	-7517	-1.71

2002	449089	8551	1443	0.32
2003	455318	6229	-879	-0.19

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	490722	0	-13937	0
1970	489084	-1638	-15575	-3.18
1971	502147	13063	-874	-0.17
1972	515446	13299	-638	-0.12
1973	535876	20430	6493	1.21
1974	551928	16052	2115	0.38
1975	572446	20518	6581	1.15
1976	589871	17425	3488	0.59
1977	603828	13957	20	0
1978	619509	15681	1744	0.28
1979	632981	13472	-465	-0.07
1980	646698	13717	-220	-0.03
1981	664231	17533	3596	0.54
1982	683826	19595	5658	0.83
1983	699251	15425	1488	0.21
1984	714246	14995	1058	0.15
1985	728714	14468	531	0.07
1986	745238	16524	2587	0.35
1987	760510	15272	1335	0.18
1988	775501	14991	1054	0.14
1989	790894	15393	1456	0.18
1990	808768	17874	3937	0.49
1991	827677	18909	4972	0.6
1992	845482	17805	3868	0.46
1993	869279	23797	9860	1.13
1994	889145	19866	5929	0.67
1995	903208	14063	126	0.01
1996	912301	9093	-4844	-0.53
1997	925540	13239	-698	-0.08

1998	934951	9411	-4526	-0.48
1999	942253	7302	-6635	-0.7
2000	950040	7787	-6150	-0.65
2001	956924	6884	-7053	-0.74
2002	964796	7872	-6065	-0.63
2003	978509	13713	-224	-0.02

Appendix Q - Yakima Training Center EIFS Analysis

EIFS REPORT

PROJECT NAME
 Army Growth Yakima Training Center

STUDY AREA
 53077 Yakima, WA

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

FORECAST OUTPUT

Employment Multiplier	1.63	
Income Multiplier	1.63	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$52,151,010	
Sales Volume - Total	\$134,930,400	2.24%
Income - Direct	\$259,700,000	
Income - Induced)	\$9,027,192	
Income - Total(place of work)	\$268,727,200	6.21%
Employment - Direct	7513	
Employment - Induced	323	
Employment - Total	7835	6.92%
Local Population	17430	
Local Off-base Population	8715	8.02%

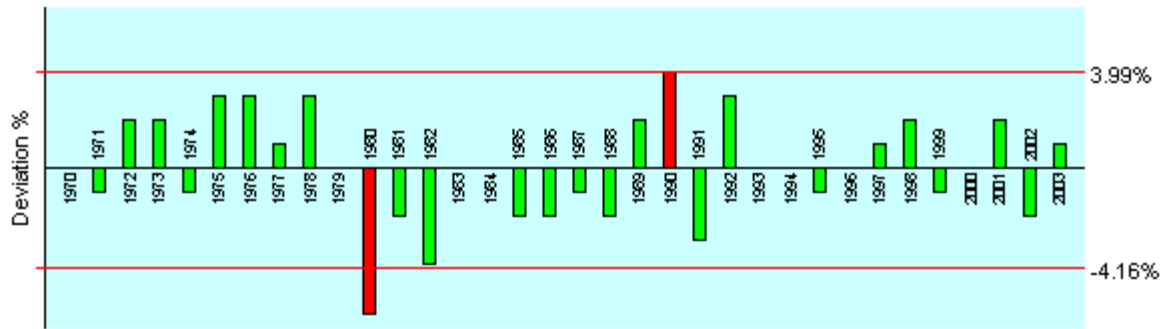
RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	3.99 %	6.32 %	7.58 %	1.39 %
Negative RTV	-4.16 %	-4.16 %	-3.07 %	-0.78 %

RTV DETAILED

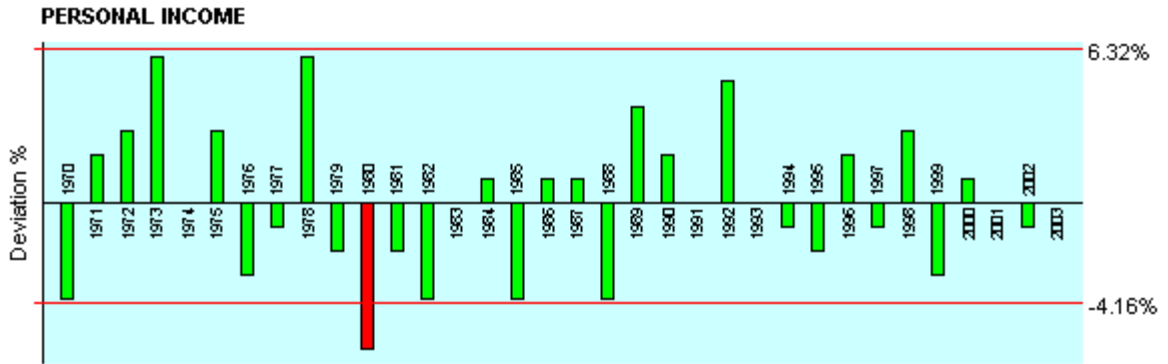
SALES VOLUME

TOTAL BUSINESS VOLUME



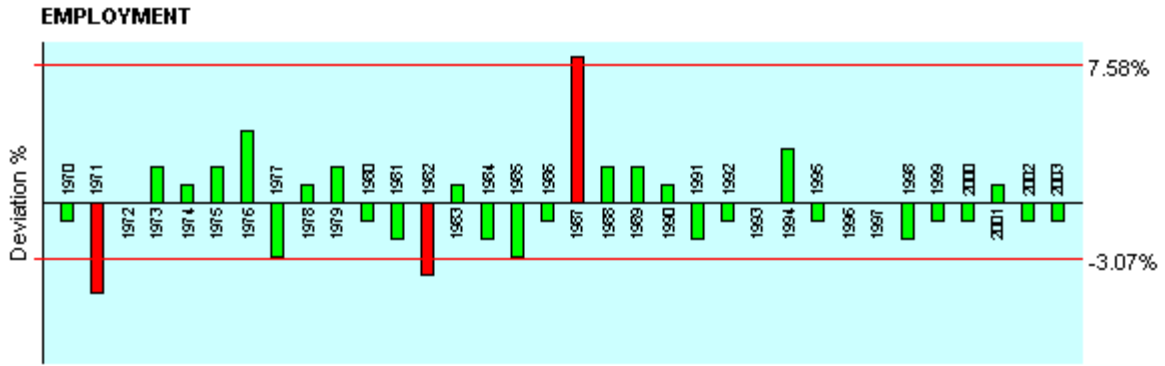
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	835016	4392184	0	-179581	0
1970	916218	4562766	170581	-9000	-0.2
1971	981894	4683634	120869	-58712	-1.25
1972	1074058	4962148	278514	98933	1.99
1973	1203168	5233781	271633	92052	1.76
1974	1371398	5362166	128385	-51196	-0.95
1975	1597914	5736511	374345	194764	3.4
1976	1798464	6114778	378266	198685	3.25
1977	1996280	6368133	253356	73775	1.16
1978	2277742	6742116	373983	194402	2.88
1979	2603438	6925145	183029	3448	0.05
1980	2876862	6731857	-193288	-372869	-5.54
1981	3186942	6788186	56329	-123252	-1.82
1982	3341500	6683,000	-105186	-284767	-4.26
1983	3521378	6831473	148473	-31108	-0.46
1984	3752984	6980550	149077	-30504	-0.44
1985	3908892	7036006	55455	-124126	-1.76
1986	4036796	7104761	68755	-110826	-1.56
1987	4247298	7220407	115646	-63935	-0.89
1988	4450510	7254331	33925	-145656	-2.01
1989	4872294	7600779	346447	166866	2.2
1990	5438930	8104006	503227	323646	3.99
1991	5653392	8027817	-76189	-255770	-3.19
1992	6151442	8488990	461173	281592	3.32
1993	6462914	8660305	171315	-8266	-0.1
1994	6826286	8874172	213867	34286	0.39
1995	7081974	8994107	119935	-59646	-0.66
1996	7455686	9170494	176387	-3194	-0.03
1997	7879142	9454970	284477	104896	1.11
1998	8266030	9836576	381605	202024	2.05
1999	8578036	9950522	113946	-65635	-0.66
2000	9010936	10092248	141727	-37854	-0.38
2001	9652628	10521365	429116	249535	2.37
2002	9756966	10439954	-81411	-260992	-2.5
2003	10169050	10677502	237549	57968	0.54

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	479277	2520997	0	-90740	0
1970	501854	2499233	-21764	-112504	-4.5
1971	553872	2641969	142737	51997	1.97
1972	611994	2827412	185443	94703	3.35
1973	713869	3105330	277918	187178	6.03
1974	821143	3210669	105339	14599	0.45
1975	946764	3398883	188214	97474	2.87
1976	996029	3386499	-12384	-103124	-3.05
1977	1074224	3426775	40276	-50464	-1.47
1978	1268555	3754923	328148	237408	6.32
1979	1413790	3760681	5759	-84981	-2.26
1980	1549604	3626073	-134608	-225348	-6.21
1981	1714196	3651237	25164	-65576	-1.8
1982	1799474	3598948	-52289	-143029	-3.97
1983	1897518	3681185	82237	-8503	-0.23
1984	2047247	3807879	126695	35955	0.94
1985	2077822	3740080	-67800	-158540	-4.24
1986	2207580	3885341	145261	54521	1.4
1987	2370934	4030588	145247	54507	1.35
1988	2429359	3959855	-70733	-161473	-4.08
1989	2707335	4223443	263587	172847	4.09
1990	2967836	4422076	198633	107893	2.44
1991	3163550	4492241	70165	-20575	-0.46
1992	3485076	4809405	317164	226424	4.71
1993	3647293	4887373	77968	-12772	-0.26
1994	3785709	4921422	34049	-56691	-1.15
1995	3882226	4930427	9005	-81735	-1.66
1996	4176974	5137678	207251	116511	2.27
1997	4328702	5194442	56764	-33976	-0.65
1998	4556283	5421977	227534	136794	2.52
1999	4625412	5365478	-56499	-147239	-2.74
2000	4916123	5506058	140580	49840	0.91
2001	5151726	5615381	109324	18584	0.33
2002	5257954	5626011	10629	-80111	-1.42
2003	5425619	5696900	70889	-19851	-0.35

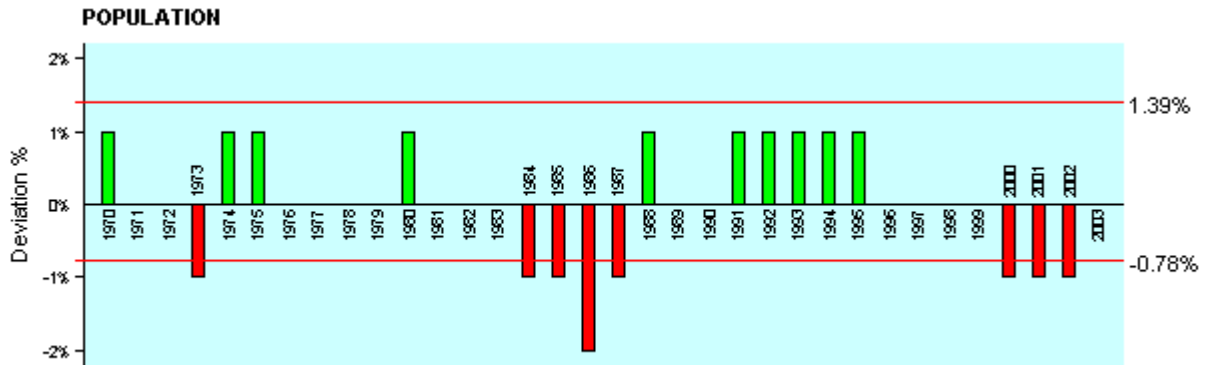
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	63018	0	-1604	0
1970	63707	689	-915	-1.44
1971	62448	-1259	-2863	-4.58
1972	64284	1836	232	0.36
1973	67149	2865	1261	1.88
1974	69450	2301	697	1
1975	72488	3038	1434	1.98
1976	77178	4690	3086	4
1977	76262	-916	-2520	-3.3
1978	79040	2778	1174	1.49
1979	82351	3311	1707	2.07
1980	82880	529	-1075	-1.3
1981	83075	195	-1409	-1.7
1982	81659	-1416	-3020	-3.7
1983	84434	2775	1171	1.39
1984	84431	-3	-1607	-1.9
1985	83846	-585	-2189	-2.61
1986	84551	705	-899	-1.06
1987	93224	8673	7069	7.58
1988	96853	3629	2025	2.09
1989	100206	3353	1749	1.75
1990	102802	2596	992	0.96
1991	102416	-386	-1990	-1.94
1992	103055	639	-965	-0.94
1993	104767	1712	108	0.1
1994	109298	4531	2927	2.68
1995	110172	874	-730	-0.66
1996	112125	1953	349	0.31
1997	113219	1094	-510	-0.45
1998	113056	-163	-1767	-1.56
1999	113979	923	-681	-0.6
2000	114502	523	-1081	-0.94
2001	117460	2958	1354	1.15

2002	118239	779	-825	-0.7
2003	119166	927	-677	-0.57

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	141416	0	-2441	0
1970	145600	4184	1743	1.2
1971	148017	2417	-24	-0.02
1972	150541	2524	83	0.06
1973	150902	361	-2080	-1.38
1974	155229	4327	1886	1.21
1975	159209	3980	1539	0.97
1976	162074	2865	424	0.26
1977	164202	2128	-313	-0.19
1978	166436	2234	-207	-0.12
1979	168987	2551	110	0.07
1980	173118	4131	1690	0.98
1981	175218	2100	-341	-0.19
1982	176825	1607	-834	-0.47
1983	179248	2423	-18	-0.01
1984	180209	961	-1480	-0.82
1985	181321	1112	-1329	-0.73
1986	180961	-360	-2801	-1.55
1987	181707	746	-1695	-0.93
1988	185454	3747	1306	0.7
1989	187574	2120	-321	-0.17
1990	189454	1880	-561	-0.3
1991	193904	4450	2009	1.04
1992	198983	5079	2638	1.33
1993	204266	5283	2842	1.39
1994	208963	4697	2256	1.08
1995	212601	3638	1197	0.56
1996	214951	2350	-91	-0.04
1997	217201	2250	-191	-0.09

1998	219748	2547	106	0.05
1999	221573	1825	-616	-0.28
2000	222752	1179	-1262	-0.57
2001	223387	635	-1806	-0.81
2002	224546	1159	-1282	-0.57
2003	226859	2313	-128	-0.06

Appendix R - Yuma Proving Ground EIFS Analysis

EIFS REPORT

PROJECT NAME
Army Growth Yuma Proving Ground

STUDY AREA
04027 Yuma, AZ
06025 Imperial, CA

FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	7,000
Average Income of Affected Military	\$37,100
Percent of Military Living On-post	50

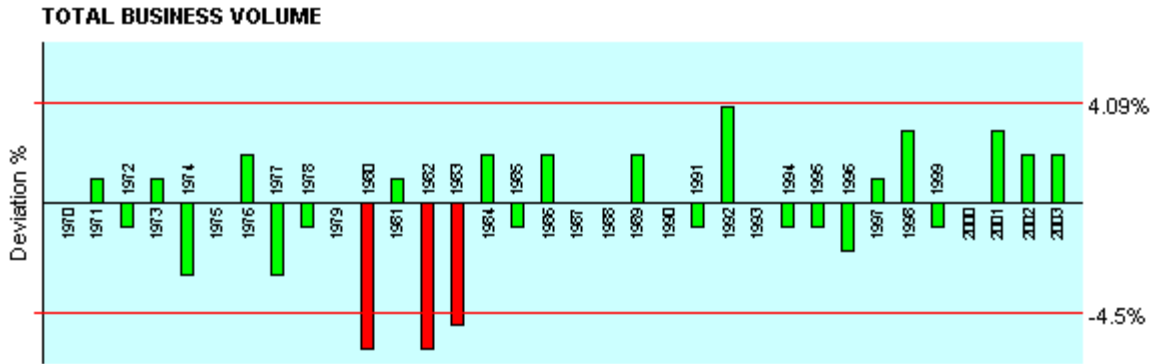
FORECAST OUTPUT

Employment Multiplier	1.8	
Income Multiplier	1.8	
Sales Volume - Direct	\$82,779,380	
Sales Volume - Induced	\$66,223,500	
Sales Volume - Total	\$149,002,900	2.65%
Income - Direct	\$259,700,000	
Income - Induced)	\$11,326,610	
Income - Total(place of work)	\$271,026,600	5.86%
Employment - Direct	7561	
Employment - Induced	449	
Employment - Total	8009	6.41%
Local Population	17430	
Local Off-base Population	8715	6.17%

RTV SUMMARY

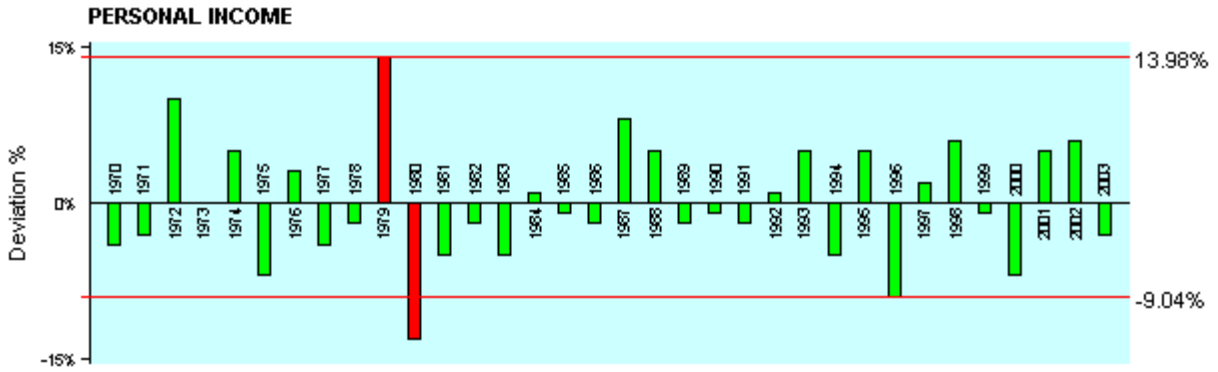
	Sales Volume	Income	Employment	Population
Positive RTV	4.09 %	13.98 %	4.46 %	3.82 %
Negative RTV	-4.5 %	-9.04 %	-3.78 %	-3.86 %

RTV DETAILED
SALES VOLUME



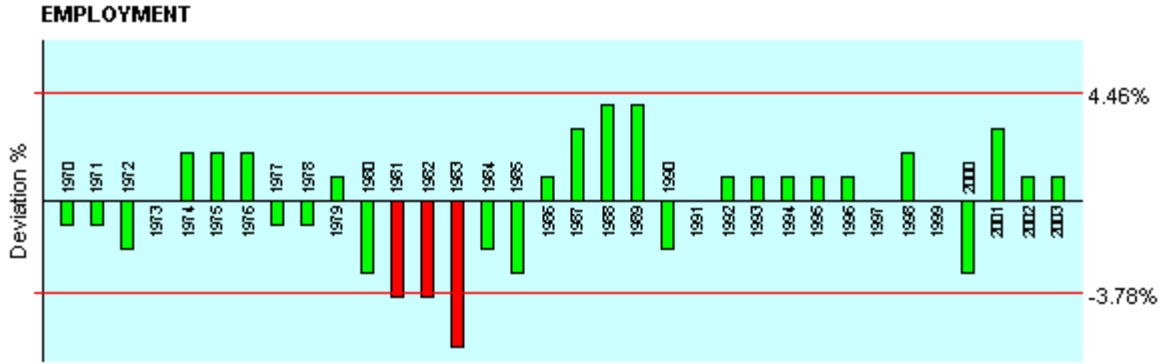
Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	648626	3411773	0	-260576	0
1970	739978	3685090	273318	12742	0.35
1971	835324	3984495	299405	38829	0.97
1972	913798	4221747	237251	-23325	-0.55
1973	1042348	4534214	312467	51891	1.14
1974	1194150	4669126	134913	-125663	-2.69
1975	1369018	4914775	245648	-14928	-0.3
1976	1554354	5284804	370029	109453	2.07
1977	1694770	5406316	121513	-139063	-2.57
1978	1898148	5618518	212202	-48374	-0.86
1979	2206606	5869572	251054	-9522	-0.16
1980	2478484	5799653	-69919	-330495	-5.7
1981	2881388	6137356	337704	77128	1.26
1982	3017864	6035728	-101628	-362204	-6
1983	3094278	6002899	-32829	-293405	-4.89
1984	3445274	6408210	405310	144734	2.26
1985	3682498	6628496	220287	-40289	-0.61
1986	3984984	7013572	385075	124499	1.78
1987	4281584	7278693	265121	4545	0.06
1988	4618432	7528044	249351	-11225	-0.15
1989	5083656	7930503	402459	141883	1.79
1990	5478010	8162235	231732	-28844	-0.35
1991	5858112	8318519	156284	-104292	-1.25
1992	6481802	8944887	626368	365792	4.09
1993	6867272	9202144	257258	-3318	-0.04
1994	7191994	9349592	147448	-113128	-1.21
1995	7477168	9496003	146411	-114165	-1.2
1996	7793164	9585592	89588	-170988	-1.78
1997	8255912	9907094	321503	60927	0.61
1998	8829922	10507607	600513	339937	3.24
1999	9202930	10675399	167792	-92784	-0.87
2000	9728940	10896413	221014	-39562	-0.36
2001	10540042	11488646	592233	331657	2.89
2002	11224830	12010568	521922	261346	2.18
2003	11935180	12531939	521371	260795	2.08

INCOME



Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	467113	2457014	0	-120218	0
1970	499540	2487709	30695	-89523	-3.6
1971	529682	2526583	38874	-81344	-3.22
1972	636489	2940579	413996	293778	9.99
1973	702575	3056201	115622	-4596	-0.15
1974	851718	3330217	274016	153798	4.62
1975	896782	3219447	-110770	-230988	-7.17
1976	1009488	3432259	212812	92594	2.7
1977	1068766	3409364	-22896	-143114	-4.2
1978	1174860	3477586	68222	-51996	-1.5
1979	1572294	4182302	704716	584498	13.98
1980	1620058	3790936	-391366	-511584	-13.49
1981	1744399	3715570	-75366	-195584	-5.26
1982	1874923	3749846	34276	-85942	-2.29
1983	1900132	3686256	-63590	-183808	-4.99
1984	2059740	3831116	144860	24642	0.64
1985	2166454	3899617	68501	-51717	-1.33
1986	2249511	3959139	59522	-60696	-1.53
1987	2603357	4425707	466568	346350	7.83
1988	2935577	4784991	359284	239066	5
1989	3078807	4802939	17948	-102270	-2.13
1990	3262763	4861517	58578	-61640	-1.27
1991	3435781	4878809	17292	-102926	-2.11
1992	3642392	5026501	147692	27474	0.55
1993	4060374	5440901	414400	294182	5.41
1994	4077802	5301143	-139759	-259977	-4.9
1995	4478696	5687944	386801	266583	4.69
1996	4344889	5344213	-343730	-463948	-8.68
1997	4628136	5553763	209550	89332	1.61
1998	5053328	6013460	459697	339479	5.65
1999	5237949	6076021	62561	-57657	-0.95
2000	5184145	5806242	-269778	-389996	-6.72
2001	5718350	6233002	426759	306541	4.92
2002	6302843	6744042	511041	390823	5.8
2003	6347266	6664629	-79413	-199631	-3

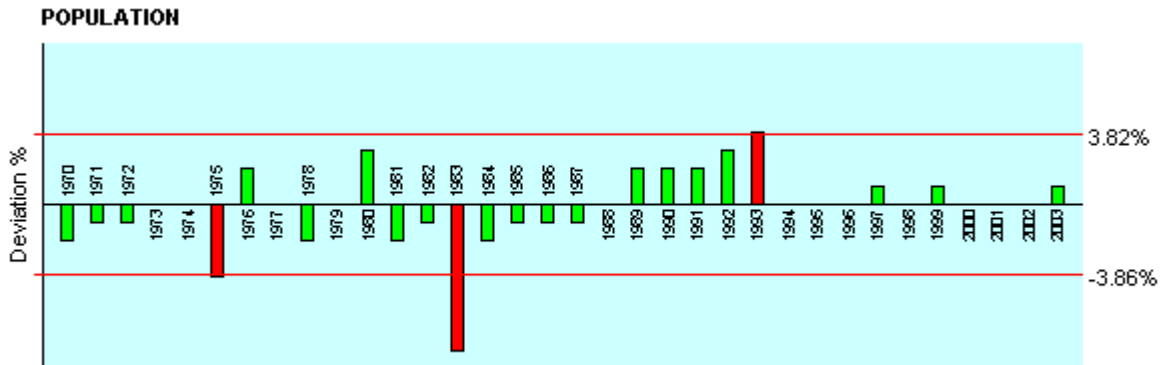
EMPLOYMENT



Year	Value	Change	Deviation	%Deviation
1969	62477	0	-2344	0
1970	64003	1526	-818	-1.28
1971	65549	1546	-798	-1.22
1972	66517	968	-1376	-2.07
1973	68588	2071	-273	-0.4
1974	72393	3805	1461	2.02
1975	76167	3774	1430	1.88
1976	79815	3648	1304	1.63
1977	81076	1261	-1083	-1.34
1978	82978	1902	-442	-0.53
1979	85994	3016	672	0.78
1980	85948	-46	-2390	-2.78
1981	84782	-1166	-3510	-4.14
1982	83995	-787	-3131	-3.73
1983	81728	-2267	-4611	-5.64
1984	82832	1104	-1240	-1.5
1985	82427	-405	-2749	-3.34
1986	85231	2804	460	0.54
1987	89925	4694	2350	2.61
1988	96468	6543	4199	4.35
1989	103420	6952	4608	4.46
1990	103823	403	-1941	-1.87
1991	105699	1876	-468	-0.44
1992	108613	2914	570	0.52
1993	112131	3518	1174	1.05
1994	115391	3260	916	0.79
1995	118976	3585	1241	1.04
1996	122721	3745	1401	1.14
1997	124958	2237	-107	-0.09
1998	129551	4593	2249	1.74
1999	131853	2302	-42	-0.03
2000	130137	-1716	-4060	-3.12
2001	136870	6733	4389	3.21

2002	140727	3857	1513	1.08
2003	144530	3803	1459	1.01

POPULATION



Year	Value	Change	Deviation	%Deviation
1969	133404	0	-5318	0
1970	136210	2806	-2512	-1.84
1971	139784	3574	-1744	-1.25
1972	143019	3235	-2083	-1.46
1973	148333	5314	-4	0
1974	152922	4589	-729	-0.48
1975	152423	-499	-5817	-3.82
1976	161740	9317	3999	2.47
1977	166435	4695	-623	-0.37
1978	169154	2719	-2599	-1.54
1979	173598	4444	-874	-0.5
1980	183977	10379	5061	2.75
1981	186135	2158	-3160	-1.7
1982	189566	3431	-1887	-1
1983	180917	-8649	-13967	-7.72
1984	182848	1931	-3387	-1.85
1985	186771	3923	-1395	-0.75
1986	189390	2619	-2699	-1.43
1987	192761	3371	-1947	-1.01
1988	198945	6184	866	0.44
1989	208546	9601	4283	2.05
1990	218902	10356	5038	2.3
1991	229110	10208	4890	2.13
1992	242483	13373	8055	3.32
1993	257650	15167	9849	3.82
1994	262290	4640	-678	-0.26
1995	268762	6472	1154	0.43
1996	275235	6473	1155	0.42
1997	282520	7285	1967	0.7

1998	288680	6160	842	0.29
1999	296721	8041	2723	0.92
2000	303283	6562	1244	0.41
2001	307192	3909	-1409	-0.46
2002	312417	5225	-93	-0.03
2003	319528	7111	1793	0.56

Appendix S- Threatened and Endangered Species Relevant to the Affected Environment

Installation	State	Scientific Name (Genus species)	Common Name	Onsite/ Contiguous	Federal Listing Status	Category	Critical Habitat Onsite
Fort Benning	GA	<i>Alligator mississippiensis</i>	Alligator, American	Onsite	T(S/A)	Reptile	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Mycteria Americana</i>	Stork, wood	Onsite	E	Bird	N
		<i>Picoides borealis</i>	Woodpecker, red-cockaded	Onsite	E	Bird	N
		<i>Trillium reliquum</i>	Trillium, relict	Onsite	E	Plant	N
Fort Bliss	TX-NM	<i>Coryphantha sneedii</i> var. <i>sneedii</i>	Cactus, Sneed pincushion	Onsite	E	Plant	N
		<i>Echinocereus fendleri</i> var. <i>kuenzleri</i>	Cactus, Kuenzler hedgehog	Onsite	E	Plant	N
		<i>Falco femoralis septentrionalis</i>	Falcon, northern aplomado	Onsite	E	Bird	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
Fort Bragg	GA	<i>Lysimachia asperulaefolia</i>	Loosestrife, rough-leaved	Onsite	E	Plant	N
		<i>Neonympha mitchellii francisci</i>	Butterfly, Saint Francis' satyr	Onsite	E	Insect	N
		<i>Picoides borealis</i>	Woodpecker, red-cockaded	Onsite	E	Bird	N
		<i>Rhus michauxii</i>	Sumac, Michaux's	Onsite	E	Plant	N
		<i>Schwalbea americana</i>	Chaffseed, American	Onsite	E	Plant	N
Fort Campbell	KY	<i>Myotis grisescens</i>	Bat, gray	Onsite	E	Mammal	N
		<i>Myotis sodalis</i>	Bat, Indiana	Onsite	E	Mammal	N
Fort Carson	CO	<i>Etheostoma cragini</i>	Darter, Arkansas	Onsite	C	Fish	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Spiranthes diuivalis</i>	Ladies'-tresses, Ute	Contiguous	T	Plant	N
		<i>Strix occidentalis lucida</i>	Owl, Mexican spotted	Contiguous	T	Bird	N
Fort Drum	NY	<i>Myotis sodalis</i>	Bat, Indiana	Contiguous	E	Mammal	N
Fort Hood	TX	<i>Dendroica chrysoparia</i>	Warbler, golden-checked	Onsite	E	Bird	N

Installation	State	Scientific Name (Genus species)	Common Name	Onsite/ Contiguous	Federal Listing Status	Category	Critical Habitat Onsite
		<i>Grus americana</i>	Crane, whooping	Onsite	E	Bird	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Vireo atricapilla</i>	Vireo, black-capped	Onsite	E	Bird	N
Fort Hunter Liggett	CA	<i>Ambystoma californiense</i>	Salamander, California tiger	Contiguous	T	Amphibian	N
		<i>Branchinecta lynchi</i>	Fairy shrimp, vernal pool	Onsite	T	Crustacean	N
		<i>Bufo californicus</i>	Toad, Arroyo	Onsite	E	Amphibian	N
		<i>Chlorogalum purpureum</i>	Amole, purple	Onsite	T	Plant	N
		<i>Gymnogyps californianus</i>	Condor, California	Onsite	E	Bird	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Rana aurora draytonii</i>	Frog, California red-legged	Contiguous	T	Amphibian	N
		<i>Vireo bellii pusillus</i>	Vireo, least Bell's	Contiguous	E	Bird	N
		<i>Vulpes macrotis mutica</i>	Fox, San Joaquin kit	Onsite	E	Mammal	N
Fort Irwin	CA	<i>Gopherus agassizii</i>	Tortoise, desert	Onsite	T	Reptile	Y
		<i>Astragalus jaegerianus</i>	Milk-vetch, Lane Mountain	Onsite	E	Plant	N
Fort Knox	KY	* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Myotis grisescens</i>	Bat, gray	Onsite	E	Mammal	N
		<i>Myotis sodalist</i>	Bat, Indiana	Onsite	E	Mammal	N
Fort Lewis	WA	<i>Brachyramphus marmoratus marmoratus</i>	Murrelet, marbled	Contiguous	T	Bird	N
		<i>Eremophila alpestris strigata</i>	Lark, Streaked horned	Onsite	C	Bird	N
		<i>Euphydryas editha taylori</i>	Butterfly, Whulge Checkerspot	Onsite	C	Insect	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Howellia aquatilis</i>	Howellia, water	Onsite	T	Plant	N
		<i>Oncorhynchus tshawytscha</i>	Salmon, Chinook	Onsite	T	Fish	N

Installation	State	Scientific Name (Genus species)	Common Name	Onsite/ Contiguous	Federal Listing Status	Category	Critical Habitat Onsite
		<i>Polites mardon</i>	Skipper, Mardon	Onsite	C	Insect	N
		<i>Salvelinus confluentus</i>	Trout, bull	Onsite	T	Fish	N
		<i>Strix occidentalis caurina</i>	Owl, northern spotted	Contiguous	T	Bird	Y
		<i>Thomomys mazama</i>	Pocket gopher, Mazama	Onsite	C	Mammal	N
Fort Polk	LA	<i>Picoides borealis</i>	Woodpecker, red-cockaded	Onsite	E	Bird	N
		<i>Pituophis ruthveni</i>	Snake, Louisiana Pine	Onsite	C	Reptile	N
Fort Riley	KS	<i>Charadrius melodus</i>	Plover, piping	Onsite	T	Bird	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Notropis Topeka</i>	Shiner, Topeka	Onsite	E	Fish	N
		<i>Sterna antillarum</i>	Tern, least	Onsite	E	Bird	N
Fort Stewart	GA	<i>Acipenser brevirostrum</i>	Sturgeon, shortnose	Onsite	E	Fish	N
		<i>Ambystoma cingulatum</i>	Salamander, flatwoods	Onsite	T	Amphibian	N
		<i>Drymarchon corais couperi</i>	Snake, eastern indigo	Onsite	T	Reptile	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Mycteria Americana</i>	Stork, wood	Onsite	E	Bird	N
		<i>Picoides borealis</i>	Woodpecker, red-cockaded	Onsite	E	Bird	N
White Sands Missile Range	NM	<i>Canis lupus</i>	Wolf, gray	Contiguous	E	Mammal	N
		<i>Coccyzus americanus</i>	Cuckoo, Yellow-billed	Onsite	C	Bird	N
		<i>Empidonax traillii extimus</i>	Flycatcher, southwestern willow	Contiguous	E	Bird	N
		<i>Falco femoralis septentrionalis</i>	Falcon, northern aplomado	Onsite	E	Bird	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Hedeoma todsenii</i>	Pennyroyal, Todsen's	Onsite	E	Plant	Y
		<i>Panthera onca</i>	Jaguar	Onsite	E	Mammal	N

Installation	State	Scientific Name (Genus species)	Common Name	Onsite/ Contiguous	Federal Listing Status	Category	Critical Habitat Onsite
		<i>Pelecanus occidentalis</i>	Pelican, brown	Onsite	E	Bird	N
		<i>Sterna antillarum</i>	Tern, least	Onsite	E	Bird	N
		<i>Strix occidentalis licida</i>	Owl, Mexican spotted	Contiguous	T	Bird	N
Yakima Training Center	WA	<i>Centrocercus urophasianus phaios</i>	Grouse, greater sage	Onsite	C	Bird	N
		<i>Erigeron basalticus</i>	Daisy, basalt	Onsite	C	Plant	N
		* <i>Haliaeetus leucocephalus</i>	Eagle, bald	Onsite	T	Bird	N
		<i>Oncorhynchus mykiss</i>	Steelhead	Onsite	T	Fish	N
		<i>Oncorhynchus mykiss</i>	Steelhead	Onsite	E	Fish	N
		<i>Oncorhynchus tshawytscha</i>	Salmon, chinook	Onsite	T	Fish	N
		<i>Salvelinus confluentus</i>	Trout, bull	Contiguous	T	Fish	N
Yuma Proving Ground	AZ	<i>Coccyzus americanus occidenti</i>	Western Yellow-billed Cuckoo	Contiguous	C	Bird	N

* As of 8 August 07, the Bald Eagle is no longer afforded protection under the Endangered Species Act (ESA). However, it is protected under the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act. The Eagle Act is the primary law protecting eagles and protection is very similar to the ESA.

Federal Listing Status

- C Candidate
- T Threatened
- E Endangered
- T (S/A) Threatened due to similarity of appearance

Appendix T: Distribution List

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Appendix U: Valued Environmental Component (VEC) General Descriptions

Air Quality

Air resources are affected by gases and particulates from stationary and mobile sources and are influenced by meteorological conditions such as prevailing wind, sunlight, and temperature inversions. The Clean Air Act (CAA), the primary federal statute regulating air emissions, applies fully to the Army and all its activities.

Depending on the installation's location and whether or not it is considered a "major source" of air pollutants, the CAA may require permitting before construction commences. This "New Source Review" program is referred to as construction permitting or actually "preconstruction" permitting. The specific requirements will depend on whether the installation is located in a "non attainment" or "maintenance" area (the process is referred to as General Conformity or simply "Conformity"). If the installation is located in an "attainment" or "unclassifiable" area, it may have to assess the project's contribution to the local air shed to ensure Prevention of Significant Deterioration - PSD). The PSD regulations provide special protection from air quality impacts for certain areas, primarily National Parks and Wilderness Areas that have been designated as "Class I" areas. These are areas where air quality (especially visibility and acid deposition) have been determined to be important issues.

Conformity. The CAA, specifically section 176(c), prohibits federal activities from taking various actions in nonattainment or maintenance areas unless they first demonstrate conformance with the respective State Implementation Plan (SIP)⁹. Regardless of compliance with other environmental regulations, failure to satisfy the requirements of the conformity rule can, by itself, prohibit an installation from moving forward with the project. A conformity review is a multi-step process used to determine and document whether a proposed action meets the conformity rule. The conformity review would require the installation to:

- Evaluate the nature of the proposed action and associated air pollutant emissions;
- Determine whether the action is exempted by the rule;
- Calculate air pollutant emissions and impacts associated with the proposed action;
- Mitigate emissions if regulatory thresholds are exceeded;
- Prepare formal documentation of the findings; and,
- Publish findings to the public and regulatory community.

Many Army conformity reviews will find that conformity is satisfied because the action is exempt, clearly presumed to conform, or the projected emissions from the project are below conformity applicability threshold values.

⁹ SIP – The plan submitted by each state and approved by the U.S. EPA for implementing, maintaining, and enforcing the National Ambient Air Quality Standards within the state.

Prevention of Significant Deterioration (PSD). Installations that are classified as “major sources,” located in areas classified as “attainment” and “unclassifiable” must obtain approval to construct a new emissions source or to modify existing emissions sources if the modification project would result in a significant emission increase. It should be noted that “project” includes operational changes that affect emissions, not only equipment construction or modification. The purpose of the PSD program is to prevent areas that meet the CAA standards from becoming nonattainment areas. A PSD Permit must be obtained in order to:

- Construct a new major stationary source of criteria pollutants, or
- Modify an existing major stationary source such that emissions from the source would increase significantly. (The significance thresholds vary from 0.0004 to 100 tons per year depending on the pollutant).

New Source Review. The Nonattainment New Source Review (NNSR) Permit Program (also known as Nonattainment Area New Source Review or Major New Source Review) applies in nonattainment areas only. Its purpose is to ensure that emissions in these areas are not increased and preferably decreased as a result of new construction or modification projects. This program applies to operational changes as well as equipment changes. It is important to emphasize that NNSR only applies to the pollutants for which the area is in nonattainment.

A NNSR Permit must be obtained in order to:

- Construct a new major stationary source of criteria pollutants, or
- Modify an existing major source such that emissions from the source would increase significantly.

Minor Source Pre-Construction Permitting. Minor NSR is actually a confusing title for the “catch-all” pre-construction permit program. To be sure all emission sources are reviewed with respect to CAA regulations and to prevent sources owners from deliberately incrementing their emission increases to avoid PSD/NNSR, EPA and the States developed Minor NSR. This program has many different names - Notice of Construction, Approval to Operate, Permit to Operate, etc. Each regulatory agency develops regulations for a pre-construction permit program. Typically the regulations will include a list of exempt sources such as temporary sources to be on-site less than 90 days (this takes care of a lot of construction equipment), small boilers or furnaces (residential size), and ventilation systems. This list may have 100 exempt source types. Most regulators also exempt sources which have a potential to emit below a specific threshold. These thresholds should not be confused with any of the others thresholds previously discussed. For example, some States exempt emissions of any pollutant less than 1 ton/year from a single emission source from minor NSR permitting - if no other regulations apply.

Air Space

The Federal Aviation Administration (FAA) manages all airspace within the United States and its territories. The FAA recognizes the military's need to conduct certain flight operations and training within airspace that is separated from that used by commercial and general aviation.

Airspace is defined in vertical and horizontal dimensions and by time. Airspace is a finite resource that must be managed to achieve equitable allocation among commercial, general aviation, and military needs. The FAA has established various airspace designations to protect aircraft while operating near and between airports and while operating in airspace identified for defense-related purposes. Flight rules and air traffic control procedures govern safe operations in each type of designated airspace. Most military operations are conducted within designated airspace and follow specific procedures to maximize flight safety for both military and civil aircraft.

Controlled airspace is a generic term for the different types of airspace (Classes A, B, C, D, E, and G airspace) and defined dimensions within which air traffic control service is provided to instrument-flight-rules (IFR) flights and visual-flight-rules (VFR) flights in accordance with the airspace classification. The classifications of airspace are as follows:

- *Class A Airspace.* This airspace occurs from 18,000 feet above mean sea level (MSL) to 60,000 feet above MSL. All operations within this airspace are in accordance with regulations pertaining to IFR flights. This airspace is dominated by commercial aircraft using jet routes between 18,000 and 45,000 feet above MSL.
- *Class B Airspace.* This airspace occurs from the surface to 14,500 feet above MSL around the Nation's busiest airports. Before operating in Class B airspace, pilots must contact controlling authorities and receive clearance to enter the airspace. Aircraft operating within Class B airspace must be equipped with specialized electronics that allow air traffic controllers to accurately track aircraft speed, altitude, and position.
- *Class C Airspace.* This airspace occurs from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and meet specified levels of IFR operations or passenger enplanements. Aircraft operating within Class C airspace must be equipped with a two-way radio and an operable radar beacon transponder with automatic altitude reporting equipment. Aircraft may not operate below 2,500 feet above the surface within 4 nautical miles of the primary airport of a Class C airspace area at an indicated airspeed of more than 200 knots (230 miles per hour).
- *Class D Airspace.* This airspace occurs from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have a control

tower. Class D airspace encompasses a 5-statute-mile radius from the airport. Unless authorized otherwise by air traffic control (ATC), aircraft must be equipped with a two-way radio. Aircraft may not operate below 2,500 feet above the surface within 4 nautical miles of the primary airport of a Class D airspace area at an indicated airspeed of more than 200 knots (230 miles per hour).

