
Final Environmental Assessment

**Construction and Operation of
2nd BCT and 159th CAB
Complexes at Fort Campbell,
Kentucky**

Prepared for
**Fort Campbell and
U.S. Army Corps of Engineers, Mobile District**

December 2005

CH2MHILL
Atlanta, Georgia

Copyright 2005 by CH2M HILL, Inc.
Reproduction and distribution in whole or in part beyond the intended
scope of the contract without the written consent of CH2M HILL, Inc. is prohibited

EXECUTIVE SUMMARY

As a result of reorganizations directed by the Army Modular Force and the Integrated Global Presence and Basing Strategy actions independent of Base Realignment and Closure, additional combat and supporting forces have been assigned to Fort Campbell. Specifically, the Army has stationed the 2nd Brigade Combat Team (BCT) and 159th Combat Aviation Brigade (CAB) at Fort Campbell. The 2nd BCT is housed in modular facilities that were not designed for, nor are they adequate for, providing permanent support for the operational requirements of unit. The 159th CAB is currently located in other permanent facilities that were temporarily vacated by deployed units of the 101st Airborne Division. When the deployed units of the 101st return to Fort Campbell, the 159th CAB will be displaced and no other permanent facilities are adequate for this unit; therefore, new facilities must be constructed.

By building facilities and relocating the 159th CAB Complex adjacent to the 2nd BCT Complex in the Clarksville Base portion of Fort Campbell, the two units will be able to share community services facilities, thus eliminating the need to provide separate facilities. Relocating to Clarksville Base also will increase the efficiency of operation of the 159th CAB, as it would be closer to its designated training area, the Sabre Helipoint. At present, members of the 159th CAB must travel across the cantonment area from their location on the north side of Fort Campbell near Campbell Army Airfield to the heliport, which is south of Clarksville Base. The proposed relocation will reduce traffic in the cantonment area and save resources and time currently spent in travel.

Proposed Action (Preferred Alternative)

Fort Campbell proposes to construct permanent operational, barracks, and community services facilities to support the 2nd BCT and the 159th CAB on the southeast portion of Clarksville Base. Because this EA is developed prior to development of specific site designs and building layouts, analysis was based on the general space requirements and the defined construction footprint. The proposed action entails construction and operation of three components:

- 2nd BCT Complex,
- 159th CAB Complex, and
- Community Services Facilities.

The 2nd BCT Complex and the 159th CAB Complex would each contain barracks, dining facilities, motor pools, headquarters and operations facilities, and supporting infrastructure and utilities. Each complex would contain approximately 2,500,000 square feet of facilities, but the footprint would be less due to use of multi-story buildings where possible. Community Services Facilities, comprising a multi-purpose fitness center, chapel center, and recreational area of four athletic fields with a concession stand, would be located between the two units and would be shared by the 2nd BCT and 159th CAB.

To enable construction, 32 existing aboveground storage facilities (7900-series buildings) from Clarksville Base would be demolished. The construction area for the proposed action was designed to avoid buildings that contribute substantially to the Cold War era significance of Clarksville Base (7800-series and 7900-series buildings) and a wooded area would remain between the new construction and the 7800-series buildings.

No Action Alternative

Under the no action alternative, Fort Campbell would not construct or operate the 2nd BCT Complex and the 159th CAB Complex, and troops would be maintained in existing facilities and structures. The no action alternative would not satisfy the need for the proposed action, but it is evaluated in this EA as a benchmark for evaluation of the potential effects of the proposed action.

Alternatives Considered and Eliminated from Analysis

The following four scenarios were evaluated and subsequently eliminated as alternatives for the 2nd BCT and 159th CAB facilities construction.

Construct 2nd BCT Complex and 159th CAB Complex in the Fort Campbell Cantonment Area

No open space in the cantonment area is available for construction of permanent facilities. Demolition of the modular facilities currently being used and construction of new facilities on those sites is not practicable, as troops have ongoing operations and must use the modular facilities until the permanent facilities are available. For these reasons, construction of facilities in the Fort Campbell cantonment area was not considered practicable.

Renovate and Convert Modular Facilities to Permanent Facilities for 2nd BCT and Relocate 159th CAB to Existing Facilities in Cantonment Area

The modular facilities (trailers) currently used by the 2nd BCT are not designed as nor are they adequate for permanent facilities. No buildings in the cantonment area are available for use by the 159th CAB. Current facilities in the cantonment area are operating at their capacity. For these reasons, the alternative of renovation of the current modular facilities for the 2nd BCT and placement of the 159th CAB in existing facilities in the cantonment area is not practicable and, accordingly, is not evaluated in detail in this EA.

Construct 2nd BCT Complex and 159th CAB Complex in a Different Location Outside Clarksville Base

Two federally protected bat species occur on Fort Campbell, but the portion of Clarksville Base selected for the proposed action does not provide suitable habitat for these species, while undeveloped areas outside of Clarksville Base may provide suitable habitat for these bats. Use of a location outside of Clarksville Base would require extended consultation with the U.S. Fish and Wildlife Service and completion of detailed surveys, which would have unacceptable impacts on the project schedule and budget. Clarksville Base has been subjected to clearing, human use, and land disturbance in the past 40 years, while undeveloped areas outside of Clarksville Base on Fort Campbell have been undisturbed for longer than 40 years. As a result, the potential for impacts to environmental resources other than protected species would be greater than that on Clarksville Base. Because siting facilities in an undeveloped location outside Clarksville Base would have a major impact on the successful and timely implementation of the required action and would likely have greater environmental impacts, construction of the proposed action at a location outside Clarksville Base was not considered practicable.

Construct 2nd BCT Complex and 159th CAB Complex in a Different Location within Clarksville Base

In consultation with the Tennessee Historical Commission, Fort Campbell has determined that Clarksville Base is eligible for the National Register of Historic Places as a historic district.

Preliminary cultural resource evaluations indicate that use of an alternate location within Clarksville Base would have greater adverse impacts on the Clarksville Base historic district than the proposed action. Other sites within Clarksville Base contain structures that contribute more toward the Cold War era significance of the base than the aboveground storage buildings in the proposed project area. The mitigation required to offset loss of the more significant structures, which could include unique buildings, would be more extensive and costly than that for the proposed action. For this reason, construction of facilities sufficient for the 2nd BCT and 159th CAB at any alternate Clarksville Base location was not considered practicable.

Findings

Consequences of the Preferred Alternative (or Proposed Action)

Implementation of the preferred alternative would result in temporary negative impacts to air quality, water quality, and traffic as a result of construction. The preferred alternative would also result in generation of construction-related noise during demolition and subsequent construction activities. All of these impacts would be temporary and less than significant. In addition, wildlife from the project area would also be displaced, both temporarily and permanently, but this impact would be minor and temporary as animals would acclimate to the areas into which they relocate or return to areas adjacent to the construction sites. Migratory birds would be displaced from the project area, but ample suitable habitat remains on Fort Campbell and in the region. One breeding season may be lost by birds that typically nest in the construction area as a result of construction, but this loss would not threaten local populations and would be less than significant.

Permanent negative impacts to land use, geology and soils, and vegetation, resulting from construction activities would occur with implementation of the preferred alternative, but these impacts would be localized and would be less than significant. A small isolated wetland would be eliminated, but this loss would be less than significant relative to the wetlands remaining in undeveloped portions of the installation and the region.

The preferred alternative would result in a loss of approximately 325 acres of hunting area, but ample hunting areas would remain on Fort Campbell and in the surrounding area to accommodate the hunting demand. Four athletic fields and a fitness center would be constructed to provide recreational opportunities for the personnel assigned to the 2nd BCT and the 159th CAB.

A minor positive impact to the local economy would result from construction-related jobs and construction-related purchases of supplies and materials. In addition, long-term improvement in traffic in the cantonment area would result from two impacts. First, the 159th CAB would no longer be forced to travel the length of the cantonment area to reach its assigned heliport; and second, when the deployed units of the 101st Airborne Division returned to the cantonment area, the troops of the 2nd BCT and 159th CAB would no longer be stationed there, resulting in a net reduction in traffic volume.

Impacts to the Clarksville Base historic district would result from the demolition of 32 storage units associated with the Clarksville Base mission; however, these units are not substantial contributors to the Cold War era significance of the historic district. At present, Fort Campbell is negotiating with the State Historic Preservation Office (SHPO) to determine appropriate mitigation for these impacts. The mitigation measures developed in coordination with the SHPO would be implemented prior to project implementation and would reduce the impacts to less than significant.

No appreciable impacts on other resource areas or any significant cumulative or indirect impacts would result from implementation of the proposed action.

Consequences of the No Action Alternative

The military mission of the 2nd BCT and the 159th CAB would be substantially inhibited as these units continue to use facilities for purposes they were not designed for, as well as use overcommitted resources/facilities.

At present, the 2nd BCT uses modular facilities for all of its administrative and classroom training. While these facilities have been sufficient to meet the short-term needs of the 2nd BCT, continued stationing in these modular buildings, which were not designed for and are not adequate for permanent stationing of combat troops, will result in an inefficient work environment, which would ultimately adversely affect the ability of the 2nd BCT to achieve its assigned missions.

The 159th CAB uses facilities vacated by deployed 101st Airborne Division units and support facilities on an as-available basis. When the deployed units of the 101st return to Fort Campbell, these facilities will have to accommodate twice the number of troops that they were designed for. Forced operation under these conditions would adversely affect the abilities of the 159th CAB and 101st Airborne Division units to achieve their assigned missions.

The no action alternative would have no short-term positive impact on the local economy. Traffic in the cantonment area would not improve, as the 159th CAB would not be relocated. Upon return of the deployed units of the 101st Airborne Division, traffic congestion in the cantonment area would increase as the number of troops routinely using the area would increase. As a result of the increased traffic volume and congestion, vehicle emissions in the cantonment area would increase, thereby causing reductions in air quality. There would be no impacts, positive or negative, to other resource areas.

Conclusions

With the proposed mitigation measures, there would be no significant impacts as a result of the proposed action. The proposed action would result in both short- and long-term positive impacts on the mission capabilities for the 2nd BCT and the 159th CAB. Therefore, a Finding of No Significant Impact is warranted for the proposed action.

Contents

EXECUTIVE SUMMARY	ES-1
1.0 PURPOSE, NEED, AND SCOPE.....	1-1
1.1 Introduction.....	1-1
1.2 Purpose and Need for Proposed Action	1-1
1.3 Scope of Analysis	1-3
1.4 Agency and Public Participation.....	1-5
1.5 Regulatory Framework	1-5
2.0 PROPOSED ACTION AND ALTERNATIVES.....	2-1
2.1 Proposed Action (Preferred Alternative)	2-1
2.1.1 2nd Brigade Combat Team Complex	2-1
2.1.2 159 th Combat Aviation Brigade Complex.....	2-5
2.1.3 Community Services Facilities	2-5
2.1.4 Schedule.....	2-5
2.2 Alternatives.....	2-5
2.2.1 Construct 2 nd BCT Complex and 159 th CAB Complex in the Fort Campbell Cantonment Area.....	2-6
2.2.2 Renovate and Convert Modular Facilities to Permanent Facilities for 2 nd BCT and Relocate 159 th CAB to Existing Facilities in Cantonment Area	2-6
2.2.3 Construct 2 nd BCT Complex and 159 th CAB Complex in a Different Location Outside Clarksville Base	2-6
2.2.4 Construct 2 nd BCT Complex and 159 th CAB Complex in a Different Location within Clarksville Base.....	2-7
2.3 No Action Alternative.....	2-7
3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES	3-1
3.1 Introduction.....	3-1
3.2 Land Use	3-1
3.2.1 Affected Environment.....	3-1
3.2.2 Consequences	3-4
3.3 Air Quality	3-4
3.3.1 Affected Environment.....	3-4
3.3.2 Consequences	3-6
3.4 Noise.....	3-7
3.4.1 Affected Environment.....	3-7
3.4.2 Consequences	3-8
3.5 Geology and Soils.....	3-9
3.5.1 Affected Environment.....	3-9
3.5.2 Consequences	3-10
3.6 Water Resources	3-12
3.6.1 Affected Environment.....	3-12
3.6.2 Consequences	3-14
3.7 Biological Resources	3-16
3.7.1 Affected Environment.....	3-16
3.7.2 Consequences	3-20

3.8	Cultural Resources	3-21
3.8.1	Affected Environment.....	3-21
3.8.2	Status of Cultural Resource Inventories and Section 106 Consultation	3-22
3.8.3	Native American Resources.....	3-23
3.8.4	Consequences	3-24
3.9	Socioeconomics	3-25
3.9.1	Affected Environment.....	3-25
3.9.2	Consequences	3-26
3.10	Transportation.....	3-27
3.10.1	Affected Environment.....	3-27
3.10.2	Consequences	3-28
3.11	Utilities	3-30
3.11.1	Affected Environment.....	3-30
3.11.2	Consequences	3-31
3.12	Hazardous and Toxic Substances.....	3-32
3.12.1	Affected Environment.....	3-32
3.12.2	Consequences	3-33
3.13	Cumulative Effects Summary	3-34
3.13.1	Preferred Alternative.....	3-35
3.13.2	No Action Alternative.....	3-36
3.14	Mitigation Summary	3-36
4.0	FINDINGS AND CONCLUSIONS	4-1
4.1	Findings	4-1
4.1.1	Consequences of the Preferred Alternative.....	4-1
4.1.2	Consequences of the No Action Alternative.....	4-5
4.2	Conclusions.....	4-5
5.0	LIST OF PREPARERS	5-1
6.0	DISTRIBUTION LIST	6-1
7.0	LITERATURE CITED	7-1
8.0	ACRONYMS	8-1

TABLES

2-1	Aboveground Storage Buildings to be Demolished for the Proposed Action	2-3
2-2	Brigade Combat Team Facilities	2-3
2-3	Community Services Facilities	2-5
3-1	National Ambient Air Quality Standards.....	3-5
3-2	Bird Species of Conservation Concern Occurring on Fort Campbell.....	3-18
3-3	Structures Within the Preferred Alternative Project Vicinity	3-23
3-4	Project Design Features to be Implemented with the Proposed Action.....	3-36
3-5	Mitigation Measures to be Implemented with the Proposed Action.....	3-37
4-1	Summary of Potential Environmental and Socioeconomic Consequences.....	4-2

FIGURES

1-1 Location of Fort Campbell..... 1-2
1-2 Location of Proposed Action on Clarksville Base at Fort Campbell, Kentucky 1-4
2-1 Location of BCT Complex, CAB Complex, and Community Services Facilities 2-2
3-1 Land Uses for Fort Campbell and Surrounding Areas..... 3-3
3-2 Locations of Sinkholes in the Project Vicinity 3-11
3-3 Wetlands on Fort Campbell in the Proposed Project Vicinity 3-15
3-4 Known Occurrences of Sensitive Species on Fort Campbell..... 3-19
3-5 Roads within the Proposed Project Area 3-29

APPENDICES

A Agency Scoping
B Federal and State Protected Species Known to Occur in Montgomery County, Tennessee

This page intentionally left blank.

SECTION 1.0

PURPOSE, NEED, AND SCOPE

1.1 INTRODUCTION

In October 1999, the Secretary of the Army and the Chief of Staff of the Army articulated a vision about people, readiness, and transformation of the Army to meet challenges emerging in the 21st century and the need to be able to respond more rapidly to different types of operations requiring military action. In March 2002, the Army published the Final Programmatic Environmental Impact Statement for Army Transformation (the Army Transformation PEIS, USACE, 2002) for its proposal to conduct a multi-year, phased, and synchronized program of transformation; and, in April 2002, the Army issued a Record of Decision (ROD) reflecting its intent to transform the Army. Over a 30-year period, the Army will conduct a series of transformation activities affecting virtually all aspects of Army doctrine, training, leader development, organizations, installations, materiel, and soldiers. As part of its long-term transformation process, the Army is initiating permanent reorganization of its existing force structure, as well as returning selected troop units from Korea and Europe to the United States. The reorganization of the existing Army force structure is referred to as the Army Modular Force (AMF), and the program to return troops from Europe and Korea to the United States is referred to as the Integrated Global Presence and Basing Strategy (IGPBS).

The AMF and IGPBS actions are independent of base realignment and closure (BRAC). The actions under consideration in this Environmental Assessment (EA) are driven by AMF and IGPBS and are not related to actions that may be associated with BRAC. In July 2004, an EA was prepared to address the *Force Structure Modularity Transformation for Forces for Fort Campbell, Kentucky* (BHATE Environmental Associates, Inc., 2004). The EA discussed potential effects associated with implementing force modularization and construction of facilities or renovation of existing facilities to support temporary stationing of the units in the Fort Campbell cantonment area. Accordingly, subsequent to completion of the EA, construction of modular facilities was completed for the 2nd Brigade Combat Team (BCT). These modular facilities were not designed for, nor are they suitable for, permanent stationing of combat troops.

When the 159th Combat Aviation Brigade (CAB) (formerly designated Multi-Functional Aviation Brigade [MFAB]) was transformed at Fort Campbell under AMF, it was placed in facilities vacated by deployed units of the 101st Airborne Division. Upon return of the deployed units of the 101st Airborne Division, these facilities will no longer be available for the 159th CAB.

This EA analyzes potential impacts of construction associated with AMF and IGPBS actions that are to occur at Fort Campbell, an Army installation located in Tennessee and Kentucky (Figure 1-1). Specifically, the Army proposes to construct a standard BCT Complex to permanently house the 101st Airborne Division's 2nd BCT, a similar complex to house the 159th CAB, and associated community services facilities at Fort Campbell, in Tennessee. The EA also analyzes the impacts associated with routine operations of the new complexes. Details of the proposed action are provided in Section 2.1.

1.2 PURPOSE AND NEED FOR PROPOSED ACTION

The purpose and need for the proposed action is to provide Fort Campbell with the capabilities to meet the requirements of AMF and IGPBS, and to further enable the 101st Airborne Division to fulfill its military mission and support national defense requirements.

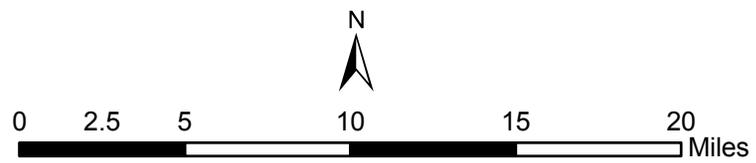
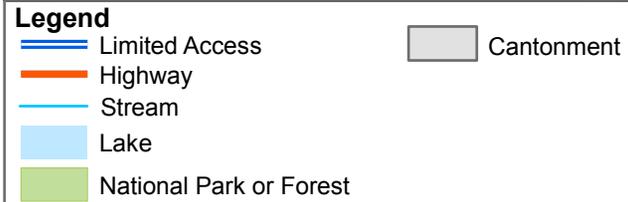
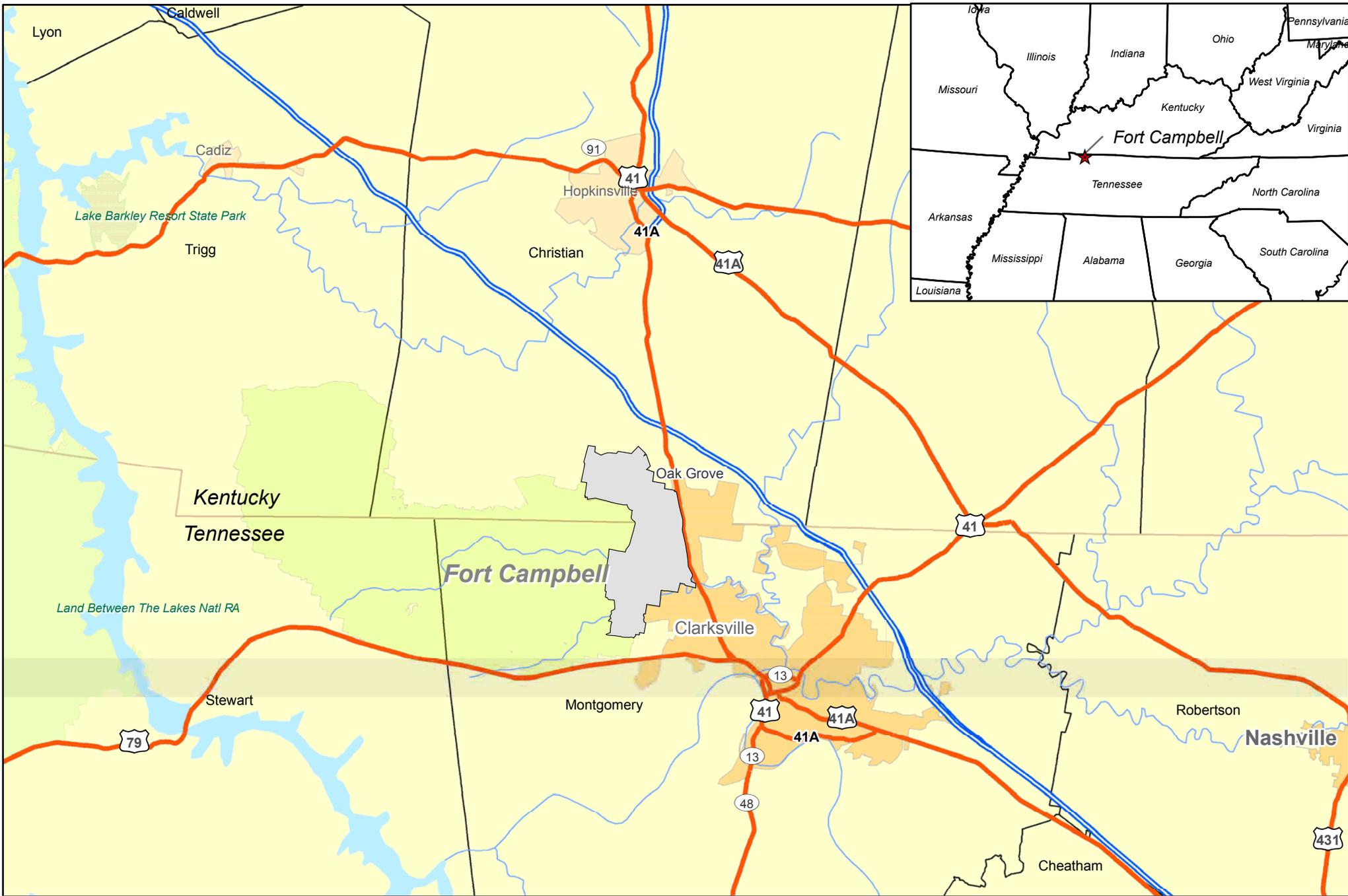


Figure 1-1
 Location of Fort Campbell
 2nd BCT/159th CAB EA
 Fort Campbell, Kentucky

As a result of AMF and IGPBS, additional combat and supporting forces have been assigned to Fort Campbell. Specifically, the Army has stationed the 2nd BCT and 159th CAB at Fort Campbell. Existing facilities at Fort Campbell were not designed for, nor are they adequate for providing permanent support for the operational requirements of the 2nd BCT and 159th CAB. Therefore, new facilities must be constructed. The 159th CAB is currently located in existing permanent facilities that are temporarily vacated by deployed units of the 101st Airborne Division, and there are no other adequate facilities available for the 2nd BCT. When the deployed units of 101st Airborne Division return to Fort Campbell, the 159th CAB will be displaced. If this proposed action were not to occur, the Army would not provide permanent facilities for the 2nd BCT and 159th CAB at Fort Campbell.

