Final

Environmental Assessment for the Implementation of Base Realignment and Closure 2005 Realignment Actions at Hot Springs, Arkansas

Prepared for:

U.S. ARMY RESERVE

Prepared by:

U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT

March 2009

ENVIRONMENTAL ASSESSMENT ORGANIZATION

This environmental assessment addresses the proposed action to implement the BRAC Commission recommendations for the U.S. Army Reserve Component at Hot Springs, Arkansas. It has been developed in accordance with the National Environmental Policy Act and implementing regulations issued by the Council on Environmental Quality (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision makers and the public of the likely environmental and socioeconomic consequences of the proposed action and alternatives.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, environmental and socioeconomic consequences, and mitigation measures.

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SECTION 1.0: ***PURPOSE, NEED, AND SCOPE*** summarizes the purpose of and need for the proposed action and describes the scope of the environmental impact analysis process.

SECTION 2.0: ***PROPOSED ACTION*** describes the proposed action to implement the BRAC Commission recommendations at Hot Springs, Arkansas.

SECTION 3.0: ***ALTERNATIVES*** examines alternative sites and alternatives to implementing the proposed action.

SECTION 4.0: ***AFFECTED ENVIRONMENT AND CONSEQUENCES*** describes the existing environmental and socioeconomic setting at Hot Springs and identifies potential effects of implementing the proposed action.

SECTION 5.0: ***FINDINGS AND CONCLUSIONS*** summarizes the environmental and socioeconomic effects of implementing the proposed action.

SECTION 6.0: ***LIST OF PREPARERS*** identifies the persons who prepared the document.

SECTION 7.0: ***DISTRIBUTION LIST*** indicates recipients of this environmental assessment.

SECTION 8.0: ***REFERENCES*** provides bibliographical information for cited sources.

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FINAL ENVIRONMENTAL ASSESSMENT FOR THE IMPLEMENTATION OF BASE REALIGNMENT AND CLOSURE 2005 REALIGNMENT ACTIONS AT HOT SPRINGS, ARKANSAS

Prepared by:

U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT

BYRON G. JORNS
Colonel, Corps of Engineers
Commanding

Approved by:

Philip L. Hanrahan, Brigadier General
U.S. Army Reserve, Commanding

ENVIRONMENTAL ASSESSMENT

LEAD AGENCY: U.S. Army Reserve, 90th Regional Readiness Command

***TITLE OF PROPOSED ACTION*:** Final Environmental Assessment for the Implementation of Base Realignment and Closure 2005 Realignment Actions at Hot Springs, Arkansas

AFFECTED JURISDICTION: Hot Springs, Arkansas

PREPARED BY: Byron G. Jorns, Colonel, Corps of Engineers, Commanding, U.S. Army Corps of Engineers, Mobile District

APPROVED BY: Philip L. Hanrahan, Brigadier General, U.S. Army Reserve, 90th Regional Readiness Command, Commanding

ABSTRACT: This environmental assessment (EA) considers the proposed construction and operation of an Armed Forces Reserve Center at Hot Springs, Arkansas, pursuant to the 2005 Base Closure and Realignment (BRAC) Commission recommendations. The EA identifies, evaluates, and documents the environmental and socioeconomic effects of facility construction, operation, and maintenance proposed to accommodate the changes mandated by the BRAC Commission. A No Action Alternative is also evaluated. Implementation of the proposed action is not expected to result in significant environmental or socioeconomic impacts. Therefore, preparation of an environmental impact statement is not required and a finding of no significant impact (FNSI) will be published in accordance with the National Environmental Policy Act.

REVIEW COMMENT DEADLINE: The EA and draft FNSI are available for review and comment for 30 days from the publication of a Notice of Availability in the *The Sentinel-Record*. Copies of the final EA and draft FNSI can be obtained by contacting Sam Pett at 703-385-6000 or at sam.pett@tetratech.com. A copy of the EA is available for review at the Garland County Library, 1427 Malvern Avenue, Hot Springs, Arkansas, and the EA and draft FNSI can be read on the Internet at http://www.hqda.army.mil/acsim/brac/env_ea_review.htm. Comments on the EA and draft FNSI should be submitted to Mr. James Wheeler II, Chief, Environmental Division, at U.S. Army Reserve, 90th Regional Readiness Command, 8000 Camp Robinson Rd, N. Little Rock, AR 72118, or at jim.wheeler@usar.army.mil. Comments on the EA and draft FNSI should be submitted by no later than the end of the public comment period.

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This environmental assessment (EA) describes and analyzes the effects of implementing the 2005 Defense Base Closure and Realignment Commission (BRAC Commission) recommendations with respect to Hot Springs, Arkansas, and associated actions on the natural and human environment.

ES.2 BACKGROUND

With respect to Hot Springs, Arkansas, the BRAC Commission recommended in relevant part:

> Close the United States Army Reserve Center, Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS), Malvern, Arkansas and relocate units to a new Armed Forces Reserve Center on property located in Hot Springs, Arkansas, if the Army is able to acquire suitable land for the construction of the facilities. The new AFRC shall have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, Arkansas, if the state of Arkansas decides to relocate those units.

To meet the BRAC directive, the Army proposes to acquire approximately 10 acres in Hot Springs, Arkansas. After acquiring the property, the Army would construct an Armed Forces Reserve Center (AFRC) (including an Organizational Maintenance Shop [OMS] and unheated storage building) having approximately 62,000 square feet of space. In this EA, the Army identifies and describes the environmental effects associated with its proposed action at Hot Springs, Arkansas.

ES.3 PROPOSED ACTION AND ALTERNATIVES

ES.3.1 Proposed Action

The site proposed for the new AFRC is at 2015 Albert Pike Road in Hot Springs. The site encompasses approximately 13 acres and is accessible from Albert Pike Road. East of the site is the residence of the property owner. Black Street lies east of the owner's property line, and a residential area is east of Black Street. A cleared corridor for power lines defines the southern border of the site, and further south is the Arkansas Midland Rail line. A commercial area is west of the proposed site. Zoned for commercial and light manufacturing uses, the property is undeveloped. The primary facilities of the new AFRC would consist of a training building, OMS, an unheated storage building, and a parking area for military vehicles. The facilities would be sufficient to accommodate 200 personnel. No demolition would be required. Construction could begin as early as February 2010 and could be completed by March 2011. The Hot Springs AFRC would support operations of units of the Army Reserve and Arkansas Army National Guard.

ES.3.2 No Action Alternative

Inclusion of the No Action Alternative is prescribed by Council on Environmental Quality regulations. The No Action Alternative serves as a baseline alternative against which other alternatives can be evaluated. No action assumes that the Army would continue its mission as it

existed in November 2005, with no unit relocations and no new facilities constructed. Because the BRAC Commission's recommendations now have the force of law, continuation of the November 2005 missions are not possible without further congressional action. The No Action Alternative is evaluated in this EA.

ES.4 ENVIRONMENTAL CONSEQUENCES

The EA evaluates potential effects on land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic materials. For each resource, the predicted effects of the proposed action and the No Action alternative are briefly described below. The consequences of the two alternatives are summarized in Table ES-1.

Table ES-1
Summary of potential environmental and socioeconomic consequences

	Environmental and socioeconomic effects	
Resource Area	**Proposed Action**	**No Action Alternative**
Land use	No effect	No effect
Aesthetics and visual resources	Long-term negligible adverse	No effect
Air quality	Short- and long-term minor adverse	No effect
Noise	Short-term minor adverse	No effect
Geology and soils	Short-term minor adverse	No effect
Water resources	Short- and long-term minor adverse	No effect
Biological resources	Long-term minor adverse	No effect
Cultural resources	No effect	No effect
Socioeconomics		
• Regional economic activity	Short-term minor beneficial	No effect
• Population	No effect	No effect
• Housing	No effect	No effect
• Quality of life	No effect	No effect
• Environmental justice	No effect	No effect
• Protection of children	No effect	No effect
Transportation	Short- and long-term minor adverse	No effect
Utilities	Long-term negligible adverse	No effect
Hazardous and toxic substances	Long-term minor adverse	No effect

ES.5 CUMULATIVE EFFECTS

Minor adverse cumulative effects on land use, aesthetics, vegetation, and wildlife, and minor beneficial effects on economic development would be expected. None of these adverse cumulative effects would be significant.

ES.6 MITIGATION

Mitigation actions are used to reduce, avoid, or compensate for significant adverse effects. The EA determined that there was no need for mitigation measures.

ES.7 CONCLUSIONS

On the basis of the analysis performed in the EA, implementation of the proposed action would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an environmental impact statement is not required. Issuance of a finding of no significant impact would be appropriate.

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SECTION 1.0
PURPOSE, NEED, AND SCOPE

1.1 INTRODUCTION

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended that certain realignment actions occur throughout the United States. The President approved these recommendations on September 15, 2005. The Congress did not alter any of the BRAC Commission's recommendations. The BRAC Commission recommendations must now be implemented, as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

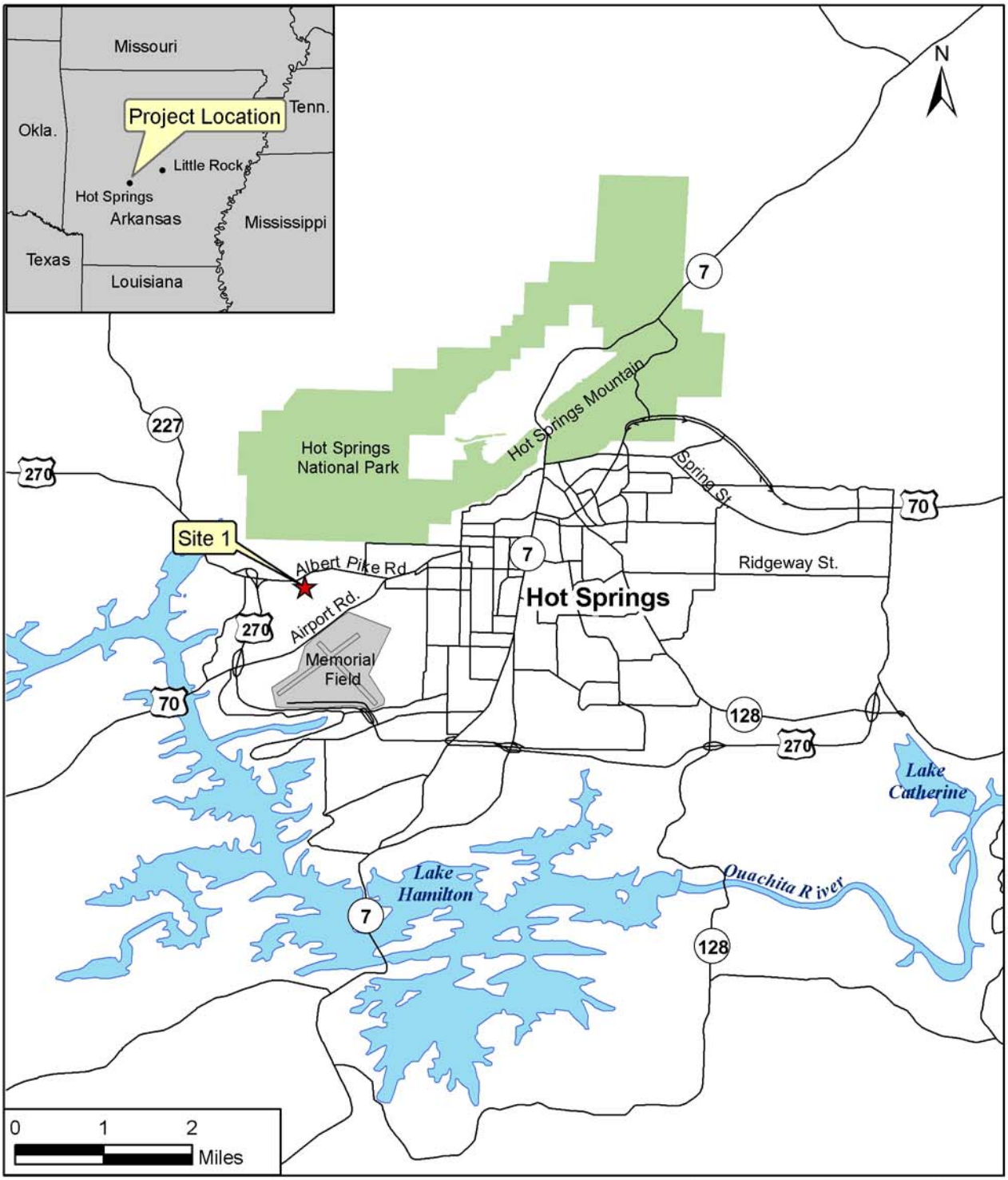
The BRAC Commission recommended the closure of the United States Army Reserve Center, Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity, Malvern, Arkansas, and the relocation of the units to a new Armed Forces Reserve Center (AFRC) in Hot Springs if the Army is able to acquire suitable land for the construction of the facilities. The new AFRC is to have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, if the state of Arkansas decides to relocate those units. In this environmental assessment (EA), the Army identifies and describes the environmental effects associated with its proposed action in Hot Springs. Details on the proposed action are provided in Section 2.2.

1.2 PURPOSE AND NEED

The purpose of the proposed action is to provide the necessary facilities to support the BRAC Commission's recommendation pertaining to United States Army Reserve and Army National Guard units to be at a new AFRC in Hot Springs. Figure 1-1 shows a general location map of Hot Springs.

The need for the proposed action is to improve the nation's ability to respond rapidly to challenges of the 21st century. The Army is legally bound to defend the United States and its territories, to support national policies and objectives, and to defeat nations responsible for aggression that endangers the peace and security of the United States. To carry out these tasks, the Army must adapt to changing world conditions and must improve its capabilities to respond to a variety of circumstances across the full spectrum of military operations. The proposed action also is needed because existing Army Reserve and Army National Guard facilities are substandard and are not adequately sized to support the number of assigned Soldiers. The following is a discussion of two major initiatives that contribute to the Army's need for the proposed action.