- *Class E Airspace.* This airspace is any controlled airspace not designated as Class A, B, C, or D airspace. It includes designated federal airways, portions of the jet route system, and area low routes. Federal airways have a width of 4 statute miles on either side of the airway centerline and occur between the altitudes of 700 feet above ground level (AGL) and 18,000 feet above MSL, but they may have a floor located at ground level at nontowered airfields. No specific equipment is required to operate within Class E airspace.
- *Class G Airspace.* Class G airspace (uncontrolled) is that portion of the airspace that has not been designated as Class A, B, C, D, or E airspace. ATC does not have authority over operations within uncontrolled airspace. Primary users of Class G airspace are VFR general aviation aircraft.
- *Special use airspace* permits activities that either must be confined because of their nature or require limitations on aircraft that are not a part of those activities. Prohibited Areas and Restricted Areas are regulatory special use airspace. They are established in Federal Aviation Regulation (FAR) Part 73 through the rule-making process of the Administrative Procedures Act (5 USC 551-702). Warning Areas, Military Operations Areas (MOAs), Alert Areas, and Controlled Firing Areas are non-regulatory special use airspace. The FAA may designate these types of special use airspace without resort to the procedures demanded of the Administrative Procedures Act.

Cultural Resources

Cultural Resources can be referred to as both historic properties and historic resources. The definition of cultural resources in AR 200-4 states, "Historic properties as defined by the NHPA, cultural items as defined by NAGPRA, archeological resources as defined by ARPA, sacred sites as defined in EO 13007 to which access is afforded under AIRFA, and collections as defined in 36 CFR 79. The National Historic Preservation Act of 1966, as amended, states that historic resources, "means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register, including artifacts, records and material remains related to such property or resource." Cultural resources on army installations generally refer to buildings, structures and archaeological sites.

Noise General Information

Noise can be defined as unwanted sound that interferes with normal human activities and may disturb wildlife populations or disrupt breeding cycles. Impulse noise levels from high-intensity military activities may cause buildings and objects nearby the source to vibrate, resulting in potential structural damage.

The Noise Management Program is implemented Army-wide to protect the installation mission and to protect the health and welfare of military personnel, their families, and civilian employees on the installation while also providing noise abatement and mitigation measures that protects the public by reducing environmental noise from training where feasible. Army installations develop noise management plans to identify recommended land uses based on noise exposure, and to provide a noise management strategy that supports the installation's mission.

The Installation Environmental Noise Management Plan includes education, complaint management, noise and vibration mitigation, noise abatement procedures, and the Installation Compatible Use Zone (ICUZ) program. The ICUZ program provides a methodology for analyzing exposure to noise and safety hazards associated with military operations and provide land use guidelines for achieving compatibility between the Army and the surrounding communities.

Noise Impacts to the Community. The U.S. Army Center for Health Promotion and Preventative Medicine (CHPPM) has defined three noise zones to be considered in land use planning (see table below) and the noise impact on the community is translated into noise zones. In general, within Zone I, where very few people will be bothered by noise levels, land use is unrestricted and thus deemed compatible with most noise-sensitive land uses. In Zone II, as outdoor noise levels increase and more people become annoyed by the noise, restrictions or qualifications are placed on certain land uses, specifically, residential development. Zone II is normally incompatible with noise-sensitive land uses. In Zone III, as noise levels escalate, fewer and fewer compatible land uses are indicated. Zone III is incompatible with noise-sensitive land uses.

Installations use the Land Use Planning Zone to provide the means to predict possible complaints, and meet the public demand for a better description of what will exist during a period of increased operations. The associated noise levels for each zones are shown in the table below and discussed throughout this document:

Noise Levels

Noise Zone	Population Highly Annoyed	Transportation (ADNL)	Impulsive (Large Caliber) (CDNL)	Small Arms (dBP)
Zone I	<15%	<65 dBA	<65 dBA	<62 dBA
Zone II	15 – 39%	65 – 75 dBA	65 – 75 dBA	62 – 70 dBA
Zone III	>39%	>75 dBA	>75 dBA	>70 dBA

Noise Impacts to Wildlife. At ranges where training occurs, noise is generated from fixed-wing and rotary-winged aircraft overflights, large and small caliber weapon fire, and vehicle maneuver throughout the range. Several reference materials exist that summarize the impact of human activities (including military training) to wildlife. Two examples include the Environmental Assessment for the Aerial Gunnery Range at Yakima Training Center, WA; and, “Effects of Military Noise on Wildlife” (Bowles, 1990). The following trends in animal behavior are common to wildlife exposed to training noise.

- Quality of habitat selection tends to outweigh quality of noise. Animals flock to Army Installations because they contain large tracks of undeveloped land, providing ample suitable habitat, and due to stringent regulatory policies the land and wildlife is often managed much more responsibly than by the surrounding communities.
- Ample adequate land equates to an abundance of food and vegetative cover. Food supply is a limiting factor for survival, if the food supply is sufficient the habitat will remain preferable to the animal species regardless of the quality of noise disturbance, especially if the noise is predictable. Since soldiers train according to a prescribed schedule, the noise generated by training reduces the occurrence of responses to unexpected training activities.
- Predator species will often move toward the sound of gunfire, demonstrated in terrestrial and avian raptor species alike, largely due to the disturbance of prey from their shelter, which ultimately provide opportunities for predator species to successfully capture food.
- Studies conducted on military noise impacts to wildlife have determined that mammals will move away from loud noises, but with few exceptions, will return to their home range.

Soil Erosion

Erosion is the gradual wearing away of land by water, wind, and other general weather conditions, and can be influenced by many military and human activities within a given landscape. Erosion impacts can be influenced by the types of soils, vegetative cover, topography, weather and climate, and may be amplified by the frequency and types of training. Soil erosion can be a significant concern on military lands where maneuver training involving large vehicles (tracked and wheeled), and large and small arms fire occur. It can undermine the ability of the natural environment to support the Army mission, and once the erosion process has started, the direct effects can usually not be reversed.

The Army has numerous programs and management initiatives to minimize environmental damage to training lands. The principal mechanism for this management is the Integrated Training Area Management (ITAM) program. The ITAM program provides a comprehensive means to address the cumulative effects of soil erosion on Army training lands. (Canton, et al., 2006).

Threatened and Endangered Species/Other Wildlife

The Endangered Species Act (ESA) was passed in 1973 to address concerns about the decline in populations of many unique wildlife species. The purpose of the ESA is to rebuild populations of protected species and conserve “the ecosystems upon which endangered and threatened species depend” (Fish and Wildlife Service (FWS), 2001). The law offers two classes of protection for rare species in decline: endangered or threatened. Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened status indicates a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened (FWS, 2001). The FWS and the National Marine Fisheries Service (NMFS) are jointly responsible for administering the ESA. As of January 31, 2001, 1,244 species were listed as either threatened or endangered. Out of these species listed under the ESA, 112 occur on 23 representative installations. All federal agencies are required to protect threatened and endangered species (TES) while carrying out projects and to preserve TES habitats on federal land. The FWS and NMFS also coordinate TES conservation efforts with state agencies and private landowners. Ideally, with sufficient protection under the ESA, the TES populations will recover to the point at which they no longer need protection under the act. To facilitate this process, a team of experts develops a recovery plan that describes the steps needed to restore the species to health.

Under the ESA, it is illegal to “take” TES. As defined in the ESA, “the term take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” The Secretary of the Interior, through regulations, defined the term “harm” in this passage as “an act which actually kills or injures wildlife.” Such an act may include significant habitat modification or degradation where it actually kills

or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (FWS, 2001). Because most TES are not significantly hunted or collected, habitat degradation is the primary reason for population declines in listed species.

The ESA contains provisions for designation of “critical habitat” for listed species when deemed essential for the conservation and recovery of a species. Critical habitat includes geographic areas “on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection (FWS, 2001).” Areas not occupied by the species at the time of listing but are considered essential to the conservation of the species can be designated as critical habitat. Critical habitat designations are limited to federal agency actions or federally funded or permitted activities.

Wetlands

For regulatory purposes under the Clean Water Act, the term wetlands means “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. [40 CFR 232.2(r)]. There are many different kinds of wetlands of which generally include swamps, marshes, bogs, and similar areas. Wetland definitions can vary by agency, regulations, and policy. Wetland functions are of value to the sustainable management of military lands because of the services they provide in addition to training realism. Three services applicable to sustainable management are flood attenuation, groundwater recharge, and improvement of water quality by filtering sediment, nutrients and toxics.

The National Wetlands Inventory (NWI) of the Fish and Wildlife Service has identified and mapped most of the known wetlands in the conterminous United States, including those on military installations. (Department of Defense Instruction (DODI) 4715.3 states that installations will manage for “no net loss” of wetlands. In order to properly manage wetlands, installations have used the NWI and have conducted planning level surveys to determine the extent and location of wetlands across their installation. By identifying wetlands early in the NEPA process, and utilizing a “Go-No Go” approach where avoidance is preferred to direct or indirect impacts, installations have the ability to avoid costly mitigation and potential delays in implementation of the proposed action.

Water Resources

Water resources include surface water, groundwater, and floodplains, as well as other conservable resources such as estuaries and watersheds. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Storm water flows, which may be exacerbated by high proportions of impervious surfaces (e.g., buildings, roads, and parking lots), are important to the management of surface water. Storm water is also important to surface water quality because of its potential to introduce sediments and other contaminants into lakes, rivers, and streams. Groundwater consists of the subsurface hydrologic resources. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically may be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate. Floodplains are areas of low-level ground present along a river or stream channel. Such lands may be subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding depends on topography, the frequency of precipitation events, and the size (areal extent) of the watershed above the floodplain. Federal, state, and local regulations generally limit development in floodplains to passive uses, such as recreational and preservation activities, in order to reduce the risks to human health and safety.

The Clean Water Act (CWA) was established by the EPA to regulate the discharge of pollutants into the waters of the United States. It set the ground rules for implementing pollution control programs as well as continuing the requirement to set water quality standards for all surface water contaminants.

Army activities subject to CWA regulation include activities involving the collection and discharge of effluents (e.g., discharging pollutants from a point source into waters of the United States) or construction activities near waterways or wetlands. Several compliance responsibilities under the CWA result from the types of facilities used by and the range of activities at Army installations.

Facilities

“Facilities” encompasses all aspects of Army real property management. Army real property includes lands, facilities, and infrastructure. Furthermore, this includes interests in land, leaseholds, standing timber, buildings, improvements, and appurtenances. Facilities are the buildings, structures, and other improvements that support the Army’s mission. Infrastructure is the combination of supporting systems that enable the use of this land and resident facilities.

The Army holds real estate in every state. The variety of locations provides the Army with installations having terrain with the characteristics of the key environments of deserts, the arctic, jungles, and mountains. The Army’s installations also contain lands that are classifiable as swamp/wetland, forest, open woodland/savanna, grassland prairie, and semiarid shrub/steppe. Because the majority of the Army’s lands are

dedicated to training and range uses, the array of terrain settings enables Army units to train in a wide variety of environments. In many instances, installations have multiple terrain settings within their confines.

The Army has a vast array of facilities across its installations. Each facility exists to aid the Army in a particular function or to carry out a specific aspect of the Army's mission. Facilities are classified into facility category groups (FCGs). Use of five-digit FCG codes permits the Army to manage its inventory of facilities and to achieve uniformity in facilities among installations.

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly synthetic, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to economic growth of an area. Although there is no national consensus as to what constitutes infrastructure, the following reflect the principal elements most often associated with the term: water systems, wastewater systems, storm water systems, solid waste management, energy, traffic and circulation, transportation systems, and communication systems.

To manage its land, facilities, and infrastructure, each Army installation prepares a real property management plan (RPMP) based on assigned mission and guidance contained in a variety of plans and other documents. These references establish trends, strategies, goals, and objectives on which Army planners can base long-range and near-term plans for economical, environmentally responsible, and effective support of Army goals, objectives, missions, and populations.

Socioeconomic

Socioeconomics are defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Population levels are affected by regional birth and death rates and immigration and emigration. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Changes in these two fundamental socioeconomic indicators may be accompanied by changes in other components, such as housing availability and the provision of public services. Socioeconomic data at county, state, and national levels permits characterization of baseline conditions in the context of regional, state, and national trends.

The principle mechanisms for Army socioeconomics are Army expenditures and populations or employment changes. As the Army increases (or decreases) either expenditures or strength (military or civilian) at an Army installation, these are felt within three basic components of the local economic region (or community): local businesses, local individuals, and local governments (Canton, et al., 2006).

Energy Demand/Generation

The prevalent sources of energy on Army installations are electricity, natural gas, fuel oil, propane, and to a much lesser extent, solid fuels, such as coal and wood. Army installations use all of these forms of energy. Concerns regarding energy can extend to selection of type, conservation measures, availability, costs, or consumption rates. Energy consumption is perhaps the major infrastructure and budgetary challenge to Army leadership, encompassing both domestic (stateside) challenges and garrison and tactical challenges abroad (OCONUS). The power generation, transmission, and use have significant economic, environmental, and mission implications (Canton, et al., 2006). However, the Army has been very successful in the last decade of privatizing its energy supplies.

Land Use Compatibility

Land use refers to the planned development of property to achieve its highest and best use and to ensure compatibility among adjacent uses. In the civilian sector, land use plans guide the type and extent of allowable land use in an effort to control and limit growth; maintain and improve social, cultural, and physical amenities; promote a stable economy; preserve agricultural lands; maintain scenic areas; supply adequate housing; ensure the availability of necessary public services and utilities; and protect specially designated or environmentally sensitive areas. These concepts apply, in part, to Army land use planning. Except for economic growth considerations, land use planning at Army installations proceeds toward the same ends. In the Army, land use planning is the mapping and planned allocation of the use of all installation lands based on established land use categories and criteria. (Cantor, et al, 2006).

The land use planning process is iterative because it needs feedback and ideas from the installation unit, tenant organizations, and residents. Plans are prepared and made to work as a matter of public business by active solicitation of comments, holding public meetings, and keeping installation residents informed of the plan. Land use planning is used on a continuing basis as a component of real property master planning.

An installation's real property master plan (RPMP), which typically covers a 20-year planning horizon, is focused on the management and development of real property resources. This plan should contain information that is vital for addressing cumulative effects on land use. The RPMP analyzes and integrates the plans prepared by the Director of Public Works and other garrison staff, mission commanders and other tenant activities, higher headquarters, and those of neighboring communities to provide: for orderly development, or in some cases, realignment and closure of real property resources (US Department of the Army, Army Regulation (AR) 210-20, May 2005, p.35).

Hazardous Materials/Hazardous Waste

Hazardous material is defined as any substance with the physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, and incapacitating reversible illness or that might pose a substantial threat to human health or the environment. Hazardous waste is defined as any solid, liquid, contained gaseous, or semisolid waste or any combination of wastes that poses a substantial present or potential hazard to human health or the environment.

Evaluation of environmental risks from hazardous materials and wastes focuses on underground storage tanks and aboveground storage tanks and the storage, transport, and use of pesticides and herbicides; fuels; petroleum, oils, and lubricants (POLs), and a variety of chemicals. Risks may also extend to generation, storage, transportation, and disposal of hazardous wastes when such activities occur at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on type of soil, topography, and water resources.

In general, hazardous material and hazardous waste issues are supported by such statutes as the Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Clean Air Act (CAA), Clean Water Act (CWA), Safe Drinking Water Act (SDWA), Federal Facilities Compliance Act (FFCA), Military Munitions Rule (MMR), and Federal Hazardous Materials Transportation Law (HMT). Army Regulations (ARs) and Executive Orders (EOs) have also been established pursuant to these and subsequent federal and state regulations.

Special hazards are those substances that might pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos, radon, lead-based paint (LBP), polychlorinated biphenyls (PCBs), and unexploded ordnance (UXO). The presence of special hazards or controls over them may affect or be affected by implementation of a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of the effects of the proposed action.

Table U.1 shows examples of hazardous materials and hazardous waste issue in regards to facility action alternatives.

Table U-1 Facilities: Hazardous Materials and Waste Issues

Action Alternative	Issues
Use of existing facilities	UST maintenance and replacement Existing LBP Existing asbestos Existing equipment with PCBs Radon
Renovation of existing facilities	UST replacement and disposal LBP removal/disposal Asbestos disposal Replacement of PCB-containing equipment Radon
Demolition of existing facilities	UST disposal LBP disposal Asbestos disposal Disposal of PCB-containing equipment
Construction of new facilities	Installation of USTs Radon

US Army Corps of Engineers. 2002. *Final Programmatic Environmental Impact Statement for Army Transformation*. Prepared by US Army Corps of Engineers Mobile District. February, 2002.

Traffic and Transportation

Traffic and transportation systems refer to organized means of moving people and commodities (Canter et al, 2006). Principal transportation systems include commercial air carriers, waterway and maritime shipping, railroads, and trucking. Movement of people by privately owned vehicles on a local or regional scale is related to traffic and circulation. In many instances the location and availability of transportation system hubs and their capacities, can affect or be affected by installation activities. The smooth flow of traffic and the adequacy of on-post and off-post road networks to move people efficiently contribute materially to the quality of the human environment in the vicinity of the installation. Unless mitigation measures are implemented, increased volume can pose an additional risk to the safety of pedestrians and bicyclists.

Appendix V: Listing of unit stationing actions taking place as part of Alternative 1

LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
ACTIVATION/ GAINS									
	01	58 AV CO	WHEELER AFB	2	0	56	080216		
ACTIVATION	90	0637 AQ TM	ANNISTON, AL	2	0	2	080916		
ACTIVATION	06	365 FA DET	BARKSDALE, LA	1	0	1	080916		
ACTIVATION	06	363 FA DET	CANNON AF, NM	1	0	1	080916		
ACTIVATION	53	XX HHC THEATER IO GP	CP PARKS	24	9	52	100916	TAA13	MODULARITY
ACTIVATION	53	XX HHC IO FLD SPT BN	CP PARKS	52	8	50	100916	TAA13	MODULARITY
ACTIVATION	53	XX HHC IO GEN SPT BN	CP PARKS	33	10	69	100916	TAA13	MODULARITY
ACTIVATION	06	366 FA DET	DYESS AFB	1	0	1	080916		
ACTIVATION	06	372 FA DET	DYESS AFB	1	0	1	080916		
ACTIVATION	06	358 FA DET	EGLIN AFB	1	0	1	080916		
ACTIVATION	31	4 BN, 7 SFG(A)	EGLIN AFB	45	26	359	111016	TAA13	NEW GROWTH
ACTIVATION	06	377 FA DET	EIELSON A, AK	1	0	1	080916		
ACTIVATION	06	367 FA DET	ELLSWORTH, SD	1	0	1	080916		
ACTIVATION	06	360 FA DET	ELMENDORF, AK	1	0	1	080916		
ACTIVATION	TDA	US Army Correction	FT BELVOIR	1	0	2	071002		
ACTIVATION	TDA	U.S. ARMY PROTECTI	FT BELVOIR	1	43	110	071003		
ACTIVATION	90	657 AQ TM	FT BELVOIR	2	0	2	090516		
ACTIVATION	90	658 AQ TM	FT BELVOIR	2	0	2	090516		
ACTIVATION	90	659 AQ TM	FT BELVOIR	2	0	2	090516		
ACTIVATION	90	660 AQ TM	FT BELVOIR	2	0	2	090516		
ACTIVATION	90	661 AQ TM	FT BELVOIR	2	0	2	090516		
ACTIVATION	90	662 AQ TM	FT BELVOIR	2	0	2	090516		
ACTIVATION	90	663 AQ TM	FT BELVOIR	2	0	2	090516		
ACTIVATION	90	915 AQ BN	FT BELVOIR	4	0	4	090516		
ARLINGTON, VA	AUG	W1JR USA ELE DEF ACQ UN	FT BELVOIR	13	0	1	071002		TDA STN CHG
ALEXANDRIA, VA	AUG	W1KJ USA ELE DTR-TCA	FT BELVOIR	168	4	110	071001		
ACTIVATION	07	75 IN HHC	FT BENNING	20	13	257	071016	MSFA	MODULARITY
ACTIVATION	05	448 ENGR BN	FT BENNING	0	0	12	080916	MSFA	MODULARITY
ACTIVATION	08	19 MD DET	FT BENNING	2	0	4	081016		

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
ACTIVATION	05	793 HORIZONTAL CO	FT BENNING	5	0	141	101016	MSFA	MODULARITY
ACTIVATION	05	52 SURVEY/DESIGN TM	FT BENNING	0	1	13	101016	MSFA	MODULARITY
ACTIVATION	05	153 CONCRETE TEAM	FT BENNING	0	0	11	101016	MSFA	MODULARITY
ACTIVATION	09	EOD CO	FT BENNING	1	7	22	101016	MSFA	MODULARITY
FT BRAGG	55	216 TC DET 00	FT BENNING	3	0	18	080916		
FT BRAGG	55	385 TC DET 00	FT BENNING	3	0	18	080916		
FT BRAGG	42	507 CSG	FT BENNING	32	5	93	081001	MSFA	MODULARITY
FT KNOX	05	60 VERTICAL CO	FT BENNING	5	3	143	091016	MSFA	MODULARITY
FT POLK	19	519 MP HHD	FT BENNING	13	2	58	081016		
FT STEWART	19	385 MP HHD	FT BENNING	13	2	78	081016		
SCHOFIELD	19	728 MP HHD	FT BENNING	13	2	60	081016		
ACTIVATION		TRADOC Analysis Center - EBC	FT BLISS	5			071001		MACOM
ACTIVATION		Future Force Integration Directo	FT BLISS	109	5	38	071001		Army Campaign Plan DF
ACTIVATION	55	47 TC CP (PLS)	FT BLISS	5	1	164	071016	MSFA	MODULARITY
ACTIVATION	44	AD ELE	FT BLISS	3	0	6	071016	MSFA	MODULARITY
ACTIVATION	19	MP BN	FT BLISS	13	2	58	071016	OIF NEW GROWTH	G3 APPROVED
ACTIVATION	08	DETMEDICAL TEAM, OPTO	FT BLISS	2	0	4	071016	FY07 OOC	
ACTIVATION	44	AD ELE	FT BLISS	3	0	6	071016	MSFA	MODULARITY
ACTIVATION	44	AD ELE	FT BLISS	3	0	6	071016	MSFA	MODULARITY
ACTIVATION	44	AD ELE	FT BLISS	3	0	6	071016	MSFA	MODULARITY
ACTIVATION	19	MP CO (CS)	FT BLISS	5	0	165	080216	OIF NEW GROWTH	
ACTIVATION	05	2 ENGR BN	FT BLISS	23	4	146	080616	MSFA	MODULARITY
ACTIVATION	44	AD ELE	FT BLISS	3	0	6	080616	MSFA	MODULARITY
ACTIVATION	05	40 EN CO	FT BLISS	5	0	122	080616	MSFA	MODULARITY
ACTIVATION	05	53 EN CO	FT BLISS	5	0	122	080616	MSFA	MODULARITY
ACTIVATION	44	78 AD ELE	FT BLISS	3	0	6	080616	MSFA	MODULARITY
ACTIVATION	44	79 AD ELE	FT BLISS	3	0	6	080616	MSFA	MODULARITY
ACTIVATION	05	595 SAPPER CO	FT BLISS	5	0	99	080616	MSFA	MODULARITY
ACTIVATION	87	AR BN	FT BLISS	24	5	274	080916		
ACTIVATION	90	635 AQ TM	FT BLISS	2	0	2	080916		
ACTIVATION	09	162 OD CO	FT BLISS	5	0	39	081016		
ACTIVATION	45	16 PI DET	FT BLISS	4	0	16	081016		
ACTIVATION	14	4 FMCO	FT BLISS	8	0	65	081016	TAA 08-13	MODULARITY
ACTIVATION	44	BN AMD (THAAD)	FT BLISS	53	10	637	081016	MSFA/PLCHLD	MODULARITY
ACTIVATION	44	AD ELE	FT BLISS	53	10	627	081016	MSFA	MODULARITY
ACTIVATION	87	STB, 2 BDE, 1ID	FT BLISS	19	6	247	090915	BCT BASING	MODULARITY
ACTIVATION	06	BTRY B TAB (FIRES UA)	FT BLISS	2	3	43	091016	TAA6	
ACTIVATION	34	533 MI BN (BFSB)	FT BLISS	23	10	257	091016	TAA13	MODULARITY
ACTIVATION	09	EOD CO	FT BLISS	1	3	22	091016	MSFA	MODULARITY
ACTIVATION	44	AD BN	FT BLISS	12	6	122	091016	MSFA	MODULARITY
ACTIVATION	44	AD BN	FT BLISS	12	6	122	091016	MSFA	MODULARITY

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ACTIVATION	63	64 CO SPT (155T)	FT BLISS	5	1	223	100616	MSFA	MODULARITY
ACTIVATION	07	STB, 2 BDE, 1ID	FT BLISS	19	6	247	100716	BCT BASING	MODULARITY
ACTIVATION	09	EOD CO	FT BLISS	1	8	22	101016	MSFA	MODULARITY
ACTIVATION	44	AD BN	FT BLISS	12	6	122	101016	MSFA	MODULARITY
ACTIVATION	44	AD BN	FT BLISS	12	6	122	101016	MSFA	MODULARITY
FRIEDBERG	17	6-1 BDE RECCE TROOP (X	FT BLISS	4	0	47	100714	GDPR	1-1 AD MOVE TO CONU
FT BLISS	02	0062 AG BND	FT BLISS	0	1	39	071017		
FT EUSTIS	19	202 MP CO	FT BLISS	5	0	165	081016		
FT HOOD	09	PLT MOD AMMO MED LIFT	FT BLISS	1	1	45	071016	TAA11	
FT HOOD	09	PLT MOD AMMO MED LIFT	FT BLISS	1	1	45	071016	TAA11	
FT HOOD	42	263 MNT SPT CO	FT BLISS	9	9	225	071016	COMMAND PLAN 08	
FT HOOD	14	230 FMD A	FT BLISS				081016	TAA13	MODULARITY
FT HOOD	63	15 HHB SUSTAINMENT	FT BLISS	81	20	294	090915	TAA1	
FT HUACHUCA	11	86 ITSB-J (MIXED TROPO)	FT BLISS	25	5	392	101016	ITSB	
FT LEONARD WOOD	09	763 OD CO	FT BLISS	1	0	22	071017		
FT RILEY	05	70 EN BN	FT BLISS	27	1	390	080615	BCT BASING	MODULARITY
MANNHEIM	55	68 TRAN CO	FT BLISS	5	1	166	090716	GDPR	
USAREUR	55	606 TM MVT CTRL	FT BLISS	3	0	18	090716	GDPR	
USAREUR	08	72 VET SVC DET	FT BLISS	7	1	47	080716	GDPR	
USAREUR	07	36 IN BN 01	FT BLISS	50	0	650	080916	GDPR	
WHITE SAN, 1NM	09	734 OD CO	FT BLISS	1	0	22	081016		
ACTIVATION	TDA	MED DET	FT BRAGG	38	0	57	071001		
ACTIVATION	20	24 MH TM	FT BRAGG	0	0	2	071016		
ACTIVATION		406AFSB AUG	FT BRAGG	0	0	0	071016		
ACTIVATION	90	406 AQ BDE	FT BRAGG	6	0	4	071016		
ACTIVATION	09	28 EOD CO	FT BRAGG	5	0	39	071017	MSFA	MODULARITY
ACTIVATION	08	51 LOG SPT CO	FT BRAGG	3	1	118	071216	MSFA	MODULARITY
ACTIVATION	41	98 CA BN	FT BRAGG	53	0	144	080316	MSFA	MODULARITY
ACTIVATION	10	DET SPO WATER	FT BRAGG	3	0	82	080616	BP FOR BW8/IMA	
ACTIVATION	10	PLT WATER PURIF	FT BRAGG	1	0	6	080616	TAA11	
ACTIVATION	10	PLTWATER PURIF	FT BRAGG	1	0	20	080616	TAA11	
ACTIVATION	10	PLT WATER STG/DIST	FT BRAGG	1	0	27	080616	TAA11	
ACTIVATION	10	HQ QM WTR PUR & DIST	FT BRAGG	1	0	18	080616	TAA11	
ACTIVATION	20	28 MH TM	FT BRAGG	0	0	2	080916		
ACTIVATION	49	38 SB BN 01	FT BRAGG	33	0	277	081015		
ACTIVATION	05	539 EN DET	FT BRAGG	1	0	6	081016	MSFA	MODULARITY
ACTIVATION	05	133 EN DET	FT BRAGG	3	0	6	081016		
ACTIVATION	05	EXPLOSIVE HAZ TEAM	FT BRAGG	1	0	6	081016	MSFA	MODULARITY
ACTIVATION	05	161 ENGR SPT CO	FT BRAGG	5	0	108	091016	MSFA	MODULARITY
ACTIVATION	05	102 SAPPER CO	FT BRAGG	5	0	86	091016	MSFA	MODULARITY
ACTIVATION	05	57 SAPPER CO	FT BRAGG	5	0	86	091016	MSFA	MODULARITY

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ACTIVATION	05	500 HORIZONTAL CO	FT BRAGG	5	0	141	091016	MSFA	MODULARITY
ACTIVATION	05	738 ENGR SPT CO	FT BRAGG	5	0	108	091016	MSFA	MODULARITY
ACTIVATION	05	534 SURVEY/DESIGN TM	FT BRAGG	0	1	13	091016	MSFA	MODULARITY
ACTIVATION	05	902 VERTICAL CO	FT BRAGG	5	3	143	091016	MSFA	MODULARITY
ACTIVATION	05	264 CLEARANCE CO	FT BRAGG	6	0	159	091016	MSFA	MODULARITY
ACTIVATION	05	137 SAPPER CO	FT BRAGG	5	0	86	091016	MSFA	MODULARITY
ACTIVATION	05	596 HORIZONTAL CO	FT BRAGG	5	0	141	091016	MSFA	MODULARITY
ACTIVATION	05	521 EXP HAZ CONTROL CELL	FT BRAGG	5	0	10	091016	MSFA	MODULARITY
ACTIVATION	41	91 CA BN	FT BRAGG	53	0	144	091016	TAA13	
ACTIVATION	31	4 BN, 3 SFG(A)	FT BRAGG	45	26	359	091016	TAA13	
FAYETTEVI, NC	AUG	0004 PO HHC AUG	FT BRAGG	0	0	6	071016		
FT BELVOIR	09	737 OD CO	FT BRAGG	1	0	22	081016		
FT MCNAIR	09	767 ORDNANCE CO (EOD)	FT BRAGG	5	0	39	071017	Command Plan 08	
USAREUR	08	51 VET MEDICINE DET	FT BRAGG	3	0	11	080716	GDPR	
ACTIVATION	05	602 EN DET	FT BUCHANAN	10	0	5	071016		
ACTIVATION		MSE	FT BUCHANAN	38	3	35	080916		
ACTIVATION	05	511 SAPPER CO	FT CAMPBELL	5	0	99	071016	MSFA	MODULARITY
ACTIVATION	43	PLT AUTH/ARMNT MNT	FT CAMPBELL	0	1	14	071016	TAA11/MNT/FDU	
ACTIVATION	09	49 ORD CO (EOD)	FT CAMPBELL	5	0	39	071017	TAA13	
ACTIVATION	19	218 MP CO (CS)	FT CAMPBELL	5	0	165	080217	OIF NEW GROWTH	
ACTIVATION	31	4 BN, 5 SFG(A)	FT CAMPBELL	45	26	359	080816	TAA13	
ACTIVATION	08	501 MD CO	FT CAMPBELL	5	0	67	081016		
FT GILLEM	09	184 OD HHD	FT CAMPBELL	9	1	26	081016		
FT GILLEM	09	723 OD CO	FT CAMPBELL	1	0	22	081016		
FT GILLEM	09	52 OD HHC	FT CAMPBELL	15	3	35	081016		
FT MCCOY	09	788 ORDNANCE CO (EOD),	FT CAMPBELL	1	0	22	071017	Command Plan 08	
FT MEADE	09	744 EOD CO	FT CAMPBELL	1	0	22	071017	Command Plan 08	
TAEGU AB, KS	01	0160 AV CO	FT CAMPBELL	7	19	116	071014		
USAREUR	08	64 VET SVC DET	FT CAMPBELL	7	1	47	080716	GDPR	
ACTIVATION	AUG	43 CS HHC SPT GRP	FT CARSON	0	0	2	080416		
ACTIVATION	09	663 OD CO	FT CARSON	5	0	39	081016		
ACTIVATION	34	XX MI BN (BFSB)	FT CARSON	23	10	257	101016	FMR13	MODULARITY
ACTIVATION	09	EOD CO	FT CARSON	1	11	22	110616	MSFA	MODULARITY
ACTIVATION	31	4 BN, 10 SFG(A)	FT CARSON	45	26	359	121016	TAA13	NEW GROWTH
ANDREWS AFB	09	749 EOD CO	FT CARSON	1	0	22	080616	CP-08	
FT HOOD	87	4 AR HHC	FT CARSON	108	23	201	081016		
FT HOOD	87	4 AR HHC 01	FT CARSON	43	11	104	081016		
FT HOOD	14	230 FMCO	FT CARSON	10	0	95	081016	TAA13	MODULARITY
FT HOOD	87	4 AR HHC	FT CARSON	81	12	134	081016		

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FT JACKSON	09	748 EOD CO	FT CARSON	1	0	22	090616	CP-08	
USAREUR	19	127 MP CO CBT SUPP	FT CARSON	5	0	166	081016	GDPR	
FT DETRIC	08	6 MD DET	FT DETRIC	14	3	42	081016		
ACTIVATION	77	IN BN	FT DIX	29	5	360	080901		
ACTIVATION	63	117 CS HHD	FT DIX	15	2	61	080901		
ACTIVATION	77	42 IN BN	FT DIX	44	10	95	080901		
ACTIVATION	03	50 CM CO	FT DIX	7	0	141	080901	MSFA	MODULARITY
ACTIVATION	90	1948 AQ TM	FT DIX	2	0	2	080901		
ACTIVATION	TDA	AR RGNL RDNSS SUST	FT DIX	45	6	32	080916		
ACTIVATION	05	990 EN CO	FT DIX	5	3	154	080916	MSFA	MODULARITY
ACTIVATION	63	77 CS HHC	FT DIX	69	18	223	080916	MSFA	MODULARITY
ACTIVATION	05	693 SAPPER CO	FT DRUM	5	0	99	071016	MSFA	MODULARITY
ACTIVATION	09	EOD CO	FT DRUM	1	1	22	071016	MSFA	FY07 OOC
ACTIVATION	19	563 MP CBT SPT CO	FT DRUM	5	0	165	071101	OIF NEW GROWTH	
ACTIVATION	55	110 TC CO	FT DRUM	5	1	163	081016	MSFA	MODULARITY
FT BRAGG	19	23 MP CBT SPT CO	FT DRUM	5	0	165	080316	TAA11	
FT DRUM	05	630 EN CO	FT DRUM	5	0	95	071017		
FT DRUM	02	0010 AG BND	FT DRUM	0	1	39	071017		
FT DRUM	05	693 EN CO	FT DRUM	5	0	95	071018		
FT DRUM	19	91 MP HHD	FT DRUM	13	2	78	081016		
FT DRUM	19	511 MP CO	FT DRUM	5	0	165	081016		
FT DRUM	19	543 MP CO	FT DRUM	5	0	165	081016		
ACTIVATION	55	359 INLAND CGO TR CO	FT EUSTIS	4	1	155	071016	TAA11	AC/RC REBALANCE
ACTIVATION	55	688 TC CO	FT EUSTIS	6	1	48	080316		
ACTIVATION	55	689 TC CO	FT EUSTIS	6	1	48	081016		
ACTIVATION	11	7 SIG CEN (THEATER)	FT GORDON	2	1	20	071016	MSFA	MODULARITY
ACTIVATION	11	518 TAC INSTL/NTWKG	FT GORDON	4	1	147	080115	MSFA	MODULARITY
ACTIVATION	11	TNC MODULE	FT GORDON	8	1	11	110922	MSFA	MODULARITY
ACTIVATION	05	937 CLEARANCE CO	FT HOOD	6	0	185	071016	MSFA	MODULARITY
ACTIVATION	05	584 MOBILITY AUG CO	FT HOOD	5	0	122	071016	MSFA	MODULARITY
ACTIVATION	08	176 MEDICAL TEAM (OPTO)	FT HOOD	2	0	4	071016	MSFA	MODULARITY
ACTIVATION	43	263 MOD WH VEH MNT	FT HOOD	1	0	1	071016	TAA11	
ACTIVATION	05	87 SAPPER CO	FT HOOD	5	0	99	071016	MSFA	MODULARITY
ACTIVATION		407AFSB AUG	FT HOOD	0	0	0	071016		
ACTIVATION	90	407 AQ BDE	FT HOOD	6	0	4	071016		
ACTIVATION	63	509 SUPPORT CO (BfSB)	FT HOOD	5	1	118	080916	MSFA	MODULARITY

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
ACTIVATION	49	2-38 CAVALRY (R&S)	FT HOOD	33	0	277	080916	MSFA	MODULARITY
ACTIVATION	05	588 EXPLOSIVE HAZ TEAM	FT HOOD	1	0	6	081016	MSFA	MODULARITY
ACTIVATION	05	160 EXP HAZ CONTROL CELL	FT HOOD	5	0	10	081016	MSFA	MODULARITY
ACTIVATION	05	EXPLOSIVE HAZ TEAM	FT HOOD	1	0	6	081016	MSFA	MODULARITY
ACTIVATION	05	30 ASPHALT TEAM	FT HOOD	0	0	28	090616	MSFA	MODULARITY
ACTIVATION	05	104 VERTICAL CO	FT HOOD	5	3	143	090616	MSFA	MODULARITY
ACTIVATION	05	63 SURVEY/DESIGN TM	FT HOOD	0	1	13	090616	MSFA	MODULARITY
ACTIVATION	09	EOD CO	FT HOOD	1	6	22	100616	MSFA	MODULARITY
FT BLISS	44	44 AD BN	FT HOOD	44	21	723	090116		
FT GORDON	11	63 BN ITSB-J	FT HOOD	25	5	485	080916	TAA13	
FT SAM HOUSTON	09	79 OD HHD	FT HOOD	9	1	26	080416		
FT SAM HOUSTON	09	797 EOD CO	FT HOOD	5	0	39	080616	CP 08	
GIEBELSTA, GM	AUG	69 AD HHB BDE AUG	FT HOOD	0	0	4	080716		
OSAN AFB	44	1 AD BN 02	FT HOOD	37	20	551	071116		
USAREUR	44	69 ADA BDE	FT HOOD	30	9	87	080816	GDPR	
USAREUR	55	70 TC CO (MDM)	FT HOOD	5	1	166	090716	GDPR	
ACTIVATION	11	207 SC CO	FT IRWIN	4	1	46	080916		
ACTIVATION	37	3 ME DET	FT IRWIN	56	10	111	080916		
ACTIVATION	09	EOD CO	FT IRWIN	1	2	22	101016	MSFA	MODULARITY
ACTIVATION		AR RGNL RDNSS SUST	FT JACKSON	45	6	32	080916		
ACTIVATION	12	310 AG CTR	FT JACKSON	20	7	56	080916		
ACTIVATION	TDA	USA REG'L CORR FAC	FT KNOX	1	0	87	071002		
ACTIVATION	TDA	TNG DIV (FUNCT TNG	FT KNOX	22	2	29	071016		TDA ACTIV
ACTIVATION	TDA	BN (SROTC)	FT KNOX	79	0	41	071016		TDA ACTIV
ACTIVATION		MSE	FT KNOX	23	6	13	080916		
ACTIVATION	TDA	MSE MCP	FT KNOX	29	4	22	080916		
ACTIVATION	TDA	MSE OCP	FT KNOX	21	1	13	080916		
ACTIVATION	TDA	MSE MCP	FT KNOX	29	4	22	080916		
ACTIVATION	TDA	MSE OCP	FT KNOX	21	1	13	080916		
ACTIVATION	90	631 AQ TM	FT KNOX	2	0	2	080916		
ACTIVATION	90	632 AQ TM	FT KNOX	2	0	2	080916		
ACTIVATION	05	HORIZON CONST CO	FT KNOX	5	0	153	091016	TAA 13	
ACTIVATION	05	538 CONCRETE TEAM	FT KNOX	0	0	11	101016	MSFA	MODULARITY
HANAU	05	502 EN Co	FT KNOX	5	1	179	080716	GDPR	MODULARITY
ACTIVATION	63	497 CS HHC	FT LEE	15	2	59	080916	MSFA	MODULARITY
ACTIVATION	AUG	0000 EN DET AUG	FT LEONARD WOOD	0	0	0	071016		
ACTIVATION	11	94 SC CO	FT LEONARD WOOD	4	1	49	081016		