By building facilities and relocating the 159th CAB Complex adjacent to the 2nd BCT Complex in the Clarksville Base portion of Fort Campbell (Figure 1-2), the two units will be able to share community services facilities, thus reducing the cost of providing separate facilities at different locations. Relocating to Clarksville Base also will increase the efficiency of operation of the 159th CAB, as it would be closer to its designated training area, the Sabre Heliport. At present, members of the 159th CAB must travel across the cantonment area from their facilities on the north side of Fort Campbell near Campbell Army Airfield (CAAF) to the heliport, which is south of Clarksville Base. The proposed relocation will reduce traffic in the cantonment area and save resources and time currently spent in travel.

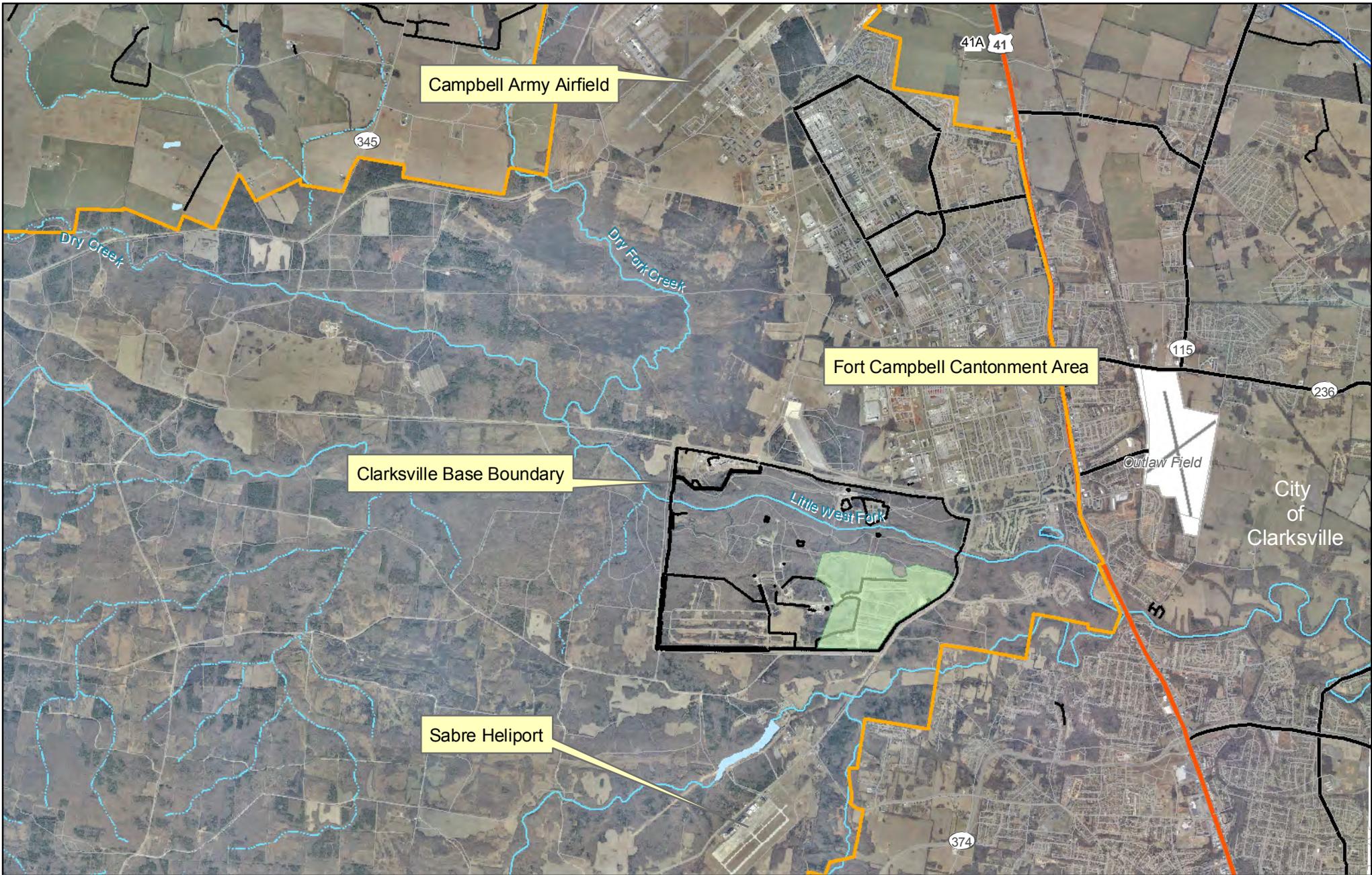
Fort Campbell applied a hierarchal policy in evaluating the potential for use of facilities at or near the post. Army Regulation (AR) 405-70 (*Utilization of Real Property*) establishes the policy that maximum use will be made of government-owned facilities. An installation may lease off-post facilities only when all existing on-post facilities are fully in use, no existing on-post facilities are available, and the requirement is identified in the installation's master plan, or the mission requirements dictate use of non-government owned facilities. Together, these policies establish a hierarchy of means to satisfy facilities space requirements. In descending order they are: use of existing facilities, modernization or renovation of existing facilities, lease of off-post facilities, and construction of new facilities.

The troops that would use the proposed construction are currently housed in modular structures unsuitable for permanent use, or in buildings temporarily vacated by deployed troops of the 101st Airborne Division that will soon be returning. Review of the usage status of permanent structures at Fort Campbell has determined that there are no unoccupied buildings that would provide adequate facilities for permanent use by these troops, nor are there any that could be modified to serve the purposes of 2nd BCT Complex and the 159th CAB Complex. Leasing of off-post facilities for combat forces is not feasible due to numerous training, equipment and safety issues. As a result, on-post construction is the only practicable means to satisfy facilities requirements.

1.3 SCOPE OF ANALYSIS

This EA has been developed in accordance with the National Environmental Policy Act (NEPA) and implementing regulations found at 40 Code of Federal Regulations (CFR) part 1500 through part 1508 (President's Council on Environmental Quality (CEQ), 2002), and 32 CFR 651 (Office of the Deputy Assistant Secretary of the Army, 2002). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives.

This EA identifies, documents, and evaluates the effects of construction of permanent facilities for the 2nd BCT and the 159th CAB at Fort Campbell. An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archaeologists, historians, and military



- Legend**
- Fort Campbell Boundary
 - Highway
 - Major Road
 - Proposed Project Area

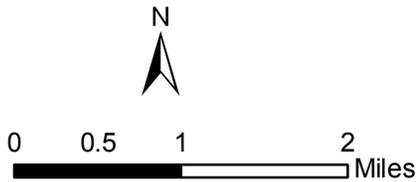


Figure 1-2
 Location of Proposed Action on
 Clarksville Base at Fort Campbell
 2nd BCT/159th CAB EA
 Fort Campbell, Kentucky

technicians has analyzed the proposed action and alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action. The proposed action and alternatives, including the no action alternative, are described in Section 2.0. Conditions existing as of 2005, considered to be the “baseline” conditions, are described in Section 3.0, Affected Environment and Consequences. The expected effects of the proposed action (also described in Section 3.0), are presented immediately following the description of baseline conditions for each environmental issue. Section 3.0 also addresses the potential for cumulative effects and mitigation measures (where appropriate). Section 4.0 presents the conclusions of the analyses.

This EA examines the potential environmental effects of the construction and routine operation of permanent facilities for the 2nd BCT and the 159th CAB. The proposed action will not result in any change in the current level of training at Fort Campbell or any alteration in restrictions and limitations placed on training activities as a result of the proposed construction. Should future events result in a need for increased training at Fort Campbell, a NEPA analysis will be completed prior to implementation of an increased level of training.

The proposed action would provide all facilities requirements to support these units. Reasonably foreseeable future needs will be assessed in the cumulative impacts/effects section of this EA. Any additional requirements stemming from other military actions will undergo separate NEPA analysis and evaluation.

1.4 AGENCY AND PUBLIC PARTICIPATION

The Army invites public participation in the proposed federal action through the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. All agencies, organizations, and members of the public having a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision-making process. Initial agency scoping letters were submitted to the United States Fish and Wildlife Service (USFWS) and the Tennessee State Historic Preservation Office (SHPO) (Appendix A).

Public participation opportunities with respect to this EA and decision-making on the proposed action are guided by 32 CFR Part 651. When the environmental analysis is complete, the Final EA and Draft Finding of No Significant Impact (FNSI) will be made available to the public for comment for a period of 30 days. At the end of the 30-day public review period, the Army will consider all comments submitted by individuals, agencies, or organizations. As appropriate, the Army may then execute the FNSI and proceed with implementation of the proposed action. If it is determined that implementation of the proposed action would result in significant impacts, the Army will publish in the *Federal Register* a Notice of Intent (NOI) to prepare an environmental impact statement (EIS) or not take the action.

Throughout this process, the public may obtain information on the status and progress of the proposed action and the EA through Mr. Eric Cloud, Fort Campbell NEPA Program Manager, at 270-956-2738.

1.5 REGULATORY FRAMEWORK

The means available to Army installation commanders to satisfy their facilities space requirements are subject to policies set forth in various ARs. AR 210-20 (*Installation Master Planning*) establishes Army policy to maximize use of existing facilities. The regulation directs

that new construction will not be authorized to meet an installation mission that can be supported by existing underutilized and adequate facilities, provided that the use of such facilities does not degrade operational efficiency.

A decision on whether to proceed with the proposed action rests on numerous factors such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, Fort Campbell is guided by relevant statutes (and their implementing regulations) and Executive Orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. These include the Clean Air Act, Clean Water Act, Noise Control Act, Endangered Species Act, Migratory Bird Treaty Act, National Historic Preservation Act, Archaeological Resources Protection Act, Resource Conservation and Recovery Act, and Toxic Substances Control Act. Executive Orders bearing on the proposed action include EO 11988 (*Floodplain Management*), EO 11990 (*Protection of Wetlands*), EO 12088 (*Federal Compliance with Pollution Control Standards*), EO 12580 (*Superfund Implementation*), EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), EO 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*), EO 13101 (*Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*), EO 13123 (*Greening the Government Through Efficient Energy Management*), EO 13148 (*Greening the Government Through Leadership in Environmental Management*), EO 13175 (*Consultation and Coordination with Indian Tribal Governments*), and EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*). These authorities are addressed in various sections throughout this EA when relevant to particular environmental resources and conditions. The full text of the laws, regulations, and EOs is available on the Defense Environmental Network & Information Exchange Web site at <http://www.denix.osd.mil>.

SECTION 2.0

PROPOSED ACTION AND ALTERNATIVES

This section presents information on the proposed action and alternatives. The proposed action is described in Section 2.1, and alternatives to the proposed action are discussed in Section 2.2. The no action alternative is presented in Section 2.3. The proposed action set forth in Section 2.1 is Fort Campbell's preferred alternative.

2.1 PROPOSED ACTION (PREFERRED ALTERNATIVE)

Fort Campbell proposes to construct permanent operational barracks, and community services facilities to support the 2nd BCT and the 159th CAB on the southeast portion of Clarksville Base (Figure 2-1). In consultation with the Tennessee Historical Commission, Fort Campbell has determined that Clarksville Base is eligible for the National Register of Historic Places as a historic district. The district is noteworthy through associations with the Cold War (Chanchani et al., 2005). Selection of the proposed action would result in impacts to the cultural value of Clarksville Base; however, proposed mitigation would reduce the level of impacts to less than significant.

The proposed projects would be constructed in the southeast portion of Clarksville Base (Figure 2-1). Because this EA was developed prior to development of specific site designs, the building layout was not known. Analysis was based on the general space requirements and the defined construction footprint. The detailed requirements for the proposed action are categorized and described as three projects:

- 2nd Brigade Combat Team Complex,
- 159th CAB Complex, and
- Community Services Facilities.

Community Services Facilities would be located between the two units and would be shared by the 2nd BCT and 159th CAB. The construction area for the proposed action was designed to avoid buildings that contribute substantially to the Cold War era significance of Clarksville Base. A wooded area would remain between the new construction and the 7800 series Clarksville Base buildings (Figure 2-1).

To enable construction of the proposed action, 32 existing aboveground storage facilities from Clarksville Base would be demolished. Because the specific building layout is not known at this time, it is also not known which storage facilities would be demolished to accommodate each component of the proposed action. The storage facilities that would be demolished are shown on Figure 2-1 and listed in Table 2-1. No other structures would be demolished to implement the proposed action.

2.1.1 2nd Brigade Combat Team Complex

This project would construct a new Barracks and Operational Complex on base. The primary facilities would include the following: Barracks, Dining Facility, Brigade Headquarters and associated Company Operation Facilities (COF), and six Battalion Headquarters with associated COFs. Construction includes connection to the Energy Monitor and Control System (EMCS) and installation of an Intrusion Detection System (IDS), and fire protection/alarm systems. Supporting facilities and infrastructure within the complex would include site utilities, electric service, walkways, curbs and gutters, parking, access roads, storm drainage, information systems, and site improvements. Antiterrorism/force protection would be provided by progressive resistance to collapse (compartmentalized structures where the collapse of one compartment does not cause the



Legend

- Proposed Project Area
- Building to Remain
- Building to be Demolished

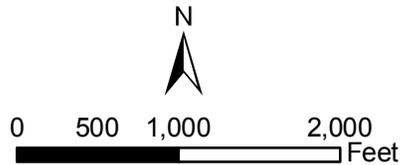


Figure 2-1
 Buildings to be Demolished
 Under Proposed Action
 2nd BCT/159th CAB EA
 Fort Campbell, Kentucky

Table 2-1
Aboveground Storage Buildings to be Demolished for the Proposed Action
2nd BCT/159th CAB EA

Building Number	Building Number	Building Number
7900	7911	7922
7901	7912	7923
7902	7913	7924
7903	7914	7925
7904	7915	7926
7905	7916	7927
7906	7917	7928
7907	7918	7929
7908	7919	7930
7909	7920	8000
7910	7921	

collapse of adjacent compartments), special windows and doors, and site measures. Access for individuals with disabilities would be provided in public areas. Heating and air conditioning would be provided by self contained units. Site improvement and demolition and disposal of 12 buildings would also occur. Existing aboveground storage buildings in the project area are unsuitable for use as permanent stationing for the 2nd BCT and the 159th CAB.

Under the proposed action, approximately 2,459,797 square feet of new facilities and associated infrastructure would be constructed for the 2nd BCT Complex. The primary facilities and their approximate size are listed in Table 2-2. Because this EA was developed prior to development of specific site designs, the building layout was not known.

Table 2-2
Brigade Combat Team Facilities
2nd BCT/159th CAB EA

Components of the Proposed Action	2 nd BCT Complex (Square Feet ¹)
Brigade Combat Team Command	
Barracks for 24	8,784
Brigade Headquarters and Sensitive Compartment Information Facility	24,220
Brigade Headquarters and Headquarters Company Operations Facilities and Exterior Covered Area	15,798
Headquarters and Headquarters Company Vehicle Maintenance Facility	7,851
Oil Storage	120
Organizational Storage	2,100
Dining Facility	30,257
Organizational Vehicle Parking	59,301
Brigade Troops Battalion	
Barracks for 124	45,384
Battalion Headquarters with Classrooms	13,907
Company Operations Facilities and Exterior Covered Area	43,432
Vehicle Maintenance Facility	20,340
Oil Storage	360
Organizational Storage	4,200
Organizational Vehicle Parking	154,107
Reconnaissance Surveillance and Target Acquisition Squadron	
Barracks for 160	58,560

Table 2-2
Brigade Combat Team Facilities
2nd BCT/159th CAB EA

Components of the Proposed Action	2nd BCT Complex (Square Feet¹)
Battalion Headquarters with Classrooms	21,134
Company Operations Facilities and Exterior Covered Area	56,054
Vehicle Maintenance Facility	17,160
Oil Storage	420
Organizational Storage	5,250
Open Storage Area	216
Organizational Vehicle Parking	173,565
Maneuver Battalion 1	
Barracks for 333	121,878
Battalion Headquarters with Classrooms	26,374
Company Operations Facilities and Exterior Covered Area	85,600
Vehicle Maintenance Facility	17,760
Oil Storage	420
Organizational Storage	6,650
Open Storage Area	243
Organizational Vehicle Parking	160,677
Maneuver Battalion 2	
Barracks for 333	121,878
Battalion Headquarters with Classrooms	26,374
Company Operations Facilities and Exterior Covered Area	85,600
Vehicle Maintenance Facility	17,760
Oil Storage	420
Organizational Storage	6,650
Open Storage Area	243
Organizational Vehicle Parking	160,677
Field Artillery Battalion	
Barracks for 169	61,854
Battalion Headquarters with Classrooms	25,402
Company Operations Facilities and Exterior Covered Area	55,319
Vehicle Maintenance Facility	17,760
Oil Storage	540
Organizational Storage	5,250
Open Storage Area	243
Organizational Vehicle Parking	198,171
Brigade Support Battalion	
Barracks for 171	62,586
Battalion Headquarters with Classrooms	17,788
Company Operations Facilities and Exterior Covered Area	49,056
Vehicle Maintenance Facility	32,014
Oil Storage	660
Organizational Storage	7,700
Open Storage Area	144
Organizational Vehicle Parking	359,586
Total	2,459,797

¹ Areas for project components are approximate.

Fort Campbell has not yet determined how the modular facilities vacated by the 2nd BCT would be used after the 2nd BCT is relocated. Such use is outside the scope of this analysis, but could include conversion to other uses more suitable for the modular structures or idling and storing the modular facilities until a need arises.

2.1.2 159th Combat Aviation Brigade Complex

The 159th CAB Complex would be located in the same area as the 2nd BCT and the 159th CAB would require comparable square footage (approximately 2,500,000 square feet) in addition to that necessary for the 2nd BCT Complex. Facilities and associated parking would be similar to those described for the 2nd BCT Complex in Section 2.1.1. Because this EA was developed prior to development of specific site designs, the building layout was not known.

2.1.3 Community Services Facilities

A multi-purpose fitness center, chapel center, and complex of four athletic fields with a concession stand will be constructed to serve the 2nd BCT and the 159th CAB. The approximate sizes of these facilities are listed in Table 2-3. The shared community services facilities would be located between the 2nd BCT Complex and the 159th CAB Complex.

**Table 2-3
Community Services Facilities
2nd BCT/159th CAB EA**

Components of the Proposed Action	Square Feet ¹
Fitness Center	89,448
Chapel Center	24,620
Ball Fields	653,400
Total	767,468

¹ Areas for project components are approximate.

2.1.4 Schedule

Construction of the proposed action is scheduled to begin in June 2006. Construction should be completed and the facilities are expected to be ready for occupancy by December 2008.

2.2 ALTERNATIVES

Alternatives may be framed in terms of meeting facilities requirements through means other than new construction and through use of alternative sites. These potential alternatives are discussed in the following sections. Each alternative is evaluated in terms of its ability to meet the project purpose and its potential impacts relative to the proposed action, in order to determine if a detailed analysis of the alternative is warranted. Alternatives that would not provide suitable facilities to support the military mission were eliminated from further consideration. Additionally, any alternative likely to have greater impacts or costs than the proposed action, after mitigation actions were considered, was eliminated from further consideration.

2.2.1 Construct 2nd BCT Complex and 159th CAB Complex in the Fort Campbell Cantonment Area

Fort Campbell has considered alternative sites for the proposed facilities that would not encroach on Clarksville Base; however, no open space in the cantonment area is available for construction of permanent facilities. Demolition of the modular facilities currently being used and construction of new facilities on those sites is not practicable, as troops have ongoing operations and must use the modular facilities until the permanent facilities are available. For these reasons, construction of facilities sufficient for the 2nd BCT and 159th CAB at a location in the Fort Campbell cantonment area is not practicable and, accordingly, is not evaluated in detail in this EA.

2.2.2 Renovate and Convert Modular Facilities to Permanent Facilities for 2nd BCT and Relocate 159th CAB to Existing Facilities in Cantonment Area

The modular facilities currently used by the 2nd BCT are modular (trailers) and not designed as or adequate for permanent facilities. No buildings in the cantonment area are available for use by the 159th CAB. Current facilities in the cantonment area are operating at their capacity. For these reasons, the alternative of renovation of the current modular facilities for the 2nd BCT and placement of the 159th CAB in existing facilities in the cantonment area is not practicable and, accordingly, is not evaluated in detail in this EA.

2.2.3 Construct 2nd BCT Complex and 159th CAB Complex in a Different Location Outside Clarksville Base

Siting facilities in an undeveloped location outside Clarksville Base would have a significant impact on the successful and timely implementation of the required action. Two federally protected bat species (Indiana bat and gray bat) are known to occur on Fort Campbell. Through previous informal consultation with USFWS, it has been determined that the portion of Clarksville Base selected for the proposed action does not provide suitable habitat for these bats and that these species do not utilize the area. Undeveloped areas outside of Clarksville Base provide potentially suitable habitat for these species.

Selecting a suitable location would require extended consultation with USFWS and completion of detailed surveys to evaluate the prospective sites. These steps would have unacceptable effects on the project schedule and budget. USFWS has determined that impacts to a protected species cannot be mitigated; only impacts to potential habitat may be mitigated. Construction at a different location outside Clarksville Base could result in loss of potentially suitable habitat for the Indiana and gray bat. Additionally, the project could not be designed and implemented to eliminate the potential for direct impacts to the two bat species unless all land clearing would be delayed until after bats have left the base for winter hibernation, which would not occur until at least October 2006. This would not allow construction to be completed in time to meet the proposed occupancy date.

Clarksville Base has been subjected to clearing, human use, and land disturbance in the past 40 years while undeveloped areas outside of Clarksville Base on Fort Campbell have been undisturbed for longer than 40 years. The potential for impacts to environmental resources other than protected species in these undeveloped areas would be greater than that on Clarksville Base. For these reasons, construction of facilities sufficient for the 2nd BCT and 159th CAB at a location outside Clarksville Base, other than that selected for the proposed action, is not practicable and, accordingly, is not evaluated in detail in this EA.

2.2.4 Construct 2nd BCT Complex and 159th CAB Complex in a Different Location within Clarksville Base

In consultation with the Tennessee Historical Commission, Fort Campbell has determined that Clarksville Base is eligible for the National Register of Historic Places as a historic district. Preliminary cultural resource evaluations indicate that use of an alternate location within Clarksville Base would have greater adverse impacts on the Clarksville Base historic district than the proposed action. Other sites within Clarksville Base contain structures that contribute more toward the Cold War era significance of the base than the aboveground storage buildings in the proposed project area. The mitigation required to offset loss of the more significant structures, which could include unique buildings, would be more extensive and costly than that which would be required for the storage units. For this reason, construction of facilities sufficient for the 2nd BCT and 159th CAB at any alternate Clarksville Base location is not practicable and, accordingly, is not evaluated in detail in this EA.