Base Realignment and Closure. In previous rounds of BRAC, the explicit goal was to save money and downsize the military to reap a *peace dividend*. In the 2005 BRAC round, the Department of Defense (DoD) also sought to reorganize its installation infrastructure to most efficiently support its forces, increase operational readiness, and facilitate new ways of doing business. Thus, BRAC represents more than cost savings; it supports advancing the goals of transformation, improving military capabilities, and enhancing military



LEGEND

- Potential Site
- Road
- Surface Water
- National Park

Location Map

Figure 1-1

value. The Army needs to carry out the BRAC recommendations at Hot Springs to achieve the objectives of the BRAC process.

1.3 SCOPE

The 1990 Defense Base Closure and Realignment Act specifies that the National Environmental Policy Act (NEPA) does not apply to actions of the President, the Commission, or the DoD, except "(i) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated" (Section 2905[c][2][A], Public Law 101-510, as amended). The law further specifies that in applying NEPA provisions to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider "(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation which has been selected as the receiving installation, or (iii) military installations alternative to those recommended or selected" (Section 2905[c][2][B]). Because the BRAC Commission's deliberation and decision, as well as the need for closing or realigning a military installation, are exempt from NEPA, this EA does not address the need for realignment. Because NEPA does apply to the activities proposed to support unit realignment, the Army addresses those actions in this document.

1.4 PUBLIC INVOLVEMENT

The Army invites public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decisionmaking. 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.

Public participation opportunities with respect to this EA and decisionmaking on the proposed action are guided by Title 32 of the *Code of Federal Regulations* (CFR) Part 651.14. The EA is available to the public for 30 days, along with a draft finding of no significant impact (FNSI). At the end of the 30-day period, the Army will consider any comments submitted by individuals, agencies, or organizations. As appropriate, the Army may then execute the FNSI and proceed with implementing the proposed action. If it is determined before issuance of a final FNSI that implementing the proposed action would result in significant impacts, the Army will publish in the *Federal Register* a notice of intent to prepare an environmental impact statement, will commit to mitigation actions sufficient to reduce impacts below significance levels, or will take no action.

1.5 IMPACT ANALYSIS PERFORMED

This EA has been developed in accordance with NEPA and its implementing regulations, issued by the President's Council on Environmental Quality (CEQ) and the Army.[1] Its purpose is to

[1] Council on Environmental Quality *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, 40 CFR Parts 1500–1508, and *Environmental Analysis of Army Actions*, 32 CFR Part 651.14.

inform decisionmakers and the public of the likely environmental consequences of the proposed action and alternatives.

An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archaeologists, historians, and military 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 is described in Section 2.0, and alternatives, including the No Action Alternative, are described in Section 3.0. Conditions considered the baseline are described in Section 4.0, Affected Environment and Environmental Consequences. The expected effects of the proposed action, also described in Section 4.0, are presented immediately following the description of baseline conditions for each environmental resource area addressed in the EA. The potential for cumulative effects is also addressed in Section 4.0, and mitigation measures are identified where appropriate.

1.6 FRAMEWORK FOR DECISION MAKING

In addressing environmental considerations, the Army is guided by relevant statutes and their implementing regulations and by Executive Orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. These include the American Indian Religious Freedom Act (AIRFA), Clean Air Act, Clean Water Act, Native American Graves Protection and Repatriation Act (NAGPRA), Noise Control Act; Endangered Species Act; National Historic Preservation Act (NHPA), Archaeological Resources Protection Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, Comprehensive Environmental Response Facilitation Act, and Toxic Substances Control Act. EOs 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 13175 (*Consultation and Coordination with Indian Tribal Governments*); EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*), and EO 13423 (*Strengthening Federal Environmental, Energy, and Transportation Management*). These authorities are addressed in various sections throughout this EA when relevant to environmental resources and conditions. The full text of the laws, regulations, and EOs is available on the Defense Environmental Network and Information Exchange Web site, at http://www.denix.osd.mil. State and local laws, ordinances, or regulations are discussed within the appropriate narrative section of this EA to the extent that they are relevant, and accompanying citations of authority or other references are provided.

SECTION 2.0
DESCRIPTION OF THE PROPOSED ACTION

2.1 INTRODUCTION

This section describes the Army's Preferred Alternative for carrying out the BRAC Commission's recommendations, which became law on November 9, 2005, as follows:

> Close the United States Army Reserve Center, Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS), Malvern, Arkansas and relocate units to a new Armed Forces Reserve Center on property located in Hot Springs, Arkansas, if the Army is able to acquire suitable land for the construction of the facilities. The new AFRC shall have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, Arkansas, if the state of Arkansas decides to relocate those units.

To meet the BRAC directive, the Army proposes to acquire about 13 acres in Hot Springs, Arkansas. Upon acquisition of property, the Army would construct and operate an AFRC (including an Organizational Maintenance Shop [OMS] and unheated storage building) having about 62,000 square feet of built space.

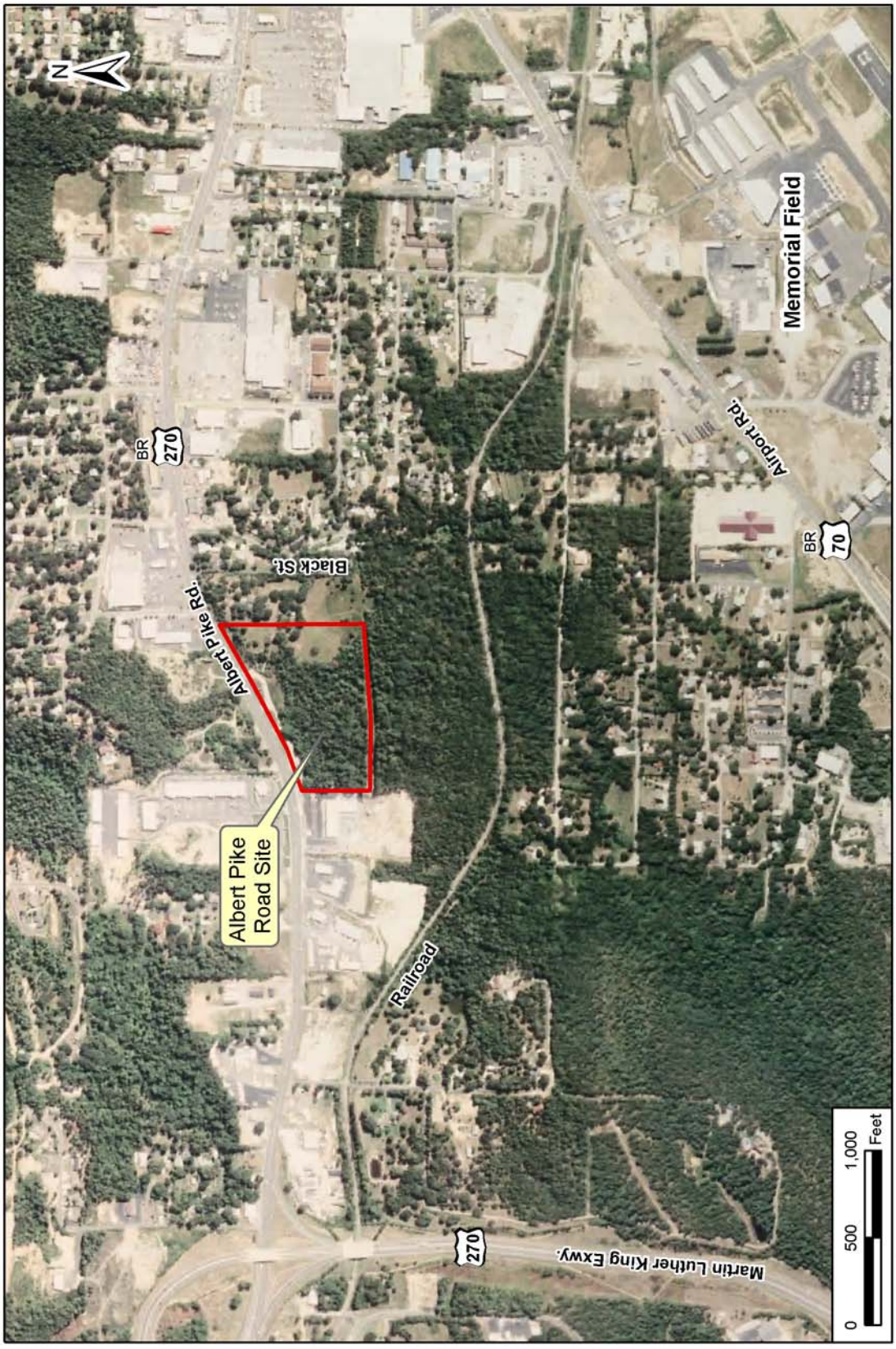
2.2 PROPOSED ACTION

2.2.1 Site Description

The site proposed for the new AFRC is at 2015 Albert Pike Road in Hot Springs (Figure 2-1). The site consists of approximately 13 acres of a larger 41-acre tract; the owner is willing to subdivide the property, enabling the Army to acquire only that amount of land necessary to meet its needs. The site is accessible from Albert Pike Road. East of the site is the residence of the property owner. Black Street lies east of the owner's property line, and further east is a residential area. A cleared corridor for power lines defines the southern border of the site, and further south is the Arkansas Midland Rail line. A commercial area is west of the proposed site. The property is undeveloped and zoned for commercial and light manufacturing uses. The terrain consists of trees and scrub vegetation. The property is outside the 100-year floodplain. This is the *Preferred Alternative* for implementation of the proposed action, as is further discussed in Section 3.0 and throughout this EA.

2.2.2 Facilities Construction

In addition to land acquisition, the primary facilities of the new AFRC would be a training building, an OMS, an unheated storage building, and parking for military and personal vehicles. The training building would provide space for administrative, educational, assembly, library, learning center, arms vault, weapon simulator, and physical fitness purposes. The maintenance shop would provide work bays and maintenance administrative support. The facilities would be sufficient to accommodate 200 personnel of two Army Reserve units and an Arkansas Army National Guard unit. The buildings would be of permanent construction with plumbing, heating, ventilation, and air conditioning systems; and mechanical, security, and electrical systems. In accordance with Army policy for the construction of new facilities, this project will be designed



Albert Pike Road Site

Figure 2-1

to meet Leadership in Energy and Environmental Design Silver standards, or better, with a view toward enhanced sustainability and energy efficiency. Table 2-1 provides information on the size of these facilities.

Table 2-1
Facility sizes

Facility	Approximate size (square feet)
Armed Forces Reserve Center	53,664
Organizational Maintenance Shop	7,276
Unheated storage building	1,065
Organizational parking	62,370
Paving—parking, walks, roads	32,571

Facilities construction would require land clearing, paving, fencing, general site improvements, and extension of utilities to serve the project. Force protection (physical security) measures would be incorporated into the design, including maximum standoff distance from roads, parking areas, and vehicle unloading areas. Berms, heavy landscaping, and bollards would be used to prevent access when standoff distances could not be maintained.

The property is undeveloped, so no demolition of existing facilities would be required. Construction could begin as early as February 2010 and could be completed by March 2011—a build-out period of about 12 months.

2.2.3 Operations

The Hot Springs AFRC would support operations of units of the Army Reserve and Arkansas Army National Guard. The AFRC would be used on weekdays by a small, full-time staff and on weekends by the various Reserve Component units for training. Daily operations would include administrative, training, and maintenance support of unit missions and requirements; recruiting; and preparing for battle assembly weekends.

Up to 200 Reservists and Guardsmen would be assigned to the units stationed at the AFRC. These Soldiers would participate in training activities on various weekends of each month. A typical training weekend would involve up to 120 Soldiers. On weekends that include a military-observed holiday, training would not occur. Training activities from a holiday weekend would be shifted to one of the other weekends during the same month, resulting in higher training populations during the remaining weekends that month. Peak weekend populations at the AFRC during such weekends would be about 200 Soldiers.

Training activities conducted on drill weekends would include Military Occupational Specialties training in a Soldier's skills (such as maintenance and communications), required briefings, physical training, mentoring, and evaluations. Weekend traffic would include personal vehicles and military vehicles such as high–mobility, multipurpose wheeled vehicles (or Humvees) of various configurations, 2.5- and 5-ton cargo trucks, light medium-tactical vehicles, wreckers, and trailers of various configurations. The AFRC would support up to 120 military vehicles, some of which would be tracked vehicles.

SECTION 3.0
ALTERNATIVES

3.1 INTRODUCTION

A bedrock principle of NEPA is that an agency should consider reasonable alternatives to a proposed action. Considering alternatives helps to avoid unnecessary impacts and allows analysis of reasonable ways to achieve the stated purpose. The following discussion identifies alternatives considered by the Army and whether they are feasible and, hence, subject to detailed evaluation in this EA.

Alternatives to the proposed action were assessed on the basis of alternative sites. In April 2008, the Army prepared an Available Site Identification and Validation Report that evaluated nine potential sites for the AFRC. For a site to be considered as a potential site for the AFRC, it had to meet all of the following criteria:

- Net usable acreage
- Compatibility with surrounding land uses
- Support for intended construction and environmental compliance
- Ready access to public utilities
- Reasonable cut or fill requirements
- Proximity to a major roadway corridor and safe ingress and egress
- Reasonable purchase price, within budget
- Appropriate zoning and antiterrorism (property set-back requirements) considerations

Four potential sites for the AFRC were identified as meeting all of the above criteria among the nine sites evaluated. Two of the four potential sites was later eliminated from consideration because of their no longer being available. Later, based on site visits and further evaluation, the Army eliminated another site because of topographic and infrastructure constraints. The Army, therefore, selected one site to be considered for the proposed action (ACSIM 2008; DA, HQ, 90th RRC 2008). The site and the No Action Alternative are discussed below.

3.2 PROPOSED SITE

This 13-acre site, on Albert Pike Road, is the Army's Preferred Alternative for the AFRC. It is described in detail in Section 2.2.1.

3.3 NO ACTION ALTERNATIVE

The CEQ regulations require inclusion of the No Action Alternative, which serves as a baseline against which the effects of the proposed action and alternatives can be evaluated.

Under the No Action Alternative, the Army would not implement the proposed action. No land would be acquired, no facilities would be constructed, and no units would relocate from other facilities. The units proposed for relocation under the proposed action would continue to operate from their current facilities.