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ACTIVATION	63	193 CS BN	FT LEONARD WOOD	26	6	316	081016		
ACTIVATION	37	4 ME HQ	FT LEONARD WOOD	56	10	110	081016		
FT BLISS		MOTOR TRANSPORT OPERA	FT LEONARD WOOD	1	1	75	100901	ACOM	
REDSTONE ARSENAL		TECHNICAL ESCORT	FT LEONARD WOOD	1	0	10	100901	ACOM	
ACTIVATION	TDA	BN (SROTC)	FT LEWIS	53	0	33	071016		TDA ACTIV
ACTIVATION	12	112 MIL MAIL TERMINAL	FT LEWIS	2	1	15	071016	TAA13	
ACTIVATION	08	DETMEDICAL TEAM, OPTO	FT LEWIS	2	0	4	071016	FY07 OOC	
ACTIVATION	08	DETMEDICAL TEAM, OPTO	FT LEWIS	2	0	4	071016	FY07 OOC	
ACTIVATION	43	PLT AUTH/ARMNT MNT	FT LEWIS	0	0	11	071016	TAA11/MNT/FDU	
ACTIVATION	31	4 BN, 160 SOAR	FT LEWIS	36	79	495	071016	ACOM	
ACTIVATION	11	525 CORPS AREA SIG CO	FT LEWIS	4	3	129	080316	MSFA	
ACTIVATION	19	493 MP CO	FT LEWIS	4	0	120	080916	MSFA	MODULARITY
ACTIVATION	11	63 SIG NETWORK SUP	FT LEWIS	3	1	43	080916	MSFA	MODULARITY
ACTIVATION	05	EXPLOSIVE HAZ TEAM	FT LEWIS	1	0	6	080916	MSFA	MODULARITY
ACTIVATION	63	125 CS CO	FT LEWIS	5	1	216	081016		
ACTIVATION	05	28 CONCRETE TEAM	FT LEWIS	0	0	12	081016	MSFA	MODULARITY
ACTIVATION	05	557 HORIZONTAL CO	FT LEWIS	5	0	156	081016	MSFA	MODULARITY
ACTIVATION	05	553 VERTICAL CO	FT LEWIS	5	3	154	081016	MSFA	MODULARITY
ACTIVATION	05	617 HORIZONTAL CO	FT LEWIS	5	0	156	081016	MSFA	MODULARITY
ACTIVATION	08	575 MD CO	FT LEWIS	5	0	67	081016		
ACTIVATION	05	84 SURVEY/DESIGN TM	FT LEWIS	0	1	13	081016	MSFA	MODULARITY
ACTIVATION	34	109 MI BN (BFSB)	FT LEWIS	23	10	257	081016	TAA13	MODULARITY
ACTIVATION	19	595 MP CO	FT LEWIS	4	0	120	081016		
ACTIVATION		404AFSB AUG	FT LEWIS	0	0	0	081016		
ACTIVATION	90	404 AQ BDE	FT LEWIS	6	0	4	081016		
ACTIVATION	05	531 EXPLOSIVE HAZ TEAM	FT LEWIS	1	0	6	091016	MSFA	MODULARITY
ACTIVATION	05	22 CLEARANCE CO	FT LEWIS	6	0	159	091016	MSFA	MODULARITY
ACTIVATION	49	201 HHC BFSB	FT LEWIS	38	9	95	091216	TAA13	MODULARITY
ACTIVATION	31	4 BN, 1 SFG(A)	FT LEWIS	45	26	359	101016	TAA13	NEW GROWTH
ACTIVATION	09	EOD CO	FT LEWIS	1	10	22	110616	MSFA	MODULARITY
ACTIVATION	05	EXP HAZ CONTROL CELL	FT LEWIS	5	0	10	110916	MSFA	MODULARITY
BAUMHOLDE, GM	06	94 FA BN 01	FT LEWIS	33	2	283	081015		
FT BRAGG	08	0056 MD HHD	FT LEWIS	16	2	58	071016		
GRAFENWOH, GM	08	255 MD DET	FT LEWIS	2	0	11	080716		
TACOMA, WA	AUG	W08R USA HEALTH SERV SP	FT LEWIS	8	0	3	071002		
VILSECK, GM	47	2 IN HHC 02	FT LEWIS	41	10	80	081016		
ACTIVATION	TDA	BDE (SCH), 70TH DI	FT MCCOY	11	1	14	071016		TDA ACTIV
ACTIVATION	TDA	BDE (TD), 70TH DIV	FT MCCOY	55	0	109	071016		TDA ACTIV
ACTIVATION	TDA	BN (LT)	FT MCCOY	13	0	8	071016		TDA ACTIV

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
FT MCPHERSON	02	0214 AG BND	FT MCPHERSON	2	0	56	071017		
ACTIVATION	19	200 MP CMD	FT MEADE	57	6	94	080416	MSFA	MODULARITY
ACTIVATION	19	200 MP DET (MSE)	FT MEADE	27	4	21	080916	MSFA	MODULARITY
ACTIVATION		MSE	FT MEADE	27	4	21	080916		
FT MONROE	02	0050 AG BND	FT MONROE,	2	0	56	071017		
CP SMITH, HI	AUG	W43A STRATCOM AIRBN CMD	OFFUTT AF, NE	16	0	0	071002		TDA STN CHG
ACTIVATION	03	275 CHEM BIDS PLT	FT POLK	3	0	90	071018	MSFA	MODULARITY
ACTIVATION	19	287 MP CO (CS)	FT POLK	5	0	165	080216	OIF NEW GROWTH	
ACTIVATION	03	316 CM CO	FT POLK	0	0	6	080915		CM REDESIGN FDU
ACTIVATION	03	316 CM CO	FT POLK	1	0	30	080915		CM REDESIGN FDU
ACTIVATION	03	316 CM CO	FT POLK	1	0	30	080915		CM REDESIGN FDU
ACTIVATION	03	42 CM PLT	FT POLK	1	0	30	080916	MSFA	MODULARITY
ACTIVATION	03	CM PLT	FT POLK	1	0	30	080916	MSFA	MODULARITY
ACTIVATION	03	183 CM PLT	FT POLK	0	6	0	080916	MSFA	MODULARITY
ACTIVATION	90	636 AQ TM	FT POLK	2	0	2	080916		
ACTIVATION	05	633 HORIZONTAL CO	FT POLK	5	0	156	081016	MSFA	MODULARITY
ACTIVATION	05	93 VERTICAL CO	FT POLK	5	3	154	081016	MSFA	MODULARITY
ACTIVATION	08	33 MD DET	FT POLK	2	0	4	081016		
ACTIVATION	05	31 ASPHALT TEAM	FT POLK	0	0	39	081016	TAA11	SAMAS RUN
ACTIVATION	05	22 SURVEY/DESIGN TM	FT POLK	0	1	13	081016	MSFA	MODULARITY
ACTIVATION	05	687 HORIZONTAL CO	FT POLK	5	0	141	081016	MSFA	MODULARITY
USAREUR	55	51 TRANS CO	FT POLK	5	1	164	090716	GDPR	
ACTIVATION	TDA	MED DET	FT RICHARDSON	19	0	27	071001		
ACTIVATION	90	1959 AQ TM	FT RICHARDSON	2	0	2	080901	MSFA	MODULARITY
ACTIVATION	77	207 IN HHC	FT RICHARDSON	44	10	95	080901	MSFA	MODULARITY
ACTIVATION	05	797 EN CO	FT RICHARDSON	5	3	154	080916	MSFA	MODULARITY
ACTIVATION	05	23 SAPPER CO	FT RICHARDSON	5	0	99	081016	MSFA	MODULARITY
ACTIVATION	05	6 ENGR BN	FT RICHARDSON	23	4	164	081016	MSFA	MODULARITY
ACTIVATION	05	84 ENG SUPPORT CO	FT RICHARDSON	5	0	116	101016	MSFA	MODULARITY
ACTIVATION	05	559 HORIZONTAL CO	FT RICHARDSON	5	0	141	101016	MSFA	MODULARITY
ACTIVATION	05	56 VERTICAL CO	FT RICHARDSON	5	0	141	101016	MSFA	MODULARITY
ACTIVATION	05	525 CONCRETE TM	FT RICHARDSON	0	0	11	101016	MSFA	MODULARITY
ACTIVATION	05	240 SURVEY/DESIGN TM	FT RICHARDSON	0	1	13	101016	MSFA	MODULARITY
FT WAINWRIGHT	05	0864 EN CO	FT RICHARDSON	5	0	138	071016		
GUAM INTL, GQ	05	297 EN CO	FT RICHARDSON	5	0	156	080917		
ACTIVATION	17	ARMORED RECON	FT RILEY	32	0	348	071016	BCT BASING	MODULARITY

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
ACTIVATION	17	ARMORED RECON	FT RILEY	32	0	348	071016	BCT BASING	MODULARITY
ACTIVATION	63	299 BSB	FT RILEY	26	5	399	080316		
ACTIVATION	63	532 CS BN	FT RILEY	26	6	312	080916		
ACTIVATION	87	AR HHC	FT RILEY	27	6	324	080916		
ACTIVATION	87	AR HHC	FT RILEY	73	13	102	080916		
ACTIVATION	90	633 AQ TM	FT RILEY	2	0	2	080916		
ACTIVATION	90	634 AQ TM	FT RILEY	2	0	2	080916		
ACTIVATION	09	EOD CO	FT RILEY	1	4	22	091016	MSFA	MODULARITY
ACTIVATION	09	EOD CO	FT RILEY	1	9	22	101016	MSFA	MODULARITY
FT BENNING	19	988 MP CO	FT RILEY	5	0	165	081016		
FT BLISS	44	31 AD HHB	FT RILEY	30	9	91	080916		
FT BLISS	19	978 MP CO	FT RILEY	5	0	165	081016		
FT BRAGG	55	126 TC CO	FT RILEY	5	1	164	081016		
FT BRAGG	14	126 FMCO (Det)	FT RILEY	2	0	21	081016	TAA-13	MODULARITY
FT BRAGG	14	126 FMCO	FT RILEY	14	0	128	081016	TAA13	
FT BRAGG	14	126 FMCO (HQ)	FT RILEY	4	0	23	081016	TAA-13	MODULARITY
FT BRAGG	19	23 MP CO	FT RILEY	5	0	165	081016		
FT CAMPBELL	19	194 MP DET	FT RILEY	5	0	165	081016		
FT CARSON	55	32 TC CO	FT RILEY	5	1	164	081016		
FT CARSON	19	984 MP CO	FT RILEY	5	0	165	081016		
FT GORDON	AUG	63 SC BN AUG	FT RILEY	0	0	1	080916		
FT HOOD	87	4 AR BN 01	FT RILEY	24	5	283	081016		
FT HOOD	87	4 AR HHC	FT RILEY	27	6	338	081016		
FT LEWIS	19	571 MP CO	FT RILEY	5	0	165	081016		
FT LEWIS	19	54 MP CO	FT RILEY	5	0	165	081016		
FT STEWART	55	396 TC CO	FT RILEY	5	1	164	081016		
FT STORY	55	611 TC CO	FT RILEY	4	1	202	081016		
SCHOFIELD	19	58 MP CO	FT RILEY	5	0	166	081016		
ACTIVATION	08	228 MED HHC	FT SAM HOUSTON	153	2	326	071016	MSFA	MODULARITY
ACTIVATION	30	338 MI BN	FT SAM HOUSTON	16	6	140	071016	MSFA	MODULARITY
ACTIVATION	TDA	AUG MCP HQ ARSOUTH	FT SAM HOUSTON	1	0	4	080716		
ACTIVATION	51	HQ HHC	FT SAM HOUSTON	80	13	62	080716		
ACTIVATION	TDA	AUG OCP HQ ARSOUTH	FT SAM HOUSTON	0	1	27	080716		
ACTIVATION	51	HQ HHC	FT SAM HOUSTON	95	15	86	080716		
ACTIVATION	51	HQ HHC	FT SAM HOUSTON	11	1	60	080716		
ACTIVATION	30	511 MI BN	FT SAM HOUSTON	25	32	265	081016		
ACTIVATION	30	14 MI BN	FT SAM HOUSTON	16	6	140	081016	MSFA	MODULARITY
ACTIVATION	08	42 MD DET	FT SAM HOUSTON	2	0	4	081016		
ACTIVATION	90	651 AQ TM	FT SAM HOUSTON	2	0	2	090516		
ACTIVATION	90	652 AQ TM	FT SAM HOUSTON	2	0	2	090516		
ACTIVATION	90	653 AQ TM	FT SAM HOUSTON	2	0	2	090516		

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
ACTIVATION	90	654 AQ TM	FT SAM HOUSTON	2	0	2	090516		
ACTIVATION	90	655 AQ TM	FT SAM HOUSTON	2	0	2	090516		
ACTIVATION	90	656 AQ TM	FT SAM HOUSTON	2	0	2	090516		
SAN ANTON, TX	AUG	W6A3 USA MED INFO MGT C	FT SAM HOUSTON	9	0	12	071002		
ACTIVATION	51	HQ HQ	FT SHAFTER	350	33	202	080616	MSFA	MODULARITY
ACTIVATION	11	98 ITSB LIGHT TROPO	FT SHAFTER	23	5	402	080916	MSFA	MODULARITY
ACTIVATION	05	955 EN DET	FT SHAFTER	0	1	13	080916	MSFA	MODULARITY
ACTIVATION	05	302 TC HHD	FT SHAFTER	14	3	47	080916	MSFA	MODULARITY
ACTIVATION	TDA	USA REG'L CORR FAC	FT SILL	2	0	80	071002		
ACTIVATION	11	529 SIG NTWRK SUP CO	FT SILL	3	1	44	080916	MSFA	MODULARITY
ACTIVATION	11	258 SIG NET SUP CO	FT SILL	3	1	43	080916	MSFA	MODULARITY
ACTIVATION	05	697 HORIZONTAL CO	FT SILL	5	0	141	090616	MSFA	MODULARITY
ACTIVATION	19	139 MP CO (CS)	FT STEWART	5	0	165	071101	OIF NEW GROWTH	
ACTIVATION	05	554 VERTICAL CO	FT STEWART	5	3	154	081016	MSFA	MODULARITY
ACTIVATION	05	984 HORIZONTAL CO	FT STEWART	5	0	156	081016	MSFA	MODULARITY
ACTIVATION	05	526 HORIZONTAL CO	FT STEWART	5	0	156	081016	MSFA	MODULARITY
ACTIVATION	05	36 SURVEY/DESIGN TM	FT STEWART	0	1	13	081016	MSFA	MODULARITY
ACTIVATION	05	EXPLOSIVE HAZ TEAM	FT STEWART	1	0	6	091016	MSFA	MODULARITY
ACTIVATION	05	EXPLOSIVE HAZ TEAM	FT STEWART	1	0	6	091016	MSFA	MODULARITY
ACTIVATION	05	512 SAPPER CO	FT STEWART	5	0	86	100916	MSFA	MODULARITY
ACTIVATION	05	67 MOBILITY AUG CO	FT STEWART	5	0	92	100916	MSFA	MODULARITY
ACTIVATION	05	530 CLEARANCE CO	FT STEWART	6	0	159	100916	MSFA	MODULARITY
ACTIVATION	05	501 MOBILITY AUG CO	FT STEWART	5	0	92	100916	MSFA	MODULARITY
ACTIVATION	05	29 CONCRETE TEAM	FT STEWART	0	0	11	101016	MSFA	MODULARITY
INDIANTOWN GAP	09	756 OD CO (EOD)	FT STEWART	1	0	22	080616	CP 08	
PATRICK AFB, FL	09	766 OD CO	FT STEWART	1	0	22	080616		
USAREUR	05	10 ENGR BN	FT STEWART	23	4	146	100916	MSFA	MODULARITY
ACTIVATION	55	611 PORT OPS CGO CO	FT STORY	3	0	84	071016	TAA11	AC/RC REBALANCE
ACTIVATION	53	151 HHC THEATER IO GP	FT TOTTEN	24	9	52	090916	TAA13	MODULARITY
ACTIVATION	53	301 HHC IO FLD SPT BN	FT TOTTEN	52	8	50	090916	TAA13	MODULARITY
ACTIVATION	53	302 HHC IO GEN SPT BN	FT TOTTEN	33	10	69	090916	TAA13	MODULARITY
ACTIVATION	55	539 TC CO (PLS)	FT WAINWRIGHT	5	1	164	071016	MSFA	MODULARITY
ACTIVATION	06	380 FA DET	HICKAM, HI	1	0	1	080916		
ACTIVATION	06	359 FA DET	HILL AFB, UT	1	0	1	080916		

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
ACTIVATION	44	3 AD BN 04	HOLLOMAN AFB, NM	37	20	551	080916		
ACTIVATION	06	370 FA DET	HOLLOMAN AFB, NM	1	0	1	080916		
ACTIVATION	10	CO SPO WATER	HUNTER AAF	1	0	6	071016	TAA11	
ACTIVATION	10	PLT WATER PUR	HUNTER AAF	1	0	20	071016	TAA11	
ACTIVATION	10	512 PLT WATER PUR	HUNTER AAF	1	0	20	071016	TAA11	
ACTIVATION	10	PLT WATER STOR DIST	HUNTER AAF	1	0	27	071016	TAA11	
ACTIVATION	10	165 QM TM	HUNTER AAF	3	1	6	081016		
FT STEWART	05	514 EN DET	HUNTER AAF	0	0	7	071017		
SAN ANTON, TX	AUG	0314 MIBN AUG	LACKLAND, TX	4	6	92	071017		
ACTIVATION	06	368 FA DET	LANGLEY A, VA	1	0	1	080916		
ACTIVATION	06	382 FA DET	LUKE, AZ	1	0	1	080916		
ACTIVATION	06	373 FA DET	MCGUIRE AFB	1	0	1	080916		
ACTIVATION	06	364 FA DET	MINOT, ND	1	0	1	080916		
ACTIVATION	06	357 FA DET	MOODY AFB, GA	1	0	1	080916		
ACTIVATION	06	362 FA DET	MOUNTAIN, ID	1	0	1	080916		
ACTIVATION	06	351 FA DET	NELLIS AFB	1	0	1	080916		
ACTIVATION	06	352 FA DET	NELLIS AFB	1	0	1	080916		
ACTIVATION	06	353 FA DET	NELLIS AFB	1	0	1	080916		
ACTIVATION	06	354 FA DET	NELLIS AFB	1	0	1	080916		
ACTIVATION	06	379 FA DET	NELLIS AFB	1	0	1	080916		
ACTIVATION	06	355 FA DET	NELLIS AFB	1	0	1	080916		
ACTIVATION	06	356 FA DET	NELLIS AFB	1	0	1	080916		
FT LEWIS	87	HQ I CORPS UEx	PACOM	109	22	176	080916	MSFA	MODULARITY
ACTIVATION	40	4 SPACE CO	PETERSON AFB	8	6	59	080916	MSFA	MODULARITY; MULTI-C
COL SPGS, CO	AUG	USA STRATEGIC & SP	PETERSON AFB	20	0	0	081001		
PETERSON AFB	AUG	USA SP & MSL DEF C	REDSTONE ARSENAL	75	0	18	081001		
ACTIVATION	05	512 ENGR DET	SAN ANTONIO	2	2	22	080717		

LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
ACTIVATION	05	34 EN CO	SCHOFIELD	6	0	185	081016	MSFA	MODULARITY
ACTIVATION	05	15 EN DET	SCHOFIELD	1	0	6	081016	MSFA	MODULARITY
ACTIVATION	55	T MDM TRK CO PLS	SCHOFIELD	5	1	163	101016	MSFA	MODULARITY
CP CASEY	19	21 MP DET CID TM A1	SCHOFIELD	0	1	1	071016	GDPR	
CP HOWZE	19	21 MP DET CID TM B4	SCHOFIELD	0	1	1	071016	GDPR	
CP RED CLOUD, KO	19	21 MP DET CID TM B3	SCHOFIELD	0	1	1	071016	GDPR	
ACTIVATION	06	361 FA DET	SEYMOUR J, NC	1	0	1	080916		
FT DIX	55	462 TC HHD	TRENTON, 1NJ	15	2	40	080916		
CP ROBERTS	40	D CO, 1ST SATCON BN	WAHIAWA NCS, HI	3	0	56	081001	ACOM	
ACTIVATION	06	369 FA DET	WHITEMAN, MO	1	0	1	080916		
INACTIVATIONS/ LOSSES									
DECATUR, AL	11	142 BDE CORPS	INACTIVATE	4	0	0	080831	MSFA	MODULARITY
DECATUR, AL	11	142 BDE CORPS	INACTIVATE	4	0	0	101001	MSFA	MODULARITY
FT A P HILL	TDA	8002 TRAINING DET	INACTIVATE	0	0	22	080915		
FT BELVOIR	12	888 AG CO	INACTIVATE	5	0	54	080915		
FT BELVOIR	52	9 HQ TM	INACTIVATE	7	0	3	080915		
FT BELVOIR	05	249 ENGR BN	INACTIVATE	7	1	60	091015	MSFA	
FT BEN HARRISON	12	326 AG HHD	INACTIVATE	9	0	22	080916		
FT BENNING	19	208 CO MP CO CBT SUPP	INACTIVATE	5	0	65	071015	TAA13	
FT BLISS	08	10 MED DET, MIN CARE	INACTIVATE	0	0	15	071015	TAA13	
FT BLISS	TDA	HQUSA GARRISON-FT	INACTIVATE	20	1	96	080915		
FT BLISS	11	286 SIG CO	INACTIVATE	4	1	178	101015	TAA11	
FT BLISS	08	745 MED DET, MED TM	INACTIVATE	5	0	15	101015	TAA 13	
FT BRAGG	TDA	SIG BN	INACTIVATE	0	0	0	071001		
FT BRAGG	51	0144 HQ DET	INACTIVATE	8	0	12	071015		
FT BRAGG	08	32 HHD MED BN	INACTIVATE	16	1	211	071215	TAA13	
FT BRAGG	05	30 EN CO	INACTIVATE	9	2	53	080715		

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
FT BRAGG	63	1 CS HHC	INACTIVATE	153	28	280	081015		
FT BRAGG	08	44 MD HHC	INACTIVATE	50	4	72	081015		
FT BRAGG	05	275 CO TOPO (XVIII CORPS)	INACTIVATE	0	1	8	090915	COPRS REDES	
FT BRAGG	05	555 CO TOPO (XVIII CORPS)	INACTIVATE	0	1	8	090915	COPRS REDES	
FT BRAGG	42	CO SUPPLY DS	INACTIVATE	4	2	111	091015	TAA11	
FT BRAGG	10	186 WATER PURF DIST HQ	INACTIVATE	5	0	93	100916	TAA11	
FT BRAGG	43	TM RADER REP	INACTIVATE	0	0	2	101015	TAA11	
FT BRAGG	09	TM ABN MSL SHORAD	INACTIVATE	0	0	9	101015	TAA11	
FT BRAGG	43	TM TOWED ARTY SPT	INACTIVATE	0	0	12	101015	CTU 0304	
FT BRAGG	43	TM TOWED ARTY SPT	INACTIVATE	0	0	12	101015	TAA11	
FT BRAGG	43	TM TOWED ARTY SPT	INACTIVATE	0	0	12	101015	CTU 0476	
FT BRAGG	09	TM MLRS SPT	INACTIVATE	0	0	25	101015	CTU 0304	
FT BRAGG	10	TM WTR PUR	INACTIVATE	4	1	201	101015	TAA11	
FT BRAGG	14	126 FIN DET D	INACTIVATE	2	0	21	101015	TAA13	
FT BRAGG	14	126 FIN DET D	INACTIVATE	2	0	21	101015	TAA13	
FT BRAGG	14	126 FIN DET E	INACTIVATE	2	0	21	101015	TAA13	
FT BRAGG	43	CO AUG MAINT SUP	INACTIVATE	0	0	16	101015	TAA11	
FT BRAGG	43	TM AUG MAINT SPT	INACTIVATE	0	0	25	101015	TAA11	
FT BUCHANAN	03	0316 CM CO	INACTIVATE	6	0	143	071015		
FT BUCHANAN	03	317 CHEM CO (BIDS)	INACTIVATE	1	0	30	080915	TAA11	CM REDESIGN FDU
FT BUCHANAN	03	318 CHEM CO (BIDS)	INACTIVATE	1	0	30	080915	TAA11	CM REDESIGN FDU
FT CAMPBELL	09	TM AIR ASLT DIV AUG	INACTIVATE	0	0	5	071015	TAA11	
FT CAMPBELL	01	0160 AV CO	INACTIVATE	7	19	116	071015		
FT CAMPBELL	14	101 FIN DET D	INACTIVATE	2	0	21	101015	TAA13	
FT CAMPBELL	10	DET WTR PUR	INACTIVATE	2	0	47	110815	TAA11	
FT CAMPBELL	44	ADA BN (LNBKR/AVG)	INACTIVATE	32	7	322	110915	TAA11	AR 5-10 APPR, A/SECA
FT CAMPBELL	55	106 MOTOR TRANS	INACTIVATE	12	1	39	110922	TAA09	Recommended to retain in
FT CARSON	05	947 EN CO	INACTIVATE	6	1	153	080901		
FT CARSON	TDA	HQ USA GARRISON-FT	INACTIVATE	45	5	246	080915		
FT CARSON	43	TM TANK TUR RPR	INACTIVATE	0	0	9	081015	AC/RC INACT	
FT DEVENS	TDA	REGIONAL READINESS	INACTIVATE	112	10	174	080915		
FT DIX	TDA	2D BN, 391ST REGT	INACTIVATE	12	1	139	080915		
FT DIX	TDA	1079 USAR GARRISON	INACTIVATE	51	6	203	080915		
FT DRUM	43	TM RADAR REPAIRER	INACTIVATE	0	0	2	091015	TAA11	
FT EUSTIS	55	98 DETAUTO CARGO DO	INACTIVATE	0	1	23	110915	TAA13	

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
FT GILLEM ENCLAVE	05	121 IN DET	INACTIVATE	7	1	151	080901		
FT GORDON	11	518 TAC INSTL/NTWKG	INACTIVATE	1	0	16	071015	GDPR	
FT GORDON	11	252 THEATR TAC SIG CO	INACTIVATE	3	0	88	071015	GDPR	
FT GORDON	11	518 TAC INSTL/NTWKG	INACTIVATE	4	2	182	080115	GDPR	
FT GORDON	11	518 TAC INSTL/NTWKG	INACTIVATE	2	2	87	080115	GDPR	
FT GORDON	11	518 TAC INSTL/NTWKG	INACTIVATE	1	0	79	080116	GDPR	
FT HOOD	TDA	USA SIG BN	INACTIVATE	0	0	0	071001		
FT HOOD	08	534 MED DET	INACTIVATE	0	0	15	071015	TAA13	
FT HOOD	09	TM BSTF AUG TM	INACTIVATE	0	0	5	071015	TAA11	
FT HOOD	AUG	0013 CS HHC COSCOM AUG	INACTIVATE	1	0	1	071015		
FT HOOD	11	3 BDE HHC MSE	INACTIVATE	48	13	114	071215	MSFA	MODULARITY
FT HOOD	12	151 AG CO	INACTIVATE	5	0	54	080115		
FT HOOD	63	4 CS CTR	INACTIVATE	43	17	285	080115	MSFA	MODULARITY
FT HOOD	12	15 AG BN	INACTIVATE	6	3	168	080115		
FT HOOD	63	13 COSCOM	INACTIVATE	108	15	232	080115	MSFA	MODULARITY
FT HOOD	12	701 AG CTR	INACTIVATE	5	4	33	080215		
FT HOOD	08	36 HHD EVAC MED BN	INACTIVATE	10	6	36	080715	TAA13	
FT HOOD	TDA	USAR GARRISON -	INACTIVATE	41	12	276	080915		
FT HOOD	14	230 FIN DET B	INACTIVATE	2	0	21	101015	TAA13	
FT HOOD	14	230 FIN DET D	INACTIVATE	2	0	21	101015	TAA13	
FT HOOD	14	230 FIN DET F	INACTIVATE	2	0	21	101015	TAA13	
FT HOOD	19	26 MP DET (LAW & ORDE	INACTIVATE	3	0	42	101015	TAA13	
FT HUACHUCA	11	269 SIGNAL CO	INACTIVATE	4	2	167	071015	MSFA	MODULARITY
FT JACKSON	TDA	3 BDE, 108TH DIV	INACTIVATE	9	1	34	080415		
FT JACKSON	TDA	7 BDE, 108TH DIV	INACTIVATE	11	2	20	080915		
FT JACKSON	TDA	USA RES READINESS	INACTIVATE	12	0	15	080915		
FT KNOX		UA EXPRMNT ELEMENT	INACTIVATE	60	14	74	071001		MACOM
FT KNOX		UA CAP DVLPMNT ACTIVITY	INACTIVATE	100	4	54	071001		MACOM
FT KNOX	17	123 ARMOR BN	INACTIVATE	36	1	465	080831	MSFA	MODULARITY
FT KNOX	43	207 ORD CO	INACTIVATE	8	8	269	080901	MSFA	MODULARITY
FT KNOX	TDA	1003 TRAINING DET	INACTIVATE	0	0	83	080915		
FT KNOX	TDA	HQ 8 BDE 100TH D	INACTIVATE	50	0	29	080915		
FT KNOX	TDA	7TH BDE, 100TH DIV	INACTIVATE	11	2	33	090415		
FT KNOX	TDA	1 BN, 399 RGMT	INACTIVATE	11	0	81	090415		
FT LEE	TDA	1 BN, 319TH REGT	INACTIVATE	15	1	140	080415		

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
FT LEE	63	300 CS HHC	INACTIVATE	37	3	92	080915		
FT LEE	10	DET WATER PUR	INACTIVATE	0	0	16	101015	TAA11	
FT LEE	42	SECQM SPT OPNS SEC (F	INACTIVATE	2	0	4	101015	TAA13	
FT LEWIS	TDA	USA SIG BN	INACTIVATE	0	0	0	071001		
FT LEWIS	01	0160 AV CO	INACTIVATE	6	16	90	071015		
FT LEWIS	11	142 SIG BDE CORPS	INACTIVATE	6	3	28	080101	MSFA	CORPS BRDGING STR
FT LEWIS	12	0700 AG CTR	INACTIVATE	5	4	33	080115		
FT LEWIS	TDA	HQ 8 BDE 104TH D	INACTIVATE	37	0	27	080915		
FT LEWIS	43	164 OD CO	INACTIVATE	7	7	206	080915		
FT LEWIS	55	300 TC DET	INACTIVATE	1	1	11	080915		
FT LEWIS	05	64 DET TERRAIN	INACTIVATE	0	1	8	080915	TAA13	
FT LEWIS	34	201 BDE HHD HVY	INACTIVATE	17	3	31	091215	TAA13	MODULARITY
FT LEWIS	42	PLT QM PERSH SUB	INACTIVATE	1	0	56	100815	CTU 0476	
FT LEWIS	10	CO PETRO SUPP LUPS	INACTIVATE	0	0	16	110316	TAA11	
FT LEWIS	05	585 PIPELINE CONT	INACTIVATE	5	1	164	110915	CTU0507	MODULARITY
FT MCCLELLAN	05	1151 EN DET	INACTIVATE	1	1	55	080901		
FT MEADE	08	0048 MD HSP	INACTIVATE	59	2	194	071015		
FT MEADE	TDA	1 BDE, 80TH DIV	INACTIVATE	13	3	24	080915		
FT MONROE		USAG FT MONROE	INACTIVATE	2	7	6	071001	MACOM	Clears garrison TDA
FT POLK	08	433 MED DET	INACTIVATE	0	0	15	071015	MSFA	MODULARITY
FT POLK	09	TM BSTF AUG TM	INACTIVATE	4	2	111	091015	TAA11	
FT POLK	14	126 FIN DET C	INACTIVATE	2	0	21	101015	TAA13	
FT RICHARDSON	77	207 IN HHC	INACTIVATE	44	10	95	080902		
FT RILEY	05	482 EN TM	INACTIVATE	1	0	3	071016	BCT BASING	MODULARITY
FT RILEY		15 AG BN	INACTIVATE	1	1	48	080115		
FT RILEY		15 AG BN	INACTIVATE	1	1	48	080115		
FT SAM HOUSTON	08	0228 MD HSP	INACTIVATE	59	2	198	071015		
FT SAM HOUSTON	TDA	USA NATION ASST PL	INACTIVATE	0	1	35	080715		
FT SAM HOUSTON	TDA	HQ USA SOUTH AUG	INACTIVATE	5	1	13	080715		
FT SAM HOUSTON	51	HQ HHC	INACTIVATE	160	3	99	080715		
FT SAM HOUSTON	30	339 MI CO	INACTIVATE	19	17	77	081015		
FT SAM HOUSTON	TDA	3457 USAR MED TNG	INACTIVATE	8	0	95	090415		
FT SHAFTER	51	HQ HHC	INACTIVATE	164	3	77	080615	MSFA	MODULARITY

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LOSING INSTALLATION	SRC	UNIT	GAINING INSTALLATION	OFF	WO	ENL	EDATE	PROGRAM	REMARKS
FT SHAFTER	TDA	USAR SCHOOL	INACTIVATE	27	1	97	080915		
FT SHAFTER	11	804 SIG CO (CMD OPS)	INACTIVATE	4	1	124	080915	MSFA	MODULARITY
FT SHAFTER	12	456 AG DET	INACTIVATE	2	0	31	080915	GDPR	TAA-11 IPR
FT SILL	TDA	HQUSA GARRISON-FT	INACTIVATE	30	1	107	080915		
FT SILL	14	15 FIN DET D	INACTIVATE	2	0	21	101015	TAA13	
FT STEWART	42	CO SUPPY DS	INACTIVATE	4	2	111	091015	TAA11	
FT STEWART	43	CO AUG TANK TURRET REP	INACTIVATE	0	0	0	101015	TAA11	
FT STEWART	43	TM TANK TURRET	INACTIVATE	2	0	47	101015	TAA11	
FT STEWART	14	24 FIN DET D	INACTIVATE	2	0	21	101015	TAA13	
FT STORY	TDA	1 BN, 318TH REGT	INACTIVATE	16	0	89	080415		
GAITHERSB	19	HHC BDE (TAACOM)	INACTIVATE	2	0	0	080415	CTU 0476	
HUNTER AA, 1GA	01	0160 AV CO D	INACTIVATE	4	11	69	071015		
HUNTER AAF	10	202 DET WATER PUR	INACTIVATE	4	0	6	081016	TAA11	
HUNTER AAF	55	10CO TRANS LHT-MDM TR	INACTIVATE	5	1	165	110915	CTU507	
MISAWA AFB	40	C DET, 1 SPACE CO		0	1	14	071001	ACOM	MODULARITY
PETERSON AFB	40	4 SPACE CO	INACTIVATE	4	2	23	080915	MSFA	MODULARITY
REDSTONE ARSENAL	TDA	PEO AMD REDSTONE A	INACTIVATE	27	0	0	071002		
SCHOFIELD	12	556 AG BN	INACTIVATE	5	2	120	071015	MSFA	MODULARITY
SCHOFIELD	19	8 HHC MP BDE	INACTIVATE	31	4	65	091015	GDPR	

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Appendix W: Listing of Unit Stationing Actions as part of Alternative 2

SRC	Unit Description	Desired Station	Strgth per unit	FY08	FY08 Total Pax	FY09	FY09 Total Pax	FY10	FY10 Total Pax	FY11	FY11 Total Pax	FY12	FY12 Total Pax	FY13	FY13 Total Pax	TOTAL PAX	Existing Soldiers
03420F300	Eliminate BIDS CLS in HVY CM	AK - Richardson	2		-		-	1	2		-		-		-	2	
05417G000	Horizontal Company	AK - Richardson	159		-		-				-		-	1	159	159	
09447GA00	716th EOD Co	AK - Richardson	44		-		-	1	44		-		-		-	44	(23)
19476G00	MP CS Bn HQs	AK - Richardson	73		-		-	1	73		-		-		-	73	
19477G000	MP CS Co	AK - Richardson	171	2	342		-		-		-		-		-	342	
34308G000	MI Co (BCT)	AK - Richardson	5		-		-		-	1	5		-		-	5	
34-HBCT/IBCT	S2 Staffs	AK - Richardson	8		-	1	8		-		-		-		-	8	
					342		8		119		5		-		159	633	(23)
190Non-existent	MP Det (Law & Order) SBCT	AK - Wainwright	42	1	42		-		-		-		-		-	42	
34308G000	MI Co (BCT)	AK - Wainwright	5		-		-		-		-		-		-		
34-HBCT/IBCT	S2 Staffs	AK - Wainwright	8		-		-		-		-		-		-		
4300-OTHER	SBCT MAINT	AK - Wainwright	100	0.33	33	0.33	33	0.34	34		-		-		-	100	
X09447GA00	65th EOD Co (Activation New)	AK - Wainwright	44		-		-	1	44		-		-		-	44	
					75		33		78		-		-		-	186	-
0347-HBCT	NBCRV HBCT 4th Crewmember	Benning	2		-		-	1	2		-		-		-	2	
08567GA00	Medical Tm (Optometry)	Benning	6		-	1	6		-		-		-		-	6	
08948A00	Hospital Co (Retain)	Benning	52		-		-		-	1	52		-		-	52	(52)
1200- Wedge	Non-BCT S-1 Standardization	Benning	2	1	2		-		-		-		-		-	2	
09447GA00	789th EOD Co	Benning	44		-		-		-		-		-	1	44	44	(23)
19477G000	MP CS Co	Benning	171		-	1	171		-		-		-		-	171	
34308G000	MI Co (BCT)	Benning	5		-		-		-	1	5		-		-	5	
34-HBCT/IBCT	S2 Staffs	Benning	8		-	1	8		-		-		-		-	8	
					2		185		2		57		-		44	290	(75)
01707G100	ER/MP (Warrior UAS) [colocates w/CAB]	Bliss	126		-		-		-		-	1	126		-	126	
0347-HBCT	NBCRV HBCT 4th Crewmember	Bliss	2		-		-	4	8		-		-		-	8	
05437G000	2nd Eng Clearance Company	Bliss/WSMR	191		-		-		-		-		-	1	191	191	
06399G200	TAB (Fires BDE)	Bliss	47		-		-	1	47		-		-		-	47	
06402G000	HFB, Fires BDE	Bliss	137		-		-	1	137		-		-		-	137	
06465G000	FA Bn MLRS Fires UA	Bliss	309		-		-	1	309		-		-		-	309	
06465G100	FA Bn HIMARS Fires UA	Bliss	317		-		-	1	317		-		-		-	317	
09447GA00	162nd EOD Co (Activation New)	Bliss	44		-	1	44		-		-		-		-	44	
09447GA00	734th EOD Co	Bliss	44		-		-		-		-		-	1	44	44	(23)
09447GA00	741st EOD Co	Bliss	44		-		-		-		-	1	44		-	44	(23)
09447GA00	763d EOD Co	Bliss	44	1	44		-		-		-		-		-	44	(23)
11307G000	Signal Network Spt Co	Bliss	47		-		-	1	47		-		-		-	47	
19476G00	MP CS Bn HQs	Bliss	73	1	73		-		-		-		-		-	73	
19477G000	591 MP CS Co	Bliss	171	1	171		-		-		-		-		-	171	
34308G000	MI Co (BCT)	Bliss	5		-		-		-	4	20		-		-	20	
34-HBCT/IBCT	S2 Staffs	Bliss	8		-	4	32		-		-		-		-	32	
43547AH00	TMDE	Bliss	7		-		-		-		-		-		-		
44623G000	JLENS Btry	Bliss	140		-		-		-		-		-	1	140	140	
44635G000	3/43 ADA Bn	Bliss	610	1	610		-		-		-		-		-	610	
45413L000	MPAD	Bliss	20		-	1	20		-		-		-		-	20	
55727F300	Mid Trk Co POL	Bliss	169		-		-		-	1	169		-		-	169	
63345G100	BSB (Fires BDE)	Bliss	312		-		-	1	312		-		-		-	312	
63347G000	FSC MLRS	Bliss	164		-		-	1	164		-		-		-	164	
63347G200	FSC HIMARS	Bliss	221		-		-	1	221		-		-		-	221	
GenFor	Army Exped. Task Force (AETF)	Bliss	969		-		-		-		-		-		-	969	(969)