2.3 NO ACTION ALTERNATIVE

Under the no action alternative, Fort Campbell would not construct facilities as described in Section 2.1. Troops would be maintained in existing facilities and structures at Fort Campbell. Failure to accomplish the proposed action would result in continued use of modular facilities not designed for permanent housing of the 2nd BCT and a serious space conflict for the 159th CAB upon the return of the deployed 101st Airborne Division units.

At present, the 2nd BCT uses modular facilities for all of its administrative and classroom training. While these facilities have been sufficient to meet the short-term needs of the 2nd BCT, continued stationing in these modular buildings will result in an inefficient work environment. As previously mentioned, the modular facilities were not designed for and are not adequate for permanent stationing of combat troops. These conditions would ultimately adversely affect the ability of the 2nd BCT to achieve its assigned missions.

The 159th CAB uses facilities vacated by deployed 101st Airborne Division units and support facilities on an as-available basis. When the deployed units of the 101st Airborne Division return to Fort Campbell, these facilities will have to accommodate twice the number of troops that they were designed for. These conditions would adversely affect the abilities of the 159th CAB and 101st Airborne Division to achieve their assigned missions.

The no action alternative would not satisfy the need for the proposed action. Inclusion of the no action alternative serves as a benchmark for evaluation of the potential effects of the proposed federal action. CEQ regulations for implementing NEPA require consideration of the no action alternative (40 CFR 1502.14(d)). The no action alternative is evaluated in detail in this EA.

This page intentionally left blank.

SECTION 3.0

AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 INTRODUCTION

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). The major command is the XVIII 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, 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, and 105-mm Howitzer Avenger.

Fort Campbell's primary mission is to advance the combat readiness of the 101st Airborne Division (Air Assault), including the 2nd BCT, and the non-divisional units, including the 159th CAB, posted at the installation through training, mobilization, and deployment. Deployable military resources 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 Power Projection Platform for the Army and for major Special Operations Command units.

To fulfill its mission, Fort Campbell maintains 48 live fire ranges, 3 high impact areas, 51 training areas, 5 drop zones, 200 artillery firing points, 51 maneuver areas, a special operations training center, and two airfields. Campbell Army Airfield is the Army's largest, covering 2,500 acres and serving as a secondary landing site for the National Aeronautics & Space Administration and the space shuttle.

The following sections provide general descriptions of the physical and biological environment and regional socioeconomic conditions for the Fort Campbell area. The consequences of the preferred and no action alternatives follow within each section.

3.2 LAND USE

3.2.1 Affected Environment

3.2.1.1 Regional Geographic Setting and Location

Fort Campbell is in southwestern Kentucky and north central Tennessee. Fort Campbell includes portions of four counties — Montgomery and Stewart Counties in Tennessee, and Christian and Trigg Counties in Kentucky. Fort Campbell is located southwest of Interstate Highway 24 (I-24), adjacent to Clarksville, Tennessee, and 17 miles south of Hopkinsville, Kentucky. The surrounding area is predominately rural and undeveloped. The nearest large urban area is

Nashville, Tennessee, 55 miles to the southeast. Louisville, Kentucky, Memphis, Tennessee, and St. Louis, Missouri, are within 200 miles of the installation (Lockwood Greene, 1994).

3.2.1.2 *Installation Land/Air Space Use*

Fort Campbell is a 105,069-acre military installation located mostly (67 percent) in Tennessee. Approximately 26,156 acres are designated small arms and artillery impact areas and are off limits to all but select military personnel. Another 11,772 acres are devoted to cantonment areas, schools, shopping areas, recreation areas, and airfields. The remaining 67,142 acres are available for military training activities (BHATE Environmental Associates, Inc., 2004).

Clarksville Base is an approximate 2,600-acre compound within the Montgomery County, Tennessee, portion of Fort Campbell. It was established during the Cold War as a naval weapons storage site that stored weapons and weapon components, including early generation nuclear weapons and components. Currently Clarksville Base is used as a munitions and equipment storage area, individual storage facilities assigned to various units stationed at Fort Campbell. The location of the preferred alternative within Clarksville Base primarily comprises hardwood forest and open fields. There also are existing paved roads and both above- and below-ground storage facilities that remain from the Cold War era. None of the below-ground storage facilities are within the proposed construction footprint. Land use on the eastern section of Fort Campbell, including Clarksville Base, is shown on Figure 3-1.

3.2.1.3 *Surrounding Land/Air Space Use*

The area surrounding Fort Campbell consists of natural woodlands, agriculture, and urban development, as shown in the aerial photograph background of Figure 3-1. Urban development is concentrated in Clarksville, Tennessee, and in Oak Grove and Hopkinsville, Kentucky. The transportation corridor along U.S. Route 41A, which connects these three cities, also is highly urbanized. The major land uses in Montgomery County, which is adjacent to the south side of Fort Campbell, are agriculture and related activities. The areas directly east and south of Fort Campbell contain a substantial urban development, most of which is in the city limits of Clarksville. Trigg and Stewart Counties are mostly forested land. The portion of Christian County immediately adjacent to the northern boundary of Fort Campbell is primarily in agricultural production. A concentration of residential and commercial development is located in the city of Oak Grove, immediately east of U.S. 41A and the installation just north of the Kentucky-Tennessee state line.

The Clarksville airport, Outlaw Field, is located east of Fort Campbell. Outlaw Field is a municipal airport that does not receive commercial air traffic.

3.2.1.4 *Current and Future Development in the Region of Influence*

Clarksville is Tennessee's fifth largest and third fastest growing metropolitan area. The population of the metropolitan area is projected to increase by approximately 70,000 in the next 15 years, approximately a 33 percent increase (City of Clarksville, 2005). The other cities and towns in the area also are likely to experience growth during this period. This growth will result in loss of agrarian and forested land uses and an increase in urban and suburban land uses. Encroachment of more densely populated land uses around the installation boundaries is mainly limited to the eastern and southeastern portions of the installation (Fort Campbell, 2004a).

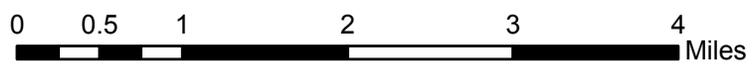
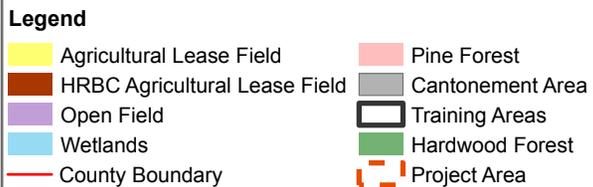
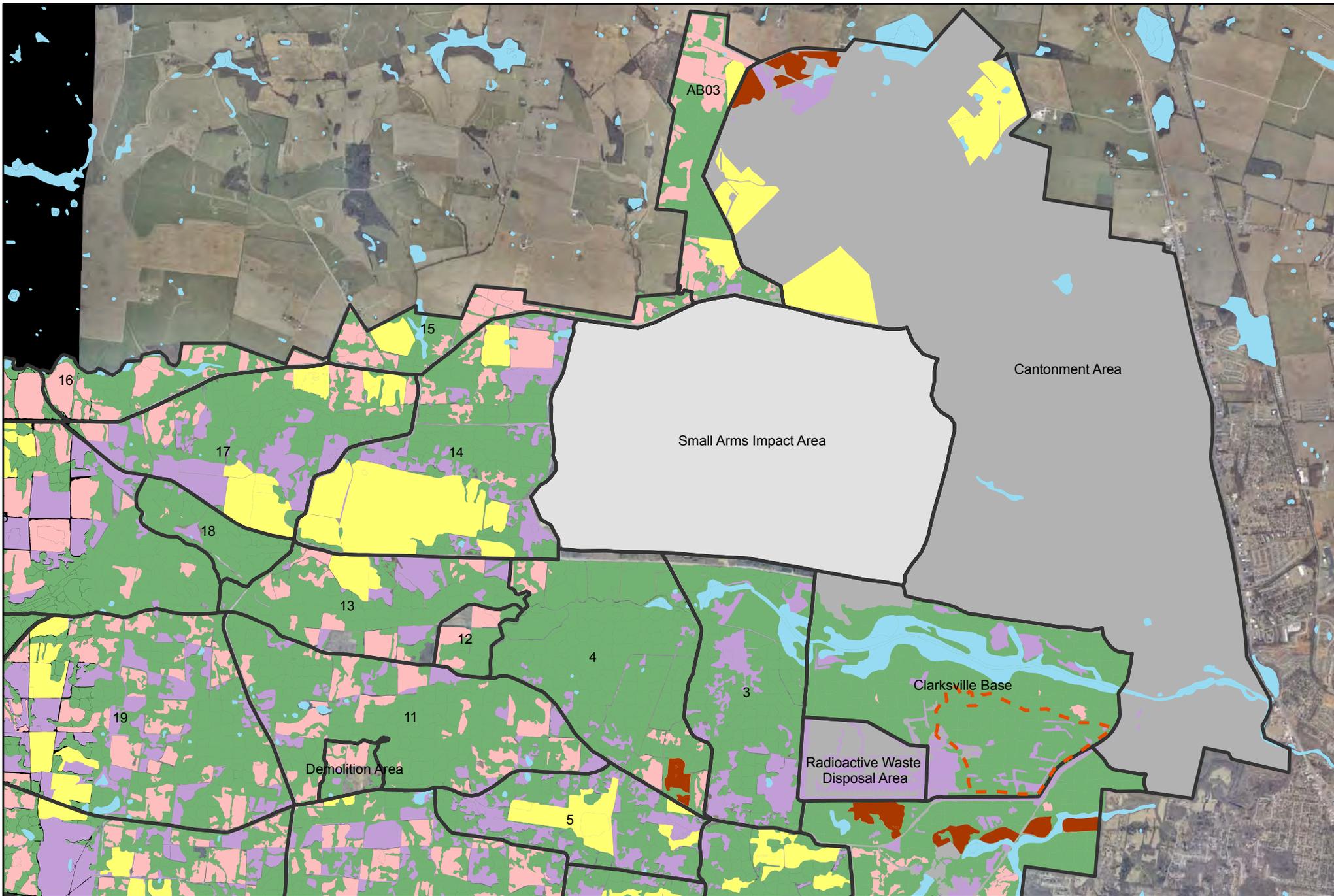


Figure 3-1
 Land Cover Types
 2nd BCT/159th CAB EA
 Forth Campbell, Kentucky

3.2.2 Consequences

3.2.2.1 Preferred Alternative

Under the Preferred Alternative, approximately 225 acres of regrowth forest and approximately 100 acres of open land would be converted to offices, storage and maintenance facilities, living space, recreation areas, and associated supporting infrastructure. The site selected for development maximizes the amount of open field and existing pavement to be converted for the 2nd BCT Complex and 159th CAB Complex and minimizes the conversion of hardwood forest. The land that would be converted is fragmented from numerous paved roads and concrete structures that remain from Clarksville Base operation. Because there is extensive forested land remaining on other parts of Fort Campbell (approximately 36,800 acres of hardwood forest and 10,500 acres of pine forest) and within the surrounding region, the conversion to implement the preferred alternative would be a less than significant impact on forest resources (approximately 0.5 percent of hardwood forest on Fort Campbell). All land disturbances would be confined to the construction area on Fort Campbell and there would be no impacts to adjacent land uses.

Because the 2nd BCT and 159th CAB are already stationed at Fort Campbell, the proposed action will not result in a change in the personnel on Fort Campbell. Therefore, construction of the 2nd BCT Complex and 159th CAB Complex would not interact with growth and related land use changes that might occur off base. There would be no interaction or cumulative impacts on land use with growth occurring in the surrounding counties outside of Fort Campbell, nor any indirect or cumulative impacts on land use in the surrounding region.

3.2.2.2 No Action Alternative

Under the no action alternative, no land clearing and no new construction for the 2nd BCT Complex and 159th CAB Complex would take place. Operations would continue in the existing facilities and no land use change would result. No impacts to existing land uses would result from the no action alternative.

3.3 AIR QUALITY

3.3.1 Affected Environment

Industrial point sources of criteria pollutants and volatile organic carbons (VOCs) in the four-county region of Fort Campbell include a steam plant, printing company, metals facilities, and quarrying company. Fort Campbell is considered a major source under the Title V program.

Air pollutant emissions are generated at Fort Campbell mainly through combustion of fossil fuels (heating plants and motorized vehicles). Lesser contributions are made from paint spray booths, woodworking shops, welding, transfer vapor emissions, storage tanks, road dust emissions, road paving, stationary internal combustion engines, degreasing, pesticide/herbicide applications, wildfires and prescribed burning, aircraft dust during takeoffs and landings, and dust from training activities and firing ranges (Fort Campbell, 2004a; Fort Campbell, 2004b). All nonexempt stationary emission sources within the installation are regulated under an air quality permit program administered by both Kentucky and Tennessee environmental agencies (Fort Campbell, 2004b). Emission rates for lesser contributing sources are well below major source trigger thresholds. Should these sources exceed major source thresholds, Fort Campbell would be required to modify its Title V permit.

The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS include two types of air quality standards. Primary standards protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (EPA, 2005a). EPA has established NAAQS for six principal pollutants, which are called criteria pollutants (Table 3-1).

Areas that do not meet the air quality standard for one of the criteria pollutants may be subject to the formal rule-making process and designated as being in nonattainment for that standard.

Table 3-1
National Ambient Air Quality Standards
2nd BCT/159th CAB EA

Pollutant	Primary Standards	Averaging Times	Secondary Standards
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour ¹	None
	35 ppm (40 mg/m ³)	1-hour ¹	None
Lead	1.5 µg/m ³	Quarterly Average	Same as Primary
Nitrogen Dioxide	0.053 ppm (100 µg/m ³)	Annual (Arithmetic Mean)	Same as Primary
Particulate Matter	50 µg/m ³	Annual ² (Arithmetic Mean)	Same as Primary
	PM ₁₀ 150 µg/m ³	24-hour ¹	
	PM _{2.5} 15.0 µg/m ³	Annual ³ (Arithmetic Mean)	Same as Primary
	65 µg/m ³	24-hour ⁴	
Ozone	0.08 ppm	8-hour ⁵	Same as Primary
Sulfur Oxides	0.03 ppm	Annual (Arithmetic Mean)	
	0.14 ppm	24-hour ¹	
		3-hour ¹	0.5 ppm (1300 µg/m ³)

¹ Not to be exceeded more than once per year.

² 3-year average of the weighted annual mean PM₁₀ concentration at each monitor within an area must not exceed 50 µg/m³.

³ 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.

⁴ 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 65 µg/m³.

⁵ 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

Source: <http://www.epa.gov/air/criteria.html> (EPA, 2005a)

Nonattainment areas for some pollutants, including ozone, are further classified as regulated under subpart 1 or subpart 2, based on the magnitude of the problem. Subpart 1 ("basic" nonattainment) is applied to those areas where the magnitude of the problem is less severe and contains general requirements for nonattainment areas. Subpart 2 is applied to areas with severe problems and establishes a classification scheme for ozone nonattainment areas with more specific requirements. An area will be classified under subpart 2 as marginal, moderate, serious, or severe based on the most recent 3 years of data. All other 8-hour ozone nonattainment areas are covered under subpart 1 (EPA, 2005b).

Ozone is the only criteria pollutant of concern at Fort Campbell. Christian County, Kentucky, and Montgomery County, Tennessee, (two of the counties in which portions of Fort Campbell are

located) were designated as basic nonattainment areas for ozone by the EPA, effective 15 June 2004. In 2005, the two counties requested re-designation as attainment areas. Effective 21 November 2005, Montgomery County, Tennessee, was re-designated as an attainment area for NAAQS; however, Montgomery County will be considered to be in a maintenance area for the next 12 years. Due to the adverse comment to the re-designation proposal, Christian County, Kentucky, remains classified in nonattainment status in the “basic” category. This nonattainment status will remain until EPA issues its final ruling.

At present, Fort Campbell is effectively divided into an ozone maintenance area (the Montgomery County portion) and a nonattainment area (the Christian County portion). The maintenance plan requirements for Montgomery County are designed to maintain the average ozone concentration levels at or below the maximum allowed concentration to sustain compliance with the NAAQS (Patty Lockard, personal communication, 22 November 2005).

During this time, Fort Campbell Directorate of Public Works must establish that all on-post construction activities will not impede the continuation of the attainment status, which is referred to as the General Conformity Rule (GCR) (Fort Campbell Environmental Division, 2005; Patty Lockard, personal communication 19 October 2005). This is done through issuance of a Record of Non-Applicability (RONA), which establishes that the requirements of the general conformity rule do not apply to a specific action or through analysis of the action to establish that any pollutants of concern would not exceed limits (Polyak and Webber, 2002). All construction projects are reviewed by the Environmental Division to ensure that construction and operating permits are applied for prior to construction activities.

3.3.2 Consequences

3.3.2.1 Preferred Alternative

The GCR requires that an analysis and other procedures (if required as a result of the analysis) be completed prior to the commencement of any of the project activities. To make the determination, Fort Campbell Air Quality must obtain information from the contractor awarded the job concerning equipment types, hours of operation, and number of personnel. Fort Campbell Air Quality then calculates estimated emissions to determine conformity. This process must be started as soon as the contractor is known because it must be completed prior to groundbreaking. Historically, DoD construction projects of similar magnitude as the proposed action have uniformly been found to be in compliance with the GCR, which is the expected result for the proposed action. Should the analysis of data provided by the selected contractor result in a non-conformity determination, construction would not be started until appropriate mitigation measures sufficient to ensure conformity were developed and implemented. The conformity analysis and any subsequent required mitigation would prevent deterioration of air quality related to ozone levels resulting from the proposed action.

During construction, air quality impacts could occur from dust carried offsite and combustion emissions from construction equipment. The primary risks from blowing dust particles relate to human health and human nuisance values. Fugitive dust can contribute to respiratory health problems and create an inhospitable working environment. Deposition on surfaces can be a nuisance to those living or working downwind.

Measures that would be implemented to reduce or eliminate fugitive dust emissions would include the following:

- *Sprinkling/Irrigation.* Sprinkling the ground surface with water until it is moist is an effective dust control method for haul roads and other traffic routes (Smolen et al., 1988). This practice can be applied to almost any site. When suppression methods involving water are used, care would be exercised to minimize over-watering that could cause the transport of mud onto adjoining roadways, which ultimately could increase the dust problem. Mechanical removal of mud from tires would be implemented if necessary.
- *Vegetative Cover.* In areas not expected to handle vehicle traffic, vegetative stabilization of disturbed soil is often desirable. Vegetation provides coverage to surface soils and slows wind velocity at the ground surface, thus reducing the potential for dust to become airborne.
- *Mulch.* Mulching can be a quick and effective means of dust control for recently disturbed areas.

No substantial changes in air quality from the baseline conditions are expected with implementation of the preferred alternative. Fugitive dust would increase in the immediate area during construction, but impacts would be temporary and less than significant. Dust abatement measures discussed above would limit the direct and secondary creation of dust.

No new permanent sources of air emissions would be created by the proposed action. There would be no change in number of personnel or training activities, and no resultant change in number of vehicles. The proposed relocation of the 2nd BCT and the 159th CAB would reduce traffic and associated vehicle emissions in the cantonment area in the short-term and would result in long-term reduced vehicle emissions in the cantonment area upon return of the deployed units of the 101st Airborne Division. Reduced travel time for the 159th CAB would result in less traffic on Fort Campbell and result in an additional minor reduction in vehicle emissions.

3.3.2.2 *No Action Alternative*

No short-term changes in current air quality conditions would occur under the no action alternative. The 2nd BCT and 159th CAB would continue using the facilities they now use. Upon the return of the deployed units of the 101st Airborne Division, traffic volume in the cantonment area would increase and the associated vehicle emissions in the cantonment area would increase. Average trip length for the 159th CAB to its assigned heliport would not be reduced, thus vehicle emissions would not be reduced.

3.4 *NOISE*

3.4.1 *Affected Environment*

For determination of impacts to human receptors, noise measurements are weighted to increase the contribution of noises within the normal range of human hearing and decrease the contribution of noises outside the normal range of human hearing. For humans, this is considered an A-weighted scale (dBA). When sound pressure doubles, the dBA level increases by 3. Psychologically, most humans perceive a doubling of sound as an increase of 10 dBA (EPA, 1974; Danish Wind Industry Association, 2003). Sound pressure decreases with distance from the source. Typically, the amount of noise is halved as the distance from the source doubles (EPA, 1974; Danish Wind Industry Association, 2003).

Training activities are the primary sources of noise at Fort Campbell. Most training activities are normally restricted to Monday through Friday between 7 A.M. and 8 P.M. These primary sources of noise are fixed- and rotary-wing aircraft operations and heavy weapons firing, with aircraft operations as the principal source. Airfields on the installation include CAAF, Destiny Heliport,

and Sabre Heliport. The main runways at CAAF run northeast-southwest. Helicopter corridors run primarily along the perimeter of the installation, as well as through the interior of the installation from east to west. Approximately 400 rotary-winged aircraft are stationed at Fort Campbell and are used extensively throughout the training area, and areas adjacent to the installation. These flights are a substantial component of the military training and operations conducted principally by the 101st Airborne Division. Heavy weapons firing is conducted in the North and South Impact Areas, which are located in the western portion of the installation. Also, a small arms impact area is located in the eastern portion of the installation. Blast noises emanate from several demolition areas located in the central portion of the installation in the rear area. Other noise sources include military and civilian motor vehicle operations.

Fort Campbell published an Environmental Noise Management Plan (ENMP) in November 2000. This ENMP provides a written plan for current and future noise management at Fort Campbell. The ENMP replaced the Installation Compatible Use Zones (ICUZ) program. The ENMP incorporated a baseline developed under the ICUZ program with a strategic guide to implement noise education, complaint management, noise and vibration mitigation, and noise abatement procedures.

Through the ENMP, Fort Campbell identified noise zones that depict the relationship between noise levels and land use. The noise zones on Fort Campbell are defined as follows:

- Zone I: An area where the sound is less than 65 dB, A-weighted day/night level (ADNL), or 62 dB, C-weighted day/night level (CDNL). This area, considered to have moderate to minimal noise exposure, is acceptable for noise-sensitive land uses.
- Zone II: An area where the sound level is 65 to 75 dB (ADNL) or 62 to 70 dB (CDNL). This area is considered to have significant noise exposure and is “normally unacceptable” for noise-sensitive land uses.
- Zone III: An area where the sound level is greater than 75 dB (ADNL) or 70 dB (CDNL). This zone is considered an area of severe noise exposure and is unacceptable for noise-sensitive activities (Fort Campbell, 1999).

The ENMP fosters communication between Fort Campbell and its civilian neighbors and provides a method for responding to civilian issues related to noise generated by Fort Campbell training activities. Other goals of the ENMP include education of both installation personnel and surrounding residents, management of noise complaints, mitigation of noise and vibration, and noise abatement procedures. Noise monitoring systems and data management are also included in the plan. The ENMP can be obtained from Fort Campbell Directorate of Public Works, Environmental Division (Fort Campbell, 2004b).

3.4.2 Consequences

3.4.2.1 Preferred Alternative

Within Clarksville Base, construction noise levels would be above background levels except during aircraft flyovers. Heavy equipment such as bulldozers, graders, backhoes, excavators, dump trucks, and cement trucks would generate noise that could affect the onsite workers. Construction equipment typically emits noise in the 86- to 94-dB range. Construction workers would use hearing protection and would follow Occupational Safety and Health Administration (OSHA) standards and procedures.