SECTION 4.0
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 LAND USE

4.1.1 Affected Environment

4.1.1.1 Regional Geographic Setting and Location

The proposed site for the Hot Springs AFRC project is in Hot Springs in Garland County, Arkansas. Little Rock, Arkansas, the state's largest city and capital, is about 50 miles northeast of Hot Springs.

4.1.1.2 Albert Pike Road Site (Preferred Alternative)

The Albert Pike Road site is in the western portion of Hot Springs, about 2 miles west of downtown Hot Springs, in the 2000 address block of Albert Pike Road (also identified as U.S. Route 270 Business) (Figure 1-1). The property is at the southwest quadrant of the intersection of Albert Pike Road and Black Street.

As shown in Figure 2-1, the 13-acre site under consideration is largely undeveloped and forested. A developed feature near the site is a low-voltage, pole-to-pole electric line that defines the southern boundary of the site. An approximately 30-foot cut embankment is along the western boundary of the site, created when a commercial development was constructed there. The site is bounded by Albert Pike Road to the north; the property owner's residence and Black Street to the east; a power line corridor, more of the property owner's property, and the Arkansas Midland railroad to the south; and a commercial area to the west. The site is owned by a private landholder and is zoned for commercial and light manufacturing uses and is designated as *Planned Development* by the city of Hot Springs. Planned Development parcels allow flexibility to encourage the development of vacant, in-fill parcels in the city (City of Hot Springs 2008a; City of Hot Springs GIS 2008).

4.1.1.3 Surrounding Land Use

Surrounding the Albert Pike Road site is the property owner's residence and a small residential area to the east and sparse residential development in the forested areas south of the site beyond the railroad track. One-half mile to the south is Memorial Field, a small regional airport. Molly Creek is southwest of the site, and it flows to the south. Fronting the site across Albert Pike Road are numerous small commercial businesses. To the west is a recreational vehicle dealership.

4.1.1.4 Future Development Trends

Apart from the site itself, no proposed development has been identified in the immediate vicinity of the site. No other Planned Development zones in Hot Springs were identified within ½ mile of the site (City of Hot Springs GIS 2008). The proposed future land use plan in the Hot Springs Comprehensive Plan indicates that the area around the proposed site is urban land and will be developed as a medium- to high-density residential area with linear commercial development along Albert Pike Road (City of Hot Springs 1997).

4.1.2 Environmental Consequences

4.1.2.1 Albert Pike Road Alternative

No effects on land use would be expected from constructing an AFRC at the Albert Pike Road site. The site is zoned Planned Development, which is compatible with the proposed AFRC use. Aspects of the surrounding area (forested areas, the railroad tracks, and commercial development along Albert Pike Road) would be compatible with the proposed AFRC and would serve as a buffer between the proposed AFRC and potentially incompatible nearby land uses (e.g., residential areas). Existing and future commercial development along Albert Pike Road does not present a land use incompatibility. Future residential development in the area, as envisioned in the Hot Springs Comprehensive Plan (City of Hot Springs 1997), would be compatible with the AFRC if site development planning included the use of vegetative buffers and the suitable placement of access points.

4.1.2.2 No Action Alternative

No effects on land use would result under the No Action Alternative because baseline conditions would remain the same.

4.2 AESTHETICS AND VISUAL RESOURCES

4.2.1 Affected Environment

Aesthetics and visual resources are the natural and man-made features of a landscape. They include notable landmarks, buildings and infrastructure elements, landforms of particular beauty or significance, water features, and vegetation. Together these features form the overall aesthetic impression that a viewer receives of an area or its landscape.

The Albert Pike Road site is forested. A electric transmission line on poles borders the site on the south. The site can be considered to have moderate scenic quality. Albert Pike Road is a busy four-lane road lined by numerous small businesses, and billboards have been erected along Albert Pike Road on the proposed site. A few residences are east of the site across Black Road. A railroad track runs east to west south of the site. Small airplanes landing at and departing from Memorial Field ½ mile to the south pass mostly east and west of the site daily and could fly over the site during landing approaches. Much of the surrounding area is developed and has moderate to low scenic quality.

4.2.2 Environmental Consequences

4.2.2.1 Albert Pike Road Alternative

Long-term minor adverse effects on aesthetics and visual resources would be expected from constructing an AFRC on the Albert Pike Road site. The project would convert the site from forested to developed, which would be in keeping with the commercial aspect of Albert Pike Road. Because the AFRC facility would be of modern design, it could be a beneficial addition to the aesthetics of the development along Albert Pike Road. The view from the residence east of the site would change, but the view could be partially preserved by maintaining a vegetative buffer between the AFRC and the property owner's residence, if the site layout and space available on the site permit. With a power line, more forested land, and a railroad track south of the site and an airport further south, no adverse effects on the visual landscape from the south would be expected to result from the development.

4.2.2.2 No Action Alternative

No effects on aesthetic and visual resources would result under the No Action Alternative. Baseline conditions would remain the same. Ultimately, the site would likely be developed for more commercial uses along Albert Pike Road and otherwise as a medium- to high-density residential area, in keeping with the Hot Springs Comprehensive Plan.

4.3 AIR QUALITY

4.3.1 Affected Environment

This section presents a description of ambient air quality at the proposed Albert Pike Road site with respect to attainment of National Ambient Air Quality Standards (NAAQS) and identifying applicable air quality regulations.

4.3.1.1 National Ambient Air Quality Standards and Attainment Status

The U.S. Environmental Protection Agency (EPA) Region 6 and the Arkansas Department of Environmental Quality (ADEQ) regulate air quality in Arkansas. The Clean Air Act (42 U.S.C. 7401-7671q), as amended, gives EPA) the responsibility to establish the primary and secondary NAAQS (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: fine particulate matter (PM_{10}), very fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O_3), and lead. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (annual averages) have been established for pollutants contributing to chronic health effects. On the basis of the severity of the pollution problem, nonattainment areas are categorized as marginal, moderate, serious, severe, or extreme. Each state has the authority to adopt standards stricter than those established under the federal program; however, Arkansas accepts the federal standards.

Federal regulations designate Air-Quality Control Regions (AQCRs) in violation of the NAAQS as *nonattainment* areas. Federal regulations designate AQCRs with levels below the NAAQS as *attainment* areas. Garland County, Arkansas, and all proposed AFRC facilities are completely within the Central Arkansas Intrastate AQCR (AQCR 016) (USEPA 2008). Federal regulations designate AQCR 016 as an attainment area for all criteria pollutants (40 CFR 81.304). Because the project area is in an attainment region, air conformity regulations do not apply to the proposed action. A Record of Non-applicability is in Appendix A. The proposed project's emissions of criteria pollutants and the applicability thresholds under the general conformity rules, however, have been carried forward for more detailed analysis to determine the level of effect under NEPA.

4.3.1.2 Local Ambient Air Quality

Existing ambient air quality conditions can be estimated from measurements taken at air-quality monitoring stations close to the proposed AFRC (Table 4-1). With the exception of an ozone standard, air-quality measurements at these stations are below the NAAQS (USEPA 2008). The reported maximum the 8-hour ozone level within the region exceeds the national standard of 0.08 parts per million (ppm). The 3-year average of the fourth-highest daily maximum ozone concentration (on which the regional attainment status is based), however, has not exceeded the 0.08 ppm standard.

Table 4-1
NAAQS and monitored air quality concentrations

Pollutant and averaging time	Primary NAAQS[a]	Secondary NAAQS[a]	Monitored data[b]	Location of station
CO				
8-hour maximum[c] (ppm)	9	(None)	4.5	Pulaski County
1-hour maximum[c] (ppm)	35	(None)	2.7	
NO_2				
Annual arithmetic mean (ppm)	0.053	0.053	(no data available)	--
Ozone				
8-hour maximum[d] (ppm)	0.08	0.08	0.083	Pulaski County
$PM_{2.5}$				
Annual arithmetic mean[e] ($\mu g/m^3$)	15	15	12.1	Garland County
24-hour maximum[f] ($\mu g/m^3$)	35	35	28.9	
PM_{10}				
Annual arithmetic mean[g] ($\mu g/m^3$)	50	50	31	Pulaski County
24-hour maximum[c] ($\mu g/m^3$)	150	150	53	
SO_2				
Annual arithmetic mean (ppm)	0.03	(None)	0.003	
24-hour maximum[c] (ppm)	0.14	(None)	0.006	Pulaski County
3-hour maximum[c] (ppm)	--	0.5	0.009	

$\mu g/m^3$ = micrograms per cubic meter
NO_2 = nitrogen dioxide
ppm = parts per million
a Source: 40 CFR 50.1-50.12.
b Source: USEPA 2008.
c Not to be exceeded more than once per year.
d The 3-year average of the fourth highest daily maximum 8-hour average O_3 concentrations over each year must not exceed 0.08 ppm.
e The 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from must not exceed 15.0 $\mu g/m^3$.
f The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor must not exceed 35 $\mu g/m^3$.
g The 3-year average of the weighted annual mean PM_{10} concentration at each monitor within an area must not exceed 50 $\mu g/m^3$.

4.3.2 Environmental Consequences

4.3.2.1 Albert Pike Road Alternative

Short- and long-term minor adverse effects on air quality would be expected as a result of implementing the proposed action. The effects would be primarily from air emissions during facility construction and from creating new stationary sources of air emissions, such as heating boilers and standby generators, at the AFRC. Increases in emissions would not exceed applicability thresholds, be regionally significant, or contribute to a violation of any federal, state, or local air regulation.[1]

[1] A facility's emissions are regionally significant if its emissions could equal or exceed 10 percent of the emissions of one or more pollutants of concern in the nonattainment or maintenance area [40 CFR 93.153(h)(4)(i)]. Regional significance is not applicable to facilities constructed in an attainment area.

Estimated Emissions and General Conformity. The general conformity rules require federal agencies to determine whether their action(s) would increase emissions of criteria pollutants above preset threshold levels (40 CFR 93.153(b)). These *de minimis* (of minimal importance) rates vary depending on the severity of the nonattainment and geographic location. Because the region is in attainment, the air conformity regulations do not apply. A Record of Non-Applicability is in Appendix A. All direct and indirect emissions of criteria pollutants for the proposed action have been estimated and compared to applicability threshold levels of 100 tons per year to determine proposed action's impact under NEPA. The total direct and indirect emissions associated with the following activities were accounted for:

- Constructing the new facilities
- Operating vehicles for construction workers
- Paving parking areas
- Operating personal vehicles for employees and trainees
- Operating new boilers
- Operating new backup generators

The total direct and indirect emissions associated with the proposed action would not exceed applicability threshold levels (Table 4-2). Because the region is an attainment area, there is no existing emission budget. Because of the limited size and scope of the proposed action, however, it is not expected that the estimated emissions from the AFRC development and operation would make up 10 percent or more of regional emissions for any criteria pollutant, and they would, therefore, not be regionally significant. A detailed breakdown of construction and operational emissions is in Appendix A.

Table 4-2
Proposed action emissions compared to applicability thresholds

	Annual emissions (tons per year)						*De minimis* threshold (tons per year)	Would emissions exceed applicability thresholds? (Yes/No)
Activity	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$		
Construction	5.3	6.3	1.2	0.0	2.3	0.5	100	No
Operations	2.1	1.8	0.3	0.4	0.1	0.1		

VOC = volatile organic compound

For the purposes of calculating emissions, it was assumed that approximately 10 permanent personnel and 200 trainees would be stationed at the AFRC. It was also assumed that a 700-kilowatt backup generator would be located at the facility either initially or in the future. Moderate changes in the size or type of equipment ultimately selected or the number of personnel would not substantially change the total direct or indirect emissions or the level of impact under NEPA.

Regulatory Review. The Clean Air Act, as amended in 1990, mandates that state agencies adopt and implement State Implementation Plans to eliminate or reduce the severity and number of violations of the NAAQS. Since 1990, Arkansas has developed a core of air quality regulations that EPA has approved. These approvals signified the development of the general requirements of the State Implementation Plan. The Arkansas program for regulating air emissions affects industrial sources, commercial facilities, and residential development activities. Regulation occurs primarily through a process of reviewing engineering documents

and other technical information, applying emission standards and regulations in permit issuance, performing field inspections, and assisting industries in determining their compliance status with applicable requirements.

As part of these requirements, the ADEQ oversees programs for permitting the construction and operation of new or modified stationary source air emissions in Arkansas. ADEQ air permitting is required for many industries and facilities that emit regulated pollutants. These requirements include Title V permitting of major sources, New Source Review, Prevention of Significant Deterioration, New Source Performance Standards for selected categories of industrial sources, and the National Emission Standards for Hazardous Air Pollutants. ADEQ air permitting regulations do not apply to mobile sources, such as trucks. An overview of the applicability of these regulations to the project is outlined in Table 4-3.

Table 4-3
Air quality regulatory review for proposed stationary sources

Regulation	Project status
New Source Review (NSR)	The potential emissions would not exceed NSR threshold and would be exempt from NSR permitting requirements. It is possible that a state operating permit would be required for both the boilers and emergency back-up generators.
Prevention of Significant Deterioration (PSD)	Potential emissions would not exceed the 250-tons-per-year PSD threshold. Therefore, the project would not be subject to PSD review.
Title V Permitting Requirements	The facility's potential to emit would be below the Title V major source threshold and would not require a Title V permit.
National Emission Standards for Hazardous Air Pollutants (NESHAP)	Potential Hazardous Air Pollutant emissions would not exceed NESHAP thresholds. Therefore, the use of Maximum Available Control Technology would not be required.
New Source Performance Standards (NSPS)	Both emergency generators and boilers would be subject to NSPS.

Other non-permitting requirements may be required through the use of compliant practices or products. These regulations are outlined in Arkansas Pollution Control and Ecology Commission Regulations. They include the following:

- Regulation 18 - Chapter 5: Visible Emissions
- Regulation 18 - Chapter 6: Emissions from Open Burning
- Regulation 18 - Chapter 9: Control of Fugitive Emissions
- Regulation 21 - Asbestos Abatement Regulation
- Regulation 25 - Lead-based Paint Hazard

In addition to those outlined above, no person may handle, transport, or store any material in a manner that could allow unnecessary amounts of air contaminants to become airborne. During construction reasonable measures may be required to prevent unnecessary amounts of particulate matter from becoming airborne (A.A.C. Section 18.901). Such precautions could include using water to control dust during construction operations, road grading, and land clearing; covering open equipment for conveying or transporting material likely to create objectionable air pollution when airborne; and promptly removing spilled or tracked dirt or other materials from paved streets.