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SRC	Unit Description	Desired Station	Strgth per unit	FY08	FY08 Total Pax	FY09	FY09 Total Pax	FY10	FY10 Total Pax	FY11	FY11 Total Pax	FY12	FY12 Total Pax	FY13	FY13 Total Pax	TOTAL PAX	Existing Soldiers
					898		96		1,562		189		170		375	3290	(1,038)
03470F000	NBCRV CS CM 4th Crewmember	Bragg	6		-	1	6		-		-		-		-	6	
05419G000	Engr Support Company	Bragg	128		-		-	1	128		-		-		-	128	
05601GT00	Construction Mgtment Tm	Bragg	9		-	1	9		-		-		-		-	9	
09446G000	192nd EOD Bn	Bragg	38	1	38		-		-		-		-		-	38	(35)
12567G100	Casualty Liaison Team	Bragg	5		-	1	5		-		-		-		-	5	
12567GE00	Postal Plt	Bragg	21		-	2	42		-		-		-		-	42	
14537GA00	Fin Mgmt Center	Bragg	36		-		-		-		-		-		-	36	(36)
49225G000	525th BfSB (R&S Squadron)	Bragg	359	1	359		-		-		-		-		-	359	(359)
34308G000	MI Co (BCT)	Bragg	5		-		-		-	4	20		-		-	20	
34-HBCT/IBCT	S2 Staffs	Bragg	8		-	4	32		-		-		-		-	32	
42420F000	QM Supply Co	Bragg	186		-		-	1	186		-		-		-	186	(117)
43470F000	SMC	Bragg	219		-		-		-		-	1	219		-	219	(219)
44623G000	JLENS Btry	Bragg	140		-		-		-		-		-	1	140	140	
44697G000	THAAD Btry	Bragg	127		-		-		-	1	127		-		-	127	
55719F000	546th Light-MDM Trk Co	Bragg	171		-		-		-	1	171		-		-	171	(171)
55727F300	Mid Trk Co POL	Bragg	169		-		-	1	169		-		-		-	169	
63400G000	SUSTAIN BDE	Bragg	363		-		-		-	1	363		-		-	363	(131)
63702G000	TSC (buy back)	Bragg	132		-	1	132		-		-		-		-	132	
1200- Wedge	Non-BCT S-1 Standardization	Bragg	2-4	5	20		-		-		-		-		-	20	
09447GA00	28 EOD Co	Bragg	44	1	44		-		-		-		-		-	44	(23)
09447GA00	722 EOD Co	Bragg	44		-		-		-		-		-		-	44	(23)
09447GA00	737 EOD Co	Bragg	44		-	1	44		-		-		-		-	44	(23)
09447GA00	767 EOD Co	Bragg	44	1	44		-		-		-		-		-	44	(23)
					505		270		483		681		219		140	2298	(1,160)
01707G100	ER/MP (Warrior UAS) [colocates w/CAB]	Campbell	126		-	1	126		-		-		-		-	126	
03470F000	NBCRV CS CM 4th Crewmember	Campbell	6		-		-	1	6		-		-		-	6	
08457A000	Medical Co (AREA SUPPORT)	Campbell	72		-	1	72		-		-		-		-	72	
08948A00	Hospital Co (Retain)	Campbell	52		-		-		-	1	52		-		-	52	(52)
12567GF00	HQ R5 Plt HQ	Campbell	8	1	8		-		-		-		-		-	8	
12567GG00	R5 Team	Campbell	6	3	18		-		-		-		-		-	18	
19477G000	MP CS Co	Campbell	171	1	171		-		-		-		-		-	171	
19880A00	CID MP Detachment	Campbell	24		-		-		-	1	24		-		-	24	
34308G000	MI Co (BCT)	Campbell	5		-		-		-	4	20		-		-	20	
34-HBCT/IBCT	S2 Staffs	Campbell	8		-	4	32		-		-		-		-	32	
55716F001	106th MTR Trk Bn	Campbell	52		-		-		-	1	52		-		-	52	(52)
55719F000	494th Light-MDM Trk Co	Campbell	171		-		-		-	1	171		-		-	171	(171)
09446G000	184 EOD Bn	Campbell	38		-	1	38		-		-		-		-	38	(35)
09447GA00	49 EOD Co	Campbell	44	1	44		-		-		-		-		-	44	(23)
09447GA00	723th EOD Co	Campbell	44		-	1	44		-		-		-		-	44	(23)
09447GA00	744th EOD Co	Campbell	44	1	44		-		-		-		-		-	44	(23)
09447GA00	788th EOD Co	Campbell	44	1	44		-		-		-		-		-	44	(23)
09627G001	52 EOD GP	Campbell	54		-	1	54		-		-		-		-	54	
					329		366		6		319		-		-	1020	(402)
0347-HBCT	NBCRV HBCT 4th Crewmember	Carson	2		-		-	4	8		-		-		-	8	
05402GL00	Survey & Design Tm	Carson	14		-		-		-	1	14		-		-	14	
05417G000	Horizontal Company	Carson	159		-		-	1	159	1	159		-		-	318	
05418G000	Vertical Company	Carson	161		-		-		-	1	161		-		-	161	
05435G000	Engr Battalion HQ	Carson	172		-		-	1	172		-		-		-	172	
05437G000	Clearance Company	Carson	191		-		-		-		-	1	191		-	191	

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SRC	Unit Description	Desired Station	Strgrh per unit	FY08	FY08 Total Pax	FY09	FY09 Total Pax	FY10	FY10 Total Pax	FY11	FY11 Total Pax	FY12	FY12 Total Pax	FY13	FY13 Total Pax	TOTAL PAX	Existing Soldiers
05520GB00	Concrete Team	Carson	12		-		-	1	12		-		-		-	12	
1200- Wedge	Non-BCT S-1 Standardization	Carson	4	1	4		-		-		-		-		-	4	
42420F001	QM Supply Co	Carson	186		-		-		-	1	186		-		-	186	
09446G000	242nd EOD Bn	Carson	38	1	38		-		-		-		-		-	38	(35)
09447GA00	62 EOD Co	Carson	44		-		-		-		-		-		-	44	(23)
09447GA00	663rd EOD Co (Activation New)	Carson	44		-	1	44		-		-		-		-	44	(23)
09447GA00	748 EOD Co	Carson	44		-	1	44		-		-		-		-	44	(23)
09447GA00	749 EOD Co	Carson	44	1	44		-		-		-		-		-	44	(23)
09447GA00	764th EOD Co	Carson	44		-		-		-		-		-	1	44	44	(23)
09627G001	71st EOD Group	Carson	54	1	54		-		-		-		-		-	54	(48)
34105G000	MI Bn (BfSB)	Carson	290		-		-		-	1	290		-		-	290	
34308G000	MI Co (BCT)	Carson	5		-		-		-	4	20		-		-	20	
34-HBCT/IBCT	S2 Staffs	Carson	8		-	4	32		-		-		-		-	32	
43547AH00	TMDE	Carson	7		-		-	1	7		-		-		-	7	
55606G000	MVMT Cntrl Bn	Carson	59		-	1	59		-		-		-		-	59	
55506G000	MVMT Cntrl Tm	Carson	21	1	21		-		-		-		-		-	21	
					161		179		358		830		191		44	1763	(198)
01707G100	ER/MP (Warrior UAS) [colocates w/CAB]	Drum	126		-		-		-		-		-	1	126	126	
03470F000	NBCRV CS CM 4th Crewmember	Drum	6		-		-	1	6		-		-		-	6	
05330G200	Sapper Company	Drum	103		-		-	1	103		-		-		-	103	
42420F001	QM Supply Co	Drum	186		-		-		-	1	186		-		-	186	
09446G000	63 EOD Bn	Drum	36		-		-		-		-		-		-	36	(35)
09447GA00	754 EOD Co	Drum	44	1	44		-		-		-		-		-	44	(23)
09447GA00	760 EOD Co	Drum	44		-		-		-		-		-		-	44	(23)
19477G000	MP CS Co	Drum	171	1	171		-		-		-		-		-	171	
43547AH00	TMDE	Drum	7		-		-		-		-		-		-		
55606F000	MVMT Cntrl Tm	Drum	21		-		-	1	21		-		-		-	21	
55719F000	57th Light-MDM Trk Co	Drum	171		-		-		-	1	171		-		-	171	(171)
55727F100	Cargo Med Trk Co	Drum	172		-		-		-	1	172		-		-	172	
34308G000	MI Co (BCT)	Drum	5		-		-		-	3	15		-		-	15	
34-HBCT/IBCT	S2 Staffs	Drum	8		-	3	24		-		-		-		-	24	
					215		24		130		544		-		126	1039	(252)
51802G000	CBRNE HQs	Edgewood	231		-		-		-		-		-		-	231	
					-		-		-		-		-		-	0	-
12567GF00	R5 PLT HQ	Eustis	8	1	8		-		-		-		-		-	8	
12567GG00	R5 Team	Eustis	6	2	12		-		-		-		-		-	12	
5500-No SRC	JTF-PO Tm	Eustis	55	1	55		-		-		-		-		-	55	
5500-No SRC	JTF-PO Tm	Eustis	55	1	55		-		-		-		-		-	55	
5500-No SRC	JTF-PO Tm	Eustis	55	1	55		-		-		-		-		-	55	
55506G000	MVMT Cntrl Tm	Eustis	21	1	21		-		-		-		-		-	21	
55613L000	558th Floating Craft MNT Co	Eustis	181		-		-		-		-		-		-	181	(181)
55727F100	Cargo Med Trk Co	Eustis	172		-		-		-	1	172		-		-	172	
55819F000	359th Inland Cargo Transfer Co (ICTC)	Eustis	162	1	162		-		-		-		-		-	162	(162)
55819F000	567th Inland Cargo Transfer Co (ICTC)	Eustis	162		-		-		-	1	162		-		-	162	
55889F000	73rd Floating Craft Co	Eustis	85		-		-		-		-		-		-	85	(85)
					368		-		-		334		-		-	702	(428)
11604G000	Theater Network Capability Module	Gordon	7	1	7		-		-		-		-		-	7	
					7		-		-		-		-		-	7	-
01707G100	ER/MP (Warrior UAS) [colocates w/CAB]	HAAF/Stewart	126		-		-		-		-	1	126		-	126	
10414L000	QM FLD SVC Co	HAAF	122		-		-	1	122		-		-		-	122	(122)

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SRC	Unit Description	Desired Station	Strgth per unit	FY08	FY08 Total Pax	FY09	FY09 Total Pax	FY10	FY10 Total Pax	FY11	FY11 Total Pax	FY12	FY12 Total Pax	FY13	FY13 Total Pax	TOTAL PAX	Existing Soldiers
10560LM00	QM PETRL LNO Tm	HAAF	10		-	1	10		-		-		-		-	10	
					-		10		122		-		126		-	258	(122)
03470F000	NBCRV CS CM 4th Crewmember	HI- Schofield	6		-		-	1	6		-		-		-	6	
34308G000	MI Co (BCT)	HI- Schofield	5		-		-		-	1	5		-		-	5	
34-HBCT/IBCT	S2 Staffs	HI- Schofield	8		-	1	8		-		-		-		-	8	
1200- Wedge	Non-BCT S-1 Standardization	HI-Schofield	1-3	2	4											4	
05330G200	Sapper Company	HI-Schofield	103		-		-		1	103			-		-	103	
05435G000	130 Engr Brigade HQ	HI-Schofield	124	1	124		-		-	-			-		-	124	
05601GT00	Construction Mgmt Tm	HI-Schofield	9		-		-		1	9			-		-	9	
09447GA00	706th EOD Co	HI-Schofield	44		-		-		-	-		1	44		-	44	(23)
190Non-existent	MP Det (Law & Order)	HI-Schofield	42		-	1	42		-	-			-		-	42	
19477G000	MP CS Co	HI-Schofield	171		-	1	171		-	-			-		-	171	
19886A000	CID Bn	HI-Schofield	44		-	1	44		-	-			-		-	44	
4300-OTHER	MAINT	HI-Schofield	100	0.33	33	0.33	33	0.34	34		-		-		-	100	
X09447GA00	30th EOD Co (Activation New)	HI-Schofield	36		-		-	1	36		-		-		-	36	
X09447GA00	74th EOD Co (Activation New)	HI-Schofield	44		-		-	1	44		-		-		-	44	
	TSC (buy back)	HI- Shafter	154		-	1	154		-	-			-		-	154	
01707G100	ER/MP (Warrior UAS) [colocates w/CAB]	HI-Wheeler AAF	126		-		-	1	126		-		-		-	126	
01707G100	ER/MP (Warrior UAS) [colocates w/CAB]	Hood	126		-		-		1	126			-		-	126	
03420F300	Eliminate BIDS CLS in HVY CM	Hood	2		-		-	1	2		-		-		-	2	
03470F000	NBCRV CS CM 4th Crewmember	Hood	6		-		-		-	-		1	6		-	6	
0347-HBCT	NBCRV HBCT 4th Crewmember	Hood	2		-		-	4	8		-		-		-	8	
05437G000	Clearance Company	Hood	191		-		-		-	-		1	191		-	191	
05601GT00	Construction Mgmt Tm	Hood	9		-		-		1	9			-		-	9	
08527AA00	Hospital AUG Tm Head & Neck Surgery	Hood	6		-		-	1	6		-		-		-	6	
08948A000	Hospital Co (Retain)	Hood	52		-		-		1	52			-		-	52	(52)
1200- Wedge	Non-BCT S-1 Standardization	Hood	1-4	4	11											11	
09446G000	79 EOD Bn	Hood	38	1	38		-		-	-			-		-	38	(35)
09447GA00	704 EOD Co	Hood	44		-		-		-	-			-		-	44	(23)
09447GA00	75 EOD Co	Hood	44		-	1	44		-	-			-		-	44	(23)
09447GA00	752 EOD Co	Hood	44		-		-		-	-			-		-	44	(23)
09447GA00	797 EOD Co	Hood	44	1	44		-		-	-			-		-	44	(23)
11975G000	Expeditionary Signal Bn (ESB)	Hood	515		-		-	1	515		-		-		-	515	
12567G100	Casualty Liaison Team	Hood	5		-	5	25		-	-			-		-	25	
12567GE00	Postal Plt	Hood	21		-	2	42		-	-			-		-	42	
12567GH00	Casualty Platoon HQ	Hood	2		-	1	2		-	-			-		-	2	
49225G000	504th BfSB (R&S Squadron)	Hood	359		-	1	359		-	-			-		-	359	
34308G000	MI CO (BCT)	Hood	5		-		-		-	4	20		-		-	20	
34-HBCT/IBCT	S2 Staffs	Hood	8		-	4	32		-	-			-		-	32	
43573FQ00	Trk Recovery Team	Hood	2		-		-		-	-			-		-		
44602A000	ADA BDE Hqs (EAC)	Hood	123	1	123		-		-	-			-		-	123	
44623G000	JLENS Btry	Hood	140		-		-		-	-			-	1	140	140	
44635G000	Patriot Bn	Hood	608		-		-	1	608		-		-		-	608	
44697G000	THAAD Btry	Hood	127		-		-		-	-		1	127		-	127	
55727F100	70th Cargo Med Trk Co (Restationing)	Hood	172		-	1	172		-	-			-		-	172	
03420F300	Eliminate BIDS CLS in BIDS Co	Hood	5		-		-	2	10				-		-	10	
					216		676		1,149		207		324		140	2712	(179)
09447GA00	759th EOD Co	Irwin	44		-		-		-	-			-	1	44	44	(23)
19880A00	CID MP Detachment	Irwin	21		-		-		-	1	21		-		-	21	

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SRC	Unit Description	Desired Station	Strgth per unit	FY08	FY08 Total Pax	FY09	FY09 Total Pax	FY10	FY10 Total Pax	FY11	FY11 Total Pax	FY12	FY12 Total Pax	FY13	FY13 Total Pax	TOTAL PAX	Existing Soldiers
1200- Wedge	Non-BCT S-1 Standardization	Irwin	3	1	3		-		-		-		-		-	3	
X09447GA00	EOD Co (Activation New)	Irwin	44		-		-		-	1	44		-		-	44	
3400-OTHER	Linguist Company 09L	Irwin	156		-	1	156		-		-		-		-	156	
					3		156		-		65		-		44	268	(23)
09447GA00	703th EOD Co	Knox	44	1	44		-		-		-		-		-	44	(23)
34308G000	MI Co (BCT)	Knox	5		-		-		-	1	5		-		-	5	
34-HBCT/IBCT	S2 Staffs	Knox	8		-	1	8		-		-		-		-	8	
					44		8		-		5		-		-	57	(23)
34308G000	MI Co (BCT)	KOR - Cp Casey	5		-		-		-	1	5		-		-	5	
1200- Wedge	Non-BCT S-1 Standardization	KOR - Cp Casey	1	1	1		-		-		-		-		-	1	
34-HBCT/IBCT	S2 Staffs	KOR - Cp Casey	8		-	1	8		-		-		-		-	8	
0347-HBCT	NBCRV HBCT 4th Crewmember	KOR - Cp Casey	2		-		-	1	2		-		-		-	2	
09447GA00	718th EOD Co	KOR - Humphry	44		-		-		-		-		-	1	44	44	(23)
03420F300	Eliminate BIDS CLS in HVY CM	KOR - Cp Casey	2		-		-	1	2		-		-		-	2	
01707G100	ER/MP (Warrior UAS) [colocates w/CAB]	KOR - Stanley	126		-		-		-		-		-	1	126	126	
					1		8		4		5		-		170	188	(23)
19543A000	MP I/R Detachments	Leavenworth	24		-	3	72	3	72		-		-		-	144	(72)
19646A000	MP I/R Bn	Leavenworth	79		-		-	1	79		-		-		-	79	
19653A000	MP I/R Company	Leavenworth	124		-		-		-	1	124		-		-	124	
					-		72		151		124		-		-	347	(72)
55727F300	Mid Trk Co POL	Lee	169		-	1	169		-		-		-		-	169	
10560LM00	QM PETRL LNO Tm	Lee	10		-		-		-		-	1	10		-	10	
1200- Wedge	Non-BCT S-1 Standardization	Lee	3	1	3		-		-		-		-		-	3	
					3		169		-		-		10		-	182	-
05437G000	Clearance Company	Leonard Wood	191		-		-		-		-	1	191		-	191	
11307G600	Signal Network Spt Co	Leonard Wood	55		-	1	55		-		-		-		-	55	
37300G000	CSB (ME) HQs	Leonard Wood	175		-	1	175		-		-		-		-	175	
63355G000	CSB(ME) BSB	Leonard Wood	348		-	1	348		-		-		-		-	348	
					-		578		-		-		191		-	769	-
03420F300	Eliminate BIDS CLS in HVY CM	Lewis	2		-		-	1	2		-		-		-	2	
03470F000	NBCRV CS CM 4th Crewmember	Lewis	6		-		-	1	6		-		-		-	6	
03537AA00	6th TEU Co HQ (Chem)	Lewis	8		-		-	1	8		-		-		-	8	
05435G000	555 Engr Brigade HQ	Lewis	124		-		-		-		-		-		-	124	(124)
05434L000	Engr Pipeline Const Co	Lewis	170		-		-		-	1	170		-		-	170	(170)
05601GT00	Construction Mgmt Tm	Lewis	9		-		-	1	9		-		-		-	9	
08457A000	Medical Co (Area Support)	Lewis	72		-	1	72		-		-		-		-	72	
1200- Wedge	Non-BCT S-1 Standardization	Lewis	2	2	4		-		-		-		-		-	4	
09446G000	3rd EOD Bn	Lewis	36	1	36		-		-		-		-		-	36	(35)
09447GA00	129th EOD Co (Activation New)	Lewis	44		-	1	44		-		-		-		-	44	
09447GA00	53th EOD Co	Lewis	44		-	1	44		-		-		-		-	44	(23)
09447GA00	707 EOD Co	Lewis	44		-		-		-		-		-		-	44	(23)
09447GA00	787 EOD Co	Lewis	44		-		-		-		-		-		-	44	(23)
12567GF00	HQ R5 Plt HQ	Lewis	8	1	8		-		-		-		-		-	8	
12567GG00	R5 Team	Lewis	6	3	18		-		-		-		-		-	18	
49225G000	152nd BfSB (R&S Squadron)	Lewis	359		-		-	1	359		-		-		-	359	
190Non-existent	MP Det (Law & Order) SBCT	Lewis	42	1	42	1	42	1	42		-		-		-	126	
19543A000	MP I/R Detachments	Lewis	24		-		-		-	3	72		-		-	72	
19653A000	MP I/R Company	Lewis	124		-	1	124		-		-		-		-	124	
34308G000	MI Co (BCT)	Lewis	5		-		-		-		-		-		-		
34-HBCT/IBCT	S2 Staffs	Lewis	8		-		-		-		-		-		-		

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SRC	Unit Description	Desired Station	Strgrh per unit	FY08	FY08 Total Pax	FY09	FY09 Total Pax	FY10	FY10 Total Pax	FY11	FY11 Total Pax	FY12	FY12 Total Pax	FY13	FY13 Total Pax	TOTAL PAX	Existing Soldiers
4300-OTHER	SBCT MAINT	Lewis	300	0.33	99	0.33	99	0.34	102		-		-		-	300	
44623G000	JLENS Btry	Lewis	140		-		-		-		-		-	1	140	140	
45413L000	MPAD	Lewis	20		-		-		-	1	20		-		-	20	(20)
55506G000	MVMT Cntrl Tm	Lewis	21		-	1	21		-		-		-		-	21	
63702G100	ESC	Lewis	254		-		-		-	1	254		-		-	254	
43547AH00	TMDE	Lewis	7		-		-	1	7		-		-		-	7	
					207		446		535		516		-		140	1844	(418)
GenFor	The Old Guard (TOG)	Myers/MDW	156	1	156		-		-		-		-		-	156	
					156		-		-		-		-		-	156	-
03410F000	Eliminate BIDS CLS in BIDS Co	Polk	5		-		-	2	10		-		-		-	10	
03470F000	NBCRV CS CM 4th Crewmember	Polk	6		-		-		-		-	1	6		-	6	
08567GA00	Medical Tm (Optometry)	Polk	6		-	1	6		-		-		-		-	6	
08948A00	Hospital Co (Retain)	Polk	52		-		-		-	1	52		-		-	52	(52)
09447GA00	705th EOD Co	Polk	44		-		-		-		-	1	44		-	44	(23)
19880A000	CID MP Detachment	Polk	21		-		-	1	21		-		-		-	21	
3400-OTHER	Linguist Company 09L	Polk	156		-		-	1	156		-		-		-	156	
34308G000	MI Co (BCT)	Polk	5		-		-		-	1	5		-		-	5	
34-HBCT/IBCT	S2 Staffs	Polk	8		-	1	8		-		-		-		-	8	
X09447GA00	34th EOD Co (Activation New)	Polk	44		-		-		-	1	44		-		-	44	
					-		14		187		101		50		-	352	(75)
01707G100	ER/MP (Warrior UAS) [colocates w/CAB]	Riley	126		-		-		-		-		-	1	126	126	
03470F000	NBCRV CS CM 4th Crewmember	Riley	6		-		-		-		-	1	6		-	6	
0347-HBCT	NBCRV HBCT 4th Crewmember	Riley	2		-		-	2	4		-		-		-	4	
05402GL00	Survey & Design Tm	Riley	14		-		-	1	14		-		-		-	14	
05417G000	Horizontal Company	Riley	159		-		-	1	159	1	159		-		-	318	
05418G000	Vertical Company	Riley	161		-		-	1	161		-		-		-	161	
05435G000	Engr Battalion HQ	Riley	172		-		-	1	172		-		-		-	172	
05437G000	Clearance Company	Riley	191		-		-		-	1	191		-		-	191	
05520GB00	Concrete Team	Riley	12		-		-		-	1	12		-		-	12	
09446G000	84 EOD Bn	Riley	36		-		-		-		-		-		-	36	(35)
09447GA00	774th EOD Co	Riley	44		-		-		-	1	44		-		-	44	(23)
19477G000	287 MP CS Co	Riley	171	1	171		-		-		-		-		-	171	
34308G000	MI Co (BCT)	Riley	5		-		-		-	3	15		-		-	15	
34-HBCT/IBCT	S2 Staffs	Riley	8		-	3	24		-		-		-		-	24	
42420F003	QM Supply Co	Riley	186		-		-		-		-		-		-		
55606G000	MVMT Cntrl Tm	Riley	21		-	1	21		-		-		-		-	21	
09447GA00	630 EOD Co	Riley	44		-		-		-		-		-		-	44	
					171		45		510		421		6		126	1279	(58)
11653G900	Strategic Signal Company (DSCS)	Riyad SA	99		-		-		-		-		-		-	99	
					-		-		-		-		-		-	0	-
1200- Wedge	Non-BCT S-1 Standardization	Ruckers	3	1	3		-		-		-		-		-	3	
					3		-		-		-		-		-	3	-
08480G000	Medical Logistics Co (Retain)	Sam Houston	80		-		-		-	1	80		-		-	80	(80)
08480G000	Medical Logistics Co (Retain)	Sam Houston	80		-		-		-	1	80		-		-	80	(80)
08489A000	Blood Support DETA (Retain)	Sam Houston	30		-		-		-	1	30		-		-	30	(30)
08567GA00	Medical Tm (Optometry)	Sam Houston	6		-	1	6		-		-		-		-	6	
					-		6		-		190		-		-	196	(190)
09447GA00	761st EOD Co	Sill	44		-		-		-		-		-	1	44	44	(23)
1200- Wedge	Non-BCT S-1 Standardization	Sill	3	1	3		-		-		-		-		-	3	
44635G000	Patriot Bn	Sill	610	1	610		-		-		-		-		-	610	

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SRC	Unit Description	Desired Station	Strgth per unit	FY08	FY08 Total Pax	FY09	FY09 Total Pax	FY10	FY10 Total Pax	FY11	FY11 Total Pax	FY12	FY12 Total Pax	FY13	FY13 Total Pax	TOTAL PAX	Existing Soldiers
43573FQ00	Trk Recovery Team	Sill	4		-		-		-		-		-		-		
					613		-				-		-		44	657	(23)
03470F000	NBCRV CS CM 4th Crewmember	Stewart	6		-		-		-	1	6		-		-	6	
0347-HBCT	NBCRV HBCT 4th Crewmember	Stewart	2		-		-	3	6		-		-		-	6	
09447GA00	731 EOD Co	Stewart	44		-		-		-		-		-		-	44	(23)
09447GA00	756th EOD Co	Stewart	44	1	44		-		-		-		-		-	44	(23)
09447GA00	766th EOD Co	Stewart	44	1	44		-		-		-		-		-	44	(23)
12410G000	HR Co. Recap	Stewart	197	1	197		-		-		-		-		-	197	
19477G000	139 MP CS Co	Stewart	171	1	171		-		-		-		-		-	171	
34308G000	MI Co (BCT)	Stewart	5		-		-		-	3	15		-		-	15	
34-HBCT/IBCT	S2 Staffs	Stewart	8		-	3	24		-		-		-		-	24	
42420F002	QM Supply Co	Stewart	186		-		-		-	1	186		-		-	186	(117)
					456		24		6		207		-		-	693	(186)

Appendix X: Projected National Guard and Reserve Component Growth

Alternative 2: Army National Guard Growth

Summary: The Army National Guard Growth plan totals 8,200 soldiers.

UNIT TYPE	STATION	STATE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	GROWTH
Military Police Platoon	PHILADELPHIA	PENNSYLVANIA						1		42
BFSB, SIGNAL CO	UNKNOWN	UNKNOWN				1				47
BFSB, Brigade Troops BN	UNKNOWN	UNKNOWN		1						310
BFSB, Forward Support CO	ATLANTA	GEORGIA			1					124
Battlefield Surveillance Brigade	UNKNOWN	UNKNOWN		1						142
BFSB, Forward Support CO	OMAHA	NEBRASKA		1						124
Engineer BDE / Grp, THEATER	VICKSBURG	MISSISSIPPI	1							125
CBRNE COMMAND	ABERDEEN	MARYLAND	1							3
ENGINEER BN , COMBAT	UNKNOWN	UNKNOWN			1					175
ENGINEER BN , COMBAT	UNKNOWN	UNKNOWN			1					175
ENGINEER BN , COMBAT	UNKNOWN	UNKNOWN						1		173
ENGINEER CO , Support	UNKNOWN	UNKNOWN					1			121
ENGINEER CO , Support	UNKNOWN	UNKNOWN					1			121
ENGINEER CO , CLEARANCE	UNKNOWN	UNKNOWN							1	191
ENGINEER CO , MOBILITY AUG	UNKNOWN	UNKNOWN						1		118
ENGINEER CO , SAPPER	UNKNOWN	UNKNOWN			1					104
ENGINEER CO , SAPPER	UNKNOWN	UNKNOWN						1		104
ENGINEER CO , SAPPER	UNKNOWN	UNKNOWN						1		104
ENGINEER CO , MULTI-ROLE BRIDGE	UNKNOWN	UNKNOWN					1			185
Engineer TM , FIRE FIGHTING TEAM	UNKNOWN	UNKNOWN			1					7
Engineer TM , CONSTRUCTION	UNKNOWN	UNKNOWN			1					25
ORDNANCE CO (EOD)	FT BUCHANAN	PUERTO RICO		1						44
QUARTERMASTER CO, WATER	BARNWELL	SOUTH CAROLINA			1					188
HR PLT / DET / TM	UNKNOWN	UNKNOWN			1					10
HR PLT / DET / TM	UNKNOWN	UNKNOWN			1					10
MILITARY POLICE CBT SPT, BN	UNKNOWN	UNKNOWN		1						73
MILITARY POLICE CBT SPT, BN	UNKNOWN	UNKNOWN		1						73
MILITARY POLICE CBT SPT, BN	UNKNOWN	UNKNOWN		1						73
MILITARY POLICE CBT SPT, BN	UNKNOWN	UNKNOWN					1			73
MILITARY POLICE I/R, BN	AUBURN	NEW YORK			1					151
MILITARY POLICE CBT SPT, CO	UNKNOWN	UNKNOWN		1						170
MILITARY POLICE CBT SPT, CO	UNKNOWN	UNKNOWN		1						170
MILITARY POLICE CBT SPT, CO	UNKNOWN	UNKNOWN					1			170
MILITARY POLICE CBT SPT, CO	UNKNOWN	UNKNOWN					1			170
MILITARY POLICE CBT SPT, CO	UNKNOWN	UNKNOWN					1			170
HHD TRANSPORTATION BN	MARION	SOUTH CAROLINA		1						51
3RD MEDIC IN BCTs	UNKNOWN	UNKNOWN			1					426
A & I PLT IN BCT	UNKNOWN	UNKNOWN			1					476

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BIDS CLS CONVERSION	UNKNOWN	UNKNOWN				1				28
BN S2 UPGRADE IN BCT	UNKNOWN	UNKNOWN			1					224
DEP CDR OFFICER	UNKNOWN	UNKNOWN			1					30
UNIT TYPE	STATION	STATE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	GROWTH
NBCRV CREW UPDATE	UNKNOWN	UNKNOWN			1					96
PSDR	UNKNOWN	UNKNOWN			1					1900
SBCT HQ STAFF INCREASE	UNKNOWN	UNKNOWN			1					24
SBCT MAINTENANCE	UNKNOWN	UNKNOWN			1					113
SMALL ARMS MAINT	UNKNOWN	UNKNOWN			1					767
									Total	8200

Summary of increases to Existing Units

Alternative 2: Army Reserve Growth

Summary: The Army Reserve Growth plan totals 1,000 soldiers.

UNIT TYPE	STATION	LOCATION	FY2010	FY2011	FY2012	FY2013	TOTAL GROWTH
SUSTAINMENT BDE	UNKNOWN	UNKNOWN				1	363
Combat Support Brigade (CSB ME), HQ	UNKNOWN	UNKNOWN				1	176
CSB ME, SIGNAL CO	UNKNOWN	UNKNOWN			1		55
CSB ME, Brigade Support BN	UNKNOWN	UNKNOWN				1	210
BIDS CLS CONVERSION	UNKNOWN	UNKNOWN	1				100
NBCRV CREW UPDATE	UNKNOWN	UNKNOWN	1				96
						Total	1000

APPENDIX Y: COMMENTS RECEIVED

Comments Y-1, Y-2, and Y-3

Gregory Hogue, Regional Environmental Officer, United States Department of the Interior, Atlanta, GA



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

9043.1
ER 07/712

October 9, 2007

Mr. Robert DiMichele
Public Affairs Office, Attention: IMAE-PA
U.S. Army Environmental Command
5179 Hoadley Road, Building E4460
Aberdeen Proving Ground, MD 21010

Subject: Review of the Draft Programmatic Environmental Impact Statement for
Army Growth and Force Structure Realignment Implementation, Nationwide

Dear Mr. DiMichele:

The Department of the Interior (Department) has reviewed the Draft Programmatic Environmental Impact Statement (PEIS) for Army Growth and Force Structure Realignment Implementation, Nationwide. We have the following comments.

The purpose of the draft PEIS is to conduct analysis of alternatives to realign the Department of Army's (Army) force structure in accordance with Army Transformation objectives and field a force which is of sufficient size and configuration to meet the nation's current and projected future security and defense requirements. This information will allow decision makers to compare alternatives and assess environmental and socio-economic impacts for implementing Army growth initiatives and enable them to make informed decisions when choosing locations to station new units.

The Department has two critical concerns in regards to federally threatened and endangered species and migratory birds. Throughout the document, the Army indicates it will manage listed species in accordance with the installation Integrated Natural Resources Management Plans (INRMP) and Endangered Species Management Plans (ESMP). However, it is not apparent that all proposed work will be completed with available funding. Please indicate that funds allocated for INRMPs are a "must fund" commitment necessary to maintain environmental compliance. In

particular, demonstration of yearlong distribution of funding would provide confidence that resources are efficiently spent on listed species and migratory bird habitat management. We emphasize that having an approved INRMP and ESMP is not adequate if the management actions in those plans are not implemented. We found only a couple of occasions where migratory birds were mentioned in the document and there is some concern regarding the priority placed on those issues and the funding in INRMPs for the management of their habitat.

Fort Riley

Fort Riley is identified as one of seventeen installations being considered for additional growth. The mission requirements resulting from the Integrated Global Presence and Basing Strategy (IGPBS), the 2005 Base Realignment and Closure Act (BRAC), and the transition to Army Modular Forces, has substantially changed the configuration of Fort Riley's training mission in the last three years. Three brigade combat teams; a Combat Aviation Brigade, a Sustainment Brigade, and Division Headquarters for the 1st Infantry Division are now stationed at the installation as a result of the above listed actions. Soldier numbers have increased significantly, as have troop support infrastructure on-post and in the surrounding communities. The current INRMP 2001-2005 for the installation does not reflect these changes. The effects on natural resources due to the increased troop numbers and support infrastructure have not yet been evaluated under the INRMP. An updated INRMP is expected in FY08.

Until the INRMP is updated, the degree of impact the previous increase in troop numbers has had upon natural resources is unknown, and any additional troops and increases in training and support services may add to those unknown impacts. Installation concerns should focus specifically on the stresses already created by BRAC, IGPBS actions, and any additions, and resultant demands on resources both on and off-post.

Cumulative effects to fish and wildlife resources to be analyzed from all recent and proposed additions to troop strength at Fort Riley should include, but not be limited to, landfill debris, floodplain development, traffic and transportation, increased storm water runoff, water demand, regional growth, soil erosion, invasive species, noise, impacts to threatened and endangered species and land use changes.

If you have questions regarding these comments on Fort Riley, please contact Michele McNulty, Kansas Ecological Services Field Office, at 785-539-3474 extension 106.

Fort Drum Military Installation

In Section 4.6.7.1, Affected Environment, we recommend that the Army provide a list of the 27 special status species of flora and fauna known to occur within the Fort Drum area. We agree that the Indiana bat (*Myotis sodalis*) is the only federally-listed species known to occur within Fort Drum.

In Section 4.6.7, Environmental Consequences, the Army anticipates long-term moderate adverse impacts on the Indiana bat or other species occurring on the installation from all potential unit growth scenarios, no description of the kinds of impacts are provided. It would be

helpful to list a few examples. We understand that the Army expects further environmental analyses to occur at the installation level once decisions for soldier restationing have been made. We also recognize that the Fort Drum Natural Resources Branch (with the assistance of the U.S. Fish and Wildlife Service's New York Field Office) is currently preparing a programmatic Biological Assessment (BA) to assess the potential for impacts associated with all installation activities (e.g., training, vegetation management, and construction), and they can develop or revise their analyses once restationing decisions have been made. However, when examining the potential for impacts at the broader scale, we disagree with the Army's initial assessment that significant impacts to Indiana bats are unlikely at Fort Drum. There is potential for adverse effects (e.g., roosting and foraging habitat degradation or removal as a result of additional construction within and outside of Fort Drum) with increased soldier levels.

4.6.7 Wetlands

The Service is currently working with Fort Drum Natural Resources Branch on updating their INRMP, and reviewing proposed Programmatic General Permits for the Corps of Engineers that will result in avoidance of wetlands or minimization of direct, indirect, and cumulative impacts to wetlands regulated under Section 404 of the Clean Water Act. We understand that compensatory wetlands were constructed on Fort Drum and remain, at least for now, protected in perpetuity. We are concerned that additional wetland impacts, as a result of base expansion, will result in a net loss of wetlands both on base and within the three watersheds that are located on Fort Drum, as a result of using off-post locations to compensate for wetland impacts. We recommend the Army to identify and protect in perpetuity high quality wetlands (including existing and compensatory wetlands) on-post and set aside additional areas outside the training area for mitigation. If mitigation is not feasible on-post, then mitigation should be sought within the perspective watershed where adverse impacts were authorized, and be located as close to the impact area as possible to replace functions and values lost due to development.

If there are any questions regarding the comments on Fort Drum, please contact Sandie Doran, New York Ecological Services Field Office at 607-753-9334.

White Sands Missile Range

The installation anticipates only minor (low) long-term impacts on the listed species found onsite. As long as activities are conducted in areas not inhabited or utilized by the federally listed and other status species, these actions will have very little impact on these species. For listed species and other special status species recorded on the installation, the Army will continue to manage in accordance with the installation's INRMP and ESMP, terms and conditions identified within biological opinion(s) issued by the Service and any conservation measures identified in Endangered Species Act (ESA), section 7 consultation documents. Avoiding or minimizing impacts to habitat essential for these species would be required to avoid the potential for these species to be listed. White Sands Missile Range has identified that listing of any of these species under the ESA would have an impact on the installation's mission.

If you have any questions concerning these comments on White Sands Missile Range, please contact Steve Parris, Clear Lake Ecological Services Field Office at 281-286-8282 or Santiago

Gonzales, Albuquerque Ecological Services Field Office at 505-761-4700.

We appreciate the opportunity to review the draft PEIS. I can be reached at 404-331-4524 if you should have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory Hogue", written over a horizontal line.

Gregory Hogue
Regional Environmental Officer

cc:

REO, Boston
REO, Denver
REO, Albuquerque
OEPC, Washington
FWS, Region 2
FWS, Region 4
FWS, Region 5
FWS, Region 6

Comment Y-4

Bernard Brady, State of Washington Department of Ecology



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

October 8, 2007

Attention: IMAE-PA
Public Affairs Office
U.S. Army Environmental Command
Building B4460
5179 Hoadley Road
Aberdeen Proving Ground, MD 21010-5401

Dear Public Affairs Office:

Thank you for the opportunity to comment on the national environmental policy act for the Army Growth & Force Structure Realignment project, located in Fort Lewis, as proposed by U.S. Department of the Army. The Department of Ecology (Ecology) reviewed the information provided and has the following comment(s):

AIR QUALITY: Bernard Brady (360) 407-6803

The project description is notable for what it does not say. I have no idea what is intended for Fort Lewis. So, I can express no meaningful opinion.

WATER QUALITY: Margaret Hill (360) 407-0246

If the proposed Army Growth and Force Structure Realignment involves construction activities and those construction activities disturb one or more acres of soil surface area, those projects may require a Construction Stormwater National Pollution Discharge Elimination System (NPDES) permit. This permit is required when a site one acre or larger already has discharge to waters of the state or will have discharge during construction. The permit application form, called a Notice of Intent, is available on Ecology's website at: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/niApplication>. To avoid project delays, we encourage the applicant to submit a completed application form and to publish public notices more than 60 days before the planned start of the project.

Ecology's comments are based upon information provided by the lead agency. As such, they do not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments please contact the appropriate reviewing staff listed above.

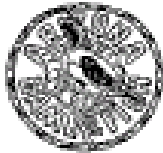
Department of Ecology
Southwest Regional Office

(SM: 07-6993)

cc: Bernard Brady, AQP
Charles Gilman, HQ/WQ
Margaret Hill, WQ
U.S. Department of the Army (Applicant)

Comment Y-5, Y-6, and Y-7

State of Arizona, Department of Game and Fish

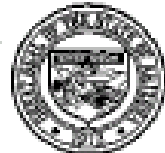


THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

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 DEPUTY DIRECTOR
 STEVE K. FERRILL



September 28, 2007

Public Affairs Office
 Attention: IMAE-PA,
 U.S. Army Environmental Command, Building E4460
 5179 Hoadley Road
 Aberdeen Proving Ground, MD 21010-5401

Re: Draft Programmatic Environmental Impact Statement for Army Growth and Force Structure Realignment

Dear Reader:

The Arizona Game and Fish Department (Department) has reviewed the Draft Programmatic Environmental Impact Statement (DPEIS) for Army Growth and Force Structure Realignment dated August 2007. Given the project description and our understanding of planned activities, the Department believe the DPEIS: 1) inadequately analyzes potential impacts to wildlife and vegetation, and 2) fails to recognize that the current Integrated Natural Resource Management Plan (INRMP) for the Yuma Proving Ground (YPG) focuses on testing and evaluation, and does not address the potential impacts to wildlife and vegetation or identify necessary management and mitigation that may result from substantially increasing the intensity and extent of training activities at YPG. We are providing the following comments for your consideration.

Description of the Alternatives

As we understand, the DPEIS analyzes three alternatives for Army growth and transition, and evaluates the environmental and socio-economic impacts to 17 military facilities from the implementation of these alternatives. In general, the Army is transitioning from a large organization constituted at the Division level to a smaller, modular system of self contained and rapidly deployable Brigade Combat Teams. Army installations considered in the analysis include only those sites that may receive more than 1,000 new soldiers between the Fiscal Years 2008 and 2013. The Army is considering the YPG as one of the training and testing facilities potentially capable of supporting the actions as part of the growth and realignment plan. The three alternatives analyzed in the DPEIS, in addition to the *No Action Alternative*, include:

1. *Alternative 1* – Implement Army force structure modifications between fiscal year 2008 and 2013 to support the Army's Modular Transformation and Global Defense Posture Review decisions. This would result in a realignment of Combat Support (CS) and Combat Service Support (CSS) units and an increase of the Army by approximately 20,000 soldiers.

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2. *Alternative 2* – Execute actions in *Alternative 1* and add CS and CSS to the Active and Reserve Components of the Army to address critical shortfalls in high demand military skills. This would result in approximately 20,000 additional Active Duty and 10,000 Reserve Component Soldiers.
3. *Alternative 3* – Execute actions in *Alternatives 1* and *2* and grow the Army by up to 6 Active Duty Brigade Combat Teams. This alternative would result in the addition of 20,400 to 24,000 new soldiers to the Army.

In addition, the following six unit scenarios were developed to capture the proposed Army growth initiatives which may be experienced at site-specific locations:

- 1) additional CS/CSS – 1,000 soldiers,
- 2) a Sustainment Logistics Support Brigade – 3,000 to 3,500 soldiers,
- 3) an Infantry Brigade – 3,500 soldiers,
- 4) a Heavy Brigade Combat Team – 3,800 to 4,000 soldiers,
- 5) a Stryker Brigade Combat Team – 4,000 soldiers (YPG not an option), and
- 6) Multiple Brigade Combat Brigades – 7,000 soldiers.