For most of the area proposed for land clearing and construction, no sensitive receptors are located in the vicinity, other than workers implementing the proposed projects. The preferred

alternative would occur outside the Fort Campbell cantonment area, limiting exposure to most non-construction personnel. Direct exposure to non-construction staff in Clarksville Base would be temporary and primarily limited to times when personnel would be traveling from vehicles to buildings or traveling between buildings. This intermittent exposure could be a nuisance, but would not pose a threat to hearing. Any impacts would be temporary and less than significant.

Personnel stationed at outdoor posts in the vicinity of construction may be exposed to sound levels that could damage hearing. For any outdoor posts near the construction and demolition area, the hearing risk would be analyzed and personnel would be provided with hearing protection if warranted by the exposure noise levels. This risk is considered minimal, as site design has placed the limit of construction approximately 200 feet from the nearest outdoor stationed personnel.

Ongoing aircraft training would not pose a noise risk to the personnel of the 2nd BCT and 159th CAB; the units would be located in a Zone I area, with the ADNL less than 65 dB (Fort Campbell, 1999). Once construction is complete, operation of the 2nd BCT Complex and 159th CAB Complex would not generate appreciable noise and would be comparable to background noise in the cantonment area, which is the noise environment the units are accustomed to. No shifts in existing noise contours would occur. No long-term indirect or cumulative noise impacts are expected to occur as a result of the proposed action.

3.4.2.2 *No Action Alternative*

Under the no action alternative, no land clearing and no new construction for the 2nd BCT and 159th CAB would occur. Operations would continue under current conditions. Therefore, no construction related noise impacts would result from the implementation of the no action alternative.

3.5 *GEOLOGY AND SOILS*

3.5.1 *Affected Environment*

3.5.1.1 *Geologic and Topographic Conditions*

Fort Campbell is located near the boundary of the Lexington Plain of southwestern Kentucky and the Highland Rim Plateau of northwestern Tennessee. The installation is within the Western Highland Rim, which surrounds the Pennyroyal Plateau. The Pennyroyal Plateau is underlain primarily by bedrock of the Mississippian age. The bedrock dips uniformly and gently to the north-northeast at a slope of approximately 15 feet per mile. The uppermost formation on Fort Campbell is the St. Genevieve Limestone, which overlies St. Louis Limestone. Beneath these formations are the older Warsaw Limestone, Fort Payne Chert, and Chattanooga Shale. The depth to bedrock ranges from 7 to 98 feet with the exception of outcrops along the slopes of Little West Fork Creek in the southeastern area of Fort Campbell.

The topography at Fort Campbell is gently rolling, with the exception of a comparatively flat area along the eastern boundary and approximately 5,000 acres of steep, highly dissected, hilly land along the western boundary. Elevations range from 397 feet above sea level south of the cantonment area where Little West Fork Creek leaves the installation, to 718 feet above sea level in the Saline Creek area in the western portion of the installation. Slopes generally range from very gentle to as steep as 70 percent in some stream valleys. Within Clarksville Base, the proposed project area is on typically level to gently sloping ground located above the slope from Little West Fork Creek.

The limestone formations found throughout Fort Campbell, including the cantonment area and Clarksville Base, are prone to solution weathering and have contributed to the numerous sinkholes and subterranean drainage systems that have developed. The karst terrain of the installation influences groundwater hydrology. Water seeping through jointing patterns in the limestone dissolves the rock and forms subterranean channels or cavities. Occasionally, the roofs of these underground channels collapse and form sinkholes. Most of the lower lands contain collapse basins and sinkholes, which typically do not contain water. Numerous sinkholes are located in the southeast and northern portions of the installation (Fort Campbell, 1999). Figure 3-2 shows the location of areas prone to sinkhole formation on Clarksville Base.

3.5.1.2 *Soils*

The United States Department of Agriculture (USDA) soil map for Fort Campbell identifies 30 soil mapping units on the installation. The major soil associations are Pembroke-Crider, Nicholson, and Dickson-Mountview (USDA, 1975 and 1981). Pembroke-Crider soils are found in areas identified as barrens on the eastern side of the installation. Nicholson soils are found on ridges, plateaus, and slopes adjacent to streams. Dickson-Mountview soils are found on the gently rolling plains that constitute the majority of the installation.

Soil information for Fort Campbell indicates that the potential for erosion for over half of the soil mapping units on the installation is moderate to severe. Because of a high degree of topographic variation within soil mapping units, there is considerable variation in erosion potential among locations within units. Most problems associated with soil erosion on Fort Campbell result from the removal of vegetation on moderate to severe slopes or on long gradual slopes (BHATE Environmental Associates, Inc., 2004). The proposed project area in Clarksville Base has level to gentle slopes, which reduces the erosion potential for these soils.

3.5.1.3 *Prime Farmland*

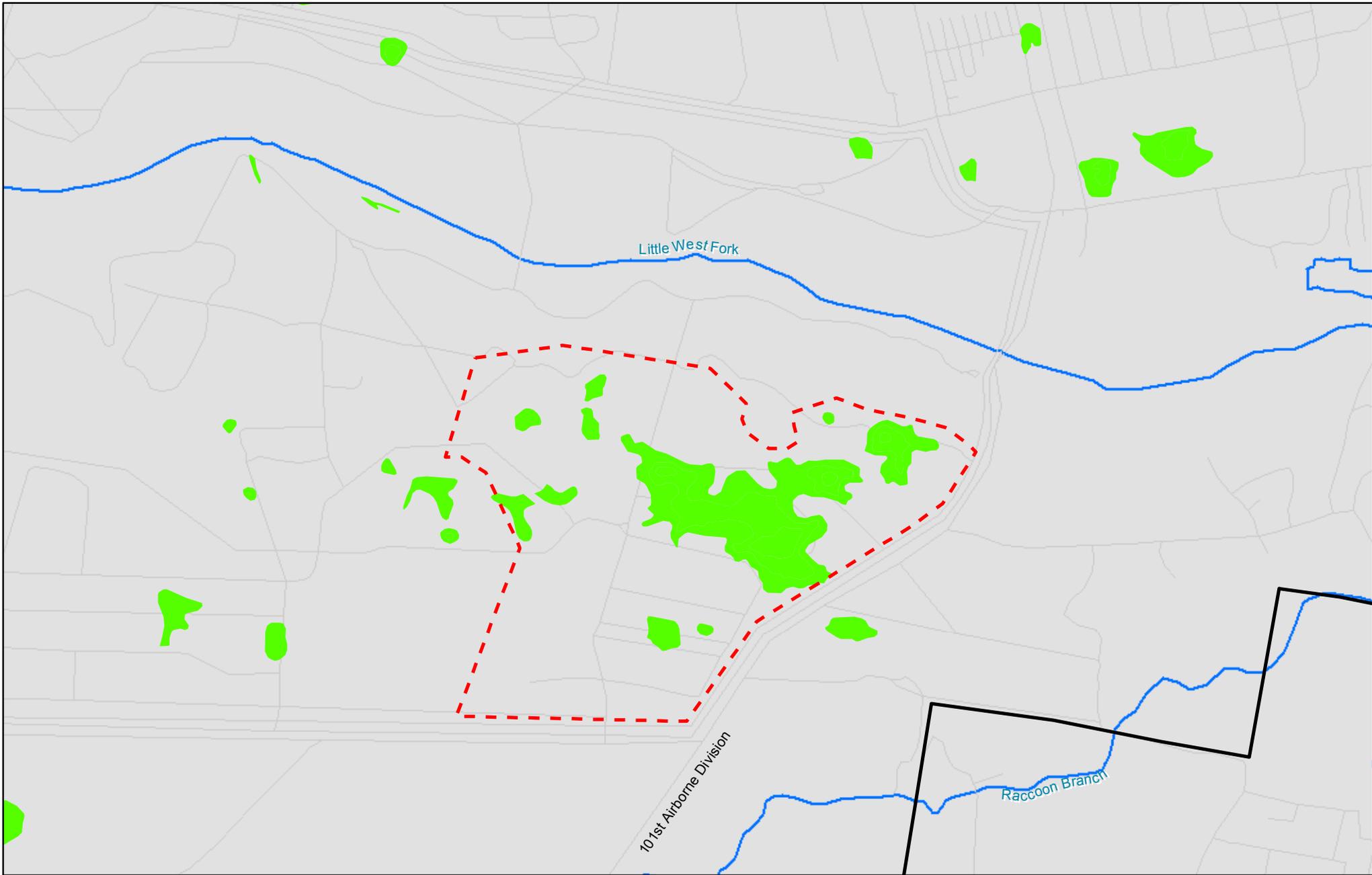
The area proposed for construction of the 2nd BCT contains shallow, rocky soils and has not been designated as prime farmland. Because there is no potential to impact prime farmland, prime farmland is not considered in this analysis.

3.5.2 *Consequences*

3.5.2.1 *Preferred Alternative*

Disturbance to soils would occur from work on roadbeds, parking lots, construction sites, and demolition sites. During construction, heavy equipment would be used to demolish buildings, move and compact soils, and remove debris in construction and paving areas. Site preparation for new structures and paved areas would require clearing and grading.

Grading plans would be prepared to identify how sites would be graded, how drainage patterns would be directed, and how runoff velocities would affect receiving waters. The grading plans would also provide information regarding when earthwork would start and stop, establish the degree and length of finished slopes, and specify where and how excess material would be disposed or where borrow materials would be obtained if needed. Berms, diversions, and other stormwater practices that require excavation and filling also would be incorporated into the grading plan. Erosion, sediment control and stormwater management goals would be considered in the grading plan. Grading crews would be supervised to ensure that the plans are implemented as intended. Disturbed areas would be kept to the minimum to complete the work and would be confined to the final site boundaries. Sedimentation and erosion controls would be implemented



- Legend**
- - - Proposed Project Boundary
 - Stream
 - Sinkhole

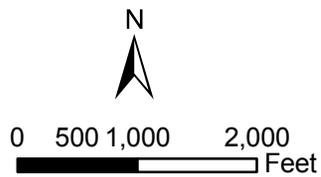


Figure 3-2
 Areas with Sinkhole Topography
 in the Project Vicinity
2nd BCT/159th CAB EA
Forth Campbell, Kentucky

to minimize erosion of surrounding soils due to soil/ground disturbance. Stormwater runoff resulting from increased impervious surface area could also contribute to limited soil erosion.

Site-specific measures would minimize transport of soils. The stormwater collection system for the completed complexes would be tied into the Base's existing stormwater program. The contract for this work would require that the contractor implement measures consistent with the Fort Campbell Policy for Storm Water Erosion and Sediment Control at Construction Projects, which has been approved by both the State of Tennessee and the State of Kentucky; when implemented on construction projects this policy ensures compliance with the Tennessee Water Quality Control Act of 1977. Appropriate best management practices (BMPs), would be selected based on site-specific conditions and could include, but would not be limited to, sediment barriers (silt fence or straw bales), temporary detention basins, grade stabilization with seed and mulch, and geotextile slope stabilization.

Soil disturbance could result in increased erosion potential from loss of groundcover and exposure of bare soils to precipitation and runoff. Potential temporary impacts to water quality from these factors are discussed in Section 3.6. Potential impacts to soils would be controlled and avoided through the use of appropriate BMPs and soil stabilization/revegetation techniques following construction. As discussed above, BMPs that are consistent with the Fort Campbell Policy for Storm Water Erosion and Sediment Control at Construction Projects would be used. Because construction will extend for over 1 year, it would not be possible to use timing of construction to offset potential erosion impacts.

The preferred alternative would have minimal impact on geology, topography or soils. Most proposed project site is on lands previously cleared, although regrowth forest has established over approximately 70 percent of the project area. All project sites are on level or gently sloping land.

The presence of karst terrain, including sinkholes, in the areas proposed for the 2nd BCT Complex and the 159th CAB Complex will affect the design and construction of facilities. Multiple structures would be placed in areas where sinkholes may occur (Figure 3-2). Much of Fort Campbell is prone to sinkhole formation and most construction projects must address sinkhole-related issues. The design of project structures will address the issues associated with instabilities associated with placement in sinkhole topography.

3.5.2.2 *No Action Alternative*

Under the no action alternative, no land clearing, demolition, or construction would take place. Therefore, no impacts to geology, soils or topography would result from the no action alternative.

3.6 **WATER RESOURCES**

3.6.1 *Affected Environment*

3.6.1.1 *Surface Water*

The surface water systems of Fort Campbell consist of 422 stream miles and four small man-made lakes at scattered locations. Major streams are perennial with substrates ranging from unconsolidated sediments to cobble (Fort Campbell, 1999). The installation is divided into three subwatersheds—Little West Fork Creek, Saline Creek, and Casey Creek, all of which drain to the Cumberland River. The Cumberland River is approximately 9 miles south of the installation and flows into the Ohio River, ultimately reaching the Gulf of Mexico through the Mississippi River

system (HQDA, 1994). The Little West Fork Creek watershed covers most of the installation, including Clarksville Base, the cantonment area, CAAF, training areas, ranges, and impact areas. The Saline Creek and Casey Creek watersheds drain the northwest portion of the post, which encompasses training areas, ranges, and impact areas (Fort Campbell, 2004b).

The Little West Fork Creek watershed is composed of 297 stream miles that drain approximately 66 percent of the surface runoff of the installation, including the proposed project area. The water flow is in an easterly direction to a confluence with the West Fork of the Red River. The main stem of Little West Fork Creek is located north of the location of the preferred alternative. This stream was channelized in the 1950s, and Little West Fork Creek remains a channelized stream. Headwater streams in and near the project area are small intermittent water bodies with stable channels (Fort Campbell, 1999).

Peak water flow typically occurs during the period from December through April, then gradually receding during the low flow period of August through October. Stream flow during dry periods is maintained by springs (Fort Campbell, 1999). There is a strong connection between surface waters and groundwater on Fort Campbell. Because of the karst terrain, streams may exhibit losing characteristics (flow is lost to groundwater) and gaining reaches (groundwater discharge increases stream flow). Where caves are present and connected to a stream by karst, surface streams can disappear underground. Subsequently, these streams can, and often do, reappear in another location as a spring. Disappearing streams are more likely to occur during drought conditions in late summer and early fall when the water table drops (Fort Campbell, 1999).

Surface water quality is moderately impacted by installation activities. The amount of sedimentation in streams resulting from erosion ranges from moderate to severe, as determined by the loss of rocky substrates in streams through burial by sediments. Sedimentation is the most serious water quality threat at Fort Campbell. Steps being implemented to minimize water quality degradation include cessation of grading bare soil firebreaks twice yearly, which allows these areas to develop vegetative cover to hold the soil; and aggressive enforcement of erosion controls requirements on construction projects in the cantonment area. Sediment accumulation data has been collected at several locations as part of the Land Condition Trend Analysis (LCTA) program, results show that sedimentation has been affecting biotic communities and compromising the aquatic systems at Fort Campbell (BHATE Environmental Associates, Inc., 2004).

3.6.1.2 *Hydrogeology/Groundwater*

Groundwater occurs on base in the residual soil and underlying limestone. Groundwater recharge occurs through precipitation, which averages 50.75 inches per year. The subsoil is generally low in permeability but can yield large amounts of water where it is sufficiently thick. Substantial quantities of groundwater are located in solution cavities in the underlying limestone. The majority of the wells in the area are for domestic use (Lamb Associates, Inc., 1996). As mentioned above, surface water interacts with groundwater through karst features.

There are shallow and deep aquifers under Fort Campbell. The shallow aquifer is recharged by sinkholes. Groundwater discharges from the bedrock aquifer primarily to surface water at springs or as seepage along surface streams. Groundwater may cycle back underground and return to the aquifer. The deeper aquifer is associated with Boiling, Quarles, and Blue Springs.

Boiling Spring, the primary source of drinking water used at Fort Campbell, receives groundwater from the Boiling Spring groundwater basin. The Boiling Spring Aquifer has natural barriers to contamination from onsite and offsite sources, and it is therefore a source of

consistently high quality water. The Boiling Spring aquifer meets the maximum demand for potable water on the installation. During severe drought conditions, the Red River is utilized as an emergency source of drinking water (BHATE Environmental Associates, Inc., 2004).

3.6.1.3 Floodplains

Typically, floodplains are designated and mapped by the Federal Flood Insurance Program, which is administered by the Federal Emergency Management Agency (FEMA). Official floodplain maps prepared by FEMA delineate intermediate regional flood zones (areas inundated by a flood having an average frequency of occurrence once in 100 years). Fort Campbell is not included in the FEMA floodplain determinations, but maintains its own flood zone area dataset with 100-year floodplains designated along the major streams (BHATE Environmental Associates, Inc., 2004). The majority of Fort Campbell lies in an area of minimal flooding, which may have short intervals of minor flooding during flashflood storm events.

3.6.1.4 Wetlands

The current characterization of wetlands on Fort Campbell is based a certified USACE jurisdictional wetland delineation, which identified 760 acres of wetlands regulated by the USACE. Additional wetlands in the Tennessee portion of the base may be regulated by the State of Tennessee. Based on USFWS National Wetland Inventory (NWI) data, palustrine and lacustrine habitats are the most dominate types on the post. Most wetland areas on Fort Campbell are located near perennial streams and creeks in low-lying areas (BHATE Environmental Associates, Inc., 2004). Depressions formed in the karst areas on Fort Campbell are also potential wetland sites (Fort Campbell, 2004a). Certified wetlands near the proposed project are shown on Figure 3-3, along with the general location of a non-certified karst depression wetland that is within the proposed project area.

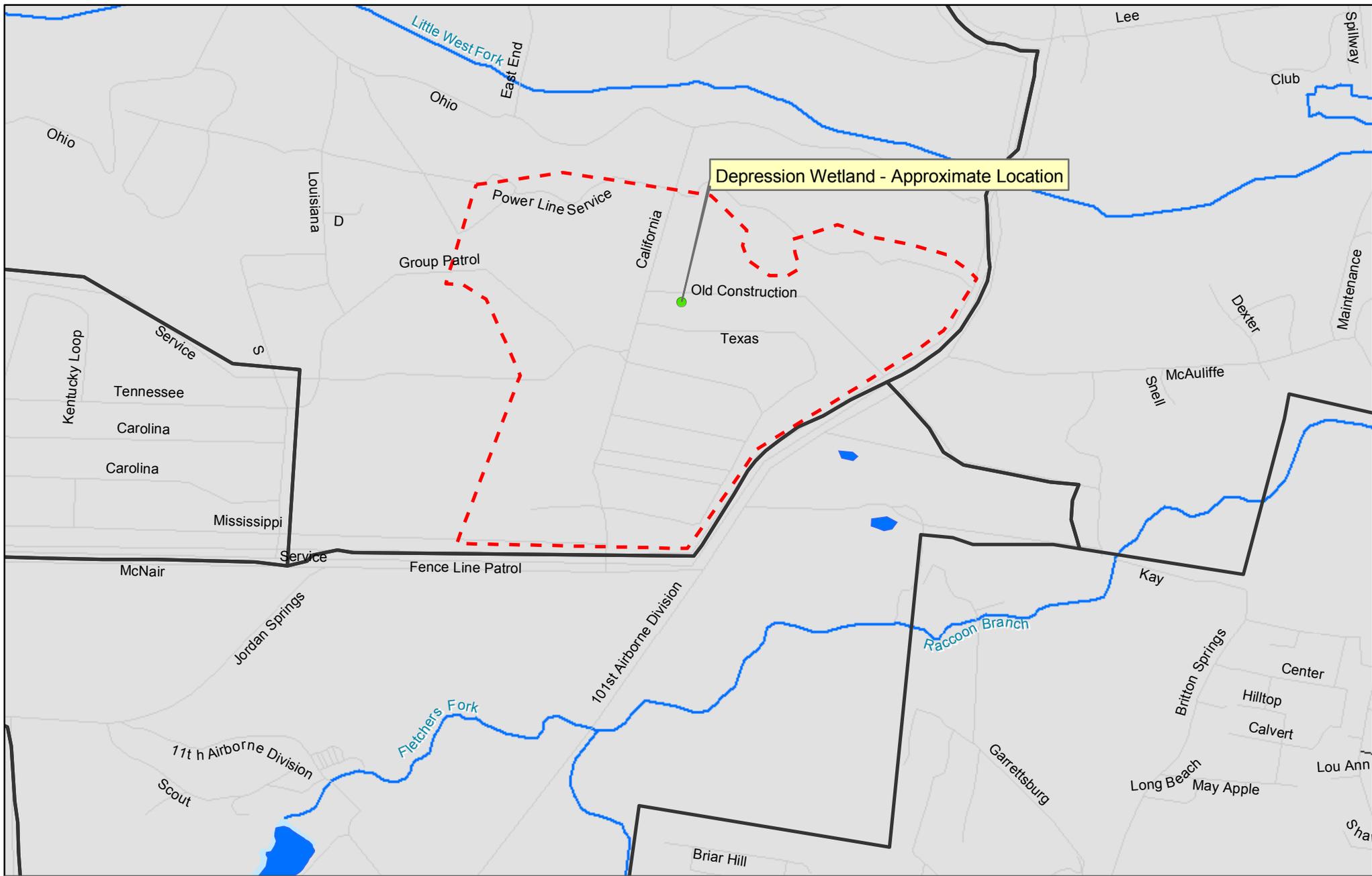
3.6.1.5 Stormwater

The stormwater collection system in developed areas of the base consists mostly of roadside ditches, culverts, and swales coupled with natural surface features that channel and direct stormwater flow away from use areas to detention or infiltration areas. Fort Campbell has 26 oil/water separators, primarily located at airfields and maintenance facilities, to prevent petroleum, oil and lubricants (POLs) pollution from reaching surface waters. These oil/water separators are located at points where POLs are used (such as motor pools and washracks) to provide maximum efficacy (Fort Campbell Environmental Division, 2005). At present there are no oil/water separators on Clarksville Base because there are no concentrated POL use areas on Clarksville Base.

3.6.2 Consequences

3.6.2.1 Preferred Alternative

Construction and demolition activities would result in soil disturbance and loss of vegetative cover. These activities could result in modified surface water runoff patterns from the site or impacts to water quality through transport of sediment and soil-bound pollutants. Increased runoff from an unvegetated site could result in hydrologic impacts, such as channelization and erosion. Any water quality and hydrologic impacts that could occur would be temporary and are limited to the construction and demolition footprints. The State of Tennessee requires that Notices of Intent (NOIs) for National Pollutant Discharge Elimination System (NPDES) Stormwater Construction Permits be filed with TDEC for all projects disturbing 1 or more acres. BMPs, as discussed



- Legend**
- - - Proposed Project Boundary
 - Training Area Boundary
 - Stream
 - Certified Wetland
 - Installation Boundary

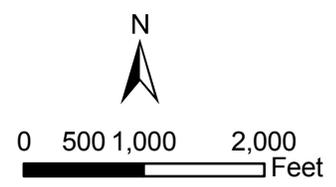


Figure 3-3
 Wetlands in Project Vicinity
 2nd BCT/159th CAB EA
 Fort Campbell, Kentucky

relative to potential soils impacts above, and onsite stormwater controls would reduce or eliminate runoff from the site to avoid impacts to nearby waters. The preferred alternative would result in the conversion of approximately 250 acres of pervious surfaces to impervious surface. The addition of impermeable surfaces through the construction of new buildings, roads, and lots would result in an increase in stormwater runoff. Impacts to the quality and utility of water resources could occur as the result of an increase in stormwater runoff. The design of buildings, parking lots, and roads would include stormwater controls, such as detention areas and infiltration areas that are designed to minimize or eliminate the effects of increased runoff.