4.3.2.2 No Action Alternative

No effect on ambient air-quality would result from implementing the No Action Alternative. No facilities would be constructed, and no new facility operations would be present as sources of air emissions. Ambient air quality conditions would remain as described in Section 4.3.1.

4.4 NOISE

4.4.1 Affected Environment

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, the distance between the noise source and the receptor, receptor sensitivity, and time of day.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz are used to quantify sound frequency. The human ear responds differently to different frequencies. A-weighing, described in A-weighted decibels (dBA), approximates this frequency response to express accurately the perception of sound by humans. Sounds encountered in daily life and their approximate levels in dBA are provided in Table 4-4.

Table 4-4
Common sounds and their levels

Outdoor	Sound level (dBA)	Indoor
Snowmobile	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998

The dBA noise metric describes steady noise levels. Very few noises are, in fact, constant, so a noise metric, day-night sound level (DNL) has been developed. DNL is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to nighttime levels (10 p.m. to 7 a.m.). DNL is a useful descriptor for noise because it averages ongoing yet intermittent noise, and it measures total sound energy over a 24-hour period. In addition, equivalent sound level (L_{eq}) is often used to describe the overall noise environment. L_{eq} is the average sound level in dB.

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. In 1974 EPA provided information suggesting that continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. Arkansas has no statewide noise regulation. The city of Hot Springs maintains a general nuisance noise ordinance. The code, however, does not set explicit not-to-exceed

sound levels. Construction noise is restricted during non-daylight hours (Hot Springs Municipal Code Title 4, Chapter 5-1).

Existing sources of noise near the proposed site include local road traffic, rail traffic, aircraft overflights, and natural noises such as leaves rustling, and bird vocalizations. The site is adjacent to the rail corridor, and is ½ mile north of the Memorial Field airport. Intermittent rail traffic is a key component of the existing noise environment. Memorial Field's primary runway is oriented away for the proposed site; however, some small propeller planes might fly over the site to access the smaller runway. The site is outside the incompatible noise contours, runway protection zone, and object-free area for the airport (Memorial Field Airport 2000).

Existing noise levels (DNL and L_{eq}) were estimated for the proposed site and surrounding areas using the techniques specified in the *American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term measurements with an observer present* (ANSI 2003). Table 4-5 outlines the closet noise-sensitive areas such as residents, schools, churches, and hospitals, and the estimated existing noise levels at each location. Notably, there are no churches, schools, or hospitals within 2,000 feet of the site.

Table 4-5
Estimated existing noise levels at nearby noise-sensitive areas

Closest noise-sensitive area			Estimated existing sound levels (dBA)		
Distance	Direction	Type	DNL	L_{eq} (Daytime)	L_{eq} (Nighttime)
100 feet (30 meters)	East	Residential	60	58	52
300 feet (100 meters)	South	Residential			

Source: ANSI 2003

4.4.2 Environmental Consequences

4.4.2.1 Albert Pike Road Alternative

Short-term minor adverse effects on the noise environment would be expected from implementing the proposed action. Minor increases in noise would be primarily from using heavy equipment during construction. The effects would be temporary in nature and would end upon completion of construction. Noise from facility operations would be expected to be negligible.

The proposed action would require the construction of several new facilities at the site. Individual pieces of construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (Table 4-6). With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise levels typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience appreciable levels of construction noise. Depending on the exact location of construction, there would be up to

Table 4-6
Noise levels associated with outdoor construction

Construction phase	dBA L_{eq} at 50 feet from source
Ground Clearing	84
Excavation, Grading	89
Foundations	78
Structural	85
Finishing	89

Source: USEPA 1971.

20 residences closer than 800 feet to the site that would experience appreciable amounts of construction noise. Given the temporary nature of the construction, it would be expected to have a minor effect. Construction activities would not likely occur at night. It is not expected, therefore, that construction noise would violate the Hot Spring's nuisance noise ordinance.

Although construction-related noise effects would be minor, best management practices (BMPs) that would be recommended to minimize noise effects would include limiting construction to occur only during normal weekday business hours and properly maintaining construction equipment mufflers.

Noise effects on construction personnel could be limited by ensuring that all personnel wear adequate personal hearing protection to limit exposure and ensuring compliance with federal health and safety regulations, including those outlined by the U.S. Occupational Safety and Health Administration.

Training at the AFRC is not expected to generate disruptive noise levels at the adjacent residences. No use of weaponry, demolitions, or aircraft operations would occur with the implementation of the proposed action.

Intermittent car, truck, and rail noise would be expected at the AFRC because of the proximity of Albert Pike Road and the rail corridor to the site. These events could be loud enough to interfere with speech outside the building but would not be expected to interfere with indoor operations.

4.4.2.2 No Action Alternative

Selecting the No Action Alternative would result in no effect on the ambient noise environment. No construction would be expected. Ambient noise conditions would remain as described in Section 4.4.1.

4.5 GEOLOGY AND SOILS

4.5.1 Affected Environment

4.5.1.1 Geologic and Topographic Conditions

The predominant geologic formation underlying the proposed AFRC site is Stanley Shale. Stanley Shale is usually composed mostly of black to brownish green shale with lesser quantities of thin to massive, gray to brown sandstone. Weathering is rapid upon exposure to rain. Stanley Shale typically forms a series of valleys with low hills, which suitably characterizes the regional terrain where the proposed site is located. The elevation of the proposed site is between 520 and 600 feet above mean sea level. The proposed site has an

irregular terrain that includes deep ravines and steep ridges. Surface water drainage appears to be towards the southwest (B&F Engineering 2002).

4.5.1.2 Soils

The site soils are classified as Bismarck-Sherless-Clebit complex, which is composed of about 40 percent Bismarck soil, 30 percent Sherless soil, 20 percent Clebit soil, and 10 percent other soils (B&F Engineering 2002; NRCS 2009). These soils are shallow, well drained, and gently sloping to very steep. They are moderately permeable and are formed under mixed hardwoods and pine from weathered shale. A typical soil profile of the soil type is gravelly loam or clay loam to a depth of from 1 to 3 feet underlain by weathered bedrock for another 6 to 12 inches (NRCS 2009). All soils on the proposed site are rated as being very limited for the construction of dwellings with basements. The soils nearest Albert Pike Road are rated as being very limited for dwellings without basements, and soils on the southern part of the site are rated to be somewhat limited for dwellings without basements. The soils have a very severe erosion hazard.

4.5.1.3 Prime Farmland

Congress enacted the Farmland Protection Policy Act as a subtitle of the 1981 Farm Bill. The purpose of the law is to "minimize the extent to which Federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses" (Public Law 97-98, Sec. 1539–1549; 7 U.S.C. section 4201 *et seq*.). According to the Natural Resources Conservation Service, the site's soils are not prime farmland soils. Also, the proposed site is zoned for commercial and light manufacturing. The selected site, therefore, would not be subject to the Farmland Protection Policy Act.

4.5.2 Environmental Consequences

4.5.2.1 Albert Pike Road Alternative

Short-term minor adverse effects on soils would be expected from implementing the proposed action. Removal of vegetation, site grading, and soils exposed during construction could cause some soil erosion. Construction would not, however, permanently alter the geology or soils of the site. Adverse effects on site soils, which are rated as having a very severe erosion hazard, would be minimized by using appropriate BMPs for controlling runoff, erosion and sedimentation. Compliance with the ADEQ Construction Storm Water Permit (ARR150000) would be required (ADEQ 2008a). ADEQ-recommended BMPs include:

- Preservation of existing vegetation
- Straw mulch
- Geotextiles and mats
- Earth dikes and drainage swales
- Slope drains
- Silt fences
- Sediment basins
- Sediment traps
- Check dams
- Fiber rolls
- Street sweeping and vacuuming
- Straw bale barriers

4.5.2.2 No Action Alternative

No adverse effects would be expected from implementing the No Action Alternative. No site disturbance or construction would occur under the alternative.

4.6 WATER RESOURCES

4.6.1 Affected Environment

4.6.1.1 Surface Water

Hot Springs, Arkansas, is in the Ouachita River basin, east and north of the river's Lake Hamilton reservoir (see Figure 1-1). From Hot Springs, the Ouachita River continues flowing southeast and then south into Louisiana, where its waters eventually empty into the Red River west of the Red River's confluence with the Mississippi River (Ouachita River Foundation 2007).

Surface water in the area of the proposed site for the AFRC drains west and south ultimately to Molly Creek, a tributary to Lake Hamilton. Molly Creek originates in the mountains in the Hot Springs National Park north of the site, flows southward west of the site, then turns west toward its confluence with Lake Hamilton about 1 mile southwest of the site (USGS 1976). Molly Creek and the proposed site are in the Lower Lake Hamilton subwatershed of the Ouachita Headwaters watershed (ANRC 2006). Molly Creek is not listed on ADEQ's 2008 list of impaired waters (Clean Water Act section 303(d) list) (ADEQ 2008b).

The proposed site has no perennial surface waterbodies. A pond that was on the eastern portion of the site was visible on aerial photos as late as 1987 (B&F Engineering 2002). By 2002 the pond was reported to have dried up, but ground in the area of the former pond can be wet and swampy following rainfall (B&F Engineering 2002).

4.6.1.2 Hydrogeology/Groundwater

The Stanley Shale in the area (see Section 4.5.1) generally limits groundwater movement. Groundwater in the region consists of hot water components, with which the area's hot spring baths are associated, and cold water components. Recharge from rainfall is considered to be the source for both hot and cold groundwater components (USACE 2007, Yeatts 2006). Rainfall that forms the hot water component is thought to flow to estimated depths of 4,500 to 7,500 feet, where it is heated and rises along fault conduits in fractured sandstone and shale (Yeatts 2006). A water well is on the proposed site in the northeast portion near the site of the former dwelling, but it is no longer in use and was filled about 50 years ago (B&F Engineering 2002). No other water wells are known to be within 1 mile of the site (B&F Engineering 2002). Depth to water table in the site's soils is estimated to be more than 6.5 feet (NRCS 2009).

4.6.1.3 Floodplains

No Federal Emergency Management Agency-designated 100-year floodplain occurs on the Albert Pike Road site (FEMA 1991, USACE 2008). Site drainage from the site and its vicinity flows generally west and south to Molly Creek. Zone AE 100-year floodplain zones occur west of the site along Molly Creek and south of the site across the railroad tracks along a tributary to Molly Creek (FEMA 1991). These floodplain zones continue south and west along Molly Creek to connect with floodplain zones along Lake Hamilton.

4.6.1.4 Coastal Zone

Arkansas is outside the coastal zone of the United States (NOAA 2008). Accordingly, the proposed action at Hot Springs is not subject to the federal Coastal Zone Management Act.

4.6.2 Environmental Consequences

4.6.2.1 Albert Pike Road Alternative

Short- and long-term minor adverse effects on water resources would be expected as a result of implementing the proposed action. Adverse effects could result from erosion and sediment runoff during land disturbance activities and vegetation clearing associated with site development and construction. The effects would be minimized by using construction-specific BMPs to control storm water runoff and implementing a site-specific sediment and erosion control plan during land development, construction, and afterward during operation of the AFRC. Compliance with the ADEQ Construction Storm Water Permit (ARR150000) by the Army or its contractors would be required (ADEQ 2008a). This would reduce the effects of land disturbance activities on water resources. Wetlands and sensitive riparian habitat would be avoided to the maximum extent practicable.

Although development can lead to long-term water quality and stream degradation from an increase in impervious surface area, the limited amount of development that would occur under the proposed action would not be expected to result in a substantial long-term effect on surface or ground waters. Impervious surface area can result in an increased volume and velocity of storm water runoff and in increased peak storm flows in streams, which lead to soil and stream bank erosion. Development in general also leads to an increase in pollutant loads in storm water runoff from areas such as parking lots, roads, and rooftops. Impervious areas also reduce the absorption of storm water into the ground, which can affect the recharge of groundwater aquifers.

No effects on floodplains or coastal zone resources would be expected under the proposed action.

4.6.2.2 No Action Alternative

No effects on water resources would result from implementation of the No Action alternative because baseline conditions would remain the same.

4.7 BIOLOGICAL RESOURCES

4.7.1 Affected Environment

According to an ecoregion classification system used by EPA, Hot Springs is in the Ouachita Mountains Level III ecoregion and, within that, in the Central Mountain Ranges Level IV ecoregion. The natural vegetation of the region is oak–hickory–pine forest, though much of the region's forests have been converted to loblolly pine and shortleaf pine (USEPA 2007). (Scientific names for species mentioned in the text are provided in Appendix B.)

4.7.1.1 Vegetation

Forest overstory species are shortleaf pine and black oak. Dominant shrubs are eastern red cedar and winged sumac. Some young black oak and hickory trees are also in the shrub layer. Open areas and right-of-ways support herbaceous species such as aster, goldenrod, boneset, vetch, and a mixture of warm season and cool season grasses. Invasive species present are Johnson grass and Japanese honeysuckle.

4.7.1.2 Wildlife

Fauna vary with the age and stocking of timber stands, mixture of pine and hardwood species, availability of openings, and presence of bottom-land forest types. Whitetail deer and cottontail rabbits are widespread in the Southern Mixed Forest Province. The fox squirrel can be common where deciduous trees are present on uplands, and gray squirrels can be found near drainages. Raccoon, fox, and black bear are found throughout the region (Bailey 1995; Sutton and Sutton 1997).

The eastern wild turkey, bobwhite, and mourning dove are widespread. Of the bird species present in mature southern mixed forest, the most common are the pine warbler, cardinal, summer tanager, Carolina wren, ovenbird, wood thrush, Carolina chickadee, ruby-throated hummingbird, blue jay, hooded warbler, eastern towhee, and tufted titmouse (Bailey 1995; Sutton and Sutton 1997).

Snakes inhabiting the region include cottonmouth moccasin, copperhead, rough green snake, rat snake, coachwhip, and speckled kingsnake. Fence and glass lizards are also found, as is the slimy salamander. Amphibian species common in the southern mixed forest include the pine wood treefrog, green treefrog, and oak toad (Sutton and Sutton 1997).