Depending on the scenario being implemented, site-specific activities at each location could include garrison construction, training facilities and range construction, and live-fire and maneuver training. The requirements for each site-specific activity and resulting environmental effects would vary according to the scenario implemented and the currently-available infrastructure and facilities at a given location. The necessary infrastructure to be created and utilized would range from housing, parking, and other civil building facilities, to live firing ranges, combat vehicle maneuvering courses, and air fields. Currently, the YPG employs approximately 636 government civilians, 1,447 civilian contractors, and 115 military personnel; approximately 205 individuals live on site (Yolie Canlas, pers. comm.).

The Affected Environment and Environmental Consequences

Due to the programmatic nature of the DPEIS, it is difficult to comprehensively discern the anticipated impacts to vegetation and wildlife. Nevertheless, the Department believes that the analysis of impacts presented in the Affected Environment and Environmental Consequences sections of the DPEIS do not accurately or thoroughly address the potential impacts to vegetation and wildlife that are likely to occur under the proposed Alternatives.

Appendix S in the DPEIS identifies the federally-listed plant species, Nichol's Turk's Head Cactus (*Echinocactus horizontalis* var. *nicholii*), as potentially occurring on the YPG. Department personnel accessed the Heritage Data Management System on September 7, 2007 and generated a list of special status species that are documented to occur on or near the YPG (Table 1). The Department recommends utilizing the list in Table 1 in addition to Appendix S for determining special status species which may be impacted by the proposed Alternatives. Although Table 1 includes the bald eagle and yellow-billed cuckoo, which are unlikely to be affected by activities described in the DPEIS, there are also numerous species of interest not

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included in Table 1 or Appendix S that could be impacted, including large mammals such as mule deer and desert bighorn sheep, migratory birds such as Le Conte's thrasher, and numerous small mammals, amphibians, reptiles, and native plants.

Table 1. Species documented in the Heritage Data Management System for the YPG on September 7, 2007.

NAME	COMMON NAME	FWS	BLM	AGFD
<i>Antrozous pallidus</i>	Pallid Bat			
Bat Colony				
Bat Foraging Area	High Netting Concentration			
<i>Chaetodipus spinatus</i>	Spiny Pocket Mouse			
<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	C		WSC
<i>Gopherus agassizi</i> (Sonoran Population)	Sonoran Desert Tortoise	SC		WSC
<i>Haliaeetus leucocephalus</i> (wintering pop.)	Bald Eagle			WSC
<i>Lasiurus xanthinus</i>	Western Yellow Bat			WSC
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		WSC
<i>Myotis velifer</i>	Cave Myotis	SC	S	
<i>Nyctinomops femorosaccus</i>	Pocketed Free-tailed Bat		S	
<i>Stillingia spiculosa</i>	Spiny Sand Spurge			
<i>Uma scoparia</i>	Mojave Fringe-toed Lizard			WSC

FWS = Fish and Wildlife Service

C = Candidate Species

SC = Species of Concern

BLM = Bureau of Land Management

S = Sensitive Species

AGFD = Arizona Game and Fish Department

WSC = Wildlife of Special Concern

The DPEIS asserts that only minor impacts to vegetation, wildlife, and threatened and endangered species will result from the Alternatives presented. Contrary to assertions in the DPEIS, though, the Department believes that significant impacts to vegetation, wildlife, and special status species are likely to occur on the YPG, depending on which Alternatives and scenario(s) are implemented. For example, the implementation of scenario #1 may result in only moderate impacts to vegetation and wildlife due to a maximum of 1,000 additional personnel, the limited new infrastructure that may be necessary to construct, and the limited increase in field training. Whereas scenarios #4 and #6 would likely result in significant negative impacts due to more than 3,000 additional personnel on site with a concurrent increase in the intensity and extent of field training exercise requiring the use of heavy equipment and vehicles such as tanks, infantry fighting vehicles, earth-moving and all-wheel vehicles, and munitions testing and training ranges.

The increase in activities resulting from garrison construction, training facilities, range construction, and live fire and maneuver training can significantly impact wildlife and their habitats through multiple mechanisms. These mechanisms can include, but are not limited to,

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permanent wildlife and habitat displacement near road and facilities construction, direct mortality from collisions with vehicles, avoidance of wildlife from areas with increased concentration of human activity, and the loss of habitat value and spread of exotic/invasive species (primarily plants) due to an increase in frequency and extent of wildfires and soil disturbance resulting from military training activities.

Further, disturbance to some habitat features, such as desert washes, can result in disproportionate negative impacts to wildlife due to the high importance of these habitats for wildlife foraging, breeding, cover, and linkage areas. If implementing scenarios as part of any Alternative in the DPEIS involves any work within desert washes or wetlands, we recommend contacting the U.S. Army Corps of Engineers, at the address provided below, regarding Clean Water Act issues:

Ron Fowler
U.S. Army Corps of Engineers
Regulatory Branch
3636 N. Central Avenue, Suite 760
Phoenix, AZ 85012-1936
Phone: 602-640-5385

The DPEIS also states that the management programs contained in the YPG's INRMP will ensure the health and viability of species at risk and other special status species. The Department believes, however, that the current INRMP does not adequately address the impacts of the Alternatives proposed in the DPEIS. The YPG is currently operated and managed as a testing and evaluation facility with very little training occurring on site. As a result, the current INRMP reflects this focus on testing and evaluation and does not address the potential impacts or necessary management and mitigation that would result from such intense and extensive training.

Finally, the Department believes that land use compatibility with wildlife-based recreation and management could be dramatically altered if one or more of the scenarios are implemented on the YPG as described in the DPEIS. Currently, hunting only occurs in designated areas on the YPG that are not extensively utilized for testing and evaluation purposes. With an increase of 3,000 or more military personnel and a corresponding increase in training on the YPG, the quantity and quality of hunting opportunities will likely diminish, if not disappear. Further, the increase in training and corresponding access restrictions on the YPG may inhibit the Department's ability to conduct vital wildlife management activities, such as population inventory and monitoring, and conducting habitat improvement projects.

Comments Y-8, Y-9, and Y-10

Jim Whitaker, Mayor, Fairbanks Northstar Borough



Fairbanks North Star Borough

Office of the Mayor

809 Pioneer Road

P.O. Box 71267

Fairbanks, Alaska 99707-1267

907/459-1300

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Email mayor@co.fairbanks.ak.us

October 5, 2007

Public Affairs Office
U.S. Army Environmental Command, Building E4460
5179 Hoadley Road
Aberdeen Proving Ground, MD 21010-5401

Attention: IMAE-PA

RE: Review of Draft Programmatic Environmental Impact Statement, August 2007

Dear Sirs:

The Fairbanks North Star Borough (FNSB) has completed our review of the *Draft Programmatic Environmental Impact Statement for Army Growth and Force Structure Realignment, August 2007* (DPEIS) and has compiled a list of concerns regarding the document.

Our foremost concern is with the statement on Page 20 Lines 10 and 11 "This EIS does not include Alaska or Hawaii". It is very clear from several references in the document that the document does indeed relate to Alaska and in particular to Fort Wainwright.

The first instance of a clear reference to Alaska bases occurs under *Alternative 1 – Implement Army force structure modifications between 2008 and 2013 to support the Army's Modular Transformation and GDRP decisions* as there is a clear loss of personnel from Fort Wainwright. On Page 40: "Table 3-1 "Unit Stationing Activities (FY2008 to 2013 – Not Inclusive of BRAC)" has a net change of -143 personnel at "AK-Wainwright"....as well as Net Change of +1249 at "AK-Richardson."

The impact to Alaska is even more pronounced with *Alternative 2-"Execute those actions discussed in Alternative 1 and, in addition, add approximately 30,000 Combat Support and Combat Support Service Soldiers to that Active and Reserve Components of the Army to Address critical shortfalls in high demand military skills"* and *Alternative 3 "Execute those actions proposed in Alternatives 1 and 2 and, in addition grow the Army by up to 6 Active Duty Brigade Combat Teams."* Page 41: "Table 3-2 "Distribution Army CS/CSS Growth Alternative 2 excluding Modular growth in Alternative 1" has a net growth of 18 at AK-Wainwright with Military Police and Engineer."

As with *Alternative 1*, this action would have significant impact on Alaska and this impact should be discussed within the Programmatic Environmental Impact Statement.

Letter to the U. S. Army Environmental Command
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Page 2

Alternative 3, the execution of actions in Alternatives 1 and 2, plus growing the Army by six additional brigade combat teams, will significantly impact Alaska. From Page 43: Table 3-3 "Total Growth Under Alternatives 1 and 2 (Combined) net growth of 43 for AK-Wainwright, and 1859 at AK-Richardson."

The surprising lack of growth at Fort Wainwright (FWW) under any of these options is puzzling to FNSB as Fort Wainwright is one of the Army's premier bases and is known for superlative training facilities; outstanding quality of life; unique climate, forward based strategic mission; and tremendous garrison support.

Fort Wainwright is, in terms of acreage, the fourth largest Army base in the United States and has more than sufficient room for more training facilities that are needed by the Army to meet the needs of the "Grow the Force" initiative. The FNSB has completed a Joint Land Use Study (JLUS) for FWW and Eielson Air Force Base that will protect the military's investment in the bases, training ranges, flight patterns, and other concerns from civilian activities. Fort Wainwright also has significant room to grow should further land be needed to support infrastructure and operations, as lands adjacent to the northeast of the base are all in the public domain. Of bases listed for new Brigade Combat Team (BCT) stationing within the DPEIS only Yuma Proving Grounds and White Sands Missile Range are larger in acreage than FWW. Fort Wainwright stands out as a facility in a community that can meet the challenge of growth and force structure realignment.

Fort Wainwright's strategic mission is unique among bases located within the United States as FWW is the nation's front line base to Asia and the Middle East and is closer to current and potential hotspots than bases located within the contiguous 48 states. The geographic location also makes FWW the leader in cold weather testing and training, as the reemergence of Russia, the strengthening of China and the ever present threat of North Korea ensure the continued need for cold hardened troops and proven equipment. The warm summers of Interior Alaska also ensure that troops can train to meet any climatic challenge.

Fort Wainwright facilities provide year-round support for live-fire exercises, maneuver training for mechanized/armored vehicles, attack helicopter gunnery, small arms, mortar and artillery firing exercises, and maneuver training for almost all weapons systems in the Army. FWW specializes in conducting operations in cold regions and mountainous terrain. The installation uses its 917,000 acres of land intensively to accommodate the wide range of mission-related activities. Fort Wainwright personnel also work with the Coast Guard and/or Navy when they have ships near Alaska to practice helicopter deck landings.

Northern Edge is an annual exercise held every Summer. It is designed to simulate joint operations, techniques, procedures, command and control relationships, and enhanced interoperability. The Pacific Command and the U.S. Northern Command alternate organizing Northern edge; approximately 9,000 Soldiers, Sailors, Airman, Marines, and Coast Guard personnel practice tasks associated with joint operations with over 180

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October 6, 2007
Page 3

aircraft and usually 9 ships from an aircraft carrier task force participate along with Homeland Security, Border Guard, and Canadian military and government officials. Along with Northern Edge, FWW's training facilities are a valuable portion of the Red Flag Pacific Alaska Range Complex (PARC), which provides training for home units in Alaska, visiting U.S. units, and international allies.

The PARC is the nation's premier training range that offers tremendous joint and combined training experiences. Northern Edge, Red Flag Alaska, and other training exercises have at their disposal 655,000 acres within the Army's Tanana Flats Training Area immediately to the south of FWW, 247,952 acres at the Army and Air Force's Yukon Flats Training Area located adjacent to Eielson Air Force Base, 624,000 acres at the Army's Donnelly Training Area 100 miles southeast of FWW, and 67,000 square miles of air space dedicated to military use. The Air Force tactical ranges include the Blair Lakes Conventional Range, the Yukon Tactical and Electronic Warfare Range, and the Oklahoma Range, all ranges are jointly used by the Air Force and Army to provide realistic air combat and ground support training exercises. At the peak of a Red Flag Alaska exercise up to 70 jet fighters; several heavy bombers such as B52's, B1's and B2's; air tankers; and Army Chinook, Blackhawk or Kiowa helicopters can occupy the airspace while conducting on-the-ground operations with units employing various equipment and weapons systems.

The basic mission of Red Flag is to run realistic 10-day air combat training exercises designed to bring Pacific Rim and NATO nations to Alaska to train and fight together. Red Flag showcases multi-national airlift operations combined with interdictions, personnel placement and recovery operations and counter-air missions. Some of the participating countries have included the United Kingdom, Germany, Australia, Singapore, Korea, India, France, Spain, Malaysia, and Japan. These countries bring transport, fighter, bomber, and ground teams to add to the diversity of combat employment.

The military has established no-fly zones and altitude restrictions in airspace to minimize the impact on commercial and general aviation. The FNSB has established policies of planning and zoning to control or prohibit residential or commercial activities that may conflict with military activities.

The FNSB works hard to maintain a high quality of life for its residents and visitors. The quality of life of FWW is unmatched of any base in the nation. Fairbanks offers all the cultural, sporting, educational, and spiritual amenities of any large American city. With outdoor activities ranging from world class salmon fishing to activities in nearby Denali Nation Park, soldiers and their dependents have a hard time leaving the area once their duty station changes. This love of Fairbanks by soldiers is reflected in Census data that show nearly 17% of the FNSB population are veterans compared to 14% statewide and 10% nationwide. Local community support for the military is very high. For example, at a local hearing for the 2005 BRAC process, a threatened closure of Eielson, attracted a crowd of 6,000 for a three hour event. The local government, as evidenced by this

Letter to the U. S. Army Environmental Command
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Page 4

response, the JLUS process, the economic diversification process, our monthly meetings with local military commanders, excels at support for the military and its personnel.

The FNSB has invested heavily to support the garrison. The FNSB operates the elementary schools on the base, provides transportation services, and regulates community development activities assuring operational utility of the base and training ranges. The Fairbanks Economic Development Corporation, in partnership with the FNSB and the University of Alaska, is preparing air space models to better regulate civilian and commercial flight activities near the base and training ranges. The City of Fairbanks in which Fort Wainwright's main post lies has invested in roads and highways to support base operations. The Alaska Railroad Corporation is constructing a rail line by-pass around base to remove trains from the central core of the base and the airfield; along with that a new rail yard and cantonment area is under construction to support rapid mobilization of the Stryker Combat Team. The state of Alaska has invested in new highways to support movement of military vehicles between the various training ranges and the base.

The local building industry has proven it can provide low-cost housing for the troops and their dependants. Over the last five years an average of 500 homes a year have been built within the FNSB.¹ The FNSB School District can easily meet a population surge if more troops were to be stationed at Fort Wainwright as funding solutions between the school district and the state allow for rapid new construction and new teacher hires. Local and state government as well as private industry can meet the needs of significantly more troops on base.

Thank you again for the opportunity to comment on the Draft Programmatic Environmental Impact Statement. The FNSB looks forward to continuing our productive relationship with the U.S. Army and Air Force. The FNSB point of contact for this action is Bob Shefchik, Chief of Staff, bshefchik@co.fairbanks.ak.us, 907-459-1300.

Sincerely,



Jim Whitaker, Mayor

JW:cs-csm

¹ Construction of 60 homes a year have consistently been reported by state and Census demographers; this major statistical error was recently caught by the FNSB Mayor's Office as data from the FNSB Assessors Office and the state demographers office was wildly inconsistent. A recent population survey has determined that the real population of the FNSB is 96,107 and not the 86,754 reported in the 2006 American Community Survey.

Comment Y-11
Commonwealth of Virginia



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
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L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Payler
Director
(804) 698-4660
1-800-392-5482

October 1, 2007

U.S. Army Environmental Command
Attn.: IMAE-PA
5179 Hoadley Road, Bldg E-4480
Aberdeen Proving Ground, Maryland 21010-5401

RE: Draft Programmatic Environmental Impact Statement for the Army Growth and Force Structure Realignment (DEQ 07-176F).

Dear IMAE-PA:

The Commonwealth of Virginia has completed its review of the August 2007 Draft Programmatic Environmental Impact Statement (DPEIS) (received August 27, 2007) for the above referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents and responding to appropriate federal officials on behalf of the Commonwealth.

Project Description

The DPEIS submitted by the Department of the Army (Army) analyzes four alternatives intended to realign the Army's force structure in accordance with Army Transformation objectives, and to field a force which is of sufficient size and configuration to meet the nation's current and projected future security and defense requirements. The DPEIS is intended to provide decision makers, regulatory agencies, and the public with information on the potential environmental and socioeconomic effects resulting from the implementation of different types of stationing decisions. This information will allow decision makers to compare alternatives and assess environmental and socio-economic impacts for implementing Army growth initiatives and enable them to make informed decisions when choosing locations to station new units. Programmatic alternatives carried forward for analysis in the DPEIS include:

- Alternative 1: Implement Army force structure modifications between fiscal year 2008 and 2013 to support the Army's Modular transformation and Global Defense Posture Review (GDPR) decisions.

Page 2

- **Alternative 2:** Execute those actions discussed in Alternative 1 and, in addition, add approximately 30,000 Combat Support (CS) and Combat Service Support (CSS) Soldiers to the Active and Reserve Components of the Army to address critical shortfalls in high demand military skills.
- **Alternative 3:** Execute those actions proposed in Alternatives 1 and 2 and, in addition, grow the Army by up to 6 Active Duty Brigade Combat Teams (BCTs).
- **No Action.**

Action Affecting Virginia

According to the DPEIS (page 259) the only foreseeable action affecting Virginia is the potential land transfer of approximately 194 acres to the State of Virginia for a Virginia Nursing Home and Medical Center, beginning in FY08-09. The location of the 194 acres is not identified in the document and no further discussion is included. The statement is contained as a bulleted sentence in a section discussing the cumulative effects of future actions proposed at the Fort Knox Army Base in Kentucky. The relationship between the proposed actions at Fort Knox and the potential Virginia land transfer is unexplained.

Future Environmental Review

Should the Army decide to transfer the 194 acres of land to Virginia, an analysis of the transfer would be required under the authorities of the National Environmental Policy Act (NEPA) and State Environmental Impact Report (EIR) law if the land is transferred to a State entity. When a project is subject to both state and federal requirements, DEQ will accept a suitable federal document as the State EIR. DEQ's Office of Environmental Impact Review (OEIR) will coordinate Virginia's review of any environmental documents prepared pursuant to NEPA and EIR law and comment to the Army on behalf of the Commonwealth. Furthermore, should the transfer have a reasonably foreseeable effect on coastal resources or uses in Virginia's designated coastal zone, a similar review of a Federal Consistency Determination (FCD) would be required pursuant to the Coastal Zone Management Act (CZMA). If the FCD is included as part of the NEPA document, there can be a single concurrent review.

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). The Army must provide a consistency determination which involves an analysis of the activities in light of the Enforceable Policies of the VCP (attached), and a commitment to comply

Page 3

with the Enforceable Policies. In addition, we invite your attention to the Advisory Policies of the VCP (attached). The federal consistency determination may be provided as part of the NEPA documentation or independently, depending on your agency's preference; we recommend, in the interests of efficiency for all concerned, that it be provided together with the NEPA document and that 60 days be allowed for review in keeping with the Federal Consistency Regulations (see section 930.41(a)). Section 930.39 of the Federal Consistency Regulations and Virginia's Federal Consistency Information Package at <http://www.deq.virginia.gov/eir/federal.htm> give content requirements for the consistency determination.

Review Process

The review of the submitted environmental document would be coordinated by DEQ-OEIR with selected state, regional and local Virginia agencies, which are likely to include the following (note: starred (*) agencies administer one or more of the Enforceable Policies of the VCP):

- Department of Environmental Quality:
 - Office of Environmental Impact Review
 - DEQ Regional Office*
 - Air Division*
 - Water Division*
 - Waste Division
- Department of Game and Inland Fisheries*
- Department of Conservation and Recreation:
 - Division of Soil and Water Conservation*
 - Division of Chesapeake Bay Local Assistance*
 - Division of Planning and Recreation Resources
- Marine Resources Commission*
- Department of Agriculture and Consumer Services
- Department of Health*
- Department of Transportation
- Department of Mines, Minerals, and Energy
- Department of Forestry
- Department of Historic Resources
- Virginia Institute of Marine Science
- Appropriate Planning District Commission
- Appropriate locality.

In order to ensure an effective coordinated review of the proposal, we would require 18 copies of the document when published. The document should include a U.S. Geological Survey topographic map as part of its information. We recommend, as well, that project details unfamiliar to people outside the Army be adequately described. DEQ will provide its response to the proposal within 60 days of the receipt of the document.

Page 4

Thank you for the opportunity to review the Draft Programmatic Environmental Impact Statement for the Army Growth and Force Structure Realignment. If you have questions about the environmental review process under State EIR law, NEPA or CZMA, please feel free to call me at (804) 698-4325 or John Fisher of this Office at (804) 698-4339.

Sincerely,

A handwritten signature in cursive script that reads "Ellie Irons".

Ellie Irons, Manager
Office of Environmental Impact Review

Enclosures

Comment Y-12

Kathleen Sebelius, Governor of the State of Kansas



Kathleen Sebelius, Governor

www.governor.ks.gov

October 8, 2007

Colonel Michael O'Keefe, Commander
U.S. Army Environmental Command
Public Affairs Office
Building B4460, 5179 Hoadley Road
Attention: IMAE-PA
Aberdeen Proving Ground, Maryland 21010-5401

Dear Colonel O'Keefe,

The State of Kansas and the communities in the Fort Riley area fully support the assignment of at least 1,000 additional Combat Support/Combat Service Support (CS/CSS) troops, as well as another Infantry Brigade Combat Team, to Fort Riley.

The coordinated response of the State, local communities and our Congressional Delegation to the growth resulting from Base Realignment and Closure, Army transformation and modularity and the global repositioning of our forces has become a model for other growth communities throughout the United States. This coordinated effort is spearheaded by the Governor's Military Council and its Fort Riley Accommodation Task Force.

The Task Force was created in December of 2004, and chartered to accommodate the troops being assigned to Fort Riley and their families in the manner they deserve. Membership in the Task Force includes members of the Governor's Military Council, representatives from several State agencies, regional and local elected officials and administrators, the Fort Riley command group and other interested individuals and organizations. The Task Force's principal focus has been in five areas: housing, schools, transportation, childcare and workforce. Additionally, Task Force members have addressed land use, healthcare and social service challenges provided by the growth.

Measurable results have occurred since the Task Force creation. For example, there have been over 4,500 housing starts in the local communities. Local financial institutions and the State have made low interest funding available to builders and developers, and the U.S. Department of Agriculture Rural Development office has established an office on the Fort to assist soldiers obtain low interest loans.

Local communities have authorized bonding for more than \$32 million dollars for new schools or renovation of existing school buildings. At the same time, the State has

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e-mail: governor@ks.gov

assisted the school districts by establishing a second count date. If on the second count date a school district has experienced an increase in enrollment of military dependents, the State will fund this higher level count.

Road improvements near the Fort are underway due to nearly \$60 million being committed by the State and Federal government for road improvements. The State is currently working with the local communities to identify additional requirements.

Workforce continues to be a high priority effort in the State, with the Kansas Department of Commerce having already implemented several recruitment/workforce development programs. The State also is working with the local communities in addressing childcare, healthcare and social service needs and then identifying possible funding sources.


Fort Riley has secured the use of 35,000 acres of training space at the Kansas Air National Guard's Smoky Hill Range. Fort Riley's access to the Range and ability to conduct "force on force" training in over 5,000 acres allotted for infantry operations is the result of a 2005 Memorandum of Understanding between the Commanding General of Fort Riley and The Adjutant General of Kansas. The ability to conduct additional training at Smoky Hill is demonstrative of Fort Riley's ability to accommodate additional forces as are the community measures in the areas of housing, transportation, education, health care and public safety.

Finally, the State is working with the Fort as it implements the Army Compatibility Use Buffer (ACUB) program. Specifically, the State is funding the administration of the Kansas Land Trust organization as it partners with Fort Riley in creating desired buffer zones. Also, the local communities, in conjunction with the Fort, have completed a Joint Land Use Study.

We have successfully met all current challenges resulting from Fort Riley's growth and are the national leader of communities adjacent to installations named in the Army's Draft Programmatic Environmental Impact Statement as it relates to the soldier/family support network required to sustain additional soldiers and their families.

We believe all current challenges resulting from Fort Riley's growth are being addressed, and the State of Kansas, the Governor's Military Council and its Fort Riley Accommodation Task Force and the local communities are committed to meet any additional challenges that may arise should additional troops and units be assigned to Fort Riley.

Sincerely,


Kathleen Sebelius
Governor of the State of Kansas

Comment Y-13

Elliott Spitzer, Governor of the State of New York



STATE OF NEW YORK

ELLIOT SPITZER
GOVERNOR

September 27, 2007

Colonel Michael O'Keefe, Commander
U.S. Army Environmental Command
Public Affairs Office
Building E4460, 5179 Hoadley Road
Attention: IMAE-PA
Aberdeen Proving Ground, Maryland 21010-5401

Dear Colonel O'Keefe:

I write in response to the Army's August 2007 Draft Programmatic Environmental Impact Statement for Army Growth and Force Structure Realignment as it relates to the potential assignment of an additional Brigade Combat Team (BCT) to the 10th Mountain Division at Fort Drum.

The State of New York strongly supports the stationing of an additional BCT at Fort Drum and views such an initiative as building upon the mutually beneficial relationship between the U.S. Army and the communities that support the installation, particularly in the environmental and socio-economic realms.

The state's continuing support includes aggressive past and proposed assistance for the construction of off-post housing. It also includes close coordination with Fort Drum and the Army as they work to expand available maneuver space and provide additional realistic training environs on state and public lands proximate to the installation's facilities. The state has also made a commitment to work with Fort Drum to enhance its logistics capabilities, building on previous commitments totaling \$65 million for upgrades to the Fort's railhead and the Interstate 81 Connector. Such initiatives will help ensure transportation efficiency, both on post and to ports of embarkation for deployments.

I note that the DPEIS indicates that the Fort Drum region could experience potentially "significant" socio-economic impacts resulting from the stationing of an additional brigade. A close reading of the document reveals that these impacts are expected to be largely manifest in shortages of school classroom space and

EXECUTIVE CHAMBER STATE CAPITOL ALBANY 12224
www.ny.gov

overcrowding. We question the basis of this assertion and are uncertain as to which data were used to arrive at this finding, particularly as schools in the region are *not* experiencing overcrowding. In fact, the districts that serve Fort Drum populations are all in the midst of capital expansion projects that will help accommodate the growth anticipated by the DPEIS. Most importantly, the State of New York has a demonstrated record of fast-tracking educational capital project approvals in the Fort Drum region. New York is prepared to adopt that posture again if local conditions warrant.

As one of the Army's most modern installations and home to one of the most frequently deployed divisions, Fort Drum is uniquely positioned to train and house additional forces. The State of New York recognizes the critical importance of the Army's growing its forces and remains ready to assist with the stationing of an additional BCT at Fort Drum.

Sincerely,

A handwritten signature in black ink, appearing to read 'Eliot Spitzer', with a long horizontal stroke extending to the right.

Eliot Spitzer

Comment Y-14

Manuel J. Rivera, Deputy Secretary for Education



STATE OF NEW YORK

ELIOT SPITZER
GOVERNOR

MANUEL J. RIVERA
DEPUTY SECRETARY FOR
EDUCATION

October 5, 2007

Colonel Michael O'Keefe, Commander
U.S. Army Environmental Command
Public Affairs Office
Building B4460, 5179 Hoadley Road
Attention: IMAE-PA
Aberdeen Proving Ground, Maryland 21010-5401

RE: Supplement to Comment Letter from Governor Eliot Spitzer of NYS

Dear Colonel O'Keefe,

I am writing regarding the possible location of an additional Brigade Combat Team at Fort Drum and the capacity of local school districts to accommodate a significant number of new students in the region. Please note that I also serve as Governor Eliot Spitzer's senior Education Policy Advisor.

First, based on our assumption of approximately 3,000 plus troops (and their families), we examined the enrollment trends and capacity of the schools within the region surrounding Fort Drum. In addition, we verified our analysis and findings with the local school superintendents of these districts. Therefore, I want to submit the following for the record.

The evidence does not support the view that the relocation of these troops will result in overcrowded schools in the area.

Our analysis indicates that the three area school districts have sufficient space and can accommodate additional students. These Districts typically account for 75% of all Fort Drum related students, the remaining 25% being distributed across 19 other area public or private schools.

The vast majority of new students enter the area schools at the elementary level. The attached chart reflects the opening and ending class sizes for each of school years 2006-07, and 2005-06 and the current opening enrollment figures for the 2007-08 school year. The number of sections reflects the number of classes at each grade level. In addition, you will note that average class sizes range from 18 at the early grade levels to 24-25 at the upper grades, all considered quite low by educational standards. Both the high

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www.nys.gov

number of available sections and class sizes that could accommodate anywhere from 2 to 5 additional students (per section) means that these schools could certainly, without a doubt, enroll significantly more students.

If a district needed to add sections at any particular grade level, the Districts, which are regulated by the State of New York, have capacity to add sections. Furthermore, each of these Districts is currently engaged in major capital campaigns that will both enhance their classroom facilities and add additional classrooms. The State of New York and local taxing entities have been most supportive in insuring both adequate classroom availability and the appropriate facilities.

In summary and for the record, no overcrowding exists at any of the schools in the Fort Drum Impact area. All of the schools have additional capacity; capital enhancement projects are already underway; and further capital enhancement projects could be undertaken if required.

District profiles indicating additional enrollment data back to 2003-04 school year and average class size information for those years can be extracted from the annual district reports submitted to the State of New York and summarized at the following Department of Education web sites:

Carthage Central School District:

<https://www.nystart.gov/publicweb-rc/2006/AOR-2006-222201060000.pdf>

Indian River Central School District:

<https://www.nystart.gov/publicweb-rc/2006/AOR-2006-220301060000.pdf>

Watertown City School District:

<https://www.nystart.gov/publicweb-rc/2006/AOR-2006-222000010000.pdf>

If you need any additional information please feel free to contact me at 518-408-2833.

Sincerely,



Manuel J. Rivera
Deputy Secretary for Education

Fort Drum Initiative Summary by District/Year/Elementary Grade Level

Carthage grades:	School Yr 05-06		School Yr 06-07		School Yr 07-08	
	Sept Enr.	June Enr.	Sept Enr.	June Enr.	Sept Enr.	June Enr.
Sections			Sections	Sections	Sections	
K	19.7	18.4	18.7	18.0	18.9	-
1st	17.1	16.0	19.3	18.7	18.9	-
2nd	18.8	17.9	18.9	18.7	20.6	-
3rd	21.4	21.4	19.6	19.3	18.3	-
4th	20.5	20.2	19.8	19.4	19.3	-
5th	24.7	23.4	21.1	21.2	20.8	-
6th						

Sixth grade are not self contained in the Carthage School District

Indian River grades:	School Yr 05-06		School Yr 06-07		School Yr 07-08	
	Sept Enr.	June Enr.	Sept Enr.	June Enr.	Sept Enr.	June Enr.
Sections			Sections	Sections	Sections	
K	19.2	18.6	17	17.1	20	18.9
1st	19.2	18.1	17	19.5	17	19.4
2nd	19.3	17.7	16	16.8	17	20.5
3rd	20.7	19.9	14	18.4	13	21.7
4th	22.0	20.8	13	20.2	13	21.8
5th	25.2	23.8	12	22.4	12	22.8
6th	22.8	22.5	12	23.7	12	23.1

Watertown City grades:	School Yr 05-06		School Yr 06-07		School Yr 07-08	
	Sept Enr.	June Enr.	Sept Enr.	June Enr.	Sept Enr.	June Enr.
Sections			Sections	Sections	Sections	
K	20.6	18.7	23.6	22.4	21.6	-
1st	21.4	22.2	22.7	21.3	19.1	-
2nd	21.9	20.6	21.9	16.8	20.5	-
3rd	20.8	18.8	22.2	19.7	19.3	-
4th	316	362	22.5	21.7	18.7	-
5th	334	307	21.8	20.9	21.6	-
6th	338	305	22.3	22.9	21.7	-

Comment Y-15 and Y-16

Keith B. Caughlin, Chair, Fort Drum Regional Liaison Organization (FDRLO)



FORT DRUM REGIONAL LIAISON ORGANIZATION

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October 1, 2007

Public Affairs Office
U.S. Army Environmental Command
Building E4460
5179 Hoadley Road,
Attention DMAE-PA
Aberdeen Proving Ground, MD 2101-5401

(U.S. Mail and e-mail)

Re: Comments to DPEIS

The Fort Drum Regional Liaison Organization provides the following comments to the Draft Programmatic Environmental Impact Statement (PEIS) *Army Growth and Force Structure Realignment* concerning Fort Drum. We do not expect that a 1,500 student increase to enrollment of the 17 school districts in the area around Fort Drum would pose any significant socioeconomic impact.

The FDRLO, a tri-county membership organization in northern New York, is the primary point of contact for the civilian side of Ft. Drum issues. We coordinate with the military leadership, our elected officials, and business leaders to support Ft. Drum and address areas of mutual concern and to advocate for Ft. Drum and its surrounding communities. We enthusiastically support the proposed growth at Fort Drum and of the Army, see the attached Resolution of August 8, 2007.

We disagree with the anecdotal remark on page 201, line 11, that: "...the installation expects further overcrowding at local schools." This observation implies existing "overcrowding", which is not the case, and assumes that our three districts welcoming the majority of Fort Drum school-aged children, Indian River, Carthage and Watertown, are at their maximum enrollment, also not the case.

Mission: To foster effective communication, understanding and mutual support by serving as the primary point of coordination for resolution of those issues which transcend the specific interests of the military and civilian communities of the Fort Drum region.

Most Fort Drum students new to our area enter the elementary schools in 17 districts or five private/parochial schools. We have attached records of the number of sections per grade and average class size at grades K-6 in the three districts with the highest military student enrollment for school years 2005-06, 2006-07 and 2007-08. We do not have overcrowded class sections in any of our districts. The three large districts typically account for 75% of all Fort Drum-related students, the remaining 25% being distributed across 14 other school districts or private/parochial schools.

At average class sizes of 19 to 22, Table 1 demonstrates reasonable class sizes at all elementary levels. Focusing on the three large districts, there is staffing and physical capacity to add students to each section. Depending on enrollment, a district could choose to add a teacher at any grade level. Lastly, each of these districts is currently engaged in major capital building projects that will both enhance their facilities and, if needed in the future, add additional classrooms. Since 1985, when the 10th Mountain Division was stationed at Fort Drum, the State of New York and local taxpaying entities have supported capital projects to insure classroom availability and excellent facilities.

We have attached the state required enrollment profiles from the School Report Cards back to the 2003-04 school year and average class size information for those years. This data is available at the following New York State Department of Education web sites:

Carthage Central School District:

<https://www.nystart.gov/publicweb-rc/2006/AOR-2006-222201060000.pdf>

Indian River Central School District:

<https://www.nystart.gov/publicweb-rc/2006/AOR-2006-220301060000.pdf>

Watertown City School District:

<https://www.nystart.gov/publicweb-rc/2006/AOR-2006-222000010000.pdf>

In summary, our classes are not currently overcrowded, nor do we expect a significant negative impact at any of the schools in the Fort Drum region if an IBCT were stationed here. All of the schools have additional capacity, capital projects already underway, and could undertake future projects, if growth exceeds that projected with the stationing of an IBCT in Alternative 3.

Respectfully submitted,



Keith B. Caughlin
Chair, Fort Drum Regional Liaison Organization

Mission: To foster effective communication, understanding and mutual support by serving as the primary point of coordination for resolution of those issues which transcend the specific interests of the military and civilian communities of the Fort Drum region.

Comment Y-17

Major General Joseph J. Taluto, Adjutant General, NYARNG



DEPARTMENTS OF THE ARMY AND AIR FORCE
JOINT FORGE HEADQUARTERS - NEW YORK
350 OLD NISKAYUNA ROAD
LATHAM, NY 12119-3514

MNAG-TAG

9 October 2007

MEMORANDUM FOR Commander, U.S. Army Environmental Command, Public Affairs Office,
ATTN: IMAE-PA, Colonel Michael O'Keefe, Building E-460, 5179 Hoadley Road, Aberdeen
Proving Ground, Maryland 21010-5401

SUBJECT: Assignment and Stationing of a Fourth Brigade Combat Team (BCT), Fort Drum

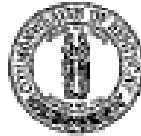
1. As the Adjutant General of the State of New York and Commander of the New York National Guard, I enthusiastically support the assignment and stationing of a fourth BCT to the 10th Mountain Division on Fort Drum.
2. Fort Drum is uniquely poised to accept additional units as a master-planned military installation. The installation provides diverse terrain, climate and environmental conditions where Soldiers learn and sustain important and unique combat skills. Fort Drum has the ability to accommodate additional forces and New York State is committed to support the identification of additional maneuver training space within public lands and by other means. The Soldiers assigned to the new BCT would benefit greatly from the unparalleled family support network in the local Fort Drum community.
3. The New York National Guard's relationship with Fort Drum, its assigned forces and facilities, truly underscores the 'One Team, One Fight' concept. The 174th Fighter Wing of the Air National Guard works extensively with the 10th Mountain Division in joint training opportunities, as Detachment 1 runs the Forward Operating Locations and Detachment 2 runs the Adirondack Air-to-Ground Range. The Division of Military and Naval Affairs also works closely with Fort Drum in managing the training space for the National Guard units in the Northeastern states.
4. As the former Commanding General of the 42nd Infantry Division, I recognize that the superior training environment and facilities at Fort Drum provides Soldiers very unique pre-deployment training opportunities given our continued success in preparing Soldiers for Operation Iraqi Freedom at Fort Drum. From an operational perspective, I can certify that Fort Drum continues to facilitate and enhance combat readiness prior to deployment into theatre.
5. Accordingly, I am very supportive of an Army decision to place a fourth Brigade Combat Team at Fort Drum, New York.

A handwritten signature in black ink, appearing to read 'Joseph J. Taluto'.

JOSEPH J. TALUTO
Major General, NYARNG
The Adjutant General

Comment Y-18 and Y-19

Brigadier General (Ret) James E. Shane, Executive Director, Kentucky Commission on Military Affairs



**KENTUCKY COMMISSION ON MILITARY AFFAIRS
OFFICE OF THE GOVERNOR**

Ernie Fletcher
Governor

66 Wilkinson Boulevard
Frankfort, Kentucky 40601
Phone 502-564-0269 Fax 502-564-0273

James E. Shane
Executive Director

October 5, 2007

Public Affairs Office,
U.S. Army Environmental Command
Building #4460
5179 Hoadley Road
Attn: IMAE-PA
Aberdeen Proving Ground, MD 21010-5401

To Whom It May Concern:

We have just completed a review of the recently-released Draft Programmatic Environmental Impact Statement (DPEIS) for Army Growth and Force Structure Realignment that includes Fort Knox as one of the seventeen (17) installations being considered for stationing additional force structure. The DPEIS analysis confirms Fort Knox's environmental capability to bed down additional, significant force structure in addition to that coming to Fort Knox as part of BRAC 2005 decisions and the Integrated Global Posture Basing Study (IGPBS).

I would like to call your attention to one issue about Fort Knox in the DPEIS, however, that deserves your attention. A significant aspect of Fort Knox's high military value designation in the BRAC 2005 analysis was due to the relatively large amount of maneuver acreage available—approximately 88,000 acres as documented in the Army's certified data. In the DPEIS, Fort Knox is credited with having only a "small" amount of maneuver acreage—approximately 46,000 acres. It appears from the DPEIS that the source of the 46,000 acre figure is Army 1995 data that probably reflects the BRAC 1995 analysis where Fort Knox erroneously reported maneuver acreage of approximately 48,000 acres. The BRAC 1995 maneuver acreage data is an obvious mistake as Fort Knox is comprised of over 109,000 acres, the bulk of which was certified as maneuver acreage in the BRAC 2005 process.

My concern over the disparity in maneuver acreage data is that someone in the Army may use the 46,000 acres as a baseline to calculate training capacity and conclude that Fort Knox has limited capacity for training additional force structure. Additionally, the Western Kentucky Training Center, a National Guard training site located approximately 100 miles from Fort Knox, has an additional 12,000 acres suited for maneuver training. While this is a non-contiguous training site, it is significantly closer to Fort Knox than non-contiguous training lands at Forts Carson, Lewis and Polk that are essential to their training capabilities.

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Public Affairs Office,
U.S. Army Environmental Command
October 5, 2007
Page 2

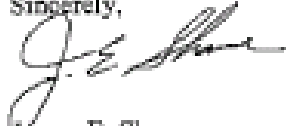
Additionally, the Hazardous Materials VEC rating for Fort Knox appears to assume that the environmental impacts associated with the Armor School at Fort Knox will remain and any additional forces assigned would add to them. As you know, this assumption is incorrect, as those impacts will be transferred with the move of the Armor School to Fort Benning. The flaw in the DPEIS assumption could have significant negative impact on the conclusions drawn about Fort Knox by the analysis, if not corrected. I would appreciate a reconsideration of these ratings if you agree that it is warranted.

The Commonwealth and Fort Knox have a long, proud history of supporting assigned military and civilian personnel and their families. The region and Commonwealth are currently engaged in studies to forecast the impacts outside the installation of changing personnel demographics at Fort Knox and to address future needs. They are working to undertake programs to proactively mitigate the environmental impacts by increasing area housing, accommodating additional school-age children, enhancing transportation infrastructure through network improvements, adjusting Fort Knox workforce skill needs and numbers, and increasing recreational and social services, among other initiatives. The VEC rating for Fort Knox on Transportation did not recognize the effort already being expended to develop projects and mitigate transportation network issues identified for the currently projected impacts of BRAC 2005 and IGPBS stationing actions. The region, and Commonwealth, could easily assess impacts from additional force stationing, incorporating those factors into current planning efforts and implementing proactive steps to support Fort Knox changes.