No wetlands within the project area are regulated by the U.S. Army Corps of Engineers (Figure 3-3); however, a small isolated wetland (less than 1 acre in size) associated with karst features is located within the proposed construction footprint and is unlikely to be avoided in site design. This wetland is subject to regulation under the Aquatic Resource Alteration Permits (ARAP) program through the Tennessee Division of Water Pollution Control (TDWPC). An ARAP is required for any alteration of state waters, including wetlands that do not require a federal permit. This isolated wetland would be delineated prior to construction and an ARAP application submitted to TDWPC. TDWPC would determine whether compensatory mitigation would be required when the application was submitted. No construction would begin until the permit, along with any mitigation requirements, was issued. Fort Campbell would implement any mitigation required by TDWPC. Regardless of whether TDWPC requires compensatory mitigation, the elimination of this isolated wetland would be a less than significant impact on regional wetland resources. No impacts would occur to any of the 750 acres of jurisdictional wetlands on the installation.

POLs storage/usage and vehicle washing would occur at the motor pool areas. Because motor pool areas are potential sources of pollutants, these areas would be designed with spill containment to prevent accidental release of POLs and work areas would be isolated from precipitation and stormwater runoff to prevent incidental discharges of potential pollutants. Construction would occur outside of designated floodplains and would have no impact on flood elevations upstream or downstream of the project area.

3.6.2.2 *No Action Alternative*

Under the no action alternative, no change from existing conditions would occur. Therefore, no impacts to surface water, hydrogeology/groundwater, and floodplains would result from the no action alternative.

3.7 *BIOLOGICAL RESOURCES*

3.7.1 *Affected Environment*

3.7.1.1 *Vegetation*

Fort Campbell is part of the Western Mesophytic Forest Region (Braun, 1950). This ecotonal region includes a variety of forest community types, depending upon specific site conditions. All forests are oak-dominated, except on the more mesic slopes where mesophytes such as beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), and tulip popular (*Liriodendron tulipifera*) are able to establish as dominants. The region also includes barrens, upland wet woods, and alluvial forests. All of these community types occur on Fort Campbell.

Hardwood forests (approximately 36,800 acres) make up the predominate plant communities on Fort Campbell. Pine plantations (approximately 10,500 acres) and grasslands (approximately 13,000 acres) are the next most abundant community types. The remaining open areas consist of agricultural lands (approximately 6,000 acres), jurisdictional wetlands (760 acres), and open water areas (117 acres) (Fort Campbell, 2004a).

Within the proposed project area on the Clarksville Base, the plant communities are regrowth hardwood forest and maintained cleared areas (grasslands), such as utility rights-of-way (BHATE Environmental Associates, Inc., 2004). No barrens or barrens-like habitat exists in the vicinity of the proposed projects.

Prescribed burning is used extensively on Fort Campbell to manage vegetation. Prescribed burns are conducted every 3 to 5 years on most training areas. Most burning is conducted in barrens and other open areas and in the pine plantations. Training range impact areas are intentionally burned on an annual basis to reduce fuel loads and maintain open areas, and occasionally unintentionally due to wildfires started during weapons training on the ranges. The proposed project area in Clarksville Base is not included in the prescribed burning program.

3.7.1.2 Wildlife

A total of 39 species of mammals have been recorded and/or documented on Fort Campbell (Fort Campbell, 1999). These mammalian species are typical of those that are known to occur in the mixed forested/agricultural landscape of the Midwestern United States.

A total of 191 avian species have been documented on the installation. In addition to monitoring through the Wildlife Program, Fort Campbell also participates in the Partners in Flight program, a national program to monitor the abundance and flight patterns of neotropical migrant birds. Three great blue heron (*Ardea herodias*) rookeries are known on the installation—one in Training Area 1, one in Training Area 11, and the other in Training Area 19. None of these locations are closer than 4.5 miles to the location of the preferred alternative (Fort Campbell, 1999).

There are 23 reptile species (15 species of snakes, 4 lizards, and 4 turtles) that are known to occur on Fort Campbell. Previous surveys have identified 18 amphibian species (8 frogs, 3 toads, 6 salamanders, and 1 newt) that are known to occur on Fort Campbell.

Previously, a cross-section of seven creeks was sampled to determine the fish species present on Fort Campbell (Fort Campbell, 1999). The preferred alternative is in the watershed for Little West Fork Creek. Fish species collected from Little West Fork Creek during that survey included longear sunfish (*Lepomis megalotis*), green sunfish (*L. cyanellus*), bluegill (*L. macrochirus*), northern hog sucker (*Hypentelium nigricans*), bigeye chub (*Hybopsis amblops*), rosefin shiner (*Lythrurus ardens*), redbfin pickerel (*Esox americanus*), banded sculpin (*Cottus carolinae*), common shiner (*Luxilus cornutus*), telescope shiner (*Notropus telescopus*), log perch (*Percina caprodes*), bluefin stoneroller (*Campostoma pauciradii*), and lamprey (*Ichthyomyzon sp.*).

A survey of installation surface waters identified macroinvertebrates from 57 families. Prominent families identified from the survey were Aeshinidea, Ancylidae, Belastomatidae, Cambaridae, Chironomidea, Corixidae, Elmidae, Glossiphoniidae, Gryllidae, Haliplidae, Leuctridae, Libelluliidae, Macromiidae, Noctuidae, Oligochaeta, Perlidae, Pleidae, Polycentropodidae, Sialidae, Syphidae, Tabanidae, and Veliidae. A terrestrial invertebrate survey has not been conducted at the installation (Fort Campbell, 1999).

3.7.1.3 Sensitive Species

Several state and federally listed threatened or endangered species are known to occur within the four counties encompassing Fort Campbell. The USFWS lists eight federally threatened and endangered species for Montgomery County, Tennessee (Appendix B, Table B-1) and the State of Tennessee has identified 25 state-listed threatened and endangered species that may occur on Fort Campbell (Appendix B, Table B-2). The locations of known occurrences of sensitive species in the project vicinity are shown on Figure 3-4.

The most notable species documented on Fort Campbell are the federally endangered gray bat (*Myotis grisescens*) and Indiana bat (*Myotis sodalis*). Fort Campbell monitors these species and provides yearly reports to the USFWS. Both species are migratory between summer habitat and hibernation caves (hibernacula). No hibernacula occur on Fort Campbell. As part of the monitoring effort, Fort Campbell staff monitors migratory patterns and evaluates habitat enhancement possibilities to facilitate recovery of these two species. Suitable summer habitat for both species of bat is limited to the installation's wooded stream corridors and scattered wood lots in the more remote areas in the western part of Fort Campbell. No part of Fort Campbell has been designated as critical habitat for these species.

No other federally listed threatened and endangered species are known to occur within the installation boundaries or the project area. Several State-listed species are known to occur on the installation (Fort Campbell, 2004b); occurrences near the proposed project area are shown on Figure 3-4.

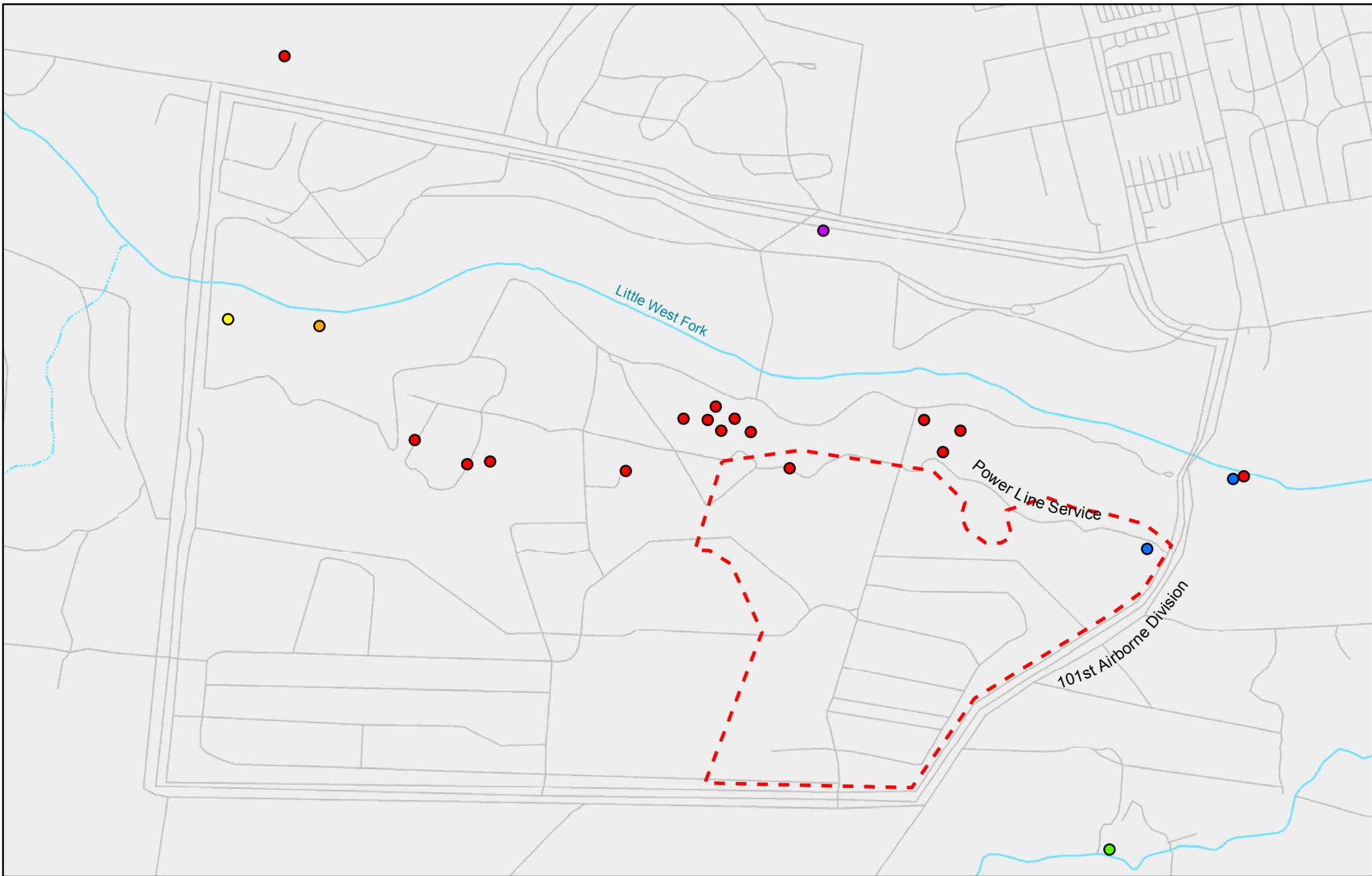
3.7.1.4 Migratory Birds

DoD installations are required to comply with the Migratory Bird Treaty Act (MBTA). The 2003 Defense Authorization Act required the USFWS to reduce restrictions to military readiness training caused by migratory birds. DoD has agreed to work to conserve bird species of conservation concern (BCC species) on installations. The BCC species list was developed by the North American Bird Conservation Initiative (NABCI), with species that occur on Fort Campbell listed for the Central Hardwoods Region, a region that includes 20 species of concern. Fort Campbell has identified 14 of those 20 species occurring on the installation (Table 3-2), with 9 of the BCC species known to breed on Fort Campbell.

**Table 3-2
Bird Species of Conservation Concern Occurring on Fort Campbell
2nd BCT/159th CAB EA**

Species Name	Common Name	Known to Breed on Fort Campbell
<i>Aimophila aestivalis</i>	Bachman's sparrow	Yes
<i>Ammodramus henslowii</i>	Henslow's sparrow	Yes
<i>Asio flammeus</i>	short-eared owl	No
<i>Caprimulgus vociferus</i>	whip-poor-will	Yes
<i>Dendroica cerulea</i>	cerulean warbler	No
<i>Dendroica discolor</i>	prairie warbler	Yes
<i>Euphagus carolinus</i>	rusty blackbird	No
<i>Helminthos vermivorus</i>	worm-eating warbler	Yes
<i>Hylocichla mustelina</i>	wood thrush	Yes
<i>Melanerpes erythrocephalus</i>	red-headed woodpecker	Yes
<i>Seiurus motacilla</i>	Louisiana waterthrush	Yes
<i>Tryngites subruficollis</i>	buff-breasted sandpiper	No
<i>Vermivora pinus</i>	blue-winged warbler	Yes
<i>Vireo bellii</i>	Bell's vireo	Yes

Data provided by Daniel Moss, Fort Campbell Avian Ecologist



Legend

- - - Proposed Project Boundary
- Ginseng
- Gray Bat
- Blue Scorpionweed
- Cerulean Warbler
- Sharp-skinned Hawk
- Yellow-bellied Sapsucker



0 500 1,000 2,000
 Feet

Figure 3-4
 Sensitive Species Near Project Area
 2nd BCT/159th CAB EA
 Forth Campbell, Kentucky

Preliminary survey work for the proposed construction area in late August 2005 identified wood thrush from the immediate proposed project area. While the survey documented use of the area by one BCC species, the survey was not conducted at the appropriate time of year to accurately determine if any nesting pairs utilized the area.

3.7.2 Consequences

3.7.2.1 Preferred Alternative

Impacts to common flora and fauna would result from construction activities. Indirect impacts would be associated with loss of habitat. The project would disturb approximately 225 acres of predominately regrowth forest and approximately 100 acres of open land, with these areas being converted to buildings, pavement, and associated landscaped areas. During land clearing and grading at locations where building and roads do not currently exist, all plants would be eliminated from the area and limited incidental animal injury or mortality could occur. This potential habitat would be permanently lost. It is expected that most animals would avoid areas adjacent to construction zones while construction was occurring and animals could return after construction is complete.

Loss of forested and open habitat types would be a permanent loss but would be less than significant. The total area that would be lost would be approximately 0.5 percent of available wildlife and plant habitat on Fort Campbell. No wildlife and plant habitat would be lost outside the boundaries of Fort Campbell. Any incidental losses of animals during construction would not seriously affect regional animal population levels.

No federally protected species occur in the project area (Figure 3-4). The gray bat has been found near the project area (Figure 3-4), but the Indiana bat has not been located in the project vicinity. Blue scorpion-weed (*Phacelia ranunculacea*) is a state species of concern that is known to occur along the right-of-way on the south side of Powerline Road at the east end of the project area (Figure 3-4). This occurrence is located such that it could be left in transportation right-of-way when the project is implemented. Any impacts would be incidental and would not threaten the continued existence of the species. No other known occurrences of sensitive species are present within the project area (Figure 3-4). No impacts to protected or sensitive species are expected to result from the proposed action.

Implementation of the proposed action would result in a loss of habitat for BCC species; however, loss of approximately 0.5 percent of the available habitat on Fort Campbell would be a less than significant impact on BCC species. BCC species are migratory and do not occur on Fort Campbell in the winter. Because birds are very mobile, the disturbance associated with tree clearing and construction would cause the birds to avoid construction areas, thus making direct mortality very unlikely. If tree clearing to prepare construction sites can be completed during the winter, reproduction would not be affected and clutch abandonment would be unlikely to result from project implementation. Should tree clearing extend into the summer, pairs with established nests in the tree clearing and construction areas would have their nests destroyed and may not be able to re-nest in another area. Those with nests adjacent to tree clearing and construction areas would possibly abandon their nests, and also may not be able to re-nest. As there would likely be no direct mortality and adult birds would be able to breed again in the future, any disruption to normal reproduction would be a temporary impact to any BCC species that may breed in the proposed project area. This impact would be comparable to that of a normal timber harvest, and would not threaten the continued existence of these species, and would be less than significant. Whether tree clearing can be completed in advance of BCC species returning to Fort Campbell in

2006 is not known. Fort Campbell will be required to conduct consultation with the USFWS under the MBTA to identify the project area and determine the level of impacts. Based on this consultation, USFWS may require additional mitigation under the MBTA. Regardless of whether additional MBTA mitigation is required, the impact to BCC species would be less than significant.

3.7.2.2 No Action Alternative

Under the no action alternative, existing conditions would not change. Therefore, no impacts to biological resources would result from implementation of the no action alternative.

3.8 CULTURAL RESOURCES

Within this section, the terms “significant” and “significance” are used in the context of NEPA and the National Historic Preservation Act (NHPA). When referring to structures, objects, or artifacts, the terms are used as defined in 36 CFR Part 800 for the NHPA. When referring to impacts, the terms are applied relative to their meaning under NEPA.

Regulations implementing Section 106 of the NHPA, 36 CFR Part 800.8, encourage the coordination of the processes of review of possible impacts to the environment under NEPA, with the assessment of effects of undertakings required under the NHPA. It is the intent of Fort Campbell that this document supports both of these independent reviews.

3.8.1 Affected Environment

Cultural Resources are defined in Army Regulation 200-4, Cultural Resources Management, Headquarters, Department of the Army, as:

- Historic Properties, protected through the NHPA
- Archaeological Resources, protected through the Archaeological Resources Protection Act (ARPA)
- Cultural Items, as specified in the Native American Graves Protection and Repatriation Act (NAGPRA)
- Sacred Sites, as referenced in the American Indian Religious Freedom Act (AIRFA) and Executive Order 13007
- Collections of artifacts and records pertaining to them as directed in 36 CFR 79

Cultural resources that would be potentially impacted by the proposed action are historic properties and archaeological resources. The Area of Potential Effect (APE) for purposes of compliance with Section 106 of the NHPA includes the immediate vicinity of the proposed construction, where direct effects of the construction might affect historic properties. The APE also includes adjacent areas where existing historic structures may have their setting compromised as a result of construction. Additionally, there could be long-term indirect impacts to cultural or archeological resources resulting from increased human use of the area following implementation of the project. The entirety of Clarksville base is considered for cumulative and indirect affects.

Fort Campbell adopted an *Integrated Cultural Resources Management Plan* (ICRMP) in 2002 to guide installation activities and ensure proper management of all cultural resources on Fort Campbell. Fort Campbell has entered into a Programmatic Agreement (PA) with the SHPOs of

Kentucky and Tennessee, and with the Advisory Council on Historic Preservation. This PA establishes a process alternative to that in 36 CFR Part 800 for considering the effects of operation, maintenance, and development at Fort Campbell on historic properties. Under the PA, the proposed action would require consultation with the Tennessee SHPO, as the project would be located entirely in Tennessee (BHATE Environmental Associates, Inc., 2004).

3.8.2 Status of Cultural Resource Inventories and Section 106 Consultation

Inventory records exist for over 1,400 archaeological sites at Fort Campbell; however, only 19 of these have been determined eligible for listing on the National Register of Historic Places (NRHP). More than 300 other archaeological sites are considered potentially eligible for listing on the NRHP (BHATE Environmental Associates, Inc., 2004).

Clarksville Base was established during the Cold War as a naval weapons storage site that stored weapons and weapon components, including early generation nuclear weapons and components. Clarksville Base was one of the earliest naval weapons storage facilities established by the Armed Forces Special Weapons Project (AFSWP). Clarksville Base was under the Command of the Navy and operated as a separate entity from the surrounding Fort Campbell until 1969 when it was turned over to the Army. Clarksville Base was used by the Navy for storage and maintenance of weapons and weapon components. In consultation with the Tennessee Historical Commission, Fort Campbell has determined that Clarksville Base is eligible for the National Register of Historic Places as a historic district through associations with the Cold War under Criteria A, as a significant and distinguishable entity whose components may lack individual distinction (Chanchani et al., 2005). Under this criterion, individual buildings and groups of buildings were assessed to determine their significance to Clarksville Base.

Buildings of primary significance are those directly associated with the storage, maintenance, and testing of weapons and weapons components, to the security of Clarksville Base. Examples include the storage facilities, the plant and surveillance buildings, pillboxes; standing fences, and other security apparatus. There were three types of storage facilities, designated A, B, and C Structures, depending on the types of weapons components stored or assembled in the building. If the property served an ancillary function to the main functions of Clarksville Base, but is still a contributing element, then it was assessed as having secondary significance. Examples of properties with a secondary level of significance are community facilities and storage sheds for the storage of grounds maintenance equipment (BHE Chanchani et al., 2005). Table 3-3 lists buildings that occur within the project area and identifies whether each structure would be demolished or left standing.

Buildings in the 7800 range on Clarksville Base that are near the proposed project vicinity include the plant, maintenance and surveillance (or S-type) structures, storage facilities, administrative buildings, and warehouses. These buildings supported the maintenance and surveillance functions of the Base; and were located in the central and south-central part of Clarksville Base (Chanchani, 2005). Additionally, a small block guardhouse associated with Building 7877 will not be impacted by construction. None of the buildings, or buildings in the 7800 range adjacent to the west of the project area would be removed under the proposed action.

Table 3-3
Structures within the Preferred Alternative Project Vicinity
2nd BCT/159th CAB EA

Building Number	Proposed Status						
7726	Remain	7750	Remain	7902	Demolish	7917	Demolish
7727	Remain	7752	Remain	7903	Demolish	7918	Demolish
7728	Remain	7871	Remain	7904	Demolish	7919	Demolish
7731	Remain	7872	Remain	7905	Demolish	7920	Demolish
7732	Remain	7873	Remain	7906	Demolish	7921	Demolish
7734	Remain	7874	Remain	7907	Demolish	7922	Demolish
7736	Remain	7875	Remain	7908	Demolish	7923	Demolish
7738	Remain	7876	Remain	7909	Demolish	7924	Demolish
7740	Remain	7877	Remain	7910	Demolish	7925	Demolish
7741	Remain	7878	Remain	7911	Demolish	7926	Demolish
7742	Remain	7880	Remain	7912	Demolish	7927	Demolish
7744	Remain	7882	Remain	7913	Demolish	7928	Demolish
7746	Remain	S-7884	Remain	7914	Demolish	7929	Demolish
7747	Remain	7900	Demolish	7915	Demolish	7930	Demolish
7748	Remain	7901	Demolish	7916	Demolish	8000	Demolish

Buildings in the 7900 range on Clarksville Base that are within the proposed project area are located in the southeast corner of Clarksville Base, in an area encompassed by the Texas Loop Road. All of these buildings are identically planned aboveground storage igloos that were constructed in 1951 (Chanchani, 2005). These structures were designed and constructed to house conventional weapons and weapon components and were not built to the specifications of structures built to house nuclear weapons and components. All of these buildings would be demolished under the proposed action.

Building 8000 is an aboveground storage igloo of the same design as the 7900 series buildings. Building 8000 also would be demolished to implement the proposed action.

Buildings in the 7700 range on Clarksville Base that are in the vicinity of the proposed action primarily were storage igloos located mainly along the east-west oriented Georgia and Ohio Roads. A few of the buildings in the 7700 range were utility facilities and housed standby generators and pump-houses. These buildings were isolated structures and mostly associated with the Base infrastructure (Chanchani, 2005). None of these buildings would be demolished under the proposed action.