4.7.1.3 Sensitive Species

The Arkansas Natural Heritage Commission lists two species of plants and no animals with federal protected status in Garland County (ANHC 2008). The plants are harperella, which is always found on saturated substrates; and the Missouri bladderpod, a plant of open limestone glades, barrens, and outcrops in prairie areas or grazed pastures (CPC 2008, NatureServe 2008).

4.7.1.4 Wetlands

According to the Available Site Identification and Validation Report for the Albert Pike Road site (USACE 2008) and the U.S. Fish and Wildlife Service National Wetlands Inventory (USFWS 2009), no wetlands are found on the Albert Pike Road site.

4.7.2 Environmental Consequences

4.7.2.1 Albert Pike Road Alternative

Long-term minor adverse effects on vegetation and wildlife would be expected from implementation of the proposed action. Construction of the AFRC on the Albert Pike Road site would require clearing about 10 of wooded land, which would eliminate habitat for vegetation and wildlife. No effects on sensitive species or wetlands would be expected because it is doubtful that these resources are found on the site.

Coordination letters were sent to the Arkansas Game and Fish Commission and the U.S. Fish and Wildlife Service concerning impacts on biological resources as a result of this project. A response dated December 4, 2008, was received from the Arkansas Game and Fish Commission. The commission stated that it would expect insignificant adverse effects from implementation of the proposed action (see Appendix C).

4.7.2.2 No Action Alternative

No effects on biological resources would result from implementation of the No Action alternative because baseline conditions would remain the same.

4.8 CULTURAL RESOURCES

4.8.1 Affected Environment

Cultural resources consist of historic properties (buildings, structures, districts, landscapes, and the like, as defined by Army Regulation (AR) 200-1 and NHPA; archaeological sites (as defined and governed by ARPA, AR 200-1, and the NHPA); Native American sacred sites (as identified in EO 13007 and AIRFA), Traditional Cultural Properties (as defined in the NHPA and as described in National Register Bulletin 38); and sites and artifacts associated with Native American Graves (as defined and governed by NAGPRA).

4.8.1.1 Archaeological Resources

A review of the Arkansas Archaeological Survey site files in Fayetteville, Arkansas, and the Arkansas Civil War Sites on file with the Arkansas Historic Preservation Program in Little Rock, Arkansas, revealed no previously recorded archaeological resources within the proposed project area or within the Area of Potential Effect (APE) for the proposed project, which encompasses the area within the viewshed of the proposed project area, or an area that extends approximately 1.5 to 2 miles from the project boundary. Eight previously recorded archaeological sites were identified within a 1.5-mile radius of the APE (Table 4-7). Of these eight sites, none have been evaluated for listing on the National Register of Historic Places (NRHP). Five of these identified sites are associated with Native American occupation of the area spanning the Paleoindian through the Archaic periods, and two have historic components (before about 1958). Two sites are west of the project area, and the other six are to the north and northeast. The exact locations of sites 3GA14 and 3GA117 are uncertain; however, they are most likely north of the project area.

Table 4-7
Previously recorded archaeological sites within a 1.5-mile radius of the APE for the proposed action

Site	Site type	Cultural affiliation	Relation to APE	NRHP status
3GA14	Prehistoric lithic scatter	Possible Paleoindian to Dalton	Outside	Not evaluated
3GA45	Prehistoric lithic scatter	Unknown	Outside	Not evaluated
3GA104	Prehistoric artifact scatter; historic artifact scatter	Unknown prehistoric; unknown historic	Outside	Not evaluated
3GA105	Prehistoric artifact scatter and possible lithic quarry/extraction site	Possible Archaic	Outside	Not evaluated
3GA117	Unknown	Unknown	Outside	Not evaluated
3GA584	Unknown	Unknown	Outside	Not evaluated
3GA829	Historic artifact scatter	20th century	Outside	Not evaluated
3GA930	Prehistoric lithic quarry/extraction site	Unknown	Outside	Not evaluated

4.8.1.2 Historic Resources

A review of the NRHP, the Arkansas Register of Historic Places (ARHP), and the Historic Site Survey, all on file with the Arkansas Historic Preservation Program in Little Rock, revealed no previously recorded historic resources within the proposed project area or within

the APE for the proposed project. No NRHP- or ARHP-listed properties, or historic sites, were identified within a 1.5-mile radius of the APE for the proposed project.

One previously unrecorded historic resource was identified during a cultural resource survey conducted by New South Associates in mid-November 2008 and early March 2009. One property 50 years of age or older (built before 1958) was identified within the APE for the proposed project. The property consists of a circa-1950, bungalow-type, single-family residence with a small-frame shed and a three-bay, drive-thru, frame barn. The property is not recommended as eligible for listing on the NRHP; concurrence from the Arkansas State Historic Preservation Office (SHPO) is pending per this recommendation (Warhop and Olson 2009).

4.8.1.3 Historic Districts

A review of the NRHP, the ARHP, and the Commercial Historic Districts, all on file with the Arkansas Historic Preservation Program in Little Rock, revealed no previously recorded historic districts within the proposed project area or within the APE for the proposed project. No historic districts were identified within a 1.5-mile radius of the APE for the proposed project.

4.8.1.4 Historic Markers, Monuments, and Memorials

A review of Arkansas Historic Preservation Program files in Little Rock revealed no previously recorded historic markers, monuments, or memorials within the proposed project area or within the APE for the proposed project. No historic markers, monuments, or memorials were identified within a 1.5-mile radius of the APE for the proposed project.

4.8.1.5 Traditional Cultural Properties, National Historic Landmarks, and World Heritage Sites

A review of National Historic Landmarks (NHLs) on file with the Arkansas Historic Preservation Program in Little Rock revealed no previously recorded NHLs within the proposed project area or within the APE for the proposed project. No NHLs were identified within a 1.5-mile radius of the APE for the proposed project. There are no Traditional Cultural Properties or World Heritage Sites within the APE for the proposed project. Hot Springs National Park is approximately 0.38 mile north of the proposed project area.

4.8.2 Environmental Consequences

4.8.2.1 Albert Pike Road Alternative

No adverse effects on cultural resources would be expected from implementing the proposed action. No cultural or historic resources were identified within the proposed project area boundaries. One property 50 year of age or older was identified within the APE for the proposed project, but the identified property is not recommended as eligible for listing on the NRHP. All previously recorded NRHP-listed resources are well removed from the viewshed of the project and therefore would not be affected. Coordination with the Arkansas SHPO indicates that cultural resources would not be adversely affected by the proposed action (Appendix C). Coordination letters were also sent to the Caddo Nation and Quapaw Tribe of Oklahoma.

4.8.2.2 No Action Alternative

No effects on cultural or historic resources would result from implementing the No Action Alternative. Under the No Action Alternative, the Army would not construct a new AFRC.

No land would be acquired, no new facilities would be constructed, and no units would be relocated.

4.9 SOCIOECONOMICS

4.9.1 Affected Environment

The socioeconomic indicators used for this study include economic development, demographics, quality of life, environmental justice, and protection of children. These indicators characterize the region of influence (ROI). The ROI is a geographic area selected as a basis on which social and economic impacts of project alternatives are analyzed. The ROI for the social and economic environment is Garland County, Arkansas. The ROI covers an area of 677 square miles. The closest major metropolitan area to Hot Springs is the city of Little Rock (the capital of Arkansas), about 50 miles to the northeast.

The baseline year for socioeconomic data is 2007, the most recent year for which most of the ROI socioeconomic indicators (e.g., population, employment) are reasonably available. Where 2007 data are not available, the most recent data available are presented.

4.9.1.1 Economic Environment

Employment and industry. ROI civilian labor force and unemployment data is shown in Table 4-8, with national data for comparative purposes. The ROI labor force increased 11 percent between 2000 and 2007. The ROI unemployment rate was 5.6 percent in 2007, higher than the national unemployment rate of 4.6 percent (BLS 2008). The primary sources of ROI employment were health care and social assistance; retail trade; government and government enterprises; accommodation and food services; and construction. Together these industry sectors accounted for about 55 percent of regional employment (BEA 2008).

Table 4-8
Labor force and unemployment

	2000 civilian labor force	2007 civilian labor force	Change in labor force, 2000–2007	2007 Unemployment rate
Garland County	38,466	42,848	11%	5.6%
United States	142,583,000	153,124,000	7%	4.6%

Source: BLS 2008

Income. The ROI per capita personal income (PCPI) was $21,230 (Table 4-9). This PCPI was 103 percent of the Arkansas state PCPI of $20,708 and 80 percent of the national PCPI of $26,688. ROI median household income was 92 percent of the state median household income of $38,134 and 69 percent of the national median household income of $50,740 (U.S. Census Bureau 2008).

Table 4-9
Income, 2007

	Garland County	Arkansas	United States
PCPI	$21,230	$20,708	$26,688
Median household income	$34,947	$38,134	$50,740

Source: U.S. Census Bureau 2008

Population. The ROI's population was 96,371, an increase of 9.4 percent from the 2000 population of 88,068 (Table 4-10). During the same time period (2000–2007), Arkansas' population increased by 6 percent and the nation's population increased by 7.2 percent (U.S. Census Bureau 2009).

Table 4-10
Population

	2000 population	2007 population	Change in population, 2000–2007
Garland County	88,068	96,371	9.4%
Arkansas	2,673,400	2,834,797	6.0%
United States	281,421,906	301,621,159	7.2%

Source: U.S. Census Bureau 2009

4.9.1.2 Sociological Environment

Housing. Housing data are presented in Table 4-11. As shown, the ROI housing costs are generally lower than the state and national levels, with the exception of ROI median gross rent which is higher than the state median. The ROI has a higher vacancy rate compared to the state and the nation (U.S. Census Bureau 2008).

Table 4-11
Housing data, 2007

	Number of housing units	Occupied	Vacant	Median monthly mortgage	Median gross rent
Garland County	46,959	82%	18%	$904	$602
Arkansas	1,287,472	86%	14%	$920	$573
United States	127,895,430	88%	12%	$1,464	$789

Source: U.S. Census Bureau 2008

Law enforcement, fire protection, medical services. ROI law enforcement is provided by the Hot Springs Police Department along with the county sheriff and state law enforcement officers. The proposed site is within the jurisdiction of the Hot Springs Police Department. The department employs 99 officers (City of Hot Springs 2007). The nearest police station is about 3.5 miles from the proposed AFRC site.

The Hot Springs Fire Department has five fire stations in the city and about 75 officers (City of Hot Springs 2007). The nearest fire station is about 1.5 miles from the proposed AFRC site.

The Advance Care, HealthPark, and Saint Joseph's Mercy Health Center hospitals in Hot Springs are within a 3-mile radius of the proposed AFRC site. The hospitals provide emergency facilities, urgent medical care, inpatient care, and surgical facilities (ahd.com 2008).

Schools. The ROI has eight public school districts with a total enrollment of almost 13,900 students in 27 schools. There are also nine private schools with a total student enrollment of

about 900 (NCES 2007). No primary or secondary schools are on or adjacent to the proposed AFRC site.

Support services, shops, and recreation. There is an array of the typical shopping, service, and recreational facilities in the ROI.

4.9.1.3 Environmental Justice

On February 11, 1994, President Clinton issued EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. The EO is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify the disproportionate placement of high and adverse environmental or health effects from proposed federal actions on minority or low-income populations, and to identify alternatives that could mitigate these effects.

Minority populations are identified as Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and other Pacific Islander; persons of two or more races; and persons of Hispanic origin. Minority populations should be identified where either the minority population of the affected area exceeds 50 percent or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (CEQ 1997). As of 2006, 89 percent of the ROI population was white and 11 percent was of a minority population. The ROI had a lower percentage of minority populations compared to Arkansas and the United States, which had 19 percent and 20 percent minority populations, respectively (U.S. Census Bureau 2008b).

Poverty thresholds established by the U.S. Census Bureau are used to identify low-income populations (CEQ 1997). Poverty status is reported as the number of persons or families with income below a defined threshold level. The Census defines the 2004 poverty thresholds as $9,645 of annual income, or less, for an individual and $19,307 of annual income, or less, for a family of four (U.S. Census Bureau, Housing and Households Economic Statistics Division 2008). About 16 percent of ROI residents were classified as living in poverty as of 2004, the same as Arkansas' poverty rate but higher than the national poverty rate of about 13 percent (U.S. Census Bureau 2008b).

4.9.1.4 Protection of Children

EO 13045, *Protection of Children from Environmental Health and Safety Risks*, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. There are no residences, schools, churches, or parks on or adjacent to the proposed AFRC site.

4.9.2 Environmental Consequences

4.9.2.1 Albert Pike Road Alternative

EIFS Methodology. The economic effects of implementing the proposed action are estimated using the Economic Impact Forecast System (EIFS) model, a computer-based economic tool that calculates multipliers to estimate the direct and indirect effects resulting from a given action. Changes in spending and employment caused by the construction of the AFRC represent the direct effects of the action. Using the input data and calculated multipliers, the model estimates ROI changes in sales volume, income, employment, and population,

accounting for the direct and indirect effects of the action. Appendix D presents the EIFS model inputs and outputs for this analysis.

For purposes of this analysis, a change is considered significant if it falls outside the historical range of ROI economic variation. To determine that range, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. This analytical process uses historical data for the ROI and calculates fluctuations in sales volume, income, employment, and population patterns. The historical extremes for the ROI become the thresholds of significance (i.e., the RTVs) for social and economic change. If the estimated effect of an action falls above the positive RTV or below the negative RTV, the effect is considered significant. Appendix D discusses this methodology in more detail and presents the model inputs and outputs developed for this analysis.

EIFS model results. Short-term minor beneficial effects on economic development would be expected from implementing the proposed action. In the short term, the expenditures and employment associated with construction of the AFRC training building, vehicle maintenance shop, storage building, and parking areas in Hot Springs would increase ROI sales volume, employment, and income. A benefit of any type of development is the construction spending, especially if local labor and materials are used. The economic benefits would be for a short term, lasting only for the duration of the construction period. These changes in sales volume, employment, and income would fall within historical fluctuations (i.e., within the RTV range) and be considered minor (Table 4-12 and Appendix D).