I fully appreciate the complexity and resource needs of the issues facing the Army and the additional force stationing, from family impacts to training capability. I assure you the Fort Knox region, the Commonwealth, the Commonwealth's Congressional delegation, and the Kentucky Commission on Military Affairs are fully prepared to support all the needs of a significant increase in force stationing above those forces and activities already slated for assignment.

Thank you for your time and consideration and the opportunity to comment on the DPEIS.

Sincerely,



James E. Shane
BG, USA (Ret)
Executive Director, KCMA
Governor's Office

Comment Y-20
Louisiana Congressional Delegation

Congress of the United States
Washington, DC 20515

October 5, 2007

The Honorable Pete Geren
 Secretary of the United States Army
 1600 Army Pentagon
 Washington, D.C. 20310

Dear Secretary Geren:

As you know, the Department of the Army is considering an important decision to permanently increase Army end-strength by up to 6 Active Duty Brigade Combat Teams (BCTs) between 2008-2013. Accordingly, we are contacting you to express our strong support of Fort Polk, and to call your attention to a number of important strategic initiatives underway in Central Louisiana that are relevant to this stationing decision.

Louisiana has a proud tradition of supporting the Army, with many of our citizens serving in Active, Reserve, and Army National Guard units. Fort Polk is at the forefront of the Global War on Terror by providing contingency training for light infantry and special operations forces, and by deploying home station and reserve component units in support of Operations Enduring and Iraqi Freedom. The installation's Joint Readiness Training Center (JRTC) is the busiest of the Army's three Combat Training Centers, providing soldiers with realistic, multi-echelon training experiences across the full spectrum of combat. Even in light of the increased pressure on resources and facilities, Fort Polk remains a strong and reliable asset to the Army.

In the strategic context of Growth and Force Realignment, we understand one of the Army's most urgent needs at Fort Polk is adequate maneuver acreage suitable for sustained combined arms training. As a Congressional delegation, this has been an important issue to us over the years. Together, we have worked closely with Fort Polk's leadership and local stakeholders in the community to ensure the Army's needs are being met.

We were happy to learn recently that the Army is studying the potential acquisition of additional lands contiguous to the installation. When completed, this initiative will result in an unprecedented increase in available training lands, ensuring the continued viability of the base for years to come. Unlike at many other installations, encroachment from urbanization is not a challenge at Fort Polk. We feel this is a compelling reason to seize the opportunity to acquire additional lands now, and look forward to assisting the Army in any way possible throughout the process.

Transportation infrastructure improvements are also playing a key role in shaping the future of Fort Polk. As you know, Louisiana Highway 28 is a vital corridor linking Fort Polk to England Air Park in Alexandria, providing home and visiting units with a strong deployment and power projection capability. In partnership with the Congressional delegation, the State of Louisiana has nearly completed the four-lane expansion of LA-28. To date, the Congress has invested over \$27M to complete this priority project. Only one remaining 3.6 mile section in Rapides parish awaits funding. We are fully committed to securing the appropriations necessary to complete this project.

PRINTED ON RECYCLED PAPER

Meeting the stationing needs of the Army means ensuring that the soldiers and their families have access to quality schools, medical facilities, housing, services, and ample access to recreation opportunities. We understand this important fact and are working closely with government and business leaders in the tri-Parish region to ensure the needs of the Fort Polk community are being fully met.

In the most current (2005-2006) State of Louisiana education rankings, Vernon Parish ranked 4th out of 64th parishes in total performance. Recently, the Vernon Parish School Board began the initial planning phase of a comprehensive enhancement and reorganization initiative, centered on the construction of a new, state-of-the-art high school. These efforts have been bolstered by the Garrison Command through the generous pledge of a 20 acre site for the school. We are enthusiastic about the potential impact of this project, and look forward to the day when a new Leesville/Vernon Parish high school opens to accept its first students.

On-base resources are also an important factor in this decision. As evidenced in the Draft Programmatic Environmental Impact Statement for Army Growth and Force Structure Realignment (August 2007), Fort Polk and the JRTC could support the stationing of additional BCTs. Over the years, the Congress has supported a number of important Military Construction (MILCON) projects at the installation, further enhancing Fort Polk's Military Value (MV). We are pleased that this year's Senate MILCON/VA Appropriations bill contains two vital projects for Ft. Polk: A \$6.1M Child Care Center and a \$9.8M Headquarters Facility for the 4th Brigade 10th Mountain.

We were also pleased to learn that the most recent Base Realignment and Closure (BRAC 2005) findings will be an integral component of the Army's stationing decision process. According to the Department of Defense's own BRAC analysis, Fort Polk is a valuable installation with high Military Value.

As you may know, Fort Polk ranked:

- 16 out of 97 installations in the Military Value-Installations (MVI) model
- 15 out of 97 installations in "Training" capability
- And most importantly, 6 out of 97 in "Future" capability

Additionally, the installation excelled in many of the important, more heavily weighted individual attributes, most notably in the A14-Force Deployment (8.84/10.0), A37-Brigade Capacity (8.36/10.0), and A4-Heavy Maneuver Area (5.15/10.0) metrics. Performance was also comparably high in the A13-Mobilization History (4.72/10.0) and A20-Test Range Capability (4.36/10.0) categories. All together, the BRAC 2005 analysis effectively highlights Fort Polk's strong potential to successfully absorb an additional BCT.

The communities of Vernon, Beauregard, and Rapides Parishes, in partnership with the State of Louisiana, are fully committed to providing the highest quality of life that can be attained for the soldiers and their families who have endured multiple deployments supporting the Global War on Terror. While we acknowledge a long road of improvement lies ahead, we are confident in Fort Polk's capability to not only meet, but excel in the requirements set forth for this new mission. We urge the Army to join us in this vision.

Thank you for the leadership and resolve you have shown in your service to the United States Army. The Louisiana Congressional Delegation is proud to reaffirm our commitment to the Army and Fort Polk, and look forward to providing any assistance possible as you undertake this important process.

Sincerely yours,



MARY LANDRIEU
United States Senator



DAVID VITTER
United States Senator



RICHARD BAKER
Member of Congress



JIM McCREERY
Member of Congress



WILLIAM JEFFERSON
Member of Congress



RODNEY ALEXANDER
Member of Congress



CHARLES BOUSTANY
Member of Congress



BOBBY JINDAL
Member of Congress



CHARLIE MELANCON
Member of Congress

cc: The Honorable Robert Gates, Secretary of Defense
General George Casey, Jr., Chief of Staff of the U.S. Army

Comment Y-21

Nicholas F. Verret, Jr., PE, District Engineer Administrator, Louisiana Department of Transportation and Development

Mr. Robert E. DeMichele,

As the Engineer Administrator for District 08 of the Louisiana Department of Transportation and Development [LA DOTD], I am responsible for the State highway system throughout a seven-parish area which includes two parishes within the Region of Influence for Fort Polk, Rapides and Vernon Parishes. As such, I would like to provide comments for the Programmatic Environmental Impact Statement (PEIS) relative to the addition of troops at Fort Polk. In order to meet the October 8 deadline for the receipt of comments, I am submitting same by e-mail.

LA DOTD is very supportive of efforts to increase troop levels at Fort Polk, and we believe such would have a positive impact on the economy of this region.

In order to address the transportation infrastructure needs of this region, including the needs of Fort Polk, DOTD in recent years has completed the widening of several segments of State Highway LA-28, which is the major arterial between Alexandria and Leesville, and which, due to the presence of an inland port on the Red River, has been heavily utilized for the deployment of troops and military equipment to and from Fort Polk.

Specifically, four segments of LA-28 totalling some 23 miles have been four-laned within the past ten years, at a total cost of nearly \$70 million. In addition, work is currently underway on a 9.9-mile section from the west junction of State Highway LA-121 to the junction of State Highway LA-465, and another 4.3-mile section from there to the Rapides/Vernon Parish Line is currently scheduled for construction next year. This leaves only 8.6 miles of LA-28 between Alexandria and Leesville that remains to be four-laned, and DOTD is committed to completing this project once the necessary funding [some \$43 million] becomes available. These capacity improvements should support the increased traffic demands, in the event that the proposed addition of troops at Fort Polk becomes a reality.

In addition, I would like to state that DOTD District 08 has maintained a good working relationship with Fort Polk in the past, and we look forward to continuing same in the future.

I respectfully request that these comments become part of the PEIS for Army growth and force structure realignment.

Sincerely,

Nicholas F. Verret, Jr., P.E.
District Engineer Administrator

Comment Y-22

**Jim Harris, Eastern Regional Manager,
Washington State Parks and Recreation Commission**



STATE OF WASHINGTON
WASHINGTON STATE PARKS AND RECREATION COMMISSION

EASTERN REGION HEADQUARTERS • OPERATIONS DIVISION
2201 N. Duncan Drive • Wenatchee, Washington 98801-1007 • (509) 662-0420
TDD (Telecommunications Device for the Deaf): (509) 664-3162

September 12, 2007

Public Affairs Office, U.S. Army Environmental Command
Building E4460 Attention: IMAE-PA
5179 Hoadley Road
Aberdeen Proving Ground, Maryland 21010-5401

Dear Sir or Madam:

I am writing in response to the Department of Army Draft Programmatic Environmental Impact Statement (DPEIS) in regards to the Yakima Training Center in Washington State. Washington State Parks has an agreement with the U.S. Army concerning the John Wayne Pioneer Trail through the Yakima Training Center. I am enclosing a copy of that agreement.

The DPEIS does not describe the recreational impacts to the John Wayne Pioneer Trail should the proposal for the growth and realignment for the U.S. Army be implemented. Please remedy this oversight and send me subsequent documents related to the proposal at the Yakima Training Center.

Sincerely,

A handwritten signature in black ink that reads "Jim Harris".

Jim Harris
Eastern Region Manager

Enclosure: Copy of the 1991 Agreement

cc: Chris Regan, Washington State Parks Environmental Programs Manager

MEMORANDUM OF AGREEMENT

By And Between

WASHINGTON STATE PARKS AND RECREATION COMMISSION

And

U.S. DEPARTMENT OF THE ARMY

"Yakima Training Center Proposed Land Acquisition:
Recreational Mitigation Requirements"

9/27/91
LTT exhibit # 3

This Memorandum of Agreement (MOA) is made and entered into on this 27 day of September, 1991, by and between the Washington State Parks and Recreation Commission, 7150 Cleanwater Ln, Olympia, Washington 98504, hereinafter referred to as the "Commission"; and the United States Department of the Army, Commander, I Corps & Fort Lewis, Attn: AFZH-EHQ, Fort Lewis, Washington 98433, hereinafter referred to as the "Army." For the purposes of this agreement, unless specifically indicated otherwise, it is understood that all references to the Director of the Commission or the Commander shall also include a designee appointed in writing.

WHEREAS, the Army proposes the acquisition/condemnation of a segment of the Iron Horse State Park, John Wayne Pioneer Trail, hereinafter referred to as "State Park," from Manapum Road just west of the Columbia River 17.25 miles, in Kittitas County, Washington, as part of a 63,000 acre expansion proposal to increase the maneuver area of the Yakima Training Center, hereinafter referred to as YTC; and,

WHEREAS, the State Park provides a significant recreational resource in the State of Washington providing opportunities for mountain biking, equestrian, hiking, wagon trains, cross-country skiing, dog sled racing, and horse drawn sleighs, as the only east-west cross state trail in Washington State; and,

WHEREAS, acquisition/condemnation of the 17.25 mile segment of trail by the Army will adversely affect the recreational attributes and continuity of the existing east-west cross state trail, which attracts an increasing number of visitors; and,

WHEREAS, the Army completed an Environmental Impact Statement for the YTC expansion proposal under the National Environmental Policy Act (NEPA), outlining impacts and proposed mitigation measures to reduce impacts on recreation; and,

WHEREAS, the Commission finds that the Environmental Impact Statement's discussion of potential impacts and proposed mitigation measures is vague and inadequate; and,

WHEREAS, the Commission is considering challenging the adequacy of measures the Army discussed in the Environmental Impact Statement to mitigate impacts on the State Park, but is willing to forgo any such challenge, provided that the Army agrees to sufficiently mitigate impacts on the State Park; and, ✓

YTC AND STATE PARKS MOA

3

September 19, 1991

Alternate Trail Requirements:

1. Military activities near the alternate trail shall be held to a minimum to ensure visitor safety and to allow for continuous 24 hour/day recreational use.
2. The existing trail is often used by wagon trains requiring a relatively level grade and well constructed surface. It need not be elevated or constructed as a railroad grade would be; however, the alternate trail must not exceed four percent grade at any point.
3. The type of trail surface for the alternate trail shall be determined by the JSG.
4. The alternate trail shall begin where the westward edge of the proposed property line meets the existing trail, continuing around the northern perimeter as much as possible and connecting to Wanapum Road. The east end of the trail will connect to Wanapum Road through Gatty's Cove. When the Beverly railroad bridge is decked and opened or if the Wanapum Dam becomes available for trail use, the Army will connect the east end of the trail to the bridge or dam as appropriate. Until such time, the Army shall construct a trailhead at the eastern terminus of the alternate trail using a design approved by the JSG. The parties anticipate that the trailhead will be relatively primitive, with parking for 15-20 vehicles and some sanitation facilities.

Authority to use Wanapum Road as a trail link to reconnect the alternate route to the State Park shall be obtained from appropriate authorities by the Army prior to any closure of the existing trail.

COOPERATIVE TRAIL MANAGEMENT

The Commission and the Army shall jointly manage that portion of the existing and alternate trail within the YTC for the benefit of the public. The JSG shall determine the extent each agency will be responsible for day to day visitor protection on, and resource management of, the trails. Preliminary management responsibilities shall be identified and agreed to in writing by both parties prior to acquisition/condemnation of the State Park. Management responsibilities shall be modified as deemed appropriate by the JSG.

ARMY TRAIL USE AND MAINTENANCE:

Use of the trails by Army vehicles simultaneously with recreation users would create user conflicts, safety problems and would detract from the recreational experience, inhibiting use. The Army shall not routinely use either the existing trail or the alternate trail for military vehicles or training. Use of both trails by all vehicles shall be limited to 20 MPH, except under emergency conditions.

YTC AND STATE PARKS MOA

5

September 19, 1991

The Army will make the planned bivouac site available to large groups of trail users. These groups should coordinate their use ahead of time with the Army and the site will be scheduled for their use and military use eliminated during such time. Users other than large groups will be free to use the facilities at the bivouac site, but will not be allowed to camp during military use.

ALTERATION OF AGREEMENT:

The Director of the Commission and the Commander of Fort Lewis may alter or amend this agreement by mutual written consent. Neither party may alter this agreement unilaterally. The authority to mutually consent to written changes is limited to the Director and Commander personally and may not be delegated.

TERMINATION OF AGREEMENT:

If, through any cause, the Army shall fail to fulfill, in a timely and proper manner, its obligations under this Agreement, or if the Army shall violate any of the covenants, agreements, assurances, or stipulations of the Agreement, the Director of the Commission shall have the right to terminate this Agreement by giving written notice to the Army at the address first noted herein, of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In that event, all finished or unfinished documents, data, plans, surveys, drawings, and reports relating to the trails prepared by the Army shall, at the option of the Commission, become the shared property of the Commission and the Army, and the Commission shall have the right to commence litigation challenging the adequacy of the Environmental Impact Statement. Notwithstanding the above, the Army shall not be relieved of liability to the Commission for damages or other such relief which a court deems appropriate by virtue of any breach of the Agreement by the Army.

The Director of the Commission and Commander of Fort Lewis may terminate this agreement by mutual written consent.

DURATION OF AGREEMENT:

This agreement shall be effective upon execution by the parties, and shall remain in effect until terminated as provided for under this agreement.

INFORMAL DISPUTE RESOLUTION:

In the event that a dispute arises under this agreement, or if the JSG cannot reach agreement on adopting or approving a matter specifically designated by this agreement as requiring JSG action, either party may request that the other voluntarily submit to informal dispute resolution. If the other party agrees, the parties shall designate a Dispute Resolution Board, composed of one person designated by the Director of the Commission, one person designated by the Commander of Fort Lewis, and one person designated by both the Director and Commander jointly. The Dispute Resolution Board shall evaluate the dispute and shall make a determination which shall not be binding on the parties but which they may voluntarily accept. Informal dispute resolution shall not be a prerequisite to any court action relating to the Memorandum of Agreement.

YTC AND STATE PARKS MDA

7

September 19, 1991

WASHINGTON STATE PARKS AND RECREATION COMMISSION

UNITED STATES DEPARTMENT OF THE ARMY

By Jam Testera

By Paul R. Schmitt

DIRECTOR
Title

MG US ARMY CG I Corps
Title

SEPT. 27, 1991
Date

27 SEP 91
Date

APPROVED AS TO FORM:
KENNETH O. EIKENBERRY
Attorney General

By Joseph E. Shorin III
Assistant Attorney General

Date 9/19/91

Comment Y-23

Rhonda M Plummer, Secretary/ Treasurer, Police Jury of Vernon Parish



POLICE JURY OF VERNON PARISH

P. O. BOX 1948 - LEEVILLE, LOUISIANA, 71446 • PHONE (337) 238-0334 • FAX (337) 238-0340 • 1-800-393-0999
ESTABLISHED 1871

JAMES B. TUCK
PRESIDENT

RHONDA M. PLUMMER
SECRETARY TREASURER

JACKIE L. GRIMES
VICE-PRESIDENT

October 5, 2007

MEMBERS:

DISTRICT 1
JAMES B. TUCK

DISTRICT 3
HOWARD 'PETE' DODDSON

DISTRICT 3
TOMMY L. McMAHON

DISTRICT 4
JACKIE L. GRIMES

DISTRICT 5
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DISTRICT 9
SAV B. FULTON, JR.

DISTRICT 10
CURTIS L. CLAY

DISTRICT 11
JOHN HAMILTON

DISTRICT 12
RAY PINES

Department of the Army
US Army Installation Management Command
US Army Environmental Command
ATTN: Mr. Robert E. DeMichele
5179 Hoadley Road
Aberdeen Proving Ground, MD 21010-5401

Dear Mr. Robert E. DeMichele:

The Vernon Parish Police Jury is pleased to pledge our support of additional soldiers being sent to Fort Polk. We would like to extend our commitment to Fort Polk, the surrounding parishes, municipalities, organizations, political leaders, and the public in providing the desired quality of life and infrastructure to incoming soldiers, their families, civilians and contractors.

Attached is a copy of the resolution of support we passed on September 17, 2006. We have also attached a copy of 255 letters of support from other organizations and residents of this area. This is all we have had time to gather over the past two days. You should be receiving additional emails and letters from this region as well.

If you have any questions, please do not hesitate to contact us.

Sincerely,

Rhonda M. Plummer
Secretary/Treasurer

PHOTO COPY

A RESOLUTION SUPPORTING THE EXPANSION OF FORT POLK AND REQUESTING SUPPORT OF LOUISIANA CONGRESSIONAL DELEGATION

WHEREAS, Central Louisiana has had an historic association with significant military installations including Fort Polk, Camp Beauregard and England Air Force Base (before its closing), and,

WHEREAS, Fort Polk is being considered for the stationing of a new Army brigade that would increase its troop strength by approximately 4,000 Soldiers and 5,400 Family members; and

WHEREAS, the increase in troop strength will generate an estimated 7,000 new jobs; and

WHEREAS, Fort Polk is a huge economic engine for the region and the largest employer in the State of Louisiana; and

WHEREAS, Vernon, Beauregard and Rapides Parishes have united in a Tri-Parish Coalition to work in partnership with Fort Polk for the betterment of the quality of life for Fort Polk Soldiers, their Families and the residents of the three parishes;

WHEREAS, the business, political and educational leadership of the three parishes has pledged their support for expanded infrastructure in terms of transportation, business opportunities, employment opportunities and educational opportunities as well as appropriate and continuing attention to a stronger and family friendly quality of life for military personnel;

NOW, THEREFORE, BE IT RESOLVED, that the Vernon Parish Police Jury, does hereby pledge its full support to provide the desired quality of life to incoming Soldiers, their Families, supporting civilians and contractors; and,

BE IT FURTHER RESOLVED, that the Vernon Parish Police Jury strongly encourages the Louisiana Congressional Delegation to unite in their support and to take all appropriate steps to secure the location of a brigade size unit at Fort Polk;

BE IT FURTHER RESOLVED, that the Louisiana Congressional delegation is encouraged to secure adequate funding to provide quality operational and administrative facilities for the new Brigade and associated family members.

On motion by Mr. Ray Pynes, seconded by Mr. Melvin Haymon, the foregoing was unanimously adopted on this the 17th day of September, 2007, at which meeting a quorum was present.


Rhonda M. Plummer, Secretary-Treasurer
Vernon Parish Police Jury


James B. Tuck, President
Vernon Parish Police Jury

00000000

Comment Y-24

Arthur Himmler, Superintendent, Steilacoom Historical School District #1

I am in receipt of the notice relative to the potential movement of 1000+ troops to Fort Lewis, Washington. I notice that there seemed to be no reference to one of the highest demands of Army families, that of available schooling (and space). I would like to know specifically how to respond to what my school district sees as a potential impact on our schooling system if the number of soldier families to Fort Lewis increases considerably.

I also want you to know that the Board of Directors of the Steilacoom Historical School District #001 is comprised of five retired US Military Officers, and that support for our troops and the Army's mission is of high importance to us, as a Board and as a school district.

Sincerely,

Dr. Arthur H. Himmler, Superintendent

Steilacoom Historical School District #1

Comment Y-25

Yakima Regional Clean Air Authority



Six So. Second St., Suite 1016, Yakima, WA 98901
Phone: (509) 834-2050, Fax: (509) 834-2060
<http://www.co.yakima.wa.us/cleanair>

Scott McDonald
Directorate of Public Works
Bldg. 810
Yakima Training Center, Washington 98901-9399

Dear Scott,
We have reviewed the Programmatic Environmental Impact Statement information. The following comments are considered preliminary and are based on the assumption that the Yakima Training Center will undergo an expansion.

Any expansion in Kittitas County is outside the jurisdiction of the Yakima Clean Air Authority (YRCAA).

For activities within Yakima County:
A Dust Control Plan must be submitted to YRCAA prior to construction.
Any new fueling facilities and paint shop facilities must undergo a new source review.
An Asbestos Survey must be conducted prior to demolitions. Asbestos containing material must be properly disposed.

We appreciate the PEIS and BRAC information you delivered to us. Let us know if you want them returned to you.

Best Regards,

A handwritten signature in black ink, appearing to read 'Jon Kurtz', is written over a light blue circular stamp.

Jon Kurtz
Air Quality Planner
Yakima Regional clean Air authority
6 South 2nd St., Suite 1016
Yakima, WA 98901
834-2050, ext. 113

S:\LETTERHEAD.DOC

Comment Y-26

Gary Brackett, Manager, Business and Trade Development, Tacoma-Pierce County Chamber



TACOMA-PIERCE COUNTY CHAMBER
P O W E R T H R O U G H
C O N N E C T I O N S

October 5, 2007

Public Affairs Office
U.S. Army Environmental Command
Building E4460
Attention: IMAE-PA
5179 Headley Road
Aberdeen Proving Ground, MD 21010-5401

Via email: PublicComments@aec.apgca.army.mil

RE: DPEIS for Army Growth and Force Structure Realignment

Sirs:

Thank you for the opportunity to comment upon the DPEIS for "Army Growth and Force Structure Realignment."

These comments will address the Fort Lewis installation and its adjacent ROI (Pierce County and Thurston County, WA) specifically, or from this perspective more generally as it applies to all.

The Ft. Lewis ROI is a major metropolitan area composed of a (Tacoma) Metropolitan Division and an (Olympia) Metropolitan Statistical Area, totaling over 1,000,000 population (WA OFM, 6/27/07). This is an indicator of a metro area that sustains a social and economic base sufficiently robust and large that it can effectively handle impacts associated with future installation expansions (and deployments). You may reference the annual Pierce County Economic Index for an overview and forecast for the 2006 year at <http://www.tacomachamber.org/chamberprograms/BusinessTrade/pdf/PCEI%20Report%202007.pdf>. The next PCEI will be released December 13, 2007. Our economic history documents the ability of the local economy to absorb and maintain itself through impacts associated with growth and deployments.

Of particular note is the reference to "11 school districts ... are currently over-capacity and are using modular facilities as additional classroom space (page VIII)." Attention should be given to the present capital plans, projects under construction, funded or otherwise underway by the various school districts to address these issues, especially as any personnel movements are anticipated to be in 2013 or thereafter.

Also, these 11 districts are out of 23 school districts that are in the Ft. Lewis ROI, at least some of which are experiencing declining enrollments (due to demographic changes similarly shared nationwide) and are contemplating reductions. Further, the districts in the ROI are responding to troop increases at Ft. Lewis (7,000 since 2003). So the current snapshot is not indicative of the typical status in the ROI community.

Finally, I suggest attention be given to the Power Projection Platform that Ft. Lewis and adjacent capital assets represent. McChord AFB, under development as Joint Base Lewis-McChord is an exceptional deployment center contiguous to Ft. Lewis, close to the National Strategic Port – the Port of Tacoma and approximate to the Ports of Seattle, Olympia and Grays Harbor. Also, the DoD has berthed at the privately-owned Sperry Ocean Dock (in the port-industrial area), vessels of the Ready Reserve Fleet, to supplement Power Projection with sea-lift and local training opportunities.

Our community is most pleased to have the soldiers and families of Ft. Lewis are part of our community. Most of those assigned to the installation live among us as citizens in our various communities. We consider them cherished neighbors and friends.

Sincerely,



Gary D. Brackett, CCR
Manager, Business and Trade Development

Attached:

- 1) Pierce County School Districts Survey 2007
- 2) School Districts in the Ft. Lewis ROI

950 PACIFIC AVENUE, SUITE 300, PO BOX 1000, TACOMA WA 98401-1000
PHONE: 253-627-2175, FAX: 253-627-7305, www.tacomadistricts.org

Pierce County School District Survey 2007

Bethel School District # 403516 E. 176th

Spanaway, WA 98387

(253) 683-6000

Enrollment- 18,000

Elementary schools (K-6): 15

Junior High schools (7-9): 3

Senior high schools (10-12): 3

Alternative middle/high school: 1

Special Services- Special Ed.,

Vocational, Gifted, Early Childhood

Asst., ESL

Certified Staff- 1127

Classified Staff- 1003

Carbonado Historical School

District #19

427-4th Street

Carbonado, WA 98323

(360) 829-0121

Enrollment- 181

Elementary school (K-8): 1

Special Services- Special Ed.

Certified Staff- 12

Classified Staff- 12

Clover Park School District

#400

10903 Gravelly Lake Drive S.W.

Lakewood, WA 98433-1341

(253) 583-5000

Enrollment- 11,704

Elementary schools (K-5): 18

Middle schools (6-8): 4

Senior high schools (9-12): 2

Alternative middle/high school: 1

Special schools: 4*Special Services*- Special Ed., ESL,

Title I/LAP, Gifted Ed., ECEAP,

Head Start, Running Start

Certified Staff- 682

Classified Staff- 721

Dieringer School District #3431320-178th Ave. E.

Sumner, WA 98380

(253) 862-2537

Enrollment- 1220

Elementary schools (K-5): 2

Middle school (6-8): 1

High schools:0

Special services- Special Ed., Special

Ed. Pre-school

Certified Staff- 68

Classified Staff-100

Eatonville School District # 404

P.O. Box 898

Eatonville, WA 98328

(360) 879-1000

Enrollment- 2,027

Elementary schools (K-5): 3

Middle schools (6-8): 1

Senior high schools (9-12): 1

Special services- Special Ed., Title

I/LAP, Voc-Tech., Gifted, ESL,

Certified Staff- 124

Classified Staff- 113

Fife School District # 4175002-20th St. East

Fife, WA 98424

(253) 517-1000

Enrollment- 3,400

Primary Elementary (Pre K-1): 1

Intermediate Elementary (2-5): 2

Middle School (6-7): 1

Junior High school (8-9): 1

High School (10-12): 1

Special services- Special Ed

Certified Staff- 165

Classified Staff - 115

Franklin Pierce School

District # 402

315-129th St. South

Tacoma, WA 98444

(253) 298-3000

Enrollment- 7,942

Elementary schools (K-5): 8

Middle schools (6-8): 2

Senior high schools (9-12): 2

Alternative middle/high school: 3

Special schools: 1*Special Services*- Special Ed., Voc-

Tech., Gifted, Bilingual

Certified Staff- 464

Classified Staff - 280

Orting School District # 344

120 Washington Ave. N.

Orting, WA 98360-8403

(360) 893-6500

Enrollment- 2,127

Primary Elementary (K-2): 1

Intermediate Elementary (3-5): 2

Middle School (6-8): 1

High School (9-12): 1

Special schools: 1*Special services*- Special Ed., Voc-

tech., Gifted, ESL

Certified Staff- 120

Classified Staff - 60

Peninsula School District # 40114015- 82nd Ave. NW

Gig Harbor, WA 98332

(253) 530-1000

Enrollment- 8,750

Elementary schools (K-5): 8

Middle schools (6-8): 4

Senior high schools (9-12):3

Alternative middle/high school: 1

Special services- Special Ed., Gifted,

Home school, Foreign Exchange

Certified Staff- 543

Classified Staff - 382

Puyallup School District-

P.O. Box 370

Puyallup, WA 98371

(253) 841-1301

Enrollment- 20,714

Elementary schools (K-6): 23

Junior High schools (7-9): 7

Senior high schools (10-12): 3

Alternative middle/high school: 1

Special services- Special Ed., Voc-

Tech., Pre-first, Gifted, Bilingual,

Certified Staff- 1,330

Classified Staff - 850

Stellacoom Historical School

District #1

510 Chambers

Stellacoom, WA 98388

(253) 983-2200

Enrollment- 3,337

Primary Elementary (K - 3): 1

Intermediate Elementary (4-5): 4

Middle School (6-8): 1

High School (9-12): 1

Special services- Special Ed,

Bilingual, Pre-School

Certified Staff- 194

Classified Staff- 97

Sumner School District # 320

1202 Wood Ave.

Sumner, WA 98380

(253) 891-6000

Enrollment- 8,308

Elementary schools (K-5): 8

Middle schools (6-8): 3

Senior high schools (9-12):2

Special Services- Special Ed., Early

Childhood-Multi Aged, Gifted, Tech

Prep, ESL, Title I/LAP

Certified Staff- 461

Classified Staff - 400

Source: Area Educational Institutions and Districts

Tacoma- Pierce County Chamber 07/08 School Year

Pierce County School District Survey 2007

Tacoma School District # 10

P.O. Box 1357

Tacoma, WA 98401

(253) 571-1000

Enrollment- 29,659

Primary Elementary (K-5): 37

Middle School (6-8): 11

High School (9-12): 5

Alternative middle/high school: 1

Special schools: 5

Special Services- Special Ed., ESL,

Title I, Gifted Ed., ECEAP, Head

Start, Running Start

Certified Staff - 1,741

Classified Staff- 1,304

University Place District # 83

3717 Grandview Drive SW

University Place, WA 98466

(253) 585-5600

Enrollment- 5,497

Primary schools (K-1): 4

Intermediate schools (3-7): 2

Junior High School (8-9): 1

Senior high schools (10-12):

Special services- Special Ed., Pre-K,

Gifted, Bilingual

Certified Staff- 315

Classified Staff- 199

White River School District

#416

P.O. Box 2050

Buckley, WA 98321

(360) 829-0600

Enrollment- 4,112

Elementary schools (K-5): 5

Middle schools (6-8): 2

Senior high schools (9-12): 1

Alternative middle/high school: 1

Special Schools: 1

Special Services- Special Ed., ESL,

Title I/LAP, Gifted Ed., ECEAP,

Head Start, Home school, Bilingual

Certified Staff- 259

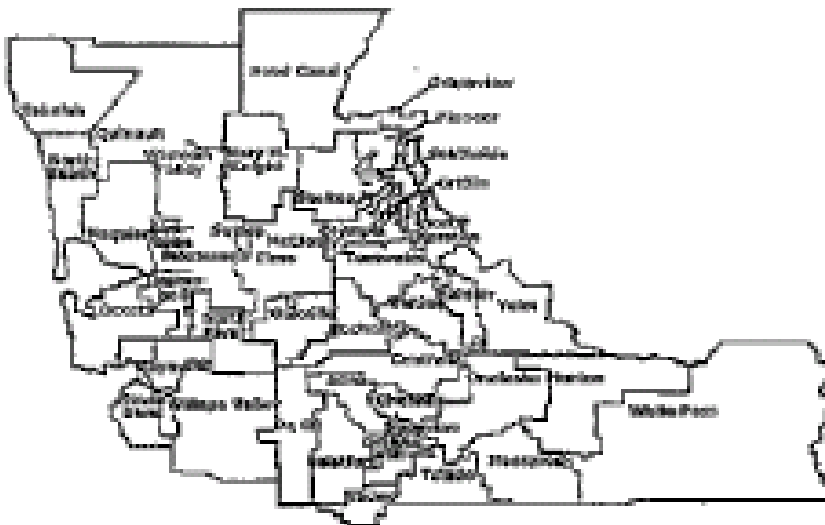
Classified Staff - 278

Source: Area Educational Institutions and Districts

Tacoma- Pierce County Chamber 07/08 School Year

SCHOOL DISTRICTS in FORT LEWIS ROI
Pierce County and Thurston County

Educational Service District 113
Includes Thurston County



- Thurston
- Griffin
- North Thurston
- Olympia
- Rainier
- Rochester
- Tenino
- Lumwater
- Yelm

Puget Sound ESD serves 35 school districts and more than 300 private schools in King and Pierce counties plus Bainbridge Island. Approximately 38 percent of the state's K-12 public school students, more than 383,000, are served in the area's school districts, which range from large to small, urban to rural.



Pierce

Bethel No. 403

Thomas Seigel
Bethel No. 403
516 E. 176th St.
Spanaway WA 98387-8399
253-539-6000

<http://www.bethelsd.org/>

Carbonado Historical No. 19

Scott Hubbard, Superintendent
Carbonado Historical No. 19
P. O. Box 131
Carbonado WA 98323
360-829-0121

www.carbonado.k12.wa.us

Clover Park No. 400

Dr. Al Cohen, Superintendent
Clover Park No. 400
10903 Gravelly Lake Dr. S.W.

Lakewood WA 98499-1341
253-583-5000

www.cloverpark.k12.wa.us

Dieringer No. 343

Dr. Judy Neumeier-Martinson, Superintendent
Dieringer No. 343
1320 - 178th Ave. E.
Sumner WA 98390-6411
253-862-2537

www.dieringer.wednet.edu

Eatonville No. 404

Ray Arment, Superintendent
Eatonville No. 404
P. O. Box 698
Eatonville WA 98328
360-879-1000

cruiser.eatonville.wednet.edu

Fife No. 417

Dr. Steve McCammon, Superintendent
Fife No. 417
5802 - 20th St. E.
Tacoma WA 98424-2000
253-517-1000

www.fifeschools.com

Franklin Pierce No. 402

Dr. Frank Hewins, Superintendent
Franklin Pierce No. 402
315 129th St. S.
Tacoma WA 98444-9044
253-537-0211

www.fp.k12.wa.us

Orting No. 344

Jeff Davis, Superintendent
Orting No. 344
120 Washington Ave. N.
Orting WA 98360-8403
360-893-6500

www.orting.wednet.edu

Peninsula No. 401

Terry Bouck, Superintendent
Peninsula No. 401
14015 - 62nd Ave. N.W.
Gig Harbor WA 98332-8698
253-857-6171

www.peninsula.wednet.edu

Puyallup No. 3

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Puyallup No. 3
P. O. Box 370
Puyallup WA 98371-0156
253-841-1301
www.puyallup.k12.wa.us

Stellacoom Historical No. 1
Dr. Arthur Himmier, Superintendent
Stellacoom Historical No. 1
510 Chambers St.
Stellacoom WA 98388-3311
253-983-2200
www.stellacoom.k12.wa.us

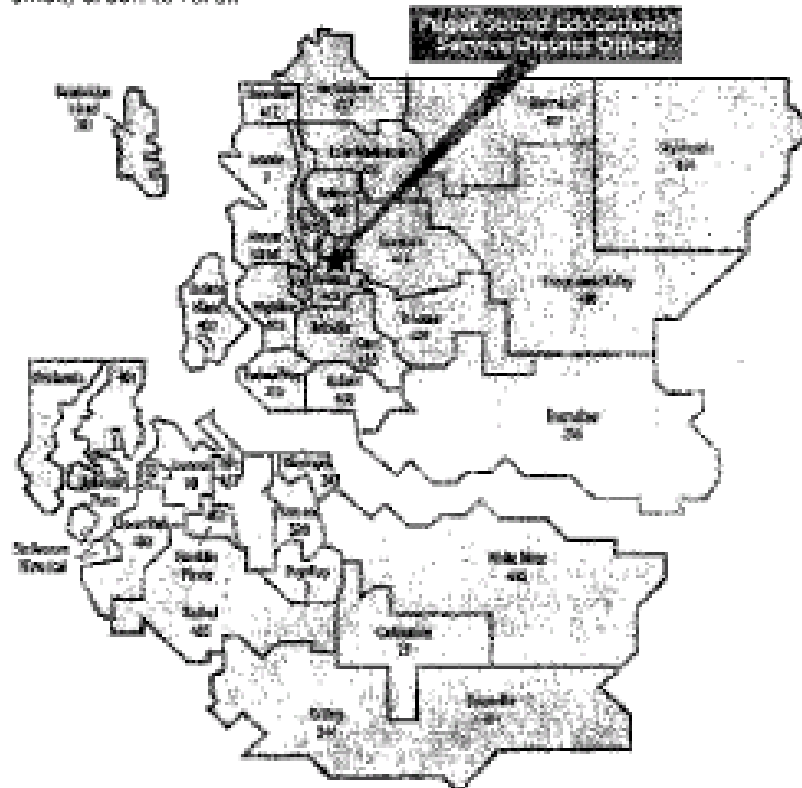
Sumner No. 320
Dr. Gil Mendoza, Superintendent
Sumner No. 320
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Tacoma No. 10
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253-571-1000
www.tacoma.k12.wa.us

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Patti Banks, Superintendent
University Place No. 83
3717 Grandview Drive W.
University Place WA 98466-2138
253-566-5600
www.upsd.wednet.edu

White River No. 416
Tom Lockyer, Superintendent
White River No. 416
P. O. Box 2050
Buckley WA 98321-2050
360-929-0600
www.whiteriver.wednet.edu

Puget Sound ESD serves 35 school districts and more than 200 private schools in King and Pierce counties plus Bainbridge Island. Approximately 38 percent of the state's K-12 public school students, more than 383,000, are served in the area's school districts, which range from large to small, urban to rural.



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cruiser.eatonville.wednet.edu

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University Place No. 83
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253-565-5600

www.upsd.wednet.edu

White River No. 416

Tom Lockyer, Superintendent
White River No. 416
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Buckley WA 98321-2050
360-829-0600

www.whiteriver.wednet.edu

Comment Y-27
AOPA



AIRCRAFT OWNERS AND PILOTS ASSOCIATION

421 Aviation Way • Frederick, MD 21701-4798
Telephone (301) 695-2000 • FAX (301) 695-2376
www.aopa.org

October 2, 2007

Mr. Addison D. Davis, IV
Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health)
Public Affairs Office
U.S. Army Environmental Command
Building E4460, Attention: EMAE-PA
5179 Headley Road
Aberdeen Proving Ground, MD 21010-5401

Re: Notice of Availability of the Draft Programmatic Environmental Impact Statement (DPEIS) for Army Growth and Force Structure Realignment

Dear Mr. Davis:

The Aircraft Owners and Pilots Association (AOPA), representing more than 413,000 members, submits the following comments with regards to the Draft Programmatic Environmental Impact Statement (DPEIS) for Army Growth and Force Structure Realignment. AOPA objects to six of the seventeen installations being considered for growth or realignment by the Department of Army (DA). The need to expand or create new Special Use Airspace (SUA) at these six installations is unnecessary and unacceptable.

Considering the number of available options, AOPA contends that the most appropriate action will be for the DA to consider only those installations shown to have no greater than "Low" impact on the surrounding airspace. More than 60% of the installation options have no greater than a "Low" impact on the surrounding airspace. These eleven options will give the DA a "turn-key" installation with respect to airspace and ranges, and will not require the lengthy and expensive process of creating or expanding SUA in the area.

The AOPA opposes the following six installations being considered for growth or realignment: Fort Bliss, TX; Fort Bragg, NC; Fort Carson, CO; Fort Drum, NY; Fort Lewis, WA; and White Sands Missile Range, NM. Each of these six areas is located in high general aviation (GA) traffic areas. Increasing the SUA in these areas would have a significant adverse impact on the local and transient GA community. Any efforts to expand or create new SUA in these areas would be complicated and scrutinized by local pilot groups and AOPA.

AOPA appreciates the opportunity to comment on this matter. If there are any questions for AOPA, you can reach me at 301-695-2207.

Sincerely,



Pete Lehmann
Government Analyst
Air Traffic Services

Comment Y-28
Earthjustice



EARTHJUSTICE
Because the earth needs a good lawyer

BOZEMAN, MONTANA DENVER, COLORADO HONOLULU, HAWAII
INTERNATIONAL JUNEAU, ALASKA OAKLAND, CALIFORNIA
SEATTLE, WASHINGTON TALLAHASSEE, FLORIDA WASHINGTON, D.C.

October 5, 2007

By Certified U.S. Mail, Return Receipt Requested,
and Electronic Transmission

Public Affairs Office
U.S. Army Environmental Command
Building E-4460
Attention: IMAE-PA
Aberdeen Proving Ground, MD 21010-5401
Email: PublicComments@aec.apgea.army.mil

Re: Comments in Response to Notice of Availability of the Draft Programmatic
Environmental Impact Statement (DPEIS) for Army Growth and Force Structure
Realignment (72 Fed. Reg. 48,620 (August 24, 2007))

To Whom It May Concern,

Earthjustice submits these comments in response to the Department of the Army's August 24, 2007 Notice of Availability of the Draft Programmatic Environmental Impact Statement (DPEIS) for Army Growth and Force Structure Realignment (72 Fed. Reg. 48,620). For the reasons set forth in our June 14, 2007 scoping comments, we agree with the DPEIS's assessment that Hawai'i should not be considered for stationing a third brigade combat team ("BCT") as part of the Army's proposed growth and restructuring. There remain, however, serious deficiencies in the DPEIS's analysis with respect to activities in Hawai'i, and more generally, that the Army must address to comply with its obligations under the National Environmental Policy Act ("NEPA").