3.8.3 Native American Resources

Fort Campbell has possession of a small inventory of cultural items and is currently in consultations regarding appropriate repatriation of these as required by NAGPRA (BHATE Environmental Associates, Inc., 2004). No significant Native American sites have been identified within the proposed construction area (BHATE Environmental Associates, Inc., 2004; Brockington and Associates, 2006). The nearest significant Native American site (40MT28) to the proposed construction area is approximately 0.5 miles away (Richard Davis, personal communication December 5, 2005).

3.8.4 Consequences

3.8.4.1 Preferred Alternative

None of the archeological or Native American resources eligible or potentially eligible for listing on the NRHP occur in the proposed construction area. The results of studies conducted in Clarksville Base by Ahler et al. (1999), Albertson and Buchner (1998), BHE (2005), Brockington and Associates (2005), Gray et al. (1998), Leary et al. (2005), and O'Malley et al. (1983) were used to define the project area such that significant or potentially significant archeological resources would be avoided. As a result, implementation of the preferred alternative would have no direct impacts on archeological or Native American resources.

Site 40MT28 has been vandalized in the past and there is concern that increased activity resulting from stationing the 2nd BCT and 159th CAB in Clarksville Base would result in a long-term increase the potential for future vandalism at this site. It also is possible that the stationing the 2nd BCT and 159th CAB in Clarksville Base would reduce human activity in the vicinity of 40MT28 as a result of reduced hunting and associated outdoor recreation in Clarksville Base, which could decrease the potential for future vandalism at 40MT28.

The demolition of Cold War era buildings on Clarksville Base would negatively impact the Clarksville Base historic district. Based on a review of the three earlier studies (Chanchani, 2005; Gray et al., 1998; and Weitze, 2005), none of the buildings to be demolished were directly associated with storage of Cold War era nuclear weapons and none was a primary contributor to the Cold War era significance of Clarksville Base.

Construction of the new facilities also would cause a change in the aesthetic quality of the remaining historic district. Fort Campbell modified the design of the proposed construction to minimize building demolition and to limit encroachment into the viewshed of the remaining historic district. A mature regrowth wooded strip approximately 200 feet wide will remain between the new construction and the 7800 series buildings in Clarksville Base, which contribute to the Cold War era historical significance of Clarksville Base. The 7700 series buildings that contribute to the Cold War era historical significance of Clarksville base are located in the floodplain of Little West Fork Creek. The new construction would not be visible from the 7700 series buildings because of the intervening forested slope that will not be impacted. The presence of screening vegetation

Beyond the avoidance of site eligible or potentially eligible for listing on the NRHP and the preservation of screening vegetation designed into the project, additional mitigation measures are being developed in consultation with the SHPO to reduce the magnitude of impacts resulting from construction and operation of the 2nd BCT Complex and the 159th CAB Complex in Clarksville Base. Fort Campbell has prepared a draft Memorandum of Agreement that includes proposed mitigation to reduce the impacts on cultural resources to less than significant. This consultation is ongoing and the proposed action would not be implemented until the Section 106 NHPA consultation is completed, including specification of final mitigation actions. Any mitigation actions that require access to structures that would be demolished, such as photo-documentation of structures, would be implemented prior to demolition. Failure to implement the mitigation measures developed in consultation with the SHPO would result in Fort Campbell issuing an NOI to prepare an EIS, as required by CFR 651.15(c).

3.8.4.2 No Action Alternative

No land clearing or construction would take place under the no action alternative. Therefore, no impacts to cultural resources would result from the implementation of the no action alternative.

3.9 SOCIOECONOMICS

3.9.1 Affected Environment

3.9.1.1 Economic Development

Fort Campbell has a substantial impact on the economy of the surrounding communities. In fiscal year 2003, Fort Campbell's total disbursement to the local economies amounted to nearly \$2.29 billion. Fort Campbell is the largest employer in the four-county region, and it is estimated that the installation contributes over \$4 million daily to the area's economy (BHATE Environmental Associates, Inc., 2004).

3.9.1.2 Demographics

Fort Campbell is a 164 square mile installation located near Clarksville, Tennessee, and Hopkinsville, Kentucky. The nearest large city are Nashville, Tennessee, which is 55 miles southeast from Fort Campbell. Fort Campbell supports the third largest military population in the Army and the seventh largest in the DoD. The fiscal year 2005 Army Stationing and Installation Plan establishes the base population at 29,321 active duty military personnel, 2,934 civilian personnel and 4,983 other personnel on Fort Campbell. Approximately 40,000 family members live on Fort Campbell and 112,000 retirees and their dependents live in surrounding communities. Approximately 18,000 Army Reserve & National Guard personnel also work on the installation.

Clarksville, located east of Fort Campbell in Montgomery County, Tennessee, has a metropolitan area population of slightly over 100,000 people (U.S. Census Bureau, 2005). Hopkinsville, Kentucky, located 17 miles northeast of Fort Campbell in Christian County, has a population of approximately 33,000 people (U.S. Census Bureau, 2005). These two cities are the primary urban centers in the area. The economy of the general region is diversified, with major sectors being agriculture, manufacturing, government, retail, and wholesale (Fort Campbell, 2004b).

3.9.1.3 Housing

There are 4,240 housing units on the installation that provide housing for officers, enlisted soldiers, and their families. Fort Campbell has seven schools operated by the DoD (including a high school), a major hospital, child care facilities, numerous chapels, banks, restaurants, post exchanges, service stations, campgrounds, five swimming pools, and most other facilities a civilian city of its size would have (Global Security, 2005). Fort Campbell also provides support to military dependents residing off post and retired military personnel and their families who have access to installation facilities (BHATE Environmental Associates, Inc., 2004).

3.9.1.4 Police, Security, and Fire Services

Fire protection is provided at Fort Campbell by an on post fire department. Security and police protection is provided by the Military Police. Gate guards are provided through contract support (BHATE Environmental Associates, Inc., 2004).

3.9.1.5 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (1994), requires federal agencies to achieve environmental justice "to the greatest extent practicable" by identifying and addressing "disproportionately high adverse human health or environmental effects of...activities on minority populations and low income populations." All four counties in which Fort Campbell is located have substantial populations of economically disadvantaged persons and several ethnic minority groups. The economically disadvantaged and minority populations are mostly concentrated in the nearby cities of Hopkinsville, Kentucky, and Clarksville, Tennessee; however, substantial numbers of these populations reside in small communities and rural areas throughout the four-county area (BHATE Environmental Associates, Inc., 2004).

3.9.1.6 Protection of Children

Fort Campbell follows the guidelines as specified for the protection of children as indicated in Executive Order 13045 – *Protection of Children from Environmental Health Risks and Safety Risk* (Federal Register: April 23, 1997, Volume 62, Number 78). This EO requires that federal agencies shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that policies, programs, and standards address disproportionate risks to children that result from environmental health or safety risks.

3.9.1.7 Recreation

The preferred alternative will not impact recreation opportunities outside of Clarksville Base. Within Clarksville Base and a portion of the Sabre Army heliport, public hunting is allowed on 3,856 acres. This hunting is primarily bow hunting for deer, but also includes turkey and small game hunting. Within Clarksville Base, 8 to 16 deer are taken per year (Fort Campbell, 1999).

3.9.2 Consequences

3.9.2.1 Preferred Alternative

The preferred alternative would have a temporary minor positive impact on socioeconomic factors. There would be temporary construction employment and associated wages. Suppliers in the surrounding area would have a short-term increase in the sale of construction-related materials.

There would be no change in personnel stationed at Fort Campbell. Therefore, there would be no change in regional demographics. Additionally, the proposed action would not have any long-term impacts on employment or income on Fort Campbell or in the surrounding area.

Fort Campbell would provide police, fire, and emergency services to the new facilities on Clarksville Base. Fort Campbell currently provides these services to the 2nd BCT and 159th CAB and to Clarksville Base. There will be no change in the need for services, just a redistribution of existing services, and no impacts to these services. The proposed action will not affect off post police, fire, and emergency services. A new chapel would be constructed to serve the 2nd BCT and the 159th CAB.

As the proposed action would be confined to Clarksville Base and will only relocate units currently stationed on Fort Campbell, there is no potential to affect children or minority and low income populations.

Public hunting would no longer be allowed in and adjacent to the newly constructed areas. There would be a permanent reduction of less than 3 percent of the available hunting land in the Clarksville Base area, where deer, turkey, and small game hunting is allowed. Fort Campbell and the surrounding region provide many other areas for these outdoor pursuits. This reduction would be a less than significant impact on recreational hunting on Fort Campbell and in the region.

Recreation activities would be enhanced for personnel of the 2nd BCT and 159th CAB through the addition of four athletic fields and a multi-purpose fitness center on Clarksville Base. With the 2nd BCT and 159th CAB relocated to Clarksville base, the demand on athletic fields and fitness center facilities in the cantonment area would be reduced, providing minor enhancement of recreation opportunities for units stationed in the cantonment area.

3.9.2.2 *No Action Alternative*

There would be no change in current conditions under the no action alternative. There would be no short-term increase in construction-related jobs and wages, and no associated increase in local sales of construction-related materials. There would be no long-term impact to socioeconomics. There would be no minor benefit to recreation opportunities in the cantonment area, as the 2nd BCT and 159th CAB would remain stationed in the cantonment area and the new athletic fields and fitness center would not be constructed.

3.10 *TRANSPORTATION*

3.10.1 *Affected Environment*

3.10.1.1 *Roadways and Traffic*

Fort Campbell is easily accessible by highway from generally every area in the mid-western and southeastern United States. Interstate 24 is located a short distance north and east of the installation. U.S. Route 41A runs north and south along the eastern boundary of the installation, and U.S. Route 79 runs east and west along the southern boundary.

3.10.1.2 *Installation Transportation*

A grid type roadway system services the cantonment area and provides the majority of public access to the installation with an entrance intersecting U.S. Route 41A. Roadways that reflect the rural road system that existed prior to Fort Campbell's ownership of the property service the outlying training areas. Many unimproved roads run throughout the installation.

Fort Campbell does not currently have a formal railroad system. Approximately 17 miles of railroad track that service the developed area are connected to a rail spur that is located south of Gate 2. Until 1981, the Illinois Central Gulf (ICG) Railroad System provided rail service to Fort Campbell. After 1981, the Department of the Army purchased the rail lines and the right-of-way to continue rail service on the installation. More rail and property have recently been purchased to allow Fort Campbell to connect with the CSX main rail line just south of Hopkinsville, Kentucky.

Air transportation is handled through CAAF for fixed-wing aircraft. Rotary aircraft utilize Destiny Heliport and Sabre Heliport. There are approximately 400 helicopters based at the Destiny and Sabre Heliports, with an average of 750 helicopter flights each day (BHATE, 2004).

3.10.1.3 Public Transportation

Public transportation to Fort Campbell is provided by the Clarksville Bus Transportation System (CBTS). The CBTS operates during regular business hours. Nashville International Airport operates a shuttle service between the Airport and Fort Campbell (Fort Campbell, 2005a).

3.10.2 Consequences

3.10.2.1 Preferred Alternative

There would be no change in training flights as a result of the proposed action. There would be no increased demand for commercial air traffic resulting from the proposed action. There would be no impacts to military or commercial air traffic resulting from the proposed action.

Implementation of the proposed action would not increase or decrease demand for service provided by public transportation. There would be no impacts to public transportation resulting from the proposed action.

Construction traffic would have a negligible impact on traffic in the cantonment area. Construction traffic would be directed through gates that would allow the bulk of this traffic to bypass the cantonment area.

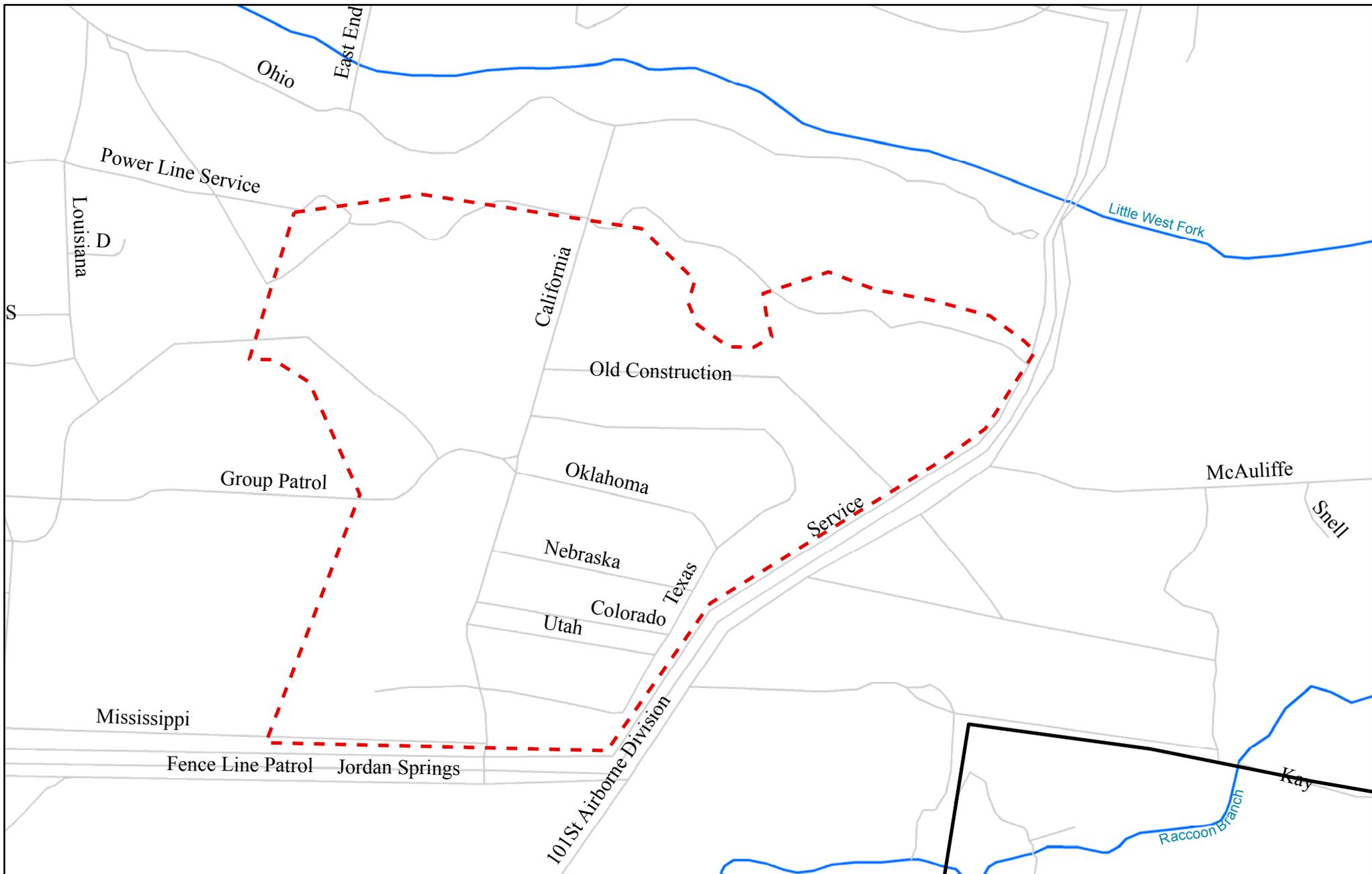
Construction and demolition would cause impacts to roads on and near the installation. Traffic would increase during construction hours on roads leading to Fort Campbell/Clarksville Base. It would be necessary to temporarily or permanently close sections of road in Clarksville Base during construction. Traffic control procedures, including flaggers and posted detours, would minimize impacts to traffic flow. Any impacts would be temporary and minor.

Transport of construction and demolition wastes to the land fill could create traffic flow problems. The transport of this material would be limited to off-peak traffic periods and would be on routes selected to minimize impacts.

Within Clarksville Base, some existing roads would be eliminated. Those roads include all or portions of Powerline Service Road, Oklahoma Road, Texas Loop Road, Nebraska Road, Colorado Road, Utah Road, California Road, Group Patrol Road and South Group Patrol Road (Figure 3-5). Because this EA was developed prior to development of specific site designs, the building layout was not known and the extent of the road elimination was not known. Analysis was based on the general space requirements and the defined construction footprint. Existing roads that are not eliminated would be upgraded and resurfaced to accommodate the increased traffic volume, and new roads and travel lanes would be constructed to provide service to the buildings and facilities constructed.

Relocating to Clarksville Base would place the 159th CAB closer to its designated training area, the Sabre Heliport. At present, the 159th CAB is stationed near CAAF in the northern part of the cantonment area. The relocation would station the 159th CAB in Clarksville Base, south of the main cantonment area and would reduce traffic in the cantonment area. Additionally, this move would save resources and time currently spent in travel.

Upon the return of the deployed units of the 101st Airborne Division, there would be reduced traffic congestion in the cantonment area with the 2nd BCT and the 159th CAB relocated to Clarksville Base.



Legend

- - - Proposed Project Boundary
- Road
- Stream



Figure 3-5
 Roads in Proposed Project Area
 2nd BCT/159th CAB EA
 Fort Campbell, Kentucky

3.10.2.2 No Action Alternative

Implementation of the no action alternative would maintain current traffic flow patterns and volumes and there would be no reduction in traffic in the cantonment area, as the 2nd BCT and 158th CAB would not be relocated to Clarksville Base. Upon the return of the deployed units of the 101st Airborne Division, traffic congestion in the cantonment area would become more severe because of the increased number of units using the cantonment area.

3.11 UTILITIES

3.11.1 Affected Environment

3.11.1.1 Potable Water

Potable water supplied to Fort Campbell is derived from the Boiling Springs aquifer, which is south of Mabry Road at Little West Fork Creek. This water source has a potential yield of 24.65 million gallons per day (mgd), and is treated in a rapid sand filter treatment plant. The Red River provides an alternate source of potable water. The installation's potable water storage system consists of one 0.25-million-gallon, one 1.0-million-gallon, and three 0.5-million-gallon elevated steel storage tanks, all located within the installation. Total water storage capacity at the installation is 2.75 million gallons. Current use of potable water ranges between 4 to 5 mgd (Fort Campbell, 1999). The City of Clarksville has the capacity to supply 28 mgd and currently provides 14 mgd from its water source, the Cumberland River (Tennessee Economic & Community Development, 2005).

3.11.1.2 Wastewater System

Sewage collection and treatment is also provided by Fort Campbell through one system that serves the post, CAAF, and Sabre Heliport. Both domestic and industrial wastewater are collected and treated at a sewage treatment plant on the former Clarksville Base, which provides both primary and secondary treatment and has a capacity of 4.0 mgd. Effluent is discharged to Little West Fork Creek, a tributary of Ringold Creek and the Red River. Water from the sewage treatment facility meets all applicable water quality standards (Fort Campbell, 1999). The City of Clarksville provides sanitary sewer service to 90 percent of its residents. The city sewage treatment system is operating at 40 percent of capacity (Tennessee Economic & Community Development, 2005).

3.11.1.3 Storm Water System

The cantonment area contains nine separate drainage basins. Limestone sinkholes and man-made detention/retention areas are used to regulate the quantity and rate of runoff carried to storm sewers and open ditches. Stormwater runoff from the cantonment area (approximately 8.3 square miles) drains into Little West Fork Creek and one of its primary tributaries, Dry Creek. Little West Fork Creek has a total drainage area of approximately 119 square miles, most of which is heavily wooded and undeveloped (Fort Campbell, 1999). The City of Clarksville has storm sewers serving 10 percent of the city (Tennessee Economic & Community Development, 2005).

3.11.1.4 Energy Sources

Electrical power is supplied by the Tennessee Valley Authority (TVA) through the Edgoten substation. The transmission line currently serving the installation has the capacity to serve the installation during peak demand. In the case of a loss of power, emergency power is available to

operate the water treatment plant, Boiling Springs aquifer pumping station, sewage treatment plant, some of the sewage lift stations, and some of the other major facilities (Fort Campbell, 1999). Combined sewers and surface runoff receive the remainder of the city's runoff.

Natural gas is supplied primarily by the Clarksville Gas and Water Department. There is an installation-wide gas distribution system throughout Fort Campbell (Fort Campbell, 1999).

3.11.1.5 Solid Waste

Nonhazardous waste generated at Fort Campbell is disposed of through a variety of means:

- All sanitary waste is collected by a refuse contractor and transported to a regional landfill for disposal.
- Two convenience centers are operated by the refuse contractor for disposal and separation of recyclable materials.
- A compost facility is operated by Roads and Grounds for the disposal of yard waste, stable waste, and leaves.
- A Recycle Center is operated by Non-Appropriated Fund (NAF) personnel to process and sell recyclable materials.
- A construction/demolition debris landfill is operated by Roads and Grounds for the disposal of construction/demolition debris.

The construction/demolition debris landfill is operated on an 85-acre site located on 101st Airborne Road, seven-tenths of a mile north of U.S. highway 79 (Dover Road). The compost facility is located in Clarksville Base on Texas Loop Road, two-tenths of a mile west of California Road. The two convenience centers are located at the north end of Stillwell Road and at the west end of Forty-Seventh Street. The Recycle Center is located on Desert Storm Road, south of Airborne Road. The convenience centers and Recycle Center promote reduction of waste disposal and recycling (Fort Campbell, 1999).

3.11.2 Consequences

3.11.2.1 Preferred Alternative

Construction would cause temporary impacts to utilities. It would be necessary to interrupt utilities temporarily in portions of Clarksville Base during construction. Existing utilities in and near the construction footprint would be identified in advance of construction to limit impacts.

The preferred alternative would require the expansion of existing utility delivery to serve the 2nd BCT and 159th CAB in Clarksville Base, but there would be no change in Fort Campbell infrastructure capacity. Energy supply, water supply, and wastewater treatment currently provide services to these units and recent expansions to these facilities created sufficient capacity to provide for the needs of the proposed action. No new personnel would be added to installation utility services as a result of the proposed action.

Solid waste would be generated during demolition of existing buildings and construction of new buildings and roads. This material would be recycled to the extent practicable, and the remainder would be sent to the regional solid waste landfill or Fort Campbell construction/demolition debris landfill as appropriate. Because construction debris recycling at Fort Campbell includes grinding and reuse of concrete, the quantity of waste generated would not exceed the capacity of the

system or appreciably shorten the projected 80-year life expectancy of the construction/demolition debris landfill. The amount of wastes generated by demolition and construction would not exceed the capacity of on-Base and regional facilities.

Any demolition wastes that contain radioactive material would require special handling and disposal procedures as discussed in Section 3.12.

3.11.2.2 *No Action Alternative*

Under the no action alternative there would be no changes in current utility service areas or utility demands. Implementation of the no action alternative would result in no impact to utilities.