Table 4-12
EIFS model output

Indicator	Projected change	Percentage change	RTV range
Direct sales volume	$15,000,000		
Induced sales Volume	$21,750,000		
Total sales volume	$36,750,000	1.13	-9.26% to 8.84%
Direct income	$2,505,780		
Induced income	$3,633,382		
Total income	$6,139,162	0.32	-7.70% to 7.44%
Direct employment	68		
Induced employment	98		
Total employment	165	0.36	-7.01% to 5.47%
Local population	0	0.00	-1.04% to 2.62%

Source: EIFS model calculations (see Appendix D).

Population. No effects on population would be expected from implementing the proposed action. The proposed action would not change the ROI's population. The affected population already resides within the ROI because the closing Army Reserve Center is also in Hot Springs, Arkansas. Full- or part-time employees and the Reservists would commute from their current homes to the AFRC.

Housing. No effects on housing would be expected from implementing the proposed action. The proposed action would not change the ROI's population and would not affect the housing

market. Full-time employees and the Reservists would commute from their homes to the AFRC.

Quality of Life. The following paragraphs identify the anticipated effects for each of the key components of quality of life.

- *Law Enforcement, Fire Protection, and Medical Services*. No effects on public services would be expected from implementing the proposed action. The Hot Springs police, fire, and medical emergency departments would respond to any emergencies at the proposed site.
- *Schools*. No effects on schools would be expected from implementing the proposed action. The proposed action would not change the ROI population and would not affect school enrollment. Full-time employees and the Reservists would commute from their homes to the AFRC.
- *Family Support, Shops and Services, and Recreation*. No effects on family services would be expected from implementing the proposed action. Shopping and service facilities needed by the reservists or AFRC staff (such as gas stations or food establishments) are available in Hot Springs.

Environmental Justice. No effects on environmental justice would be expected from implementing the proposed action. No aspect of the construction or operation of the AFRC would create environmental or health risks that would disproportionately affect low-income or minority populations.

Protection of Children. No effects on children would be expected from implementing the proposed action. Children would not use the AFRC, facilities frequented by children are not close to the proposed site, and no aspect of the construction or operation of the AFRC would disproportionately create environmental, health, or safety risks to children.

4.9.2.2 No Action Alternative

No effects on socioeconomics, environmental justice, or the protection of children would be expected from implementing the No Action Alternative. Under the No Action Alternative, there would be no changes to socioeconomic resources from baseline conditions.

4.10 TRANSPORTATION

This section describes the existing highway and transit subsystems near the proposed site; the effects associated with the proposed action and alternatives; and potential mitigation measures, if required.

4.10.1 Affected Environment

Traffic in Hot Springs is generated primarily by personal operating vehicles (POVs). Roadways are predominately paved two- or four-lane asphalt. Regional access to Hot Springs is provided by Interstate 30 via US Highway 270 and US Highway 70. Interstate 30 travels northeast and southwest between Little Rock and Texarkana. Travelers would approach and access the site most efficiently via State Highway 270 once entering the Hot Springs area, and depending on their point of origin, could approach via State Highway 70.

Level of Service (LOS) is a qualitative measure of the operating condition of an intersection or other transportation facility. There are six LOS (A through F) defined; LOS A represents the best operating conditions with no congestion, and LOS F is the worst with heavy congestion. The segment of State Highway 270 adjacent to the proposed site total average daily traffic volume ranges from 21,500 to 22,900 in 2007 vehicles per day, and an estimated

traffic volume of 1,288 vehicles per lane during the peak hour in the primary direction. This roadway segment operates at an LOS C during both a.m. and p.m. peak periods (HSA-MPO 2008). The traffic on this section of State Highway 270 would be free flowing most of the time and considered acceptable to drivers.

Hot Springs has a transportation system of buses that is provided by the Hot Springs Intercity Transit Public Bus System, and its Bus Route 2 has several stops along State Highway 270 adjacent to the proposed site. There are several charter bus services in Hot Springs. Amtrak provides passenger train service to Hot Springs from Chicago, St. Louis, Dallas/Ft. Worth, Austin, and San Antonio. There is no parking available at the site.

The largest airport in the area is the Little Rock National Airport in Little Rock which is a 1-hour drive from Hot Springs. This airport is one of Arkansas' largest airports serving the greater Little Rock area and surrounding cities. Although the airport does not have direct international passenger flights, there are more than 150 flight arrivals and departures at Little Rock each day, with nonstop jet service to 18 national/international gateway cities. In addition, Memorial Field is ½ mile south of the site and provides limited air service to the region.

4.10.2 Environmental Consequences

4.10.2.1 Albert Pike Road Alternative

Short- and long-term minor adverse effects on traffic would be expected from implementing the proposed action. Only small changes to the transportation system would be expected with the proposed action. The changes would be primarily contributable to construction vehicles and small changes in localized traffic patterns from the additional personnel.

Additional construction vehicles and traffic delays near the construction site would increase traffic. These effects would end with the construction phase. The local roadway infrastructure would be sufficient to support any increase in construction vehicle traffic. Road closures or detours to accommodate utility system work could be expected, creating short-term traffic delays. All construction vehicles would be equipped with backing alarms, two-way radios, and *Slow Moving Vehicle* signs when appropriate. Although the effects would be minor, the following measures would be implemented during construction:

- Route and schedule construction vehicle traffic to minimize conflicts with other traffic
- Strategically locate construction material staging areas to minimize traffic effects

The following operational components of the Preferred Alternative would contribute additional vehicle trips to local roadways (ITE 2003):

Access to the project site would be limited to a single entrance/exit from State Highway 270, which would result in minor traffic effects on streets near the project site. Approximately 10 permanent personnel would be stationed at the AFRC during normal weekday business hours. These personnel would generate up to 24 daily vehicle trips, primarily during non-peak traffic periods (ITE 2003). This small increase in traffic would be only a fraction of the existing weekday traffic at any of the intersections or roadways affected, and would not likely affect the capacity of any of nearby roadway segments or intersections adjacent to the site. Weekday operational activities, therefore, would result in long-term negligible adverse effects on local and regional traffic levels.

Weekend training activities would generate additional traffic, mostly on Saturday mornings and Friday and Sunday evenings. The 120 trainees on an average weekend would constitute approximately 288 more POV trips and the 200 trainees on a peak weekend would constitute

approximately 480 more POV trips spread out over these periods (ITE 2003). None of the new trips would occur during weekday peak periods. Although this would be an increase in trips to and from the site, it would account for only a fraction of the existing traffic at any of the intersections or roadways affected. The additional traffic would likely cause negligible changes on nearby roadway segments or intersections adjacent to the site. Moderate changes in the number of personnel would not substantially change the number of daily trips, the times of travel, or the level of impact under NEPA.

Because the administrative personnel and weekend trainees would be within driving distance of the AFRC, the proposed action would likely have no effect on public transit, rail, bus, or air traffic in the area. The additional 2.2 acres of parking would be adequate for the permanent personnel and trainees' POVs and for the staging military vehicles.

4.10.2.2 No Action Alternative

No effects on transportation resources would be expected the from implementation of the No Action alternative because there would be no construction or increase in traffic volume. Current and future traffic would remain as described in section 4.10.1.

4.11 UTILITIES

4.11.1 Affected Environment

According to the environmental site assessment for the Albert Pike Road site (B&F Engineering 2002), all utilities necessary for the proposed AFRC are available on or near the proposed site. Utilities provided by Hot Springs or private entities include water, wastewater, electricity, natural gas, telephone and other communications, and solid waste disposal.

Potable water supply. Hot Springs provides water service to areas within and outside the city limits (City of Hot Springs 2008b). The city has two water treatment plants that serve more than 31,000 customers. The plants can produce a maximum of 27.5 million gallons of water per day (mgd). The sources of potable water for the city are Lakes Hamilton, Ouachita, Sanderson, Rick's, and Dillon.

Wastewater system. The Hot Springs Wastewater Treatment facility serves more than 23,000 customers within the city limits and in unincorporated areas of Garland County (City of Hot Springs 2008b). The rough terrain of the region requires that the city use more than 120 pump stations and 4,500 grinder pumps to transport the sewage to the wastewater treatment plant. Treated sewage is discharged into Lake Catherine.

The city plans to construct a new wastewater treatment facility to serve the area west of Lake Hamilton, which will relieve the future flow burden of the existing facility. The facility will be designed to treat approximately 1 mgd and to be able to be expanded to treat up to 3 mgd (City of Hot Springs 2008b).

Stormwater system. The Albert Pike Road site is undeveloped and does not have a dedicated storm sewer system. Surface runoff drains to nearby streams or infiltrates to groundwater.

Energy Sources

- *Electricity*. The Entergy Corporation provides electricity supply and electrical service to customers in central and eastern Arkansas, western Mississippi, northeastern and southern Louisiana, and part of eastern Texas (Entergy 2007). The company's Carpenter Dam on Lake Hamilton in Hot Springs has two generation units that combined can

provide up to 59 megawatts of electricity. Overall, the company operates and maintains 15,500 miles of 69- to 500-kilovolt transmission lines.

- *Natural gas*. CenterPoint Energy owns and operates the natural gas distribution system in the Hot Springs area, and the company transports the natural gas to the end-use customer (CenterPoint 2008).
- *Communications*. Telephone and Internet service is available at the Albert Pike Road site from Southwestern Bell. HughesNet provides Internet service in the area (Movearoo 2008). Cellular service is available from all major cellular service companies, including AT&T, Sprint, Verizon, Alltel, and T-Mobile (Cellreception 2008).

Solid Waste. Hot Springs provides solid waste collection service. The city's Sanitation Department provides residential and commercial trash collection service in the city. The city provides curbside recycling for household items (newspaper, aluminum cans, leaves, grass and other yard waste, and cardboard) (ADEQ 2008c).

Garland County has one permitted Class 4 landfill, and within a two-county radius, there are another five Class 4 landfills, two Class 1 and 4 landfills, and five Class 1 landfills (ADEQ 2008c). Class 1 landfills accept nonhazardous residential, industrial, and commercial solid waste, and Class 4 landfills accept inert nonhazardous solid waste.

4.11.2 Environmental Consequences

4.11.2.1 Albert Pike Road Alternative

Long-term minor adverse effects on utility systems would be expected. The adverse effects would result from the increased demand on all utility systems created by constructing and operating an AFRC in Hot Springs. Any increase in demand on local utilities would be partially—and potentially completely—offset by closure of the U.S. Army Reserve Center in Hot Springs and the U.S. Army Reserve OMS in Malvern, Arkansas. No significant adverse effects on any utility system would be expected from constructing and operating the proposed AFRC. All utility systems and utility providers have sufficient capacity to meet the additional demand that the AFRC would create.

About 200 Reservists and Guardsmen would use the proposed AFRC on weekends or, on average, about 8 to 10 days per month, as well as 10 permanent staff. Using average per capita consumption rates, the AFRC would create the approximate demands on local utility systems listed in Table 4-13.

Table 4-13
Utility system demand created by the proposed AFRC

System	Average per capita consumption rate	Monthly AFRC demand
Potable water	150 gallons per day	345,000 gallons
Wastewater	120 gallons per day	276,000 gallons
Municipal solid waste	4.5 pounds per day	10,350 pounds

Calculations for demand on the electrical system and natural gas usage are not available. However, any demand for electricity and natural gas at the new AFRC would be minimized by the Army installing electrical fixtures and air-conditioning systems in compliance with the Energy Policy Act of 2005 (Public Law 109-58), which has specified goals for increased use of renewable energy sources, advanced utility metering, and procurement of energy-efficient

equipment and building systems in all applicable contracts. Compliance with energy efficiency goals at the new AFRC could result in a reduced regional demand on utilities once the U.S. Army Reserve Center facilities being closed no longer create a demand. The demand on the water supply system would be minimized by installing water-conserving devices such as low-flow shower heads, faucets, and toilets in new facilities. All DoD vertical building construction projects, starting with the FY2008, would be expected to achieve the SILVER level of Leadership in Energy and Environmental Design of the U.S. Green Building Council (Deputy Assistant Secretary of the Army 2006).

Overall, constructing the AFRC would not likely produce a quantity of debris that would pose a problem in terms of area landfill capacity. Adhering to the Army memorandum dated February 6, 2006 (ACSIM 2006), the Army's selected contractor would attempt to divert 50 percent or more of the estimated 136 tons of construction debris from landfills by recycling. As a result, about 68 tons of debris would be disposed of in landfills (Table 4-14). Timber removed from the site before facility construction could be used for lumber or paper products production, or for firewood. A private contract could be pursued to ensure viable use of the wood products taken from the site.

Table 4-14
Construction debris generated by AFRC construction

Construction type	Gross building area[a] (sf)	C&D factor (lb/sf)	Estimated waste (lb)	Estimated waste (tons)
Construction	62,005	4.4	272,822	136
Amount recycled (50%)	N/A	N/A	136,411	68
Net total C&D debris generated	N/A	N/A	136,411	68

a Includes construction of the AFRC, OMS, and unheated storage building.
lb = pound, sf = square foot, C&D = construction and debris

4.11.2.3 No Action Alternative

No effect on utilities would result from implementing the No Action Alternative. No additional demand on utility systems would be created because no AFRC would be constructed. Utility system demands from use of the existing U.S. Army Reserve Center facilities in Hot Springs and Malvern, Arkansas, would continue at their current levels.

4.12 HAZARDOUS AND TOXIC SUBSTANCES

4.12.1 Affected Environment

A Phase I Environmental Site Assessment report that was prepared in 2002 for the proposed parcel indicates that no evidence of activities that pose a major environmental hazard to health, safety or to the value of the property was found. An approximately 70-year-old residence with out-buildings is on the northeast portion of the property. The age of the residence and out-buildings indicates that they could have building components that contain asbestos or lead-based paint (B&F Engineering 2002).

Before site acquisition, an Environmental Condition of Property (ECP) Report would be prepared. The ECP Report would be prepared to meet the Department of the Army's requirement to assess, determine and document the environmental condition of transferable property and to determine if the property is suitable for acquisition. The ECP would be

prepared in accordance with AR 200-1, Section 15-5 c(6) *Environmental Protection and Enhancement*, and comply with EPA's *All Appropriate Inquiry* rules under the Comprehensive Environmental Response, Compensation, and Liability Act. Additionally, the ECP Report would comply with the American Society for Testing and Materials Designation: E 1527-05, *Standard Practice for Environmental Site Assessments: Phase l Environmental Site Assessment Process* (ASTM 2005).