Failure to Analyze Impacts on Hawai'i

The DPEIS acknowledges it "does not include ... Hawai'i" in its analysis. DPEIS at 20. However, every alternative under consideration (other than the "no action" alternative) would increase the number of soldiers stationed here:

- Alternative 1 proposes to implement Army force structure modifications between FY 2008 and 2013 to support the Army's Modular Transformation and Global Defense Posture Realignment decisions. See DPEIS at 37-40. This alternative includes unit stationing actions at two Army installations in Hawai'i, Schofield Barracks and Fort Shafter, with a net increase of 462 soldiers stationed here. See *id.* at Table 3-1. Given that approximately 50-55% of soldiers are married and many have children, the increase in personnel stationed here would be further augmented by an increase in family members, requiring additional housing, schools, and so forth. See *id.* at 14.

223 SOUTH KING STREET, SUITE 400 HONOLULU, HI 96813-4501
T: 808.599.2426 F: 808.521.6841 E: ej@earthjustice.org W: www.earthjustice.org

Earthjustice Comments on DPEIS for Army Growth and Force Structure Realignment
 October 5, 2007
 Page 2

- Alternative 2 includes the growth proposed in Alternative 1 and, in addition, would add Combat Support ("CS") and Combat Services Support ("CSS") soldiers to most Army installations, resulting in a net increase of 722 soldiers at Schofield Barracks and 716 soldiers at Fort Shafter. *Id.* at 41-44. As noted previously, the substantial increase in soldiers stationed in Hawai'i would be further augmented by hundreds of family members.
- While the DPEIS does not propose the stationing of any new active duty BCTs in Hawai'i, all of the sub-alternatives included in Alternative 3 include implementation of the actions proposed in Alternatives 1 and 2, which would significantly increase the number of soldiers stationed here. *Id.* at 45.

Regardless of which action alternative the Army selects at the end of its programmatic environmental review, the number of soldiers stationed in Hawai'i will increase. The Army cannot lawfully defer to another day analysis of the site-specific impacts in Hawai'i of decisions it intends to make at the programmatic level. See *California v. Block*, 690 F.2d 753, 761 (9th Cir. 1982). Since "[f]uture decisions concerning [Army activities in Hawai'i] will be constrained by [the] choice" made at the programmatic level, "the promise of site-specific EIS's in the future is meaningless." *Id.* at 762-63; see also DPEIS at 39, 43.

The DPEIS tries to justify its failure to discuss the impacts of bringing additional soldiers to Hawai'i on the grounds that, allegedly, any increase of less than 1,000 soldiers is below the "level of growth ... at which significant impacts could occur." DPEIS at 39. Under both Alternatives 2 and 3, however, the number of soldiers in Hawai'i would increase by 1,438, well above the Army's artificial threshold of 1,000 soldiers and greater than the increase under Alternative 2 for several of the installations included in the DPEIS's impact analysis. See *id.* at Table 3-3 (lower increases at Forts Benning, Campbell, Irwin, Knox, & Polk). Since Schofield Barracks and Fort Shafter are located on the same island only about twenty miles apart and soldiers stationed at both installations use the same training facilities, any attempt by the Army to claim the increase at "each installation" is less than 1,000 soldiers would elevate form over substance. Alternatives under consideration would increase the number of soldiers on O'ahu by more than 1,000, exceeding the level the Army acknowledges may have significant impacts.

In any event, there is no legal basis for the Army's apparent belief the PEIS need analyze and disclose only those impacts the Army deems significant. NEPA's implementing regulations require an EIS to discuss all "environmental impacts of alternatives including the proposed action" and provide an assessment of each impact's significance. 40 C.F.R. § 1502.16(d); see also *id.* § 1502.16(a), (b); *id.* § 1508.8. The determination whether an impact is significant is made through the EIS process, and the fruits of the inquiry must be disclosed in the EIS. The Army cannot exclude potential impacts from review based on its unsupported assumption they are not likely to be significant.

It is only logical that the Army must first analyze the impacts of proposed actions in Hawai'i before it can take the "hard look" required by NEPA and make reasoned determinations whether those impacts would be significant. *Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th

Earthjustice Comments on DPEIS for Army Growth and Force Structure Realignment
 October 5, 2007
 Page 3

Cir. 2005). Moreover, to the extent the Army claims it has conducted such an analysis in preparing the DPEIS, "NEPA requires that the public receive the underlying environmental data from which [the Army] derived [its] opinion" about the significance of impacts in Hawai'i. Idaho Sporting Cong. v. Thomas, 137 F.3d 1146, 1150 (9th Cir. 1998). The DPEIS's "generalized conclusory statements that the effects are not significant" cannot pass legal muster. Klamath-Siskiyou Wilderness Center v. Bureau of Land Management, 387 F.3d 989, 996 (9th Cir. 2004); see also id. ("NEPA documents are inadequate if they contain only narratives of expert opinions").

Inadequate Discussion of Impacts at Installations Included in DPEIS Analysis

Even for those installations that were carried forward into the DPEIS's analysis, the Army failed to take the mandated "hard look" at the impacts of pursuing the alternate courses of action. The document is replete with "conclusory statements" about the significance of potential impacts, with no discussion of the underlying data from which the Army derived its opinions. Id.

In addition, the DPEIS fails to analyze the specific actions proposed for each installation under Alternatives 1 or 2. Under Alternative 1, the installations carried forward for analysis would experience changes in personnel ranging from a loss of 699 soldiers at Fort Knox to a gain of 6,019 soldiers at Fort Bliss. DPEIS at 40. While Appendix V is nearly indecipherable due to the DPEIS's failure to provide any explanation of the acronyms describing units gained or lost (violating NEPA's requirement that an EIS be "written in plain language ... so that decisionmakers and the public can readily understand them"), it appears that, under Alternative 1, each installation would receive or lose a variety of different units. 40 C.F.R. § 1502.8. Alternative 2 would similarly involve widely different changes at the various installations in terms of both soldier numbers and types of units. See DPEIS at 43-44 (net changes range from a loss of 665 soldiers at Fort Knox to a gain of 9,240 soldiers at Fort Bliss), Appendices V & W.

Ignoring this great diversity in the changes proposed for each installation, the DPEIS considers only two generic stationing scenarios – one involving an increase of 1,000 CS/CSS soldiers and another involving a 3,000-3,500 soldier full Sustainment Brigade – that do not accurately capture the changes that would actually occur at any installation under Alternatives 1 or 2. The Army cannot fulfill its obligations under NEPA to take a hard look at impacts by analyzing fictional scenarios that bear no resemblance to the actions it actually proposes to undertake. Since Alternative 3 would include full implementation of Alternatives 1 and 2, the deficient analyses of Alternatives 1 and 2 render inadequate the analysis of Alternative 3 as well.

The Army Cannot Limit Alternatives for Permanent Stationing of the 2/25th Stryker Brigade

On October 5, 2006, the Ninth Circuit Court of Appeals held the Army violated NEPA when it decided to convert the 2nd Brigade of the 25th Infantry Division into a Stryker BCT without "considering alternatives that include transformation of the 2nd Brigade outside of Hawaii." Ilio'ulaokalani Coalition v. Rumsfeld, 464 F.3d 1083, 1098

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(9th Cir. 2006). To remedy this violation, the court ordered the Army “to prepare a supplemental [site-specific EIS] to consider all reasonable alternatives, most notably the potential for transforming the 2nd Brigade outside of Hawaii.” *Id.* at 1087. Pursuant to the court’s order, the Army is currently preparing a supplemental analysis of stationing alternatives, with a draft EIS out for public review until October 30, 2007. *See* 72 Fed. Reg. 39,800 (July 20, 2007). Prior to the completion of the EIS for the 2nd Brigade’s permanent stationing, the Army may not take any action that would “[l]imit the chose of reasonable alternatives.” 40 C.F.R. § 1506.1(a)(2).

The DPEIS identifies five installations that can accommodate the stationing of a Stryker BCT: Fort Bliss, Fort Carson (including use of the Pinon Canyon Maneuver Site as a maneuver training site), White Sands Missile Range, Fort Lewis, and Yakima Training Center. DPEIS at XIII. The draft EIS for the 2/25th Stryker Brigade identifies one of these installations – Fort Carson – as a potential permanent stationing location. The other four installations must also be included in the Army’s analysis of stationing alternatives for the 2nd Brigade. Until the EIS for the 2nd Brigade’s permanent stationing is completed, the Army may not lawfully take any action with respect to Army growth and force structure realignment that would preclude stationing the 2/25th Stryker Brigade at these alternate locations.

In addition, the DPEIS improperly assumes the outcome of the EIS process for the 2nd Brigade will be a decision to station the Stryker BCT in Hawai‘i permanently. This is reflected in its discussion of expected increases in numbers of soldiers under Alternatives 1 and 2, which (as best we can determine) assumes the 2nd Brigade will remain in Hawai‘i. It is also evident in the DPEIS’s conclusion that Hawai‘i cannot accommodate any of the new BCTs proposed under Alternative 3, due to its assumption that two brigades – the 2nd Stryker BCT and the 3rd Infantry BCT – will be stationed here, leaving insufficient facilities for another BCT.

The Army may not lock in the 2nd Brigade’s stationing in Hawai‘i prior to completion of the EIS process. Rather, in its environmental review for both Army growth and the 2nd Brigade’s permanent stationing, the Army must seriously and objectively consider the alternative of permanently stationing the 2/25th Stryker Brigade outside Hawai‘i. This would alter the assessment of soldier increases under Alternatives 1 and 2. It might also make room for a new Infantry BCT that could be considered for stationing in Hawai‘i under Alternative 3.¹

¹ Please note we are not suggesting it would be advisable to station a second Infantry BCT in Hawai‘i. Due to Hawai‘i’s limited land mass and fragile cultural and biological resources, any military training in the islands inevitably results in significant impacts that the Army must seek to avoid or minimize by shifting training – particularly live-fire training – to locations outside Hawai‘i. Our comment is intended to convey only that, to comply with its obligation under NEPA to consider a reasonable range of alternatives, the Army should evaluate the option of stationing the 2/25th Stryker Brigade elsewhere, which might make room for a second Infantry BCT. The Army must also consider whether it could accomplish its mission

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We appreciate the opportunity to provide these comments on the DPEIS. Please feel free to contact me should you wish to discuss the foregoing.

Sincerely,



David Lane Henkin
Staff Attorney

DLH/t

Comment Y-29, Y-30, and Y-31

Merrill, Anderson, and Harris, LLC. Attorneys at Law (On behalf of Not 1 More Acre!)

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U.S. Army Environmental Command
5179 Hoadley Rd, BLG E-4460
Attention: DMAE-PA
Aberdeen Proving Ground, MD 21010-5401

Re: Draft Programmatic Environmental Impact Statement for Army Growth and Force Structure Realignment

To Whom It May Concern:

These comments on the Draft Programmatic Environmental Impact Statement for Army Growth and Force Structure Realignment (PEIS) are submitted on behalf of Not 1 More Acre!. Not 1 More Acre! is a Colorado non-profit corporation formed to promote ecological and economic health in southeastern Colorado. Not 1 More Acre! filed Articles of Incorporation with the Colorado Secretary of State on January 10, 2007 and has its principal place of business at 7451 East Ponderosa Circle, Parker, Colorado 80138. Not 1 More Acre! has been active in raising public awareness regarding the potential environmental and economic impacts of continued military use of the Pifion Canyon Maneuver Site (PCMS).

Introduction

As a Colorado organization whose primary purpose is to promote ecological and economic health in southeastern Colorado, Not 1 More Acre! is most concerned about how the stationing scenarios proposed in the PEIS will impact the Army's PCMS. As such these comments will focus on the PCMS and not the other bases discussed in the PEIS.

Fort Carson is an approximately 137,000-acre United States Army installation located immediately south and east of Colorado Springs. Currently, 14,500 Army soldiers are assigned to Fort Carson. Pifion Canyon Maneuver Site Draft Transformation Environmental Impact Statement (DEIS) at 2-2. The 2005 Base Realignment and Closure (BRAC) Commission recommended that a Brigade Combat Team be relocated from Fort Hood, Texas to Fort Carson. DEIS at 1-2. As a result of the BRAC recommendations, 8,500 new soldiers are expected to be stationed at Fort Carson by 2009, yielding a total projected troop strength of 23,000 soldiers. DEIS at ES-3.

The PCMS is a satellite maneuver training area which is primarily used to meet the training needs of soldiers stationed at Fort Carson and would be impacted by an increase in troops. PEIS at 149. The PCMS consists of over 235,000 acres of land located roughly 150 miles southeast of Colorado Springs. DEIS at 1-1. Fort Carson has operated the PCMS as a large-scale training site since the land was acquired (primarily by eminent domain) in the early

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1980s. *Id.* Of the property's total area, 158,620 acres are presently open to mechanized use. Exhibit 1 at 21. The PCMS currently has sufficient infrastructure to support the training of 8,000 to 10,000 soldiers at one time. Exhibit 2 at 4.

On August 24, 2007 the Army announced the availability of a Draft Programmatic Environmental Impact Statement for Army Growth and Force Structure Realignment (PEIS). The purpose of the PEIS is conduct analysis of alternatives to realign the Army's force structure in Accordance with Army Transformation Objectives. PEIS at 5. The PEIS evaluated the environmental and socioeconomic impacts of three stationing alternatives that would meet the Army's need for growth on 17 military bases around the country including Fort Carson and the PCMS. The first alternative involves increasing the size of the Army by up to approximately 20,000 soldiers between 2008 and 2013. PEIS at 37. The second alternative involves the increase in troops proposed in the first alternative along with an increase of 30,000 additional troops. PEIS at 41. The third alternative involves the actions proposed in the first and second alternatives as well as adding up to six additional active duty Brigade Combat Teams (BCT), which would add approximately 24,000 additional troops. PEIS at 44. Fort Carson is one of the bases where the Army would consider stationing an additional BCT, which would amount to an increase of approximately 7,000 troops. PEIS at 45.

The PEIS analyzes the impacts of six separate stationing scenarios that would likely occur under the Army's growth initiatives at Fort Carson. PEIS at 51. The first scenario involves stationing not more than 1,000 combat support and combat support systems soldiers at Fort Carson. *Id.* The second stationing scenario involves stationing an infantry BCT, Heavy BCT, or Stryker BCT at Fort Carson, which would result in an additional 3,000-4,000 troops at the base. *Id.* The third scenario involves stationing multiple BCTs at Fort Carson, resulting in an additional 7,000 stationed at the base. The PCMS would be used to meet the training needs of any additional troops stationed at the PCMS. PEIS at 149.

Due to likely adverse impacts to environmental and cultural resources, Not 1 More Acres! opposes all of the stationing scenarios contemplated by the PEIS that would increase the number of troops training at the PCMS. The PCMS lands include undisturbed, pristine natural areas with important ecological, archaeological and historical values that must be protected.

For the reasons discussed below, the PEIS is inadequate and precludes meaningful disclosure and analysis of impacts to the PCMS. Chief among the deficiencies is the PEIS's failure to take a "hard look" at potential environmental, archaeological, historical and socioeconomic impacts. Impacts are often not disclosed, stated as obvious generalities without attempt at quantification or discussion, understated, or stated in a manner intended to mislead the public into believing they are insignificant. In fact, disclosure and discussion of the significance of the action's impacts on many resources are simply absent.

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The PEIS does not disclose and make use of the best available scientific information to analyze impacts. Information relevant to reasonably foreseeable adverse impacts that is critical to arriving at a reasoned choice among alternatives is not included in the PEIS. There is therefore no disclosure of how or why the decision makers will make a decision, i.e. no clear basis for choice among alternatives based upon impacts and their significance.

I. The Army failed to consider the cumulative impacts of other projects planned for the PCMS.

CEQ regulations provide that “[c]umulative impacts when viewed with other proposed actions should be discussed in the same impact statement.” 40 C.F.R. § 1508.25(a)(2). There are at least five actions connected to the PCMS that are presently under consideration by the Army: (1) construction of new communications facilities linking Fort Carson and the PCMS addressed in an EA; (2) the DEIS that seeks to increase usage of the PCMS and authorize construction of new facilities; (3) the proposed physical expansion of PCMS through acquisition of hundreds of thousands of acres of additional land; (4) the potential stationing of a Stryker Brigade at Fort Carson, which would result in additional training at the PCMS; and (5) the stationing activities proposed in the PEIS. The PEIS fails to adequately disclose and consider the cumulative impacts the activities proposed therein will have on the environment, cultural resources and rural communities surrounding the PCMS in light of the proposed communication facilities, the PCMS Transformation, the proposed expansion, and the proposed stationing of a Stryker Brigade. The PEIS does not analyze the cumulative impacts from all of these projects. Rather the PEIS states that the impacts from Transformation activities and the stationing of the Stryker Brigade were not analyzed because they were the subject of other National Environmental Policy Act (NEPA) studies. PEIS at 184. The PEIS also fails to acknowledge that the expansion of the PCMS is a possibility and does not discuss any potential impacts related to expansion.

The cumulative impacts that must be considered are not limited to those from actual proposals, but also include impacts from actions that are merely being contemplated so long as they are reasonably foreseeable and not speculative. The cumulative impact analysis must identify any reasonably foreseeable actions that are expected to have impacts, describe the expected impacts, and discuss the overall impacts that can be expected if individual impacts are allowed to accumulate. The proposed expansion of the PCMS, Transformation of the PCMS, and stationing of a Stryker brigade are reasonably foreseeable actions whose impacts should have been analyzed in the PEIS. By failing to analyze these issues the Army has improperly denied the public a reasonable opportunity to assess the overall impacts of the proposed stationing scenarios in violation of NEPA.

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II. The PEIS fails to provide sufficient information about the anticipated use of PCMS to enable the public and agency officials to take a "hard look" at the potential environmental and economic impacts, in violation of NEPA.

Pursuant to NEPA, all federal agencies are required to undertake thorough public review of the environmental consequences of all "major federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). Congress intended that NEPA review would help "prevent or eliminate damage to the environment and biosphere by focusing government and public attention on the environmental effects of proposed agency action." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, at 371 & n.14 (1989) (citations and quotations omitted); see also *Robertson v. Methow Valley Citizens' Council*, 490 U.S. 332, 349 (1989). NEPA ensures that federal agencies elevate the consideration of the environmental effects of their proposed actions to the same level as other, more traditional, factors.

Preparation of an EIS serves two primary purposes: (1) "to inject environmental considerations into the federal agency's decision making process," and (2) "to inform the public that the agency has considered environmental concerns in its decision making process." *Weinberger v. Catholic Action of Hawaii*, 454 U.S. 139, 143 (1981); see also *Sierra Club v. Hodel*, 848 F.2d 1068, 1088 (10th Cir. 1988). An EIS also enables critical evaluation of an agency's actions by those outside the agency. *Catron County Bd. of Comm'rs v. U.S. Fish & Wildlife Serv.*, 75 F.3d 1429, 1434 (10th Cir. 1996); *Env't. Defense Fund, Inc. v. Froehike*, 473 F.2d 346, 351 (8th Cir. 1972). The EIS thus "helps insure the integrity of the process of decision," providing a basis for comparing the environmental problems raised by the proposed project with those in the alternatives. *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1973). Federal agencies must comply with NEPA to the fullest extent possible. 42 U.S.C. § 4332.

NEPA requires an EIS to include an analysis of "the environmental impact of the proposed action," 42 U.S.C. § 4332(2)(C)(i), including ecological, aesthetic, historical, cultural, economic, social, and health impacts, whether direct, indirect, or cumulative, 40 C.F.R. § 1508.8. CEQ regulations implementing NEPA state that information included in NEPA documents "must be of high quality. Accurate scientific analysis ... [is] essential to implementing NEPA." 40 C.F.R. § 1500.1(b). In addition:

Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analysis in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement.

40 C.F.R. § 1502.24. Where an agency has incomplete or no information on potential impacts, it must develop the information as part of the NEPA process. 40 C.F.R. § 1502.22. The CEQ

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regulations specify how an agency should proceed when faced with "incomplete or unavailable" information relating to its evaluation of "reasonably foreseeable significant adverse effects on the human environment." 40 C.F.R. § 1502.22. An agency "must obtain and include in the EIS information on 'reasonably foreseeable significant adverse impacts'" that are essential to a reasoned choice among alternatives "if the costs of obtaining such information are not exorbitant." *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1523 (10th Cir. 1992). "If the costs of obtaining the information are exorbitant 'or the means to obtain it are not known' the agency must include within the EIS: (a) a statement that such information is incomplete or unavailable; (b) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (c) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and is within the rule of reason; and (d) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. *Lee v. U.S. Air Force*, 354 F.3d 1229, 1241 (10th Cir. 2004).

The PEIS contains no detailed information about: (a) the frequency of training exercises resulting from the proposed stationing scenarios; (b) the duration of proposed training exercises; (c) the weapons and equipment to be employed in training exercises; or (d) the numbers of troops who will train at one time.

In the absence of reliable information about anticipated use, agency officials and the public lack a sound basis for distinguishing among the various alternatives and thereby making a reasoned choice of action. The failure to disclose expected use levels in the PEIS is a critical flaw that prevents the public from understanding the extent of potential significant environmental impacts.

The PEIS also under-represents the environmental impacts of the proposed stationing scenarios or portrays them in a manner which misleads the public into believing they will be insignificant. In order to comply with NEPA, the Army must quantify the expected increase in training in terms of frequency, duration, number and identity of troops, and weapons and equipment. Only then will the agency decision makers and the public be able to fairly analyze the potential impacts of the proposed stationing scenarios.

III. The PEIS fails to adequately disclose or consider the best available information regarding baseline environmental conditions at the PCMS.

The southeastern Colorado ecosystem is unique, with a combination of canyon lands, forested mesas, grasslands and riparian systems that is found nowhere else on Earth. The ecoregion is one of the largest remaining intact shortgrass prairie and canyonland landscapes in the West. Exhibit 3 at 1-2; Exhibit 4. These ecosystems contain critical riparian systems that

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provide habitat for many diverse species of flora and fauna and cannot be replaced if destroyed. According to The Nature Conservancy, "the lands surrounding the Piñon Canyon Maneuver Site represent one of the largest blocks of native grasslands on the western High Plains." Exhibit 4.

In the nearly twenty-five years that have passed since the PCMS was originally acquired, the military has failed to gather baseline information necessary to evaluate the potential impacts of the proposed stationing scenarios. There is no evidence that the Army has actually performed the appropriate level and types of information gathering necessary for comparative analysis. Without this information, agency decision makers cannot make a reasoned choice among the alternatives.

IV. The PEIS fails to adequately disclose or consider potential impacts to air quality.

The stationing activities proposed in the PEIS will adversely impact air quality in the region surrounding the PCMS, where the landscape is so fragile that farm equipment generates visible dust plumes. The PEIS does not provide a full analysis of how the unquantified harm to air quality that accompanies the proposed stationing activities will impact troops, nearby rural communities or wildlife.

While the PEIS does acknowledge that the proposed stationing scenarios could result in long term significant impacts to air quality in the area around the PCMS, the PEIS does not fully discuss or analyze the impacts to air quality that will be caused by the proposed stationing activities. PEIS at 154-155. The Army's PCMS Transformation DEIS discussed impacts to air from increased training activities that are not discussed in the PEIS. The DEIS acknowledged that prescribed burns, the use of smoke grenades and fog-oil and live fire exercises will increase, all of which will further elevate levels of inhalable particulate matter in the region. DEIS at 3-11. The DEIS further admits that "[i]ncreases in criteria pollutants have the potential to decrease visibility and violate" the National Ambient Air Quality Standards. *Id.* The DEIS also disclosed that air quality modeling undertaken by the Army demonstrates that increased training and construction will result in emissions of nitrogen dioxide and particulate matter that may exceed the Environmental Protection Agency's Class II significant impact levels. DEIS at 3-15. Increased convoy traffic related to the proposed action also has the potential to affect short-term air quality along the Interstate 25 transportation corridor due to increased vehicle exhaust. DEIS at 3-13 to 3-14. It is likely that many of these impacts will also occur under the stationing scenarios proposed in the PEIS.

Despite acknowledging the potential impacts to air quality that may be caused by the proposed stationing scenarios, the PEIS does not provide enough information for decision makers and members of the public to adequately analyze the impacts. The PEIS also fails to

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describe how these impacts will be mitigated. Based on these observations, the PEIS is inadequate as a matter of law.

V. The PEIS fails to adequately disclose or consider potential impacts caused to cultural, archaeological and historic resources.

The PEIS minimizes the importance of archaeological and historic resources at the PCMS, and fails to disclose the likely impacts to those resources caused by the proposed stationing scenarios. While acknowledging that long term significant impacts to cultural resources could result from the proposed stationing activities, the PEIS does not acknowledge that the PCMS is an archaeological hotspot of irreplaceable value, containing thousands of archaeological resources which document several thousand years of human prehistory. PEIS at 160-161. The scientific knowledge to be gained from these resources can provide us with an understanding of the human prehistory of southeastern Colorado. The variety of habitat types and environmental features on the PCMS provide a means for assessing how prehistoric humans evolved different social, technological, and land use systems to adapt to environmental variations. The need for public disclosure of the extent of archaeological resources, data, and research conducted at the PCMS is particularly compelling given the historic lack of general public access to this area.

Humans have occupied the Purgatoire River basin and its tributaries for over 10,000 years. The PCMS area is a rich and largely unsurveyed repository of archaeological and historic resources, with a history spanning from the Paleoindian Period to the present day. The PEIS admits that 5,113 archaeological sites have been documented on the PCMS to date, of which 488 are eligible for inclusion in the National Register of Historic Places. PEIS at 157. Of the known sites, 77% are prehistoric and include habitation sites, temporary field camps, lithic sites, food procurement and processing locations. PEIS at 157. Historic sites include old stage route and station remnants, ranching complexes, homesteads and small mining operations. There are also five prehistoric sites that are considered sacred, three Traditional Cultural Properties (TCPs) and "two sites of concern." DEIS at 3-62. Predominately prehistoric rock art, considered a "locus of sacred power and cultural significance," is also found throughout the area, mainly in the hogback formations and canyon areas. PEIS at 168. The Army has admitted that rock art at the PCMS has been directly linked to the Jicarilla Apache, Kiowa, Comanche and Southern Cheyenne tribes. DEIS at 3-62.

The PCMS is also likely to contain important historic resources related to the Spanish, Mexican and early American settlement of the area. The PCMS contains a number of historic district-eligible homesteads including La Placita Hispanic Settlement, Cross Ranch, Bar VI Ranch, Mark Doyle Homestead, Red Rocks Ranch, Sharps Ranch, Crowder's Ranch & Big Canyon, Brown's Sheep Camp, Bent Stage Station, Lockwood Stage Station and Pinon Booster Station. PEIS at 158. The Army has acknowledged that Red Rocks Ranch, Sharps Ranch and

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the Big Canyon Complex are used by soldiers as base camps for field operations and as simulated Iraqi villages. DEIS at 3-63. The Mountain Branch of the Santa Fe Trail passes through a small segment of the PCMS and parallels State Highway 350 along the Timpas Creek drainage. Picketwire Canyonlands is located east of the PCMS in the Comanche National Grasslands and includes important recreational and tourism sites such as the dinosaur tracks and numerous petroglyphs. Exhibit 5. The Spanish Peaks are located west of the PCMS.

The stationing scenarios proposed in the PEIS may violate the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires federal agencies to consider the effects of any proposed action on resources listed or eligible for inclusion in the National Register of Historic Places. In order to comply with Section 106, the military must: (1) identify historic resources that may be impacted; (2) determine if any historic resources in the project area are eligible for listing; (3) determine what effect the proposed activity will have on eligible historic resources; and (4) attempt to resolve or mitigate any adverse effects to eligible historic resources. The agency must consult with the State Historic Preservation Officer, Native American tribes, and members of the public during the Section 106 process.

The PEIS does not disclose what impacts the proposed stationing scenarios will have on the archeological and historic resources or what measures will be taken to mitigate impacts. If the Army does not engage in the Section 106 review prior to implementing any proposed stationing scenarios it will be in violation of the NHPA. The archeological and historic resources at PCMS are important to the history of the region and must be protected to the fullest extent possible.

Damage to or destruction of any archaeological or historic resources that are potentially eligible for inclusion in the National Register or for which eligibility is unassessed must be prohibited. Under the PEIS, areas known to contain properties eligible for inclusion in the National Register and areas not yet surveyed for cultural resources would still be used for dismounted training exercises. PEIS at 160. It is not appropriate to use any of the areas designated as Dismounted Training Areas or Restricted Areas for military activities. Any use of these areas for training purposes creates the possibility of inadvertent or even intentional destruction of important cultural resources.

Damage to archaeological resources is permanent, and incremental damage is cumulative and adverse. Unlike impacted biological resources, no amount of rest or rotational methods can prevent damage to or rehabilitate impacted archaeological sites. Thus, dismounted training exercises should not be allowed to occur in any area that has not been surveyed for archaeological and historical resources.

There is ample evidence that past training exercises on the PCMS have caused severe impacts to identified archaeological resources. The Colorado Council of Professional

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Archaeologists (CCPA) reported that there has been inadvertent, significant damage to archaeological sites when tracked vehicles have breached fences protecting the sites. The CCPA also states that the Army has asked archaeologists to assess damages on several prehistoric and historic period National Register-eligible archaeological sites that have been impacted in the past by training despite protective measures put in place by the Army. According to the CCPA, many of the historic structures on the PCMS are free-standing, dry-laid masonry walls that will not withstand much in the way of vibrations caused by maneuver training. Damage reports prepared by the Army after the majority of training exercises conducted on the site since 1985 demonstrate that important cultural resources were negatively impacted during almost all training maneuvers despite efforts to protect the sites from impacts. Exhibit 6.

The Army has previously admitted that the PCMS contains 68,864 acres of unsurveyed land estimated to contain an additional 2,040 archaeological sites, of which 406 are predicted to be potentially eligible for inclusion in the National Register. DEIS at 3-61. The PEIS acknowledges that the proposed stationing scenarios could cause significant impacts to undiscovered archaeological resources. PEIS at 160. However, without information about what equipment will be used during training or the frequency, duration or density of training activities, it is impossible for the public or agency decision makers to fairly evaluate potential impacts to undiscovered archaeological or historical sites that would be caused by the actions proposed in the PEIS.

Fort Carson does not have the staffing resources to conduct the surveys necessary to ensure that cultural resources will be protected during increased training exercises that will result from any of the proposed stationing scenarios. The CCPA reports that current staffing levels for archaeology at Fort Carson are stretched too thin to effectively monitor resources under the pressures posed by the current training schedule. If this is the case, it seems self-evident that the archaeology staff will be unable to conduct the necessary surveys, assessment, mitigation, and write up that will be required to minimize the impacts to cultural resources caused by the increase in training. Without adequate personnel, the Army cannot ensure that cultural resources are protected.

VI. The PEIS fails to adequately disclose or consider potential impacts to paleontological resources.

The Purgatoire River valley, its tributaries and the surrounding areas contain an abundance of diverse paleontological resources that include trace plant, and invertebrate fossils from the Permian through Cretaceous geological periods (about 250-145.5 million years ago). Two paleontological studies have been conducted on PCMS, yielding thirteen documented finds. The military has previously admitted that four of the finds "were determined to be of high paleontological significance" because of the diversity of plant and animal fossils, rare taxa and the amount of fossils in a stratigraphic unit (fossils located in rock layers). DEIS at 3-59. The

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Picketwire Canyonlands, located adjacent to the PCMS, contain a wealth of paleontological resources including the largest dinosaur tracksite in North America. Exhibit 7 at 1. The fact that areas surrounding the PCMS contain numerous paleontological resources indicates that significant resources may also be located on the PCMS.

The increase in training activities at the PCMS resulting from the proposed stationing scenarios will like cause severe impacts to paleontological resources. Dinosaur fossils can be harmed and/or destroyed by mechanized training exercises and dismantled training exercises. The PEIS provides no information regarding what procedures, if any, will be taken to safeguard paleontological resources as they are discovered. Although there may be no formal federal mandates for protection of paleontological resources, Congress has considered numerous bills including the "Paleontological Resources Prevention Act", H.R. 2416, that recognize the importance of protecting such resources as part of our national heritage. Additionally Public Law 101-510, § 2825 recognized the importance of paleontological resources when it transferred the Picketwire Canyon lands to the Department of Agriculture with the specific charge to "conserve and protect paleontological resources." Based on the spirit of these initiatives the Army should make an effort to identify and protect paleontological resources at the PCMS.

VII. The PEIS fails to adequately disclose or consider potential impacts to Native Americans.

Eleven federally recognized tribes have some cultural affiliation with the PCMS region, including the Apache Nation of O.K., Cheyenne and Arapaho Nation of O.K., Comanche Nation of O.K., Kiowa Nation of O.K., Northern Arapaho Nation, Northern Cheyenne Nation, Oglala Sioux Nation of the Pine Ridge Reservation, Shoshone Nation (Eastern band), Southern Ute Indian Nation, Ute Mountain Ute Nation, and the Jicarilla Apache Nation. PEIS at 158. However, the PEIS does not consider the impacts that the proposed stationing scenarios would have on the tribes and TCPs. The Army must consider impacts to Native Americans before making decisions on any of the stationing scenarios.

VIII. The PEIS fails to adequately disclose or consider potential impacts caused by increased noise.

The PCMS is surrounded by residential properties and public lands that are used for recreation and wildlife habitat. The Army has previously acknowledged that noise generated by jet and helicopter overflights, live fire exercises using artillery and hand grenades, mechanized training, and construction will disturb area residents and wildlife. DEIS at 3-19 to 3-20. The PEIS acknowledges that increased training associated with stationing more soldiers at Fort Carson may cause noise emissions to increase outside the boundaries of the PCMS. PEIS at 163. The increase in noise associated with the proposed stationing scenarios will disturb area residents and discourage residential development on the lands surrounding the PCMS. However, the PEIS

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makes no effort to quantify the impacts of increased noise levels on wildlife and livestock, either within or outside the PCMS boundaries. Increased noise levels have the potential to significantly disrupt animal behavior and can lead to impacts on species population and viability. The Army must fully analyze and disclose the noise impacts caused by the proposed stationing scenarios before moving forward with any site-specific actions.

IX. The PEIS fails to adequately disclose or consider potential impacts to soils.

The PEIS does not fully discuss or analyze the impacts the stationing scenarios will have on soils located within the PCMS. The Army has previously admitted that at least 47% of the soil on the PCMS is susceptible to high water erosion and at least 60% is susceptible to high wind erosion. Exhibit 8 at 3-64 and 3-67. As a result, any increase in training exercises will disrupt fragile soils and result in increased erosion. The Army has also acknowledged that mechanized tank maneuvers will destroy and remove vegetation resulting in soils that are more susceptible to wind and water erosion and compact the soil creating impervious surfaces that increase runoff and erosion. *Id.* Dismounted maneuvers will also destroy vegetation, compact soils and increase erosion. *Id.*

Although the PEIS recognizes that increased training activities under the proposed training scenarios would result in moderate to significant impacts to soil, it does not consider the consequences of the impacts on the area. PEIS at 165. The soil structure in the area is so fragile that even prescribed burns may cause loss of topsoil due to wind and water erosion. The fragility of the soil is demonstrated by the fact that much of the surrounding area was consumed by the dust bowl in the 1930s. Increased training activities will strip the soil of vegetative cover and permanently destroy soil structure, leading to devastating soil erosion and dust storms.

The military has not sufficiently analyzed the effects of increased training activities on soil erosion. The United States Department of Agriculture evaluated the potential for soil erosion on the PCMS using a hillslope erosion model and recommended that the model be used in soil protection planning on the PCMS. DEIS at 3-27. However, Army has acknowledged that it has not used the model since initial studies were conducted in 1999. *Id.* The Army has not conducted any modeling studies to determine the amount of erosion that will be caused by an increase in training activities. Thus, the Army does not have sufficient information to fairly evaluate impacts to soils and erosion.

X. The PEIS fails to acknowledge that the Army lacks sufficient information regarding the presence of endangered species on the PCMS.

The PEIS acknowledges that the bald eagle, a recently de-listed species, is known to be a winter resident of the PCMS but does not provide adequate information to enable the public to determine if other endangered or threatened species inhabit the PCMS. The PCMS

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Transformation DEIS provided a list of endangered and threatened species that are known to occur in Las Animas County and notes that six of the seven listed species "are not known to occur on the PCMS." DEIS at 3-42. However, neither the PEIS nor the Transformation EIS disclose or otherwise indicate that detailed surveys or other studies have been conducted to determine if these species occur on the PCMS. Without sufficient information regarding whether endangered species inhabit the PCMS, agency decision makers lack sufficient information to fully evaluate the impacts the proposed stationing scenarios will have on endangered species.

XI. The PEIS fails to adequately disclose or consider impacts to species protected under the Migratory Bird Treaty Act.

The PEIS does not explain how the proposed increase in training activities on the PCMS will conform to the Migratory Bird Treaty Act (MBTA). 16 U.S.C. §§ 703-712. Enacted in 1918, the MBTA implements four international conventions between the U.S. and Great Britain, Mexico, Japan, and the former Soviet Union. The Act states that it is illegal to:

...pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof,...

16 U.S.C. § 703. Over 340 bird species listed as known to occur on the PCMS are protected under the MBTA. The PCMS lies within an area known for its high bird diversity. Conserving the birdlife and protecting avian biodiversity in this region is extremely important. Migratory birds are declining globally. In the United States, it is our grasslands that are experiencing the most dramatic declines of migratory bird species. The lack of information about impacts to migratory birds prevents agency decision makers from making a reasoned choice among the proposed alternatives.

XII. The PEIS fails to adequately disclose or consider potential impacts to wildlife.

The PCMS is home to hundreds of wildlife species and the PEIS fails to adequately discuss how the proposed stationing scenarios will impact wildlife. The PEIS acknowledges that the proposed stationing scenarios could have significant impacts on wildlife but does not discuss those impacts. PEIS at 167-168. The Army has previously disclosed that increased training activities will destroy wildlife habitat, disrupt foraging and reproduction behavior, lead to

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increased predation/displacement of young animals and eggs, and kill individual animals. DEIS at 3-46. Training and construction activities will also pollute the streams and drainages that serve as a water supply for animals. The PEIS provides little or no information about how the anticipated impacts will affect individual species populations on the PCMS. The PEIS also fails to disclose the amount of habitat that will be negatively impacted or destroyed by the proposed stationing scenarios.

Increased training resulting from the proposed stationing activities has the potential to negatively impact state-listed and sensitive wildlife species and the PEIS fails to discuss the impacts on these species. Increased training at the PCMS will have negative impacts on the burrowing owl, a Colorado state-listed threatened species. The Army has admitted that burrowing owls use active prairie dog colonies for nests and there are at least 15 known burrowing owl nesting sites located on the PCMS. DEIS at 3-50 to 3-51. Increased training will also impact the mountain plover, a Colorado Department of Wildlife Special Concern Wildlife Species. There are at least ten mountain plover nesting sites on the PCMS. DEIS at 3-51. The Army has previously admitted that training exercises destroy plover nesting sites, disrupt egg incubation and chick brooding and that no studies have been done regarding the effect of jet and helicopter overflights on mountain plovers. DEIS at 3-50. The PEIS does not provide any quantitative information regarding how increased training activities will affect the current populations of burrowing owls and mountain plovers on the PCMS.

The PEIS also fails to provide information sufficient to evaluate impacts on other wildlife species. Increased training will directly impact pronghorn, elk and mule deer that inhabit the area. As of 2001, it was reported that 1,300 pronghorn were present on the PCMS. Exhibit 9 at 3. The Army is aware that pronghorn and deer have been alarmed by jet and helicopter overflights at the PCMS in the past and that military overflights can contribute to reduced winter survival rates and reproductive success and eventual population declines. DEIS at 3-48 to 3-49.

Finally, the PEIS fails to make any reference to or list any invertebrates known to occur at the PCMS. The lack of information on invertebrates prevents agency decision makers and the public from evaluating the impacts the stationing scenarios may have on invertebrates. The Army needs to obtain or generate information on invertebrates and the potential impacts to them that will result from the proposed stationing activities as part of the NEPA process. 40 C.F.R. § 1502.22.

XIII. The PEIS fails to adequately disclose or consider potential impacts to vegetation.

The PCMS would be perfect for a national wildlife refuge, with its mix of plain, woodland, and canyon habitats. However, the Army previously admitted that “[n]early all of the vegetated areas and wildlife habitat on the Maneuver Training Area (most of the land area, excluding canyons and cantonment area) at PCMS could be disturbed during training exercises.”

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DEIS at ES-5. Increased training activity will negatively impact fragile vegetation and native grasses on the PCMS, including eight Colorado Plant Species of Special Concern. Mechanized maneuvers will crush individual plants and destroy sensitive root systems, ultimately leading to bare soils, increased erosion, decreased water retention, and the spread of noxious weeds. Mechanized maneuvers may also introduce non-native plant species to the PCMS.

There is no question that tanks, armored fighting vehicles, and trucks damage vegetation, even at the existing, minimal level of usage. U.S. Fish & Wildlife (FWS) employee Dan Sharps monitored the PCMS at least as recently as 2001. Mr. Sharps reported to the media that the Army destroyed 400 pinon pine and juniper trees, some hundreds-of-years-old, during two months of maneuvers ending in March 2001. Exhibit 9 at 3. Even though the Army promised to operate only under dry conditions, Mr. Sharps reported that unit commanders sometimes disregarded recommendations to delay training during wet conditions, thereby causing some of the longest-lasting damage. *Id.* Although FWS was reseeding some 3,000 acres of land at the PCMS each year, the Army often engaged in exercises in areas where native grasses had not yet fully re-established themselves. *Id.* Reports prepared by the Army after most training activities between 1985 and 2002 document the damage Mr. Sharp reported and demonstrate that damage to vegetation occurs during almost every training exercise conducted on the PCMS. Exhibit 6.