3.12 HAZARDOUS AND TOXIC SUBSTANCES

3.12.1 *Affected Environment*

Fort Campbell hazardous waste streams result from site operations and maintenance of aircraft, vehicles, buildings, grounds maintenance, and various other equipment on the installation. Also incorporated into the hazardous waste stream is the management of hospital wastes, lead-based paint, pesticides, herbicides, and unexploded ordnance (UXO). Fort Campbell has multiple surveillance (both in-plant and contractor personnel) and regulatory reporting programs instituted to ensure proper management control for the handling and storage of these materials. The waste streams include spent cleaning solvents, waste oils, spent fuels, corrosion/descaling liquids, and waste paints. Primary sources and usage of hazardous and toxic materials within the installation involve POLs, industrial chemicals (cleaners/solvents), pesticides, and asbestos. Other hazardous materials include chemicals in the operation of the installation's drinking water and wastewater treatment facilities; and underground distribution of natural gas for consumer and industrial heating uses.

Fort Campbell is a large quantity generator as defined under the Resource Conservation and Recovery Act (RCRA). Fort Campbell currently does not treat, store, or dispose onsite any RCRA regulated hazardous wastes. All hazardous wastes generated onsite are collected and processed through a centrally located hazardous waste management facility, the Pollution Prevention Operation Center (PPOC). The PPOC provides a single point of accountability for classification, chemical analysis, manifesting, bulking, labeling, and tracking of all waste for ultimate disposal. From the PPOC, hazardous wastes are shipped offsite to an approved treatment, storage, or disposal facility (Fort Campbell Environmental Division, 2005).

Hazardous waste generators on Fort Campbell contact the PPOC by telephone to schedule a pickup of waste and within 72 hours PPOC personnel will come to the unit location and remove the material. Product screening has been established to minimize material disposal. These processes coupled with dedicated PPOC personnel have enabled Fort Campbell to reduce hazardous waste disposal quantities and related costs by over 80 percent since 1992. The PPOC manages used antifreeze for the installation, providing onsite testing and recycling to provide a serviceable product that meets all military specifications at a reduced cost. The PPOC also provides management for used POLs. Used POLs generated at the unit or maintenance level are collected, assessed, stored, and then sent for recycling (Fort Campbell Environmental Division, 2005).

Fort Campbell implements an Installation Spill Control and Counter Measure Plan (SPCCP) that provides guidance concerning the containment and cleanup of spills (for all type hazardous materials) identified in the Installation Spill Contingency Plan (ISCP).

Fort Campbell has an extensive asbestos management, inventory/tracking, and surveillance program. A number of older structures have asbestos containing material (ACM). These materials include pipe insulation, linoleum flooring, mastics, wallboard and coatings, roofing materials, paneling, and plumbing. All ACM collected throughout the installation is containerized, inventoried, and disposed of within a designated area of the Fort Campbell solid waste landfill, which is inspected by state regulators (Fort Campbell, 2004b).

Older structures, such as Cold War era buildings, may contain lead-based paint. Lead-based paint is most commonly encountered on metal surfaces, but may occur on any painted surface.

Two radioactive waste disposal areas are located on a hill approximately in the center of the Clarksville Base area. Each area is fenced and the gates are padlocked. "Caution-Radiation Area" signs are placed at frequent intervals on the fences. Available records indicate that the two radioactive waste disposal areas contain only low-level waste materials such as filter elements, gloves, and wipe samples, in addition to drums of laboratory animals (Lamb Associates, Inc., 2004).

The proposed project would be constructed in a karst area. The local karst system connects with buildings (such as Building 7740) that are known to have high levels of radon. Radon is capable of moving through the karst system and can accumulate to potentially harmful levels in poorly designed structures.

SWMU 11, an abandoned 10-acre municipal landfill, located at the northwest corner of Old Construction Road and California Road is adjacent to, but outside the proposed construction area. This landfill operated from 1949 to 1967. The landfill area is covered with mature cedar trees and grasses. VOCs and metals were concerns at this landfill that were addressed through the Environmental Restoration Program (ERP), and no further action is required. Long-term monitoring of the site is being conducted (Fort Campbell, 2004c).

3.12.2 Consequences

3.12.2.1 Preferred Alternative

Motor pool units associated with the 2nd BCT and 159th CAB Complexes would include spill containment measures to prevent accidental release of POLs to the environment. Waste POLs will be collected, recycled to the extent practicable, and disposed of at appropriate off post facilities.

Worker precautions will be taken to minimize potential exposure to lead-based paints when buildings are demolished and when the debris is disposed.

A subset of the buildings that would be demolished has been surveyed for radioactive materials and confirmed to contain no such materials or residues. There are no records indicating that radioactive materials or residues were ever stored in the buildings that would be demolished. Should any of the demolition debris be found to contain radioactive material, appropriate worker safety measures would be implemented and the debris would be treated as hazardous material and disposed of at an appropriate facility. Therefore, no impacts are expected from radioactive materials.

Should any of the buildings to be demolished contain ACM, the asbestos will be removed, encapsulated, or abated under proper regulatory parameters prior to razing the structure. Appropriate worker safety measures would be implemented for those workers who could encounter ACM.

Fort Campbell requires all construction to include passive ventilation. This requirement mandates that all structures have vents in crawlspaces and basement areas to prevent capture of radon and prevent accumulation of potentially harmful concentrations of this gas. All buildings constructed for the 2nd BCT and 159th CAB would comply with this requirement and their occupants would not risk exposure to potentially harmful levels of radon.

The project design included exclusion of SWMU 11 from the area considered for construction. Therefore, there will be no impacts to SWMU 11 and no potential for SWMU 11 to affect construction and operation of the proposed facilities.

As a result of the safety measures identified above, no impacts from hazardous/toxic materials are expected.

3.12.2.2 No Action Alternative

Implementation of the no action alternative would maintain current conditions on Fort Campbell and Clarksville Base. There would be no impact to hazardous and toxic substances.

3.13 CUMULATIVE EFFECTS SUMMARY

The most severe environmental impacts may not result from the direct effects of any particular action, but from the combination of effects of multiple, independent actions over time. The CEQ regulations implementing NEPA define a cumulative impact for purposes of NEPA as follows:

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR Section 1508.7).

CEQ guidelines state that cumulative effects analyses should be limited to the effects that can be evaluated meaningfully by the decision makers. The guidelines further state that the area to use in defining the cumulative impacts geographical boundary should extend to the point at which the resource is no longer affected significantly (CEQ, 1997).

Significant cumulative impacts would occur if incremental impacts of the proposed action (or the alternatives), added to the environmental impacts of past, present and reasonably foreseeable actions (identified below), result in an adverse significant effect to regional resources. For an impact to be considered cumulative, these incremental impacts and potential incremental impacts must be related in space and time, so that they are either capable of combining (when considering potential incremental impacts of future projects) or have, in fact, combined (when considering impacts of current and past projects).

Fort Campbell currently is responding to multiple mission changes and planning programs. In addition to conducting the routine military construction program, Fort Campbell also is responding to the larger Army reorganization efforts of AMF and IGPBS. It is difficult to fully evaluate the long term cumulative impacts until final reorganization and planning decisions are made. Once finalized, these reorganization efforts will translate into a variety of projects over time. Any additional projects would be assessed in the future NEPA documentation.

For this analysis, cumulative impacts could result from incremental loss of habitat from conversion to other uses, incremental impacts to hydrology or water quality resulting from

increased impervious surfaces within the region, excessive demand on the local labor force, and impacts to cultural resources through demolition of buildings or impacts to views.

3.13.1 Preferred Alternative

There would be a minor loss of upland forested habitat resulting from implementation of the proposed action. The lost forested habitat would be limited to an area of relatively early successional regrowth that provides relatively lower habitat value compared to more mature forested areas in the region. Land clearing in Clarksville Base would have no influence on future land clearing that could occur outside the boundaries of Fort Campbell, as there would be no new personnel stationed at Fort Campbell as a result of the proposed action. The loss of 0.5 percent of the forested land on Fort Campbell would be a less than significant impact to forest resources in western Tennessee/Kentucky, either singly or in concert with other land clearing activities in the region. This region has been predominately pastoral and agricultural, with extensive land clearing for these uses (USDA Forest Service, 1994). Because of the relatively small amount of clearing that would occur on Fort Campbell, the low potential for future forest clearing on other parts of Fort Campbell, the potential for interaction with additional clearing that may occur outside Fort Campbell is small.

Development that results in increased impervious cover has the potential to impact water quality through increased runoff volume and intensity and associated increased erosion. Independent developments could have individually minor impacts that are magnified through incremental combination with other developments. The 2nd BCT and 159th CAB Complexes would be designed with post-construction stormwater controls, including detention and infiltration areas and oil/water separators that would prevent future impacts to water quality and hydrology. These stormwater controls would eliminate or minimize the increase in stormwater runoff caused by the increase in impervious area, and prevent contaminants such as POLs from entering the surface water system. Because of the stormwater controls that would be implemented, no cumulative impacts to water quality and hydrology are anticipated.

Other construction projects are occurring on Fort Campbell and in the surrounding area. With multiple construction projects occurring simultaneously, the demand for skilled construction labor force in the Fort Campbell/area could exceed the supply; however, additional construction workers could be hired from the larger Nashville metropolitan area, which is within an hour of Clarksville Base. The proximity to this larger metropolitan area would ensure a sufficient workforce to prevent negative impacts on construction projects and schedules.

The proposed action would adversely impact historic cultural resources associated with Clarksville Base; however, mitigation/avoidance measures developed in coordination with the SHPO would reduce the effects of that impact to less than significant. Construction of the proposed action would result in demolition of aboveground storage units designed for storage of conventional weapons and non-nuclear weapons components. Because these units do not substantially contribute to the Cold War significance of the historic district and because other examples of these structure types will be preserved, no interaction effects with other reasonably foreseeable projects are expected.

For the reasons discussed above, the potential for indirect and cumulative impacts resulting from interaction of the proposed action with other past, present, and reasonably foreseeable projects is less than significant.

3.13.2 No Action Alternative

There would be no change in existing conditions under the no action alternative. Therefore, there would be no potential for interaction with other reasonably foreseeable projects resulting from the no action alternative.

3.14 MITIGATION SUMMARY

Some unavoidable impacts would result from implementation of the proposed action; however, specific project design features would be implemented to eliminate impacts or reduce the nuisance level of impacts. These project design features are summarized in Table 3-4. For resource areas not included in Table 3-4, no project design features are needed. Beyond the project design features, mitigation will be necessary to offset impacts to the historic value of Clarksville Base. Compensatory mitigation may be required by TDWPC for impacts to an isolated wetland within the construction area; however, impacts to this wetland would be less than significant without the mitigation. Table 3-5 summarizes the potential mitigation actions.

**Table 3-4
Project Design Features to be Implemented with the Proposed Action
2nd BCT/159th CAB EA**

Resource Area	Proposed Mitigation Measures
Air Quality	Use of sprinkling/irrigation, vegetative cover, and mulching as dust abatement measures during construction.
Noise	Workers will be required to wear appropriate hearing protection.
Soils	Use of sediment barriers (silt fence or straw bales), temporary detention basins, grade stabilization with seed and mulch, and geotextile slope stabilization to minimize impacts to soils.
Surface Water	Use of sediment barriers (silt fence or straw bales), temporary detention basins, grade stabilization with seed and mulch, and geotextile slope stabilization to minimize erosion and transport of sediments to surface waters. Use of work area containment and oil/water separators to prevent transport of POLs from motor pool areas to surface waters.
Wetlands	BMPs implemented during construction would minimize impacts to offsite wetlands
Stormwater	Use of silt fencing, guttering and other flow control measures, detention and infiltration areas, and oil/water separators to prevent onsite and downstream impacts from stormwater.
Historic Resources	Reduction of project area to avoid multiple potentially significant sites; project planning, in conjunction with SHPO resulted in design of proposed project footprint to avoid sensitive buildings and preservation of wooded strip between Clarksville base buildings and new construction.
Transportation	Use of clearly indicated detours and traffic control signalers to keep traffic moving during periods of heavy construction-related traffic or temporary road closures.
Hazardous/Toxic Materials	Site design avoided SWMU 11. Use of site inspections prior to demolition and appropriate removal and disposal techniques should hazardous/toxic materials be discovered.

Table 3-5
Mitigation Measures to be Implemented with the Proposed Action
2nd BCT/159th CAB EA

Resource Area	Proposed Mitigation Measures
Land Use	None, impacts are less than significant without mitigation.
Air Space Use	None, impacts are less than significant without mitigation.
Air Quality	None, impacts are less than significant without mitigation.
Noise	None, impacts are less than significant without mitigation.
Geology/Topography	None, impacts are less than significant without mitigation.
Soils	None, impacts are less than significant without mitigation.
Prime Farmland	None, impacts are less than significant without mitigation.
Surface Water	None, impacts are less than significant without mitigation.
Hydrogeology/Groundwater	None, impacts are less than significant without mitigation.
Floodplains	None, impacts are less than significant without mitigation.
Wetlands	Less than significant without mitigation. However, compensatory mitigation may be required under Tennessee ARAP Program. Any such mitigation would be required as a condition of the ARAP and would be implemented. Whether mitigation would be required and what that mitigation would be in cannot be determined until the ARAP is submitted to TDWPC.
Stormwater	None, impacts are less than significant without mitigation.
Vegetation	None, impacts are less than significant without mitigation.
Wildlife	None, impacts are less than significant without mitigation.
Sensitive Species	None, impacts are less than significant without mitigation.
Historic Resources	Less than significant with implementation of mitigation measures. At present, Fort Campbell is negotiating with the SHPO to establish appropriate mitigation for the demolition of 32 storage buildings within Clarksville Base and potential indirect impacts to other cultural resources within Clarksville Base. Once established, this mitigation would be implemented prior to project implementation.
Archeological Resources	None, impacts are less than significant without mitigation.
Native American Resources	None, impacts are less than significant without mitigation.
Economic Development	None, impacts are less than significant without mitigation.
Demographics	None, impacts are less than significant without mitigation.
Housing/Quality of Life	None, impacts are less than significant without mitigation.
Environmental Justice	None, impacts are less than significant without mitigation.
Protection of Children	None, impacts are less than significant without mitigation.
Recreation	None, impacts are less than significant without mitigation.
Transportation	None, impacts are less than significant without mitigation.
Potable Water	None, impacts are less than significant without mitigation.
Wastewater	None, impacts are less than significant without mitigation.
Energy	None, impacts are less than significant without mitigation.
Solid Waste	None, impacts are less than significant without mitigation.
Hazardous/Toxic Materials	None, impacts are less than significant without mitigation.
Environmental Restoration Program	None, impacts are less than significant without mitigation.
Stored Fuels	None, impacts are less than significant without mitigation.

This page intentionally left blank.

SECTION 4.0

FINDINGS AND CONCLUSIONS

4.1 FINDINGS

Table 4-1 summarizes the consequences of the preferred alternative and the no action alternative

4.1.1 Consequences of the Preferred Alternative

Implementation of the preferred alternative would result in negative impacts to air quality, water quality, and traffic and would result in generation of construction-related noise during demolition and subsequent construction activities. All of these impacts would be temporary and less than significant. In addition, there would also be minor displacement of wildlife, both temporary and permanent, from the construction area and adjoining areas, but this impact would be temporary as animals would acclimate to the areas into which they relocate or return to areas adjacent to the construction sites.

There would be permanent displacement of BCC from the project area and potential loss of reproduction for one breeding season by birds that may have nested on Clarksville Base. Suitable additional habitat exists in the region and breeding loss would not cause local extirpation. Any impacts would be less than significant.

There would be a minor positive impact to the local economy resulting from construction-related jobs and construction-related purchases of supplies and materials.

There would be a loss of approximately 325 acres of hunting area, but there would be ample hunting areas remaining on Fort Campbell and in the surrounding area to accommodate the hunting demand. Four athletic fields and a fitness center would be constructed to provide recreational opportunities for the personnel assigned to the 2nd BCT and the 159th CAB.

There would be permanent negative impacts to land use, geology and soils, and vegetation, but these impacts would be localized and less than significant. There would be a long-term improvement in traffic in the cantonment area, as the 159th CAB would no longer be forced to travel the length of the cantonment area to reach its assigned heliport. There would be a long-term improvement in traffic in the cantonment area upon the return of the deployed units of the 101st Airborne Division. These units would return to the cantonment area, but the troops of the 2nd BCT and 159th CAB would no longer be stationed in the cantonment area, resulting in a net reduction in traffic volume.

There would be impacts to the Clarksville Base historic district resulting from the demolition of 32 storage units associated with the Clarksville Base mission; however, these units are not substantial contributors to the Cold War era significance of the historic district. At present, Fort Campbell is negotiating with the SHPO to determine appropriate mitigation for these impacts. The mitigation measures developed in coordination with the SHPO would be implemented prior to project implementation and would reduce the impacts to less than significant.

There would be no appreciable impacts on solid wastes, hazardous materials, fuels, and the ERP. There would be no impacts to other resource areas. No significant cumulative or indirect impacts would be expected to result from the proposed action.

Table 4-1
Summary of Potential Environmental and Socioeconomic Consequences
2nd BCT/159th CAB EA

Resource	Environmental and Socioeconomic Consequences	
	No Action	Proposed Action
Land Use	No Effect	Less than significant: minor conversion of forested land to barracks, administrative facilities, and community services facilities.
Air Space Use	No Effect	No Effect
Air Quality	No short-term effect; long term increase in vehicle emissions in cantonment area with increased number of vehicles upon return of deployed units of 101 st Airborne Division.	Less than significant: construction related fugitive dust that will be controlled through appropriate mitigation measures; minor reduction in vehicle-related emissions in cantonment area.
Noise	No effect	Less than significant: appropriate worker safety measures will be implemented; no long-term effects from operation.
Geology and Soils		
Geology/Topography	No Effect	Less than significant: minor topographic alteration through grading for site preparation.
Soils	No Effect	Less than significant: appropriate mitigation measures would be implemented to minimize erosion and impact from stormwater runoff.
Prime Farmland	No Effect	No Effect
Water Resources		
Surface Water	No Effect	Less than significant: use of appropriate BMPs and stormwater controls would prevent impacts to surface waters from construction activities and from motor pool operations subsequent to occupancy of the proposed facilities.
Hydrogeology/Groundwater	No Effect	No Effect
Floodplains	No Effect	No Effect
Wetlands	No Effect	Less than significant: No wetlands subject to federal jurisdiction would be impacted by the proposed project. A small isolated depression wetland may be eliminated by the project, but the magnitude of this impact would be less than significant.
Stormwater	No Effect	Less than significant: use of appropriate BMPs and stormwater controls would prevent impacts from construction activities and from motor pool operations subsequent to occupancy of the proposed facilities.

Table 4-1
Summary of Potential Environmental and Socioeconomic Consequences
2nd BCT/159th CAB EA

Resource	Environmental and Socioeconomic Consequences	
	No Action	Proposed Action
Biological Resources		
Vegetation	No Effect	Less than significant: clearing of less than 0.5 percent of the land on Fort Campbell would not alter the general vegetation cover for the installation.
Wildlife	No Effect	Less than significant: loss of approximately 325 acres of habitat, wildlife would be displaced to other areas of Fort Campbell or the surrounding area.
Migratory Bird Species of Conservation Concern	No Effect	Less than significant: Permanent displacement from the project area and potential loss of 1 breeding season. Suitable additional habitat exists in the region and breeding loss would not cause local extirpation.
Sensitive Species	No Effect	No Effect
Cultural Resources		
Historic Resources	No Effect	Mitigated to less than significant: Demolition of minor contributing buildings in the Clarksville Base historic district. Appropriate mitigation, as determined by SHPO, would be implemented prior to project implementation to reduce the affect of the impact to less than significant.
Archeological Resources	No Effect	No Effect
Native American Resources	No Effect	No Effect
Socioeconomics		
Economic Development	No Effect	Short-term, benefit from construction-related jobs and materials purchases; no long-term effect as there would be no change in personnel or permanent jobs.
Demographics	No Effect	No Effect
Housing/Quality of Life	No Effect	No Effect
Environmental Justice	No Effect	No Effect
Protection of Children	No Effect	No Effect
Recreation	No Effect	Less than significant: loss of approximately 325 acres of hunting land, addition of 4 athletic fields and a fitness center.
Transportation	No short-term effect; long term increase in traffic congestion in cantonment area upon return of deployed units of 101 st Airborne Division.	Less than significant: increased traffic in Clarksville Base, but road infrastructure would be constructed to accommodate this increase as part of the proposed action; minor reduction of traffic in cantonment area once facilities are occupied by 159 th CAB.

Table 4-1
Summary of Potential Environmental and Socioeconomic Consequences
2nd BCT/159th CAB EA

Resource	Environmental and Socioeconomic Consequences	
	No Action	Proposed Action
Utilities		
Potable Water	No Effect	No Effect
Wastewater	No Effect	No Effect
Energy	No Effect	No Effect
Solid Waste	No Effect	Less than significant: typical construction and demolition wastes that would be within the capacity of local and regional waste disposal facilities.
Hazardous Materials, Wastes, ERP Sites, and Stored Fuels		
Hazardous/Toxic Materials	No Effect	Less than significant: Appropriate protective measures would be implemented if lead-based paint or ACM is encountered during demolition activities and appropriate disposal procedures would be followed. Only use-quantities of hazardous/toxic materials would be associated with construction and operation of the 2 nd BCT and 159 th CAB Complexes. No other impacts on hazardous/toxic materials.
ERP	No Effect	Less than significant: SWMU 11 is in the project area, but already is classified as requiring no further action.
Stored Fuels	No effect	Less than significant: Use quantities would be stored in motor pool areas associated with the 2 nd BCT and 159 th CAB Complexes.
Indirect and Cumulative Impacts	No effect	Less than significant: Because the proposed action would not result in a change (positive or negative) in the personnel assigned to Fort Campbell and all work would be confined to the Clarksville Base area, the potential for interaction effects with other past, present, and reasonably foreseeable actions is negligible. The amount of land clearing is slight and confined to Clarksville Base, and would not interact with other unrelated land clearing activities on post or off post.

4.1.2 Consequences of the No Action Alternative

The military mission of the 2nd BCT and the 159th CAB would be significantly inhibited as these units continue to use facilities for purposes they were not designed for and/or use overcommitted resources/facilities. There would be no short-term positive impact on the local economy. Traffic in the cantonment area would not improve, as the 159th CAB would not be relocated. There would be no impacts, positive or negative, to other resource areas.

4.2 CONCLUSIONS

With the proposed mitigation measures, there would be no significant impacts as a result of the proposed action. The proposed action would result in both short- and long-term positive impacts on the mission capabilities for the 2nd BCT and the 159th CAB. Therefore, a FNSI is warranted for the proposed action.

This page intentionally left blank.

SECTION 5.0

LIST OF PREPARERS

Russell Short/Senior Project Manager/28 years of experience/Master of Arts

Rich Reaves/Environmental Scientist/12 years of experience/PhD.

Rob Price/Environmental Scientist/9 years of experience/Master of Science; Master of Public Affairs

Paul Rose/Project Planner/16 years of experience/Master of City Planning

Kira Zender/Senior Planner/10 years of experience/Master of Urban and Regional Planning

Collin Horace/GIS Analyst/5 years of experience/Bachelor of Science

David Dunagan/Technical Editor/26 years of experience/Master of Arts

This page intentionally left blank.