4.12.2 Environmental Consequences

4.12.2.1 Albert Pike Road Alternative

Long-term minor adverse effects related to hazardous materials and waste would be expected from implementing the proposed action. Facility construction would involve the use of heavy equipment, which would be expected to result in minor spills from engines and equipment operation. Operation and maintenance of the AFRC and the OMS would require the use of materials such as petroleum, oils, lubricants, solvents, and paints. All hazardous materials and waste would be handled in accordance with local, state, and federal regulations and in accordance with established procedures.

4.12.2.2 No Action Alternative

No adverse effects would be expected from implementing the No Action alternative. The AFRC would not be constructed under the No Action alternative, and the site would remain undeveloped.

4.13 CUMULATIVE EFFECTS SUMMARY

Cumulative effects reasonably expected to result if the proposed action is implemented as described in the EA are discussed below. Only those resource areas for which cumulative effects were identified are discussed.

Development would continue in the ROI with or without the proposed action. The preferred site is owned by a private property owner who is seeking to develop the property or sell the properties to developers. Development of the site would result in a reduction in green space in the ecoregion, with adverse cumulative effects on the natural vegetation of the region and its wildlife, and an increase in the quantity of developed land. A beneficial cumulative effect could occur from transferring the existing Hot Springs AFRC to a local reuse authority to be available for use by the community. Beneficial cumulative socioeconomic effects could also be expected. In addition to the BRAC action, a number of other economic development projects occurring in the region would have short- and long-term beneficial effects on the local economy by increasing employment, income, and business sales volume. Recent and proposed projects in the ROI include construction of a new hotel and restaurants, expansion of Magic Springs Amusement Park and Crystal Falls Water Park, opening of a new marketing call center, road and pedestrian crosswalk improvements, a new shopping center, residential development, and additions to the Health Park Hospital (City of Hot Springs 2008a).

4.14 MITIGATION

Mitigation actions are used to reduce, avoid, or compensate for significant adverse effects. The EA determined that there was no need for mitigation measures.

SECTION 5.0
FINDINGS AND CONCLUSIONS

This EA has been prepared to evaluate the potential effects on the natural and human environment from activities associated with implementation of the proposed action. The EA has examined the Army's Preferred Alternative and the No Action Alternative.

The EA has evaluated potential effects on land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic materials.

5.1 FINDINGS

The evaluation of the proposed action, identified as the Army's Preferred Alternative, indicates that the physical and socioeconomic environments at the Albert Pike Road site and in the ROI would not be significantly affected by the proposed action singularly or through any combination of direct, indirect, or cumulative effects. The predicted consequences on resource areas are briefly described below. Table 5-1 provides a summary and comparison of the consequences of the proposed action versus the No Action Alternative.

5.1.1 Consequences of the Proposed Action

5.1.1.1 Land Use

No effects on land use would be expected from constructing an AFRC at the Albert Pike Road site. The site and nearby areas are zoned for commercial and light manufacturing uses, which is compatible with the proposed AFRC use. Aspects of the surrounding area (forested areas, the railroad tracks, and commercial development along Albert Pike Road) would be compatible with the proposed AFRC and would serve as a buffer between the proposed AFRC and potentially incompatible nearby land uses (e.g., residential areas).

5.1.1.2 Aesthetics and Visual Resources

Long-term minor adverse effects on aesthetics and visual resources would be expected from constructing an AFRC on the Albert Pike Road site. The project would convert the site from forested to developed, which would be in keeping with the commercial aspect of Albert Pike Road. Because the AFRC facility would be of modern design, it could be beneficial to the aesthetics of the developed area along Albert Pike Road.

5.1.1.3 Air Quality

Short- and long-term minor adverse effects on air quality would be expected as a result of implementing the proposed action. The effects would be primarily from air emissions during facility construction and from creating new stationary sources of air emissions, such as heating boilers and standby generators, at the AFRC. Increases in emissions would not exceed applicability thresholds, be regionally significant, or contribute to a violation of any federal, state, or local air regulation.

Table 5-1
Summary of potential environmental and socioeconomic consequences

	Environmental and socioeconomic effects	
Resource Area	**Proposed Action**	**No Action Alternative**
Land use	No effect	No effect
Aesthetics and visual resources	Long-term minor adverse	No effect
Air quality	Short- and long-term minor adverse	No effect
Noise	Short-term minor adverse	No effect
Geology and soils	Short-term minor adverse	No effect
Water resources	Short- and long-term minor adverse	No effect
Biological resources	Long-term minor adverse	No effect
Cultural resources	No effect	No effect
Socioeconomics		
• Regional economic activity	Short-term minor beneficial	No effect
• Population	No effect	No effect
• Housing	No effect	No effect
• Quality of life	No effect	No effect
• Environmental justice	No effect	No effect
• Protection of children	No effect	No effect
Transportation	Short- and long-term minor adverse	No effect
Utilities	Long-term minor adverse	No effect
Hazardous and toxic substances	Long-term minor adverse	No effect

5.1.1.4 Noise

Short-term minor adverse effects on the noise environment would be expected from implementing the proposed action. Minor increases in noise would be primarily from using heavy equipment during construction. The effects would be temporary in nature and would end upon completion of construction. Noise from facility operations would be expected to be negligible.

5.1.1.5 Geology and Soils

Short-term minor adverse effects on soils would be expected from implementing the proposed action. Removal of vegetation, site grading, and soils exposed during construction could cause some soil erosion. Construction would not, however, permanently alter the geology or soils of the site. No prime farmland soils would be affected.

5.1.1.6 Water Resources

Short- and long-term minor adverse effects on water resources would be expected as a result of implementing the proposed action. Adverse effects could result from erosion and sediment runoff during land disturbance activities and vegetation clearing associated with site development and construction. The effects would be minimized by using construction-specific best management practices to control storm water runoff and implementing a site-specific sediment and erosion control plan during land development, construction, and afterward during operation of the AFRC.

Compliance with the ADEQ Construction Storm Water Permit by the Army or its contractors would be required. This would reduce the effects of land disturbance activities on water resources. Wetlands and sensitive riparian habitat are not present on the proposed site.

5.1.1.7 Biological Resources

Long-term minor adverse effects on vegetation and wildlife would be expected from implementation of the proposed action. About 13 acres of forested land would be cleared and developed for the AFRC and associated facilities. Adverse effects would, therefore, be expected on the vegetation and wildlife of the parcel. No effects on sensitive species or wetlands would be expected because these resources are not found on the site.

5.1.1.8 Cultural Resources

No adverse effects on cultural resources would be expected from implementing the proposed action. No cultural or historic resources were identified within the proposed project area boundaries. One property 50 year of age or older was identified within the APE for the proposed project, but the identified property is not recommended as eligible for listing on the NRHP. All previously recorded NRHP-listed resources are well removed from the viewshed of the project and therefore would not be affected.

5.1.1.9 Socioeconomics

Short-term minor beneficial effects would be expected on regional economic activity. The expenditures and employment associated with construction of the AFRC would increase regional sales volume, employment, and income. The economic benefits would be for the short term, lasting for the duration of the construction period, and these changes would fall within historical fluctuations and be considered minor. No effects would be expected on population, housing, or quality of life. The proposed action would not change the region of influence's population, demand for housing, or public services. No effects would be expected on environmental justice or the protection of children.

5.1.1.10 Transportation

Short- and long-term minor adverse effects on traffic would be expected from implementing the proposed action. Only small changes to the transportation system would be expected with the proposed action. The changes would be primarily contributable to construction vehicles and small changes in localized traffic patterns from the additional personnel.

5.1.1.11 Utilities

Long-term minor adverse effects on utility systems would be expected. The adverse effects would result from the increased demand on all utility systems created by constructing and operating an AFRC in Hot Springs. Any increase in demand on local utilities would be partially—and potentially completely—offset by closure of the U,S. Army Reserve Center in Hot Springs and the U.S. Army Reserve OMS in Malvern, Arkansas. No significant adverse effects on any utility system would be expected from constructing and operating the proposed AFRC. All utility systems and utility providers have sufficient capacity to meet the additional demand that the AFRC would create.

5.1.1.12 Hazardous and Toxic Substances

Long-term minor adverse effects related to hazardous materials and waste would be expected from implementing the proposed action. Facility construction would involve the use of heavy equipment, which would be expected to result in minor spills from engines and equipment operation. Operation and maintenance of the AFRC and the OMS would require the use of materials such as petroleum, oils, lubricants, solvents, and paints. All hazardous materials and waste would be handled in accordance with local, state, and federal regulations and in accordance with established procedures.

5.1.1.13 Cumulative Effects

The CEQ defines *cumulative effects* at 40 CFR 1508.7 as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions."

The summary presented in this section recognizes the effects of the proposed action on the various resources and conditions discussed earlier. It also recognizes the effects of other past, present, and reasonably foreseeable actions, and it describes the additive, or cumulative, effects that might result. Although some cumulative effects, however minimal, could be identified for virtually any resource or condition, the effects described below are believed to be most pertinent to and representative of those associated with the proposed action. Only those resource areas for which cumulative effects were identified are discussed.

Development would continue in the ROI with or without the proposed action. The preferred site is owned by a private property owner who is seeking to develop the property or sell the properties to developers. Development of the site would result in a reduction in green space in the ecoregion, with adverse cumulative effects on the natural vegetation of the region and its wildlife, and an increase in the quantity of developed land. A beneficial cumulative effect could occur from transferring the existing Hot Springs AFRC to a local reuse authority to be available for use by the community. Beneficial cumulative socioeconomic effects could also be expected. In addition to the BRAC action, a number of other economic development projects occurring in the region would have short- and long-term beneficial effects on the local economy by increasing employment, income, and business sales volume. Recent and proposed projects in the ROI include construction of a new hotel and restaurants, expansion of Magic Springs Amusement Park and Crystal Falls Water Park, opening of a new marketing call center, road and pedestrian crosswalk improvements, a new shopping center, residential development, and additions to the Health Park Hospital (City of Hot Springs 2008).

5.1.1.14 Mitigation Measures

Mitigation actions are used to reduce, avoid, or compensate for significant adverse effects. The EA determined that there would be no need for mitigation measures.

5.1.2 Consequences of the No Action Alternative

No adverse effects on any resource area would be expected from implementing the No Action Alternative. Under the No Action Alternative, the Army would not construct an AFRC on the proposed site.

5.2 CONCLUSIONS

On the basis of these analyses, the proposed action would have no significant direct or indirect effects on the natural or human environment. Preparation of an environmental impact statement is not required. Issuance of a FNSI would be appropriate.

SECTION 6.0
LIST OF PREPARERS

Michelle Cannella
Graduate Studies, Mineral Economics, Pennsylvania State University
B.S., Mineral Economics, Pennsylvania State University
Years of Experience: 12

Christina Olson
M.A., Historic Preservation, University of Georgia
B.S., Historic Preservation, Southeast Missouri State University
Years of Experience: 6

Greg Hippert
B.S., Earth Science, University of North Carolina at Charlotte
Years of Experience: 14

Jennifer Jarvis
B.S., Environmental Resource Management, Virginia Polytechnic Institute and State University
Years of Experience: 9

J.W. Joseph, Ph.D., RPA
New South Associates, Inc.
Ph.D., Historical Archaeology, University of Pennsylvania
M.A., American Civilization, University of South Carolina
B.A., Anthropology, University of South Carolina
Registered Professional Archaeologist
Years of Experience: 30

Timothy Lavallee
M.S., Environmental Health, Tufts University
B.S., Mechanical Engineering, Northeastern University
Years of Experience: 17

Martha Martin
B.A., English, Capital University
Years of Experience: 28

Samuel Pett
M.S., Environmental Science and Policy, University of Massachusetts/Boston
B.S., Wildlife Biology and Zoology, Michigan State University
Years of Experience: 18

Jeff Strong
M.S., Technical and Scientific Communication, James Madison University
B.A., Computer Information Systems, Eastern Mennonite University
Years of Experience: 19

Paul Wilbur, J.D.
J.D., Wayne State University Law School
B.A., English, University of Michigan
Years of Experience: 31

SECTION 7.0
DISTRIBUTION LIST

Agencies

Mr. Chris Hemann, Chief
Arkansas Department of Environmental Quality
Public Outreach and Assistance Division
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Mr. Robert Leonard, Biologist
Arkansas Game & Fish Commission
2 Natural Resources Drive
Little Rock, Arkansas 72205

Ms. Cindy Osborne
Arkansas Natural Heritage Commission
1500 Tower Building
323 Center Street
Little Rock, Arkansas 72201

Ms. Cathie Matthews
State Historic Preservation Officer
Department of Arkansas Heritage
323 Center Street
Suite 1500
Little Rock, Arkansas 72201

Mr. Mark Sattelberg, Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services Field Office
Southeast Region (4)
110 South Amity Suite 300
Conway, Arkansas 72032-8975

Tribes

The Honorable LaRue Martin Parker, Chairwoman
Caddo Nation of Oklahoma
ATTN: Mr. Robert Cast,
Tribal Historic Preservation Officer
P.O. Box 487
Binger, Oklahoma 73009

Ms. Carrie V. Wilson
NAGPRA and Section 106 Review Coordinator
Quapaw Tribe of Oklahoma
223 E. Lafayette
Fayetteville, Arkansas 72701

Library

Garland County Library
1427 Malvern Avenue
Hot Springs, Arkansas 71901-6316

SECTION 8.0
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SECTION 9.0
PERSONS CONSULTED

Cindy Osborne, Arkansas Natural Heritage Commission. December 19, 2008.