Southeast Colorado was devastated during the great dust storms of the depression. Area residents are concerned that the loss of vegetation and increased erosion resulting from increased training may lead to a second dust bowl. In addition, the Army has previously acknowledged that “[s]everal state-listed and county-listed noxious weeds have invaded both natural and developed landscapes on the PCMS.” DEIS at 3-38. It is likely that increased training activities under any of the proposed stationing scenarios will increase the potential for the spread of noxious weeds. The PEIS does not disclose what types of noxious weeds are present on the PCMS or analyze the potential impacts to native vegetation.

XIV. The PEIS fails to adequately disclose or consider potential impacts to water resources.

The PCMS is located in the Arkansas River basin and the Purgatoire River flows along the eastern border of the facility. There are several small creeks and drainages located on the PCMS that drain into the Purgatoire and then into the Arkansas River. The Army has previously stated that surface water quality on the PCMS is generally good but admits that sediment loading is a concern. DEIS at 3-32 to 3-33. Water quality testing indicates that the groundwater below the PCMS exceeds water quality standards for public use for a number of constituents.

The PEIS fails to acknowledge the impacts to water quality that may be associated with increased training activities. The Army previously admitted that an increase in the number of vehicles crossing dry drainages will cause more compaction and erosion, resulting in greater

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turbidity and sediment loading. DEIS at 3-34. The Army has also acknowledged that increased training will increase the potential for surface and groundwater contamination from fuels, solvents and other hazardous and toxic substances associated with the maintenance of military equipment. DEIS at 3-35. The expansion of authorized live fire exercises will also increase the potential for lead contamination of surface and subsurface waters. *Id.* There is also a possibility that soil disturbance caused by mechanized training will negatively impact regional aquifers. There is no question that the impacts discussed above pose direct threats to humans, wildlife and livestock in southeast Colorado. However, the PEIS fails to adequately disclose or analyze these threats. The lack of information on these threats makes it impossible for agency decision makers to make a reasoned choice regarding the available alternatives.

XV. The PEIS fails to adequately disclose or consider potential impacts caused by hazardous materials.

Hazardous waste storage and disposal issues have not been adequately addressed in the PEIS. Hazardous materials that will be used and stored at the PCMS include gasoline, diesel fuel, oil and lubricants for equipment maintenance, pesticides, chemical agents, and explosive and pyrotechnic devices. PEIS at 178. The use, storage and disposal of hazardous materials will increase under any of the proposed stationing scenarios and may lead to environmental impacts, but the PEIS makes no effort to quantify or otherwise evaluate the increased risk of toxic exposure. PEIS at 180-181. Field maneuver training increases the likelihood that wildlife habitat will be contaminated with petroleum hydrocarbons from leaking vehicles. Increased training will endanger human and wildlife health by increasing the land deposit of lead waste at expanded small arms and live fire ranges. Leachable lead will likely pollute the air, surface water, groundwater, and soil. Live fire exercises will also leave expended munitions (including unexploded ordnance) in training areas with substantial risk to the safety of troops, civilians who visit the PCMS, and wildlife. The lack of information on these threats makes it impossible for agency decision makers to make a reasoned choice regarding the available alternatives.

XVI. The PEIS fails to adequately disclose or consider potential impacts to utilities in the area.

The Army purchases treated potable water for use at the PCMS from the City of Trinidad. PEIS at 171. This water is stored in a large tank and distributed through underground water lines. *Id.* However, the Army has previously admitted that it does not know the location of the water supply or the distribution lines and that the water supply line from Trinidad has deteriorated and is leaking. DEIS at 3-78. The PEIS does not discuss the impacts on the water system caused by the proposed stationing scenarios.

Construction and operation of new facilities to support increased training activities will increase wastewater and stormwater. The Army has previously acknowledged that increased

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training will have an impact on the wastewater and stormwater systems at the PCMS because existing facilities are not adequate and new sewer mains will need to be constructed. DEIS at 3-78. The cantonment area contains an evaporative treatment/oxidation pond designed for continuous use by a brigade-sized unit. *Id.* The wastewater ponds do not have a discharge permit even though stormwater generated in the cantonment area is directed to the ponds and allowed to run directly off site. DEIS at 3-78 to 3-79. Furthermore, the septic tank for the Headquarters Building is not large enough to meet existing treatment design. DEIS at 3-79.

A high-pressure gas line runs through the PCMS from southwest to northeast. Although the Army plans to expand the operation of tanks in the area, it has previously revealed that information concerning the existing utilities infrastructure is limited. DEIS at 3-77. The military also lacks information about the location of existing buried telephone lines. DEIS at 3-80. In the absence of accurate information about underground utilities, it appears likely that increased military use will damage existing utilities infrastructure.

XVII. The PEIS fails to adequately disclose or consider potential impacts to the Comanche National Grasslands.

The proposed stationing scenarios have the potential to severely impact the Comanche National Grasslands. The Comanche National Grasslands consist of roughly 440,000 acres of public lands on the northern, northwestern and eastern border of the PCMS. Exhibit 10 at 1. The Comanche Grasslands are home to Picketwire Canyon, the largest dinosaur track site in North America, with over 1,300 visible tracks. *Id.* Originally, the Picketwire Canyon property was acquired by the military for training purposes. Only the vigilance and activism of the public forced the Army to transfer these lands to the Forest Service in the mid-1980s.

The Comanche Grasslands also contain a wealth of historical sites including portions of the Santa Fe Trail, ancient rock art sites, and many abandoned homesteads. *Id.* The Comanche Grasslands are home to numerous wildlife species including the lesser prairie chicken, the golden eagle, the swift fox, the black-tailed prairie dog, and the burrowing owl, among others. *Id.* The Comanche Grasslands provide the public with recreational opportunities for birding, hiking, hunting and mountain biking. Exhibit 11 at 1.

The PEIS does not consider the fact that increased training at the PCMS will negatively impact the Comanche Grasslands. Noise generated by tank maneuvers, live fire exercises, joint air-ground operations and fighter jet and helicopter overflights will harm wildlife and ruin the wild character of the area, making it less desirable for recreation. The proposed stationing scenarios will also result in air and water pollution that will negatively impact recreation and wildlife. The lack of information on these threats makes it impossible for agency decision makers to make a reasoned choice regarding the available alternatives.

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XVIII. The PEIS fails to adequately disclose or consider potential socioeconomic impacts to rural communities.

The proposed stationing scenarios will have profound impacts on the rural communities surrounding the PCMS. Las Animas, Huerfano and Otero counties will be impacted most heavily; approximately 44,000 people live and work in these counties. Southeastern Colorado is vital to agriculture in the region and has a rich history of ranching. Ranching and agriculture are the backbone of the local economy. In Las Animas County alone there are approximately 567 working farms and ranches. Much of the rangeland has been passed down through several generations.

As discussed above in greater detail, the stationing scenarios will also create environmental problems for rural communities in the vicinity of the PCMS. The stationing scenarios may lead to contamination of water resources with lead, petroleum products and other hazardous materials, rendering water unfit for agricultural or domestic use. Air pollution in the area is also likely to increase due to increases in training exercises. The PEIS does not address any potential impacts to visual resources. Increased training activities will destroy vegetation and increase soil erosion, creating the potential for another dust bowl in the area. Increased training resulting from the proposed stationing scenarios will create extreme congestion problems on Interstate 25 near Fort Carson and Pueblo. The Army has acknowledged that convoys on U.S. 350 will essentially shut down traffic 30-60 days a year unless passing lanes are constructed between Trinidad and the gate to the PCMS. DEIS at 3-75. The Army's failure to discuss or disclose these impacts prevents agency decision makers from making a reasoned choice among the alternatives.

Conclusion

For the reasons stated in this letter, Not 1 More Acre! opposes the proposed stationing scenarios because they will result in irreparable impacts to the PCMS. The PEIS is fundamentally flawed and violates the intent and plain language of NEPA in a myriad of respects. Therefore, the Army must address these defects before proceeding with plans for stationing additional troops at Fort Carson. Thank you for the opportunity to submit these comments, and please do not hesitate to contact me directly if you have any questions about my client's positions.

Very truly yours,



Stephen D. Harris
Michael J. Gustafson

Comments Y-32, Y-33, and Y-34
Ventana Wilderness Alliance



Ventana Wilderness Alliance

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Public Affairs Office
Attn: IMAE-PA
US Army Environmental Command, Building E4460
5179 Hoadley Rd.
Aberdeen Proving Ground, MD 21010-5401

RE: Public Comment on Draft Programmatic Environmental Impact Statement
Sent Certified Mail Return Receipt Requested October 8, 2007

The Ventana Wilderness Alliance is a not for profit 501(c)(3) organization whose mission is to protect, preserve, and restore the wilderness qualities and biodiversity of the public lands within California's northern Santa Lucia Mountains and Big Sur coast.

Given that the US Army's Fort Hunter Liggett is part of the Santa Lucia Mountains and shares borders with the federally designated Ventana Wilderness and Silver Peak Wilderness, we have grave concerns about the plans for "growth and force structure realignment" at Fort Hunter Liggett.

In the DPEIS, the assessment of impacts are identified as follows:

Air Quality
Air Space
Cultural Resources
Noise
Soil Erosion
Vegetation and Wildlife
Wetlands
Water Resources
Facilities
Energy Demand
Land Use Conflicts / Compatibility
Socioeconomics
Scheduling
Hazardous Materials
Traffic and Transportation

In each of these categories the DPEIS claims no impact, very low impact or medium impact in all but the most intensive use alternatives, known as HBCT and Multiple BCTs.

Our organization strongly disagrees with almost all of the conclusions for each of the VECs identified and at the usage level identified. Further we believe the data to be incomplete and, in many cases, in error. Consequently we support the alternative known as "NO ACTION" as it relates to Fort Hunter Liggett.

In addition to the above, for the following reasons, the Ventana Wilderness Alliance unequivocally supports the alternative known as "NO ACTION" for increase in Growth and Force Structure Realignment specifically at Fort Hunter Liggett:

1. Presence of Threatened and Endangered Plant species.
2. Presence of six (6) Threatened and Endangered animal species, including the Arroyo Toad, the San Joaquin Kit Fox, California Condor and American Bald Eagle.
3. Presence of unique geological features of critical scientific research importance.
4. Adverse impacts on registered historical landmarks and cultural resources including Mission San Antonio, the Hearst Hacienda, the De Anza National Trail, the Gaspar de Portola Trail, and Native American archaeological sites of national significance.
5. Presence of and contiguous to the most extensive Valley Oak savannah still existing on public lands.
6. Proximity to the Ventana and Silver Peak Wildernesses, within the Los Padres National Forest.
7. Proximity to nationally recognized California coastal recreation areas including Big Sur and California Highway One.
8. Adverse impact on recreational uses currently authorized on the base.
9. Adverse impact on fire danger both on the base and surrounding National Forest and Wilderness areas
10. Adverse Impact on air quality in the Lockwood and Salinas Valleys due to combustion emissions during training, vehicle emissions due to a possible 25 mile vehicle commute from personnel housing, and extreme dust emissions. Outside of the cantonment area there are only two paved roads within the 111,000 acres of maneuver area.

11. Adverse impact on soil stability. The area is extremely dry with seasonal rains. The soils are highly erodible, especially in steeper areas.
12. Adverse impact on the Nacimiento and San Antonio watersheds and water quality. The Nacimiento and San Antonio Reservoirs, downstream from the installation, provide flood control and protection from salt water intrusion for Salinas Valley agriculture. With completion of the Nacimiento Water Project, drinking water will be delivered to communities in San Luis Obispo County. Increased silt and sedimentation will occur due to training and traffic, decreasing reservoir capacity and the quality of drinking water. This problem already exists on the "tank trail" easement between Ft Hunter-Liggett and Camp Roberts.
13. Being a relatively rural, agricultural area, there is no public transportation. Having only two roads entering and exiting the installation and an increase of 12,000-20,000 additional soldiers, support staff and families would have a severe impact on traffic congestion and an extreme increase in the safety of pedestrians and bicyclists.
14. Infrastructure to support the increase in soldiers and families (schools, medical services, shopping, etc.) is lacking, with significant services available in Paso Robles, approximately 65 miles south and Salinas, approximately 60 miles north.

On September 19, 2006 the National Park Service completed the "Fort Hunter Liggett Special Resource Study". The NPS concluded that Fort Hunter Liggett contains "nationally significant natural and cultural resources suitable for inclusion in the National Park system".

The very nature of the resources on Fort Hunter Liggett itself renders it unsuitable for expansion. Its proximity to National Forest, Wilderness and public recreation resources, as well as its adverse environmental and socioeconomic impact on municipalities in the region further impair its suitability for expansion. For all of the stated reasons we reaffirm the conclusion that the alternative of "NO ACTION" is the only appropriate course of action for Fort Hunter Liggett.

Because the DPEIS has only recently been released, our organization has not had the opportunity to present additional data omitted from the DPEIS and has not had the opportunity to submit corrections to erroneous data included in the DPEIS. Please accept this document as a formal request for an extension of time to March 31, 2008 to submit and correct such data before reaching a final decision with respect to Fort Hunter Liggett.

Given the magnitude of the proposed activity and the significant impact to the base as well as the entire region, we feel this extension request is reasonable.

Thank you for accepting our organization's input on this matter.

Sincerely,



Thomas A. Hopkins, President
Ventana Wilderness Alliance

cc: Senator Diane Feinstein
Senator Barbara Boxer
Representative Sam Farr
Representative Lois Capps
Governor Arnold Schwarzenegger.

Comment Y-35

James Dodson, CEO, Fairbanks Economic Development Corporation

10/11/2007 THU 9:42 FAX 907 451 9534 FEDC

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FAIRBANKS
Economic Development
CORPORATION A COMMITMENT

301 Cushman St., Suite 301, Fairbanks, AK 99701

October 10, 2007

Public Affairs Office
U.S. Army Environmental Command, Building E4460
5179 Hoadley Road
Attention: IMAE-PA
Aberdeen Proving Ground, MD 21010-5401

Attention: IMAE-PA

RE: Review of Draft Programmatic Environmental Impact Statement, August 2007

Dear Sirs,

I am writing to express my support for the position that Fairbanks North Star Borough Mayor, Jim Whitaker, expresses in his letter to you dated October 5, 2007. I believe Mayor Whitaker clearly delineated the many advantages and mission enhancing benefits the US Military receives from basing troops in Alaska and particularly Interior Alaska.

I appreciate the complexity of the task you have been asked to accomplish and also the ultimate long term impact your decisions will have on the ability of our armed forces to be prepared for current and future challenges. I do not intend to consume your time by reiterating our Mayor's positions, but I would like reinforce three very significant points;

Encroachment:

Many military installations in the United States and around the world are facing time consuming, mission restricting and costly encroachment issues. Recognizing that it would be better to be proactive than reactive on any encroachment issues that may effect military installations in the Fairbanks North Star Borough (FNSB), the FNSB in co-operation with the US Army, Fort Wainwright and the US Air Force, Eielson Air Force Base conducted and completed a Joint Land Use Study. The community and the military bases are now working together on the recommendations suggested in this study to help assure military bases located within the FNSB are not compromised by encroachment.

The FNSB has also contracted the University of Alaska Fairbanks to create a 3D airspace model of Army and Air Force airspace training requirements. This model will be used to help alleviate any conflicts between military, commercial and private airspace use and help assure necessary training space is available to meet current and future military training situations.

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Training opportunity:

Many current military leaders consider Interior Alaska to be the best overland military training space available to the US Military in the world. Besides Fort Wainwright Post which encompasses 13,700 acres, military training space available in Interior Alaska includes the 655,000 acre Tanana Flats Training Area, the 247,952 acre Yukon Training Area and the 624,000 acre Donnelly Training Area.

Combined, this training space offers the US Military the unparalleled opportunity to provide today's soldier with integrated training not available at other bases. The Fort Wainwright soldier is able to train as he will fight, with the "joint team". The integration of ground, air and sea power into the training mission saves lives.

Cost of basing:

While Alaska offers the military many advantages, Alaska military basing is considered, by some, to be high cost. Two recent US Army Fort Wainwright initiatives are expected to substantially reduce the current cost of basing at Fort Wainwright.

Housing at Fort Wainwright is scheduled to be turned over to a RCI housing contractor early in 2008. While this transfer is not complete, indications are that several highly qualified bidders are participating in the Fort Wainwright RCI proposal.

An additional initiative is the utility privatization. A 50 year contract was recently awarded to Doyon Utilities LLC to own, manage and operate all utilities at Fort Wainwright. After the contract was awarded, I met with the management team of Doyon Utilities to express our congratulations and also to state our belief that providing the Army with a expandable, quality service at a reduced cost is key to our communities' and ultimately Doyon Utilities success. They assured me that they were up to that challenge and were committed to achieve those goals.

These two new Fort Wainwright initiatives will reduce the military's cost of infrastructure and also reduce operating costs. The partnership between military and private industry will produce results. The US Army had the vision to move forward with these initiatives, now we need to have the foresight to take advantage of the savings and consider Fort Wainwright for expansion.

Thank you for your consideration and above all else, thank you for your service to our country.

Sincerely



James L. Dodson, CEO
Fairbanks Economic Development Corporation

Comment Y-36

Frances J. Balcomb

I support the "No Action" alternative - if selected, this would leave Fort Hunter Liggett as an army reserve training base. All new infrastructure should be developed on nearby Camp Roberts which has previously developed massive infrastructure adjacent to the Highway 101 corridor.

I have spent hours and hours at FHL doing research for a novel, *Back to Go*, published in 2002. The preservation of archeological sites and preservation of so much of the woodland are now credited by indigenous people to the oversight of the Army -- a rare circumstance of praise. Please do not reverse this record now.

It would be a crime against nature and history to expand FHL. A better use of the 165,000 acres of FHL is an addition to the National Park System as outlined in the NPS' 2006 Fort Hunter Liggett Final Special Resource Study which can be viewed at: <http://www.nps.gov/pwro/fhl/fhlfinalreport.htm>. That study identified cultural and natural resources of national significance worthy of National Park protection including over 600 Native American archeological sites and the largest intact valley oak savannah remaining on public land anywhere. Why turn it into just another army base when it could be a unique National Park?

The alleged economic benefits to the area will be cyclical as the 3,500 to 5,000 member Brigade Combat Team is cycled to and from war zones for a year or more at a time (families will remain). National Park designation would likely provide an equivalent economic benefit to the area while preserving the unique natural and cultural resources.

FHL includes many tens of thousands of acres of de facto wilderness that should be preserved as such for the benefit of present and future generations and for the benefit of native wildlife and native plant communities that live there.

FHL includes over ten miles of the Nacimiento River which remains mostly pristine and suitable for permanent protection by inclusion in the National Wild and Scenic River System. FHL is home to several federally threatened and endangered species including the recovering California Condor. The Palisades section of the Nacimiento River includes high potential Condor nesting sites that could further the Condor's recovery.

Please do not move forward with expansion to FHL.

Thank you for your attention,

Frances J. Balcomb
4906 Buchanan St
Los Angeles, CA 90042

Comment Y-37

Robert L. Chestnutt

Route 1, Box 131
Ludowici, GA 31316
October 4, 2007

Public Affairs Office
U.S. Army Environmental Command
Building E4460
5179 Hoadley Road
Attention: IMAE-PA
Aberdeen Proving Ground, MD 21010-5401

To whom it may concern:

This comment is in regard to an article in the Hinesville, Georgia "Coastal Courier" concerning public comments on additional troops at Ft. Stewart, Georgia.

Being the son of a retired Air Force officer and a long-time resident of Long County, Georgia, a county in which a portion of the Ft. Stewart military reservation is located, I feel that I should comment on this matter. It is my opinion that the majority of the Long County commissioners have little regard for the environment, their constituents, and future homebuyers. I base my opinion on the fact that the commissioners are approving development of subdivisions in areas that may not be suitable for them. Because of the excessively dry weather we have been experiencing in this area during recent years, it is possible that areas that now appear suitable for building, may not actually be suitable during typical South Georgia weather. Environmentalists refer to this as "building dry."

It appears that any dwellings located in close proximity to wetlands including "Carolina bays" may be in jeopardy of experiencing poor drainage during wet periods. A homebuyer who is not familiar with this area may not realize the consequences of this until their septic tank fails to function, their vehicle gets stuck in the yard, or their walls begin cracking due to an unstable foundation.

In conclusion I will state that whether future homebuyers are active duty military, retired military, or civilian – homebuyer beware!

Thank you for the opportunity to comment.

Respectfully submitted,



Robert L. Chestnutt

Comment Y-38

Fran Fookes



Learning feels good.

1260 Texas Avenue, Suite F
Alexandria, LA 71301
Telephone: (318) 443-0949
1-800-EDUCATE
Fax: (318) 443-0591
Email: sylvan107@bellsouth.net
www.educate.com

October 4, 2007

US Army Environmental Command
Attn: Mr. Robert E. De Michele (DMAE-PA)
Public Affairs Office, Bldg. D4460
3179 Howdley Road
Abbeville Proving Ground, D 21010-3401

RE: Comments regarding the PEIS for Army Growth and Force Structure Realignment

Dear Mr. De Michele,

I, Frances V. Fookes, a resident of Alexandria, LA in Rapides Parish respectfully submit the following comments regarding the PEIS.

We, in our community, are looking forward to growth in every area possible so that our schools, our economy, our government and our entire region may benefit. A brigade at Ft Polk would bring thousands of soldiers as well as their family members to a community primed and ready for continued growth. The cultural impact and the socioeconomic benefits would be substantial and a welcome benefit to this tri-parish area.

I am convinced that our area has an established record of being extremely supportive of the military – all soldiers and their families. We have an excellent reputation for good schools, low crime, reasonable cost of living, and strong social and cultural integration between military and civilian personnel. We in this tri-parish area are committed partners in the growth of Ft. Polk. The addition of a brigade such as the one under consideration would result in improvement of the quality of life for the entire community.

I respectfully request that these comments become part of the decision making process for Army growth and force structure realignment.

Sincerely,

Fran Fookes
President, Sylvan Learning Center

Comment Y-39
Jared J. Marks

To: whom it may concern:

Hello my name is Jared J. Marks an inmate at Pelican Bay state Prison in California CAC# F-76112. This is in response to your notice in the USA Today newspaper to analyze alternatives for adding up to 74,200 active and reserve competent soldiers to US forces.

This may seem an outrageous suggestion to you but if considering all that I have heard of all branches of the military falling short of quotas or manpower. Maybe its time to re-evaluate screening of criminal background and the acceptance or denial thereof.

I'm serving 35 years for 4 serious felonies and although my case was overturned on appeal and I was now heading back to superior court for a 3rd trial. I know that if given the chance to serve my country in whatever way possible despite my past I would gladly volunteer my services to any branch accepting the hazards of duty and sacrifices one makes in serving willingly.

Realistically for me that possibility is not an option. At one point in my Juvenile life say age 15 I made a similar proposal to an Army Recruiter but because of my age then a few run-ins with the law at that time I was disparaged until I was 21 one year later I found myself in a Youth Authority for crimes committed as a Juvenile I served 3 years & was on Parole 2 years but because of my prior incarceration crime & Parole I was still disqualified to apply for recruitment. Keep in mind my crimes consist of property crimes Petty theft, Grand Theft Auto, Burglary & Possession & Receiving of Stolen property.

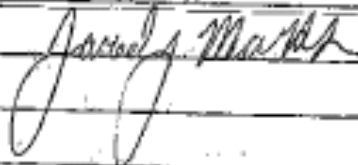
By then I was 19. By the time I was 21 I was in prison for Burglary, petty theft & taking a vehicle without an owners consent. I did 2 years. I was out 3 months & was back in for a Burglary, armed robbery, carjacking and Robbery with a rifle. Here I sit 26 yrs old looking back on my wasted life of crime waiting for the hopes of an appeal of a third trial.

But I can't help but think when I was younger had the qualifications not been so strict even having had a few infractions with the law had I been accepted into any branch to serve my hearts noble desire. To my country, Branch unit etc. I do believe my life would have turned into a career servicemen dedicated to duty & to serve to obey & follow orders to serve honorably, proudly & nobly. Instead of a career criminal following the orders of a prison guard a blight to society & my country a burden & statistic to our system.

So I ask you to consider re-evaluation your acceptance and qualification standards. You would be surprised how many thousands of lives you will save in a positive direction while meeting the ~~respective~~ Army's own needs & expectations. I am too late to save but help but there are thousands out there who are not or but only need given a chance.

I am

Your most humble servant.



Pelican Bay State Prison, I-76212 ASU-All

P.O. Box 7500

Crescent City CA 95532

Comment Y-40

B. VanLeer

To: PublicComments@aec.apgea.army.mil.

Subject: comment

I can only speak for Ft. Hood, Texas with below standard housing! It has improved the last several years, I am sure, however when my son was stationed there, rental housing offbase was infested! and very expensive and a long long waiting list for onbase housing. I hope it is improved BEFORE you put mor soldiers at any of the listed bases. Furthermore, I am against this war we are mired in, thanks to King George. I don't think we need a buildup, getting out is more to my liking, and I don't care how we do it.
B. VanLeer in Illinois

Comment Y-41
Harold Parkes

To: PublicComments@aec.apgea.army.mil

Subject: YPG Brigade

i would hope the powers to be would only consider a base that already had the infrastructure for such a build-up!! at present ypg does not have that,and should not be considered !!

please use my tax dollars wisley THANK YOU

harold parkes

Comment Y-42

Jim Kock

To: PublicComments@aec.apgea.army.mil

Cc: JNEWELL@carthagecsd.org; JBoak@mail.boces.com; James Kettrick

Subject: DPEIS - Brigade Stationing - Drum - Comments

Attachments: Drum EIS analysis.doc

Attached as a Word document are specific comments relating to the DPEIS issued 24 August 2007.

Thank you for the opportunity to provide comment.

James R. Koch

The following comments are directed at the Draft Programmatic Environmental Impact Statement (DPEIS) for Army Growth and Force Structure Realignment issued 24 Aug 07 for public comment. The comments are specifically aimed at the portions of the report dealing with Fort Drum, New York and the impact on schools.

As an affected school district, we regularly model demographics and conduct population analyses in order to predict our enrollment. The primary use of these projections is for budgeting, but a secondary use is to ensure sufficient space exists for the anticipated population. Our models have served us well in this regard, and they are specifically tuned to the demographic living on Fort Drum. Utilizing a 31 August population study provided by Fort Drum, we validated the model's underlying assumptions developed in 2005. Therefore, we feel that our comparisons do provide some additional local validity.

The distribution of numbers of children predicted by age in the Socioeconomic Impact Analysis (page 404) matches pretty closely to the model with the stark exception of one year old children (DPEIS value is 287, local value is 117). The DPEIS number stands in stark contrast to the rest of the model and doesn't track at all with the pattern. Request that this number be reevaluated.

In a similar vein, the population number 1605 (Table 4.18-6) as the total number of children in the IBCT/HBCT model seems high. The chart on page 387 shows depicts the expected grade distribution for the IBCT/HBCT. Almost 2000 of the soldiers in the IBCT are pay grades E3 and E4. If you assume EVERY soldier E5 and above is married (and that is a stretch), you have 1175 married soldiers. If you use the metric for on-post housing, .62 children in public school per housing unit (with more at the higher ranks, but the married without children types lower the mix considerably), you only have 725 or so children in school, not the 898 (ages 5-18) suggested in the EIS in the table. A higher metric of .86 children of school age can be applied, but some of these children

will attend private/parochial schools and will not impact on the district (though we must be prepared to accept them should they elect to come). For this reason, we use the .62 multiplier as our macro model.

The DPEIS author's numbers are “heavy”, but that isn't necessarily a bad thing because the tendency is for a conservative approach where it is better to be prepared for more and be surprised when the outcome is slightly lower. Our experience with Fort Drum is that their numbers are generally heavier than the local district’s model, but the district’s tend to reflect reality a bit more. This is likely due to different modeling techniques, including the parochial/home school factor include in the district’s model.

Finally, page 201 contains wording which presents a negative image of area schools and a lack of understanding of the nature of educational aid. Specifically, beginning on line 11, the drafts states, “With the growth of a BCT, the installation expects further overcrowding at local schools. However, the school systems affected may receive additional aid for the increase in students.”

The words “further overcrowding” implies that the schools are currently overcrowded and this situation will be exacerbated by the addition of a BCT. The fact is that the Indian River School District, the most heavily impacted district in the Fort Drum area, opened the current school year with the following average class sizes:

GRADE	AVERAGE CLASS SIZE
K	18.9
1	19.4
2	20.5
3	21.7
4	21.8
5	22.8
6	23.1

Source: 5 Sep 07 opening enrollment data

As this data demonstrates, classes are not overloaded or overcrowded. In addition to favorable class sizes, the district retains a number of classrooms which can be converted into full time class use should the need arise.

The District is in the midst of adding to its infrastructure to meet the increasing demand it foresees as a result of the Army’s recent modularity transformation. Over the past 20 years we have added in excess of \$100 Million in infrastructure to meet the needs of a growing presence at Drum. The current \$40,693,800 effort is along a similar path and shows the District’s commitment to providing a quality education. We respectfully request that any reference to “further overcrowding” or “overcrowding” in general be deleted from the final report.

The issue of aid in the same paragraph is interesting. Currently, children of military members residing off post receive a reduced weight of 0.2, while those living on post

receive a weight of 1.0. The impact aid program (appropriation) is only funded at approximately 60% of the requirement (authorization), so while any aid is appreciated, it does not mitigate the fact that it is not fully funded, here or anywhere else in the United States. The state of New York and the local property tax payer make up the difference, and do so willingly because education is a high priority locally. The federal aid flow for children living off-post is miniscule when compared to New York sources of funding. We request that references to “additional aid” reflect the sourcing and not leave the impression that it is predominantly federal.

The specific school districts affected by growth are directly aligned to where the soldiers will reside. The children will go to school where their parents live (New York is not an open enrollment state – we rely on district residency to determine the district of attendance). Thus, housing becomes key to school construction. Regardless of the district, the sooner we can determine an accurate flow of soldiers, the better we can anticipate the construction requirements.

Thank you for providing us an opportunity to comment on the DPEIS.

Comment Y-45

Shelley Hossenlopp

To: PublicComments@aec.apgea.army.mil.

Subject: comments on 17 posts

Please don't forget to consider the ability of the spouses of the soldiers to find and obtain jobs in these communities.....

--

Very Respectfully,
Shelley Hossenlopp

Comment Y-46

Renee Grigg

To: PublicComments@aec.apgea.army.mil

Subject: fort drum

I do not want to see more troops sent to fort drum anytime in the near future. We need time to adjust to the new 3rd Bde. There are too many planes flying and too much noise now.

Comment Y-47

Shawn S. Marsteller

To: publiccomments@aec.apgea.army.mil; jeffrey.marsteller@us.army.mil

Subject: Fort Riley

To Whom It May Concern:

I am the Army wife of Captain Jeffrey Marsteller. I live off-post here at Fort Riley and my Transition Team husband is deployed in Iraq.

I feel with the return on the Big Red 1 from Germany and with the increased numbers here already, Fort Riley would not be a good location for any of the 6 new brigade combat teams. There is already 6-9 months wait for housing and the housing available off-post is expensive due to Kansas State University students occupying much of it. The housing that is available is not priced in the range to make it affordable for enlisted families.

Additionally, the hospital and clinics are still not able to handle the current amount of soldiers and families here. I have been asked to wait 7 days for urgent care appointments on post or wait 3-4 days for an off-post referral. I have also been told to call back for routine appointments as there were "no more available". When I cannot wait for care, I have sat in the ER for 7 hours (not an exaggeration) many times, with sick children.

Please do not ask more soldiers and families to put themselves in this situation. It is very disheartening.

Sincerely,

Shawn S. Marsteller

Comment Y-48
Andrea Pearson

To: PublicComments@aec.apgea.army.mil

Subject: Ft Hood Texas

Attachments: Card for <andrea.pearson1@us.army.mil>

I would only suggest adding more to Ft Hood, Texas if you plan on adding to the base. You could easily build up North Fort Hood. Adding housing and other needed places. I live off post in Gatesville. It is north of post and I have little to no traffic up here. On post however, between 6:30-8:30am, anywhere between North Ave and 761st Tank Battalion around Hood Road is just jammed. Sometimes you can't even get across streets. I think the post needs to spread out a bit more to ease the population overflow.

Comment Y-49

Tracy Eby

To: USAEC Public Comments

Subject: New Brigade at FT. Campbell

I have lived in Clarksville my entire adult life, I am an active duty military officer. I have seen a lot during my tenure here and one of the most disturbing is the building and expansion that Clarksville has gone through in the past decade. There seems to have been no planning or foresight, traffic is appalling, and the infrastructure to support it isn't happening. Example, I have not moved in the last five years yet my son's have gone to 4 different schools because of re-zoning.

I would not recommend the increase of a new brigade without a lot of research done first and not with the city of Clarksville, they will only a benefit from the growth, it should be from the eye's of the public, the one's who suffer from poor city planning and profit.

Comment Y-50

Dan Raymond

To: PublicComments@aec.apgea.army.mil

Subject: Draft Programmatic Environmental Impact Statement

The Yuma Proving Ground is critical in training troops for any warfare, but essential for Iraq & Afghanistan type locations. Nowhere in the U.S. can provide the REALISM that Yuma Proving Grounds can.

People from Yuma love the Marine Corps Air Station and Yuma Proving Ground. We have excellent schools, access to great medical facilities, recreation at the sand dunes and Colorado river, very inexpensive to live here which the troops will love and just a 2 hour drive to San Diego or Phoenix, AZ.

Please include Yuma Proving Grounds as one of your picks.

Thank You

Dan Raymond
23 year resident of Yuma, AZ.

Comment Y-51

MAJ Bruce Revers

To: 'Public-Comments@aec.apgea.army.mil'

Subject: Growing the Force Assessment

In a recent Army Times article, the current U.S. Army Environmental Command review of potential growth sites was commented on. The article cited that for the 74,000 increase in manning, 17 active duty posts were named, with no mention of current Reserve Installations.

Last year, similar studies in congressional committees reviewed Camp Shelby, MS and Camp Grayling MI as potential sites for growth of the force.

Has the initial criteria of this study already ruled out Reserve Installation as a future option for growth?

MAJ Bruce Revers

Comment Y-52

Patrick Lewis

To: PublicComments@aec.apgea.army.mil

Subject: Home for New Brigades

Importance: High

To Whom it may Concern:

I read the article about finding a home for the new Brigades for the U.S. Army, the places that were recommended so far are good, especially FT. Hood, FT. Bragg, FT. Bliss, and FT. Riley. These post have plenty of land that is available, also the communities are growing to accommodate the new Soldiers. I would like to recommend one other place that has not been mention probably, please give it some thought. The community is growing and it will be a welcome by the community, IAM talking about SHAW AFB, S.C. (SUMTER, S.C.). There will be a U.S. Army unit there from the Third Army I believe, and we have strong commitment to the military, our Congressman and Senators back the military 100%. The strong points to this is that this unit will already be on a air base, there is plenty of land, deployment can be quick also to anywhere. You have the air base and Charleston port for shipment also, this can save the military lots of money in the long run, as well as provide for a strong defense for our nation. Please consider my recommendation please, and contact me if you can of your decisions either way.

SFC Lewis, Patrick O.
Battalion Logistics NCO Trainer/Advisor 1-4 2IA Bn

Comment Y-53
Donald Hoskins

To: PublicComments@aec.apgea.army.mil

Subject: Location of six Brigades

With the ever increasing, speed with that terrorist can use these days, I would suggest that a wider dispersion of troops is needed to meet this and future threats.

Florida has many sites that would serve as a home base for these Brigades.

Camp Blanding is closely located to the city of Jacksonville with its ports and has two major Naval Air stations.

Donald Hoskins

Comment Y-54
Sandra Lewis

To: PublicComments@aec.apgea.army.mil

Subject: Public Notice in USA Today

I wanted to comment on your public notice that you placed in the USA Today on 8/28/07. If this is a backwards way to re-institute the draft, I am thoroughly and aggressively opposed. I fully support a 100% troop withdrawal from Iraq. I think our volunteer troops should be sufficient to work in Afganistan where we should have been implementing our full force military action. I have already contacted my Senators Joe Biden and Tom Carper and have also contacted my representative in Congress Mike Castle. No Way to the Draft, this War in Iraq should never have been started!

Sandra K. Lewis

Comment Y-55

Guenter Monkowski

To: PublicComments@aec.apgea.army.mil

Subject: The Neo Nazi Invasion!

The baby killer army needs more training grounds for their atrocious cowardly acting mercenario army.

No common sense, but let's create another dump on top of the other 749 dumps which have already been created by the "heroic baby killer" army.

And for what! You have been defeated in all wars even in WW II. it was the Russian army which did all the work for you.

The support for the "baby killer" army has vanished.

R. I. P. or R. I. B. (rest in brain washed attitude)

--

Guenter Monkowski

Comment Y-56
Marilyn Stewart

To: PublicComments@aec.apgea.army.mil
Subject: Additional Brigade at Fort Polk

To whom it may concern:

I feel strongly about the greatest use possible of outstanding facilities that are already available at Fort Polk. This would be a great economic boost for the Central La. area and best use of our tax funds.

Thank you for your consideration.

Marilyn Stewart

Central Louisiana resident....Pineville, La.

Comment Y-57

Nancy Thiels

To: PublicComments@aec.apgea.army.mil

Subject: Input on Fort Polk

I am a resident of Alexandria, Rapides, Louisiana and respectfully request the addition of 1,000 to 7,000 soldiers and families to Fort Polk would help mitigate the negative impact on our region experienced as a result of the BRAC of 1991.

I request that these comments become part of the decision-making process for Army growth and force structure realignment.

Sincerely,

Nancy L. Thiels

Comment Y-58

Von Hatley

To: 'PublicComments@aec.apgea.army.mil'

Subject: Support of Ft. Polk

The presence of Ft. Polk in Louisiana has been mutually successful for many decades for both the US Armed services and our state. Many of the people who have worked and lived there have stayed in our area and succeeded in finding employment after their military tenure, and raised their families in a safe environment. I am in full support of further expansion in our state for this project, and look forward to continued commitment to the project.

Sincerely,

Von Hatley
Director, Durable Goods/Manufacturing
Louisianan Economic Development

Comment Y-59

Terry Conner

To: PublicComments@aec.apgea.army.mil

Subject: Additional troops to Ft. Polk LA

I am a landowner in Vernon Parish LA. I currently own approx 100 acres in the parish none of which would be impacted by the addition of incremental troops. I am excited about the positive socio-economic impact that the increasing of the number of troops housed at Ft. Polk would bring to the area. The multiplier effect of the increased spending in the area brought by the increased number of troops would provide an immeasurable positive impact on all aspects of the local economy which is desperately needed. The general populace is very supportive of the military presence in the community.

Our economic development efforts are directed toward utilizing our most valuable resource which is the spouses of our valued military population. This resource is what differentiates from many other "small" towns and the spouses respective skills and multicultural nature will enable us to attract businesses that will provide gainful employment for this unique labor force. This will also minimize the need for businesses to outsource such service jobs to other countries. It is a "win" situation for the Army, the local economy and for incoming businesses that need comparatively low cost facilities and a stable labor force to provide their services.

BRING THEM ON-WE WANT THEM AND NEED THEM

Terry Conner
REALTOR ASSOCIATE
ERA SARVER REAL ESTATE, Inc.

Comment Y-60

Several Members (more than 1,000) of the Fort Polk Community



Kathleen Babineux Blanco
Governor

State of Louisiana
LOUISIANA ECONOMIC DEVELOPMENT

Michael J. Olivier, CEED
Secretary

October 8, 2007

Mr. Robert E. Demichele
Department of The Army
U.S. Army Installation Management Command
U.S. Army Environmental Command
5179 Hoadley Road
Aberdeen Proving Ground, MD 21010-5401

Via U.S. Mail, Fax, & E-mail

RE: Comments regarding the PEIS (Programmatic Environmental Impact Statement) for Army Growth and Force Structure Realignment

Dear Mr. DeMichele:

I am writing in my capacity as the Secretary for the Louisiana Department of Economic Development to submit the following comments regarding the PEIS:

- Based on previous troop levels at Fort Polk, that were equal to and exceeded those being contemplated in this PEIS, I believe that an addition of up to 7,000 soldiers at Fort Polk would have a positive impact on our schools, our economy, and our entire region.
- Based on historically higher troop levels at Fort Polk, I believe that any impact on environmental factors, such as noise and traffic congestion, would be minor, while the socioeconomic and cultural impact would be overwhelmingly positive.
- I believe that the ROI (Region of Impact) for Fort Polk (Beauregard, Vernon, and Rapides Parish) has an established record of being extremely supportive of the Army and more specifically; soldiers and their families. Each of the communities in the ROI has an excellent reputation for good schools, low crime, stable and reasonable cost of living, and strong social and cultural integration between the Army and civilian communities.
- I believe that the communities in the ROI are committed partners in the growth of Fort Polk.
- I believe that the addition of 1,000 to 7,000 soldiers and families to Fort Polk would help mitigate the negative impact on our region experienced as a result of the BRAC (Base Realignment & Closure) of 1991. The addition of 1,000 to 7,000 soldiers and families to Fort Polk and the resulting increase in population and wages would improve the quality of life for civilians and Army families.

I respectfully request that these comments become part of the decision-making process for Army growth and force structure realignment.

Sincerely,

A handwritten signature in black ink that reads "Michael J. Olivier".

Michael J. Olivier, CEED
Secretary

Post Office Box 94185, Baton Rouge, Louisiana 70804-9185 (225) 342-3000
www.LouisianaForward.com

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