SECTION 6.0

DISTRIBUTION LIST

Linda Alderdice	Fort Campbell Conservation
David Barber	U.S. Army Installation Management Agency
Jonathan Bowman	U.S. Army Corps of Engineers – Mobile District
Eric Cloud	Fort Campbell NEPA Program
Jim Cobb	U.S. Army Installation Management Agency
Richard D Davis	Fort Campbell Conservation
Thad Keefe	U.S. Army Installation Management Agency
Dana Perkins	U.S. Army Installation Management Agency
Ernie Seckinger	U.S. Army Corps of Engineers – Mobile District
Cheryl Smith	U.S. Army Installation Management Agency
Rich Williamson	Fort Campbell Conservation
Gene Zirkle	Fort Campbell Conservation

This page intentionally left blank.

SECTION 7.0

LITERATURE CITED

- Ahler, Steven R., Marjorie B. Schroeder, and Karli White. 1999. National Register Eligibility Assessment of Geophysical Investigation of Site 40MT28, Fort Campbell, Tennessee/Kentucky. Prepared through Illinois State Museum and submitted to Construction Engineering Research Laboratories, U.S. Corps of Engineers, Champaign, IL.
- Anderson, E.S. and C.A. Buchner. 1998. Intensive Cultural Resources Survey of the 100-a. Proposed National Guard Project Area, within the Former Clarksville Base, Fort Campbell Military Reservation, Montgomery County, Tennessee. Prepared by Panamerican Consultants, Inc. for the National Park Service Southeast Regional Office, Atlanta, GA.
- BHATE Environmental Associates, Inc. 2004. Environmental Assessment: Force Structure Modularity Transformation Fort Campbell, KY.
- BHE Environmental, Inc. 2005. Archaeological Site Detection Survey of CA 396 acres on the Old Clarksville Base at Ft. Campbell, Montgomery County, Tennessee, August 2005.
- Brockington and Associates, Inc. 2005. Draft Report Findings: Phase I Cultural Resources Investigations of 255 Acres in Support of an Environmental Assessment for Proposed Constructions Associated with the integrated Global Presence and Basing Strategy/Army Modular Force at the Old Clarksville Base, Fort Campbell, Kentucky. Submitted to the U.S. Army Corps of Engineers, Mobile District.
- Braun, E.L. 1950. Deciduous forests of eastern North America. Reprinted in 1964 by Hafner Publishing Co., New York, NY.
- Chanchani, S. (Principal Author). March 2005. Inventory and Management Plan for Clarksville Base Historic District at Fort Campbell, Kentucky (Draft), prepared by BHE Environmental, Inc. for USACE Louisville District.
- City of Clarksville, 2005. <http://www.cityofclarksville.com/finance/Budget/pdf/FY%202004/SECTION%2023%20CLARKSVILLE%20STATISTICS>. Web site accessed September 2005.
- Danish Wind Industry Association. 2004. www.windpower.org. Web site accessed November 2005.
- Fort Campbell Environmental Division. 2005. website: <http://www.campbell.army.mil/envdiv/Index.htm>, accessed October 2005.
- Fort Campbell. 1999. Integrated Natural Resources Management Plan.
- Fort Campbell. 2004a. Programmatic Environmental Assessment in Support of the Fort Campbell Range and Training Land Development Plan.
- Fort Campbell. 2004b. Environmental Assessment to Analyze Standard Practices for Construction Projects in the Cantonment Area Fort Campbell, KY.

- Fort Campbell. 2004c. Fort Campbell installation Action Plan: FY 2005 as of September 2004.
- Fort Campbell. 2005a. website: www.campbell.army.mil/transportation.htm, accessed September 2005.
- Global Security. 2005. website: <http://www.globalsecurity.org/military/facility/fort-campbell.htm>, accessed September 2005.
- Gray, Anna, Dorothy Humpf, and Kelly Mitchell. 1998. Architectural Survey of the Proposed National Guard Complex on Clarksville Base, Montgomery County, Fort Campbell, Kentucky. On file at Public Works Business Center, Environmental Division, Conservation Branch, Fort Campbell, KY.
- Lamb Associates, Inc. January 1996. Site Summary for the Fort Campbell (Clarksville Base) Kentucky/Tennessee Former Weapons Storage Area.
- Last, G.V., Gilmore, T.J., and Bronson, F.J., January 1998, Relative Risk Site Evaluation for Buildings 7740 and 7741 Fort Campbell, Kentucky, prepared for the U.S. Department of the Army, Environmental Division, Fort Campbell, KY.
- Leary, Christopher, Samiran Chanchani, and Christopher A. Bergman. 2005. Archaeological Site Detection Survey of Ca. 22 Acres on the Old Clarksville Base at Fort Campbell, Montgomery County, Tennessee. Prepared by BHE Environmental, Inc. and submitted to Fort Campbell Environmental Division through the U.S. Army Corps of Engineers, Louisville District.
- Lockwood Greene. 1994. Planning Studies Related to an On-Going Mission Environmental Impact Statement for Fort Campbell, Kentucky, 101st Airborne Division (Air Assault). Prepared for U.S. Army Corps of Engineers, Nashville District.
- O'Malley, Nancy, Jared Funk, Cynthia Jobe, Thomas Gatus, and Julie Riesenweber. 1983. Cultural Resources Reconnaissance of Fort Campbell, Kentucky-Tennessee. Prepared through the University of Kentucky and submitted to the U.S. Army Corps of Engineers, Nashville District.
- Office of the Deputy Assistant Secretary of the Army. 2002. *Environmental Analysis of Army Actions; Final Rule*. Volume 32, Code of Federal Regulations (CFR), part 651, Environmental Analysis of Army Actions. March 2002.
- Polyak, L.M. and L.L. Webber. 2002. Technical Guidance for Compliance with the General Conformity Rule. <https://www.denix.osd.mil/denix/Public/Library/Air/Conform/techguidecomp.html>, Web site accessed October 2005.
- President's Council on Environmental Quality (CEQ). Considering Cumulative Effects under the National Environmental Policy Act. <http://ceq.eh.doe.gov/nepa/nepanet.htm>. Web site accessed September 2005.
- President's Council on Environmental Quality. 2002. *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, Volume 28, Title 40 Code of Federal Regulations (CFR) Parts 1500–1508. Revised as of July 1, 2002.

Sandia National Laboratories (SNL) Clarksville Base, Fort Campbell, KY/TN Former Special Weapons Storage Area Trip Report, July 11, 1994.

Smolen, M.D., D.W. Miller, L.C. Wyatt, J. Lichthardt, A.L. Lanier, W.W. Woodhouse, and S.W. Broome, 1988. Erosion and Sediment Control Planning and Design Manual. North Carolina Sedimentation Control Commission, NC Dept. of Natural Resources and Community Development, Raleigh, NC.

Tennessee Economic & Community Development. 2005. Accessed via the internet at <http://www.tnecd.net/prospect/comdatarpt.asp?id=Clarksville>. October 2005.

U.S. Army Corps of Engineers (USACE). 2002. Final Programmatic Environmental Impact Statement for Army Transformation. February 2002.

U.S. Environmental Protection Agency (EPA). 1974. Information Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. EPA/ONAC 550/9-74-004. March 1974.

U.S. Environmental Protection Agency (EPA). 2005a. Website accessed November 30, 2005. <http://www.epa.gov/air/criteria.html>

U.S. Environmental Protection Agency (EPA). 2005b. Website accessed November 30, 2005. <http://www.epa.gov/oar/oaqps/greenbk/o3co.html#Ozone8>

United States Department of Agriculture, Forest Service. 1994. Ecological Subregions of the United States, compiled by W. Henry McNab and Peter E. Avers. <http://www.fs.fed.us/land/pubs/ecoregions>. Web site accessed October 2005.

United States Department of Agriculture, Soil Conservation Service (USDA). 1975. Soil Survey of Montgomery County, Tennessee. U.S. Department of Agriculture, Washington, DC.

United States Department of Agriculture, Soil Conservation Service (USDA). 1981. Soil Survey of Lyon and Trigg Counties, Kentucky. U.S. Department of Agriculture, Washington, DC.

United States Department of the Army (HQDA). 1994. *Environmental Assessment Rear Area Master Plan*. Headquarters Department of the Army, 101st Airborne Division (Air Assault) and Fort Campbell, Fort Campbell, KY.

Weitze, K. 2005. Cold War Properties at Fort Hood, Texas: Research Overview and Preliminary Identification. Submitted to Cultural Resources management Program, Environmental Division, Directorate of Public Works, Fort Hood, TX.

This page intentionally left blank.

SECTION 8.0

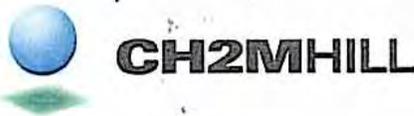
ACRONYMS

ACM	asbestos containing material
ADNL	A-weighted day/night noise level
AFSWP	Armed Forces Special Weapons Project
AIRFA	American Indian Religious Freedom Act
AMF	Army Modular Force
APE	Area of Potential Effect
AR	Army Regulation
ARAP	Aquatic Resource Alteration Permits
ARPA	Archaeological Resources Protection Act
BCT	Brigade Combat Team
BMP	Best Management Practice
BRAC	base realignment and closure
CAAF	Campbell Army Air Field
CAB	Combat Aviation Brigade
CBTS	Clarksville Bus Transportation System
CDNL	C-weighted day/night level
CEQ	President's Council on Environmental Quality
CFR	Code of Federal Regulations
COF	Company Operation Facilities
dB	decibel
dBA	A-weighted decibel level
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMCS	Energy Monitor and Control System
ENMP	Environmental Noise Management Plan
EPA	U.S. Environmental Protection Agency
EO	Executive Order
ERP	Environmental Restoration Program
FEMA	Federal Emergency Management Agency
FNSI	Finding of No Significant Impact
FORSCOM	United States Army Forces Command
GCR	General Conformity Rule
HQDA	Headquarters, Department of the Army
ICUZ	Installation Compatible Use Zone
ICG	Illinois Central Gulf

IDS	Intrusion Detection System
I-24	Interstate Highway 24
IGPBS	Integrated Global Presence and Basing Strategy
ICRMP	Integrated Cultural Resources Management Plan
ISCP	Installation Spill Contingency Plan
LCTA	Land Condition Trend Analysis
MFAB	Multi-Functional Aviation Brigade
NAAQS	National Ambient Air Quality Standards
NAF	Naval Air Facility
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OSHA	Occupational Safety and Health Agency
PA	Programmatic Agreement
PEIS	Programmatic Environmental Impact Statement
POL	Petroleum, oil, and lubricants
PPOC	Pollution Prevention Operation Center
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RONA	Record of non-Applicability
SHPO	State Historic Preservation Offices
SNL	Sandia National Laboratories
SOAR	Special Operations Aviation Regiment
SPCCP	Spill Control and Counter Measure Plan
TDEC	Tennessee Department of Environment and Conservation
TDWPC	Tennessee Division of Water Pollution Control
TVA	Tennessee Valley Authority
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

Appendix A

Agency Scoping



CH2M HILL
115 Perimeter Center Pl. NE
Suite 700
Atlanta, GA 30346

September 13, 2005

Mr. Herbert Harper
Deputy Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, TN 37243-0442

Subject: Construction Environmental Assessment (EA) at Fort Campbell, Kentucky

Dear Mr. Harper:

CH2M HILL is currently assisting Fort Campbell with preparation of an Environmental Assessment (EA) for construction of permanent facilities for the 2nd Brigade Combat Team within the northeastern section of the old Clarksville Base. This letter is being sent as part of the agency scoping for the EA. This letter requests your input with regard to any issues of concern to the Tennessee State Historic Preservation Office (SHPO) relevant for consideration in the NEPA analysis.

This letter is not a request for 106 consultations with the Tennessee SHPO. Any consultation that may be required as a result of the proposed project would be handled directly by Fort Campbell, by Richard Davis or Eric Cloud.

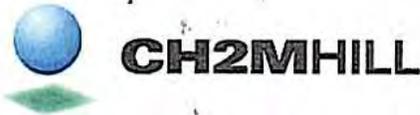
If you have any questions please give me a call at 770-604-9182 ext 504.

Sincerely,

CH2M HILL

A handwritten signature in black ink that reads "Rich Reaves".

Rich Reaves



CH2M HILL
115 Perimeter Center Pl, NE
Suite 700
Atlanta, GA 30346

September 13, 2005

Mr. Jim Widlak
Endangered Species Biologist
Cookeville Ecological Services Field Office
U.S. Fish and Wildlife Service
446 Neal Street
Cookeville, TN 38501

Subject: Construction Environmental Assessment (EA) at Fort Campbell, Kentucky

Dear Mr. Widlak:

CH2M HILL is currently assisting Fort Campbell with preparation of an Environmental Assessment (EA) for construction of permanent facilities for the 2nd Brigade Combat Team within the northeastern section of the old Clarksville Base. This letter is being sent as part of the agency scoping for the EA. This letter requests your input with regard to any issues of concern to the U.S. Fish and Wildlife Service (USFWS) relevant for consideration in the NEPA analysis.

This letter is not a request for consultation with the USFWS. Any consultation that may be required as a result of the proposed project would be handled directly by Fort Campbell, by Eric Cloud and Gene Zirkle.

If you have any questions please give me a call at 770-604-9182 ext 504.

Sincerely,

CH2M HILL

A handwritten signature in black ink that reads "Rich Reaves".

Rich Reaves



CH2M HILL
115 Perimeter Center Pl, NE
Suite 700
Atlanta, GA 30346

September 22, 2005

Mr. Herbert Harper
Deputy Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, TN 37243-0442

Subject: Construction Environmental Assessment (EA) at Fort Campbell, Kentucky

Dear Mr. Harper:

CH2M HILL contacted your office via letter on September 13 regarding an Environmental Assessment (EA) for construction of permanent facilities for the 2nd Brigade Combat Team within the northeastern section of the old Clarksville Base on Fort Campbell. Subsequent to that inquiry, the U.S. Army has altered the proposed action to include construction of a second complex, adjacent to the one for the 2nd Brigade Combat Team in the Clarksville base area. The second complex would support the 159th Multi-Functional Aviation Brigade. Please consider issues that may arise from the full projected build-out when addressing scoping issues relevant to the EA.

This letter is not a request for 106 consultations with the Tennessee SHPO. Any consultation that may be required as a result of the proposed project would be handled directly by Fort Campbell, by Richard Davis or Eric Cloud.

I regret any inconvenience resulting from this change of scope. If you have any questions please give me a call at 770-604-9182 ext 504.

Sincerely,

CH2M HILL

A handwritten signature in blue ink that reads "Rich Reaves".

Rich Reaves



CH2M HILL
115 Perimeter Center Pl, NE
Suite 700
Atlanta, GA 30346

September 22, 2005

Mr. Jim Widlak
Endangered Species Biologist
Cookeville Ecological Services Field Office
U.S. Fish and Wildlife Service
446 Neal Street
Cookeville, TN 38501

Subject: Construction Environmental Assessment (EA) at Fort Campbell, Kentucky

Dear Mr. Widlak:

CH2M HILL contacted your office via letter on September 13 regarding an Environmental Assessment (EA) for construction of permanent facilities for the 2nd Brigade Combat Team within the northeastern section of the old Clarksville Base on Fort Campbell. Subsequent to that inquiry, the U.S. Army has altered the proposed action to include construction of a second complex, adjacent to the one for the 2nd Brigade Combat Team in the Clarksville base area. The second complex would support the 159th Multi-Functional Aviation Brigade. Please consider issues that may arise from the full projected build-out when addressing scoping issues relevant to the EA.

This letter is not a request for consultation with the USFWS. Any consultation that may be required as a result of the proposed project would be handled directly by Fort Campbell, by Eric Cloud and Gene Zirkle.

I regret any inconvenience resulting from this change of scope. If you have any questions please give me a call at 770-604-9182 ext 504.

Sincerely,

CH2M HILL

A handwritten signature in blue ink that reads "Rich Reaves".

Rich Reaves



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

October 18, 2005

Mr. Rich Reaves
CH2M Hill
115 Perimeter Center Place, N.E.
Suite 700
Atlanta, Georgia 30346

Re: FWS #05-1757

Dear Mr. Reaves:

Thank you for your letter of September 13, 2005, requesting our comments concerning preparation of an environmental assessment for construction of permanent facilities for the 2nd Brigade Combat Team at Fort Campbell, Kentucky. Fish and Wildlife Service biologists have reviewed your request and we offer the following comments.

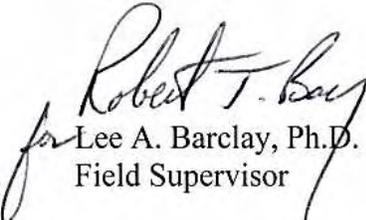
We offer the following for consideration in the proposed environmental assessment:

1. Will the proposed construction destroy or have significant adverse impacts on wetland resources? If jurisdictional wetlands will be impacted, what measures will be implemented to mitigate for such losses?
2. Will water quality in streams and other waterbodies on the base be degraded as a result of construction-related sedimentation? Will runoff from the completed facility result in introduction of pollutants or toxicants into waterbodies on the base, offsetting ongoing efforts to improve water quality?
3. Will construction result in further fragmentation of forest habitat or destruction of grassland habitat for migratory songbirds? What measures will be taken to avoid or minimize such fragmentation?
4. Will construction and/or operation of the facility have adverse effects on federally listed or proposed endangered or threatened species? If so, what measures will be implemented to avoid such effects?
5. What measures will be implemented to avoid or minimize impacts to State-listed species and Federal species of concern?

We recognize the importance of training military personnel, but we believe that high-quality military training can be accomplished without significant adverse impacts to wetlands or fish and wildlife resources. We are willing to work with your staff and the personnel at Fort Campbell to ensure that both objectives are met.

Thank you for the opportunity to comment. If you have any questions, please contact Jim Widlak of my staff at 931/528-6481, ext. 202.

Sincerely,


for Lee A. Barclay, Ph.D.
Field Supervisor



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

December 14, 2005

Mr. Rondal G. Ballard
Chief, Environmental Division
Headquarters, United States Army Garrison
Fort Campbell, Kentucky 42223-5000

Re: FWS #06-FA-0223

Dear Mr. Ballard:

Thank you for your letter and enclosure of December 9, 2005, concerning a proposed development project within the Clarksville Base area of Fort Campbell in Montgomery County, Tennessee. Fish and Wildlife Service biologists have reviewed the information submitted and we offer the following comments.

Based on the results of mist net surveys and surveys of bunkers in the action area, we concur that construction of troop barracks and support facilities on 1,242 acres of the Clarksville Base is not likely to adversely affect the federally endangered Indiana bat (*Myotis sodalis*) and gray bat (*Myotis grisescens*). In view of this, we believe that the requirements of section 7 of the Endangered Species Act have been fulfilled. Obligations under section 7 must be reconsidered, however, if: (1) new information reveals that the proposed action may affect listed species in a manner or to an extent not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this review, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

Thank you for the opportunity to comment on this action. Your concern for the protection of endangered and threatened species at Fort Campbell is greatly appreciated. If you have any questions, please contact Jim Widlak of my staff at 931/528-6481, ext. 202.

Sincerely,


Lee A. Barclay, Ph.D.
Field Supervisor

Appendix B

Federal and State Protected Species Known to Occur in Montgomery County, Tennessee

Table B-1 Federal Listed Species in Montgomery County, Tennessee		
Common name	Scientific name	Federal Status
Gray bat	<i>Myotis grisescens</i>	Endangered
Indiana bat	<i>Myotis sodalis</i>	Endangered
Pink mucket pearly mussel	<i>Lampsilis orbiculata</i>	Endangered
Tan riffle shell	<i>Epioblasma walkeri</i>	Endangered
Rough pigtoe pearly mussel	<i>Pleruobema plenum</i>	Endangered
Dromedary pearly mussel	<i>Dromus dromas</i>	Endangered
Orange-footed pearly mussel	<i>Plethobasus cooperianus</i>	Endangered
Price's potato bean	<i>Apios priceana</i>	Threatened
Short's bladderpod	<i>Lesquerella globosa</i>	Candidate
<i>Source: USFWS, 2005</i>		

Table B-2 State Listed Species in Montgomery County, Tennessee		
Common name	Scientific name	State Status
Gray bat	<i>Myotis grisescens</i>	E
Indiana bat	<i>Myotis sodalis</i>	E
Northern pine snake	<i>Pituophis melanoleucus melanoleucus</i>	T
Western pigmy rattlesnake	<i>Sistrurus miliarius streckeri</i>	T
Bachman's sparrow	<i>Aimophila aestivalis</i>	E
Lark sparrow	<i>Chondestes grammacus</i>	T
Osprey	<i>Pandion haliaetus</i>	T
Bewick's wren	<i>Thryomanes bewickii</i>	S
Earleaved false foxglove	<i>Agalinis auriculata</i>	E
Limestone blue star	<i>Amsonia tabernaemontana var gatting</i>	S
Price's potato bean	<i>Apios priceana</i>	E
Short's rock cress	<i>Arabis shortii</i>	S
Prairie milkweed	<i>Asclepias hirtella</i>	S
Purple milkweed	<i>Asclepias purpurascens</i>	S
Spreading false-foxglove	<i>Aureolaria patula</i>	T
Bristly sedge	<i>Carex comosa</i>	T
Heavy sedge	<i>Carex gravida</i>	S
Lake bank sedge	<i>Carex lacustris</i>	T
Muskingum sedge	<i>Carex muskingumensis</i>	E-P
Appalachian bugbane	<i>Cimicifuga rubifolia</i>	T
Wavy leaf purple coneflower	<i>Echinacea simulata</i>	T
Blue mud-plantain	<i>Heteranthera limosa</i>	T

Table B-2
State Listed Species in Montgomery County, Tennessee

Common name	Scientific name	State Status
Hairy hawkweed	<i>Hieracium longipilum</i>	S
Featherfoil	<i>Hottonia inflata</i>	S
Short's bladderpod	<i>Lesquerella globosa</i>	E
Michigan lily	<i>Lilium michiganense</i>	T
Hair grass	<i>Muhlenbergia glabriflora</i>	S
Lake cress	<i>Neobeckia aquatica</i>	S
Blue scorpion-weed	<i>Phacelia ranunculacea</i>	S
Maryland milkwort	<i>Polygala mariana</i>	S
Large-tooth aspen	<i>Populus grandidentata</i>	S
Bearded rattlesnake-root	<i>Prenanthes barbata</i>	S
Nodding rattlesnake-root	<i>Prenanthes crepidinea</i>	E
Eastern white water-crowfoot	<i>Ranunculus longirostris</i>	E
Sweet coneflower	<i>Rudbeckia subtomentosa</i>	T
Short-beaked arrowhead	<i>Sagittaria brevirostra</i>	T
Sessile fruited arrowhead	<i>Sagittaria rigida</i>	S
Compass plant	<i>Silphium laciniatum</i>	T
Southern prairie dock	<i>Silphium pinnatifidum</i>	T
Rock goldenrod	<i>Solidago rupestris</i>	E
Clebsch's pocket moss	<i>Fissidens clebschii</i>	S
Notes:		
T = Threatened		
E = Endangered		
S = Species of special concern		
D = Deemed in need of management		
SR = State rare species		
E-P = Endangered-Possibly extirpated		
Source: TDEC, 2003 and KDFWR, 2003		