APPENDIX A

EMISSIONS CALCULATIONS
and
RECORD OF NON-APPLICABILITY

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Table A-1 Construction Equipment Use

Equipment Type	Number of Units	Days on Site	Hours Per Day	Operating Hours
Excavators Composite	1	115	4	460
Rollers Composite	1	173	8	1384
Rubber Tired Dozers Composite	1	115	8	920
Plate Compactors Composite	2	115	4	920
Trenchers Composite	2	58	8	928
Air Compressors	2	115	4	920
Cement & Mortar Mixers	2	115	6	1380
Cranes	1	115	7	805
Generator Sets	2	115	4	920
Tractors/Loaders/Backhoes	2	230	7	3220
Pavers Composite	1	58	8	464
Paving Equipment	2	58	8	928

Table A-2 Construction Equipment Emission Factors (lbs/hour)

Equipment	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Excavators Composite	0.5828	1.3249	0.1695	0.0013	0.0727	0.0727	119.6
Rollers Composite	0.4341	0.8607	0.1328	0.0008	0.0601	0.0601	67.1
Rubber Tired Dozers Composite	1.5961	3.2672	0.3644	0.0025	0.1409	0.1409	239.1
Plate Compactors Composite	0.0263	0.0328	0.0052	0.0001	0.0021	0.0021	4.3
Trenchers Composite	0.5080	0.8237	0.1851	0.0007	0.0688	0.0688	58.7
Air Compressors	0.3782	0.7980	0.1232	0.0007	0.0563	0.0563	63.6
Cement and Mortar Mixers	0.0447	0.0658	0.0113	0.0001	0.0044	0.0044	7.2
Cranes	0.6011	1.6100	0.1778	0.0014	0.0715	0.0715	128.7
Generator Sets	0.3461	0.6980	0.1075	0.0007	0.0430	0.0430	61.0
Tractors/Loaders/Backhoes	0.4063	0.7746	0.1204	0.0008	0.0599	0.0599	66.8
Pavers Composite	0.5874	1.0796	0.1963	0.0009	0.0769	0.0769	77.9
Paving Equipment	0.0532	0.1061	0.0166	0.0002	0.0063	0.0063	12.6

Source: CARB 2007b

Table A-3 Construction Equipment Emissions (Tons per Year)

Equipment	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Excavators Composite	0.1341	0.3047	0.0390	0.0003	0.0167	0.0167	27.5037
Rollers Composite	0.3004	0.5956	0.0919	0.0005	0.0416	0.0416	46.4006
Rubber Tired Dozers Composite	0.7342	1.5029	0.1676	0.0011	0.0648	0.0648	109.9886
Plate Compactors Composite	0.0121	0.0151	0.0024	0.0000	0.0010	0.0010	1.9843
Trenchers Composite	0.2357	0.3822	0.0859	0.0003	0.0319	0.0319	27.2467
Air Compressors	0.1740	0.3671	0.0567	0.0003	0.0259	0.0259	29.2594
Cement and Mortar Mixers	0.0309	0.0454	0.0078	0.0001	0.0031	0.0031	5.0012
Cranes	0.2419	0.6480	0.0716	0.0006	0.0288	0.0288	51.7885
Generator Sets	0.1592	0.3211	0.0494	0.0003	0.0198	0.0198	28.0566
Tractors/Loaders/Backhoes	0.6542	1.2470	0.1939	0.0012	0.0964	0.0964	107.5583
Pavers Composite	0.1363	0.2505	0.0455	0.0002	0.0178	0.0178	18.0811
Paving Equipment	0.0247	0.0492	0.0077	0.0001	0.0029	0.0029	5.8593
Total	**2.84**	**5.73**	**0.82**	**0.0051**	**0.35**	**0.35**	**458.73**

Table A-4 Painting

VOC Content	0.84	lbs/gallon	
Coverage	400	sqft/gallon	
Emission Factor	0.0021	lbs/sqft	
Building/Facility	Wall Surface	VOC [lbs]	VOC [tpy]
All Buildings Combined	62005	124010	260.4
Total	**62005**	**124010**	**260.42**

Table A-5 Delivery of Equipment and Supplies

Number of Deliveries	2						
Number of Trips	2						
Miles Per Trip	30						
Days of Construction	230						
Total Miles	27600						
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Emission Factor (lbs/mile)	0.0219	0.0237	0.0030	0.0000	0.0009	0.0007	2.7
Total Emissions (lbs)	605.80	654.47	82.60	0.71	23.63	20.41	75056.4
Total Emissions (tpy)	**0.30**	**0.33**	**0.04**	**0.0004**	**0.01**	**0.01**	**37.53**

Source: CARB 2007a

Table A-6 Paving Off Gasses

VOC Emissions Factor	2.62	lbs/acre	
Building/Facility	**Area [acres]**	**VOC [lbs]**	**VOC [tpy]**
All Combined Parking	2.18	5.72	0.0029
Total	**2.18**	**5.72**	**0.0029**

Source: SQAQMD 1993

Table A-7 Surface Disturbance

TSP Emissions	80	lb/acre				
PM_{10}/TSP	0.45					
$PM_{2.5}$/PM_{10}	0.15					
Period of Disturbance	30	days				
Capture Fraction	0.5					
Building/Facility	**Area [acres]**	**TSP[lbs]**	**PM_{10}[lbs]**	**PM_{10}[tons]**	**$PM_{2.5}$[lbs]**	**$PM_{2.5}$[tons]**
Construction	3.6	8663	3899	1.95	292	0.15
Total	**3.6**	**8663**	**3899**	**1.95**	**292**	**0.15**

Sources: USEPA 1995 and USEPA 2005

Table A-8 Worker Commutes

Number of Workers	30						
Number of Trips	2						
Miles Per Trip	30						
Days of Construction	230						
Total Miles	414000						
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001	1.1
Total Emissions (lbs)	4367.05	456.59	446.79	4.45	35.21	21.91	455206.4
Total Emissions (tpy)	**2.18**	**0.23**	**0.22**	**0.0022**	**0.02**	**0.01**	**227.60**

Source: CARB 2007a

Table A-9 Total Construction Emissions (Tons per Year)

Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Construction Equipment	2.84	5.73	0.82	0.0051	0.35	0.35	458.73
Painting	0.00	0.00	0.13	0.0000	0.00	0.00	0.00
Delivery of Equipment and Supplies	0.30	0.33	0.04	0.0004	0.01	0.01	37.53
Paving Off Gasses	0.00	0.00	0.00	0.0000	0.00	0.00	0.00
Surface Disturbance	0.00	0.00	0.00	0.0000	1.95	0.15	0.00
Worker Commutes	2.18	0.23	0.22	0.0022	0.02	0.01	227.60
Total Construction Emissions	**5.32**	**6.28**	**1.22**	**0.0077**	**2.33**	**0.52**	**723.86**

Table A-10 Boiler Emissions

Gross Area	62005	sf					
Heating Requirements	99000	btu/sf					
Total Annual Heat Required	6138	MMBTU					
Heating Value	150	MMBtu/1000 Gallons					
Total #2 Oil Used	40.9	10^3 Gallons					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	
Emission Factor (lb/1000 gal)	5	24	2.493	0.1	2	2	
Total Emissions (tons)	**0.10**	**0.49**	**0.05**	**0.00**	**0.04**	**0.04**	

1. Emission factors for all pollutants were obtained from U.S. EPA's AP-42, Section 1.3. Conservatively assume that PM_{10} = PM.
2. Assumed sulfur concentration 1%
3. Heating requirements obtained from Commercial Buildings Energy Consumption Survey, DOE 2003

Table A-11 Emergency Generators

Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**		
Emission Factor [lb/hp-hr]	0.0055	0.024	0.000705	0.00809	0.0007	0.0007		
Generator Rating [kW]	**Estimated Run Time (hr/yr)**	**Annual Power Output [kW-hr/yr]**	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
700	100	70000	0.26	1.13	0.03	0.38	0.03	0.03
	Total Emissions [tpy]		**0.26**	**1.13**	**0.03**	**0.38**	**0.03**	**0.03**

1. Emission factors for all pollutants were obtained from U.S. EPA's AP-42, Section 3.4 Stationary Diesel Engines

Table A-12 Worker Commutes

Number of Workers	10					
Number of Trips	2					
Miles Per Trip	30					
Days of Work	260					
Total Miles	156000					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	1645.56	172.05	168.35	1.68	13.27	8.26
Total Emissions (tons)	**0.82**	**0.09**	**0.08**	**0.00**	**0.01**	**0.00**

Source: CARB 2007a

Table A-13 Drill Weekend Commutes

Number of Workers	200					
Number of Trips	0.650856199					
Miles Per Trip	60					
Days of Training	24					
Total Miles	187447					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	1977.27	206.73	202.29	2.01	15.94	9.92
Total Emissions (tons)	**0.99**	**0.10**	**0.10**	**0.00**	**0.01**	**0.00**

Source: CARB 2007a

Table A-14 Total Operational Emissions (tons)

Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Boiler Emissions	0.10	0.49	0.05	0.00	0.04	0.04
Emergency Generators	0.26	1.13	0.03	0.38	0.03	0.03
Worker Commutes	0.82	0.09	0.08	0.00	0.01	0.00
Drill Weekend Commutes	0.91	0.10	0.09	0.00	0.01	0.00
Total Operational Emissions	**2.10**	**1.80**	**0.26**	**0.38**	**0.09**	**0.08**

RECORD OF NON-APPLICABILITY

In Accordance with the Clean Air Act - General Conformity Rule for the
Proposed Construction and Operation
of an Armed Forces Reserve Center in Hot Springs, Arkansas

6 March 2009

The Army proposes to construct and operate an Armed Forces Reserve Center (AFRC) in Hot Springs, Arkansas. Primary facilities would include an AFRC building, maintenance shop, and organizational unit storage building. Buildings would be of permanent construction with heating, ventilation, air conditioning, plumbing, mechanical, security, and electrical systems. Supporting facilities would include land clearing, paving, fencing, general site improvements, and extension of utilities to serve the project. Force protection (physical security) measures would be incorporated into design of the facility, to include consideration of stand-off distance from roads, parking areas, and vehicle unloading areas. The proposed AFRC would provide training to the Army National Guard, Army Reserve, and Army Active Component soldiers to attain military education and proficiency.

General Conformity under the Clean Air Act, Section 176 has been evaluated according to the requirements of 40 of the *Code of Federal Regulations* Part 93, Subpart B. The requirements of this rule are not applicable to the Proposed Action or the alternatives because:

All activities associated with the Proposed Action and alternatives are located in an area designated by the U.S. Environmental Protection Agency to be in attainment for all criteria pollutants.

Supported documentation and emission estimates:

( ) Are attached

( ) Appear in the NEPA documentation

(X) Other (not necessary)

James Wheeler II
Chief, Environmental Division
90th Regional Readiness Command

13 Mar 2009
Date

APPENDIX B

SCIENTIFIC NAMES OF SPECIES

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Scientific names of species mentioned in the text

Aster sp.	Aster
Carya sp.	Hickory
Eupatorium sp.	Boneset
Juniperus virginiana	Eastern red cedar
Lonicera japonica	Japanese honeysuckle
P. echinata	Shortleaf pine
Pinus taeda	Loblolly pine
Quercus alba	White oak
Q. falcata	Southern red oak
Q. velutina	Black oak
Rhus copallinum	Winged sumac
Solidago sp.	Goldenrod
Sorghum halepense	Johnson grass
Vicia sp.	Vetch
Odocoileus virginianus	Whitetail deer
Procyon lotor	Raccoon
Sciurus carolinensis	Gray squirrel
S. niger	Fox squirrel
Sylvilagus floridanus	Cottontail rabbit
Ursus americanus	Black bear
Vulpes vulpes	Red fox
Archilochus colubris	Ruby-throated hummingbird
Baeolophus bicolor	Tufted titmouse
Cardinalis cardinalis	Cardinal
Colinus virginianus	Bobwhite
Cyanocitta cristata	Blue jay
Dendroica pinus	Pine warbler
Hylocichla mustelina	Wood thrush
Meleagris gallopavo	Eastern wild turkey
Parus carolinensis	Carolina chickadee
Pipilo erythrophthalmus	Eastern towhee
Piranga rubra	Summer tanager
Seiurus aurocapillus	Ovenbird
Thryothorus ludovicianus	Carolina wren
Wilsonia citrina	Hooded warbler
Zenaida macroura	Mourning dove
Agkistrodon piscivorus piscivorus	Cottonmouth moccasin
A. contortrix	Copperhead
Bufo quercicus	Oak toad
Elaphe sp.	Rat snake
Hyla cinerea	Green treefrog
H. femoralis	Pine wood treefrog
Lampropeltis getula holbrooki	Speckled kingsnake
Masticophis flagellum	Coachwhip
Opheodrys aestivus	Rough green snake
Ophisaurus ventralis	Glass lizard
Plethodon glutinosus	Slimy salamander
Sceloporus undulatus	Fence lizard

Protected Species in Garland County

Plants – Vascular

Scientific name	Common name	Federal status	State status
Physaria filiformis	Missouri bladderpod	LT	INV
Ptilimnium nodosum	Harperella	LE	INV

Note: INV = Inventory element (The Arkansas Natural Heritage Commission is currently conducting active inventory work on this element), LE = endangered, LT = threatened

APPENDIX C

AGENCY COORDINATION LETTERS

[Note: Each letter sent included the two maps that follow the first letter in this appendix. The two maps, however, are not duplicated in this appendix for the other coordination letters.]

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DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

November 24, 2008

Reply to the Attention of Environmental Office

Chris Hemann, Chief
Arkansas Department of Environmental Quality
Public Outreach and Assistance Division
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Dear Mr. Hemann:

The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended, implements recommendations made during the fall of 2005, by the Defense Base Closure and Realignment Commission (BRAC Commission). One of the proposed actions is to close the Hot Springs U.S. Army Reserve Center (USARC) in Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS) in Malvern, Arkansas, and relocate the units to a new Armed Forces Reserve Center (AFRC) in Hot Springs. The new AFRC is to have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, if the state of Arkansas decides to relocate those units. No additional weapons systems or demands on training ranges are required for the proposed action.

After review of nine potential locations in Hot Springs, one preferred site was identified as suitable for the construction of the AFRC (see Figure 1). The U.S. Army Corps of Engineers (USACE), Mobile District is in the process of preparing an Environmental Assessment (EA), which will assess the potential impacts of constructing and operating the new AFRC.

The preferred site (Albert Pike Road site as shown in Figure 2) consists of 41 acres, although the total amount of area to be acquired is expected to be approximately 10 acres. It is largely undeveloped and forested, with the exception of a single residential unit in the northeast corner of the site. It is surrounded by a variety of developments including a residential area, commercial areas, four-lane road, and a railroad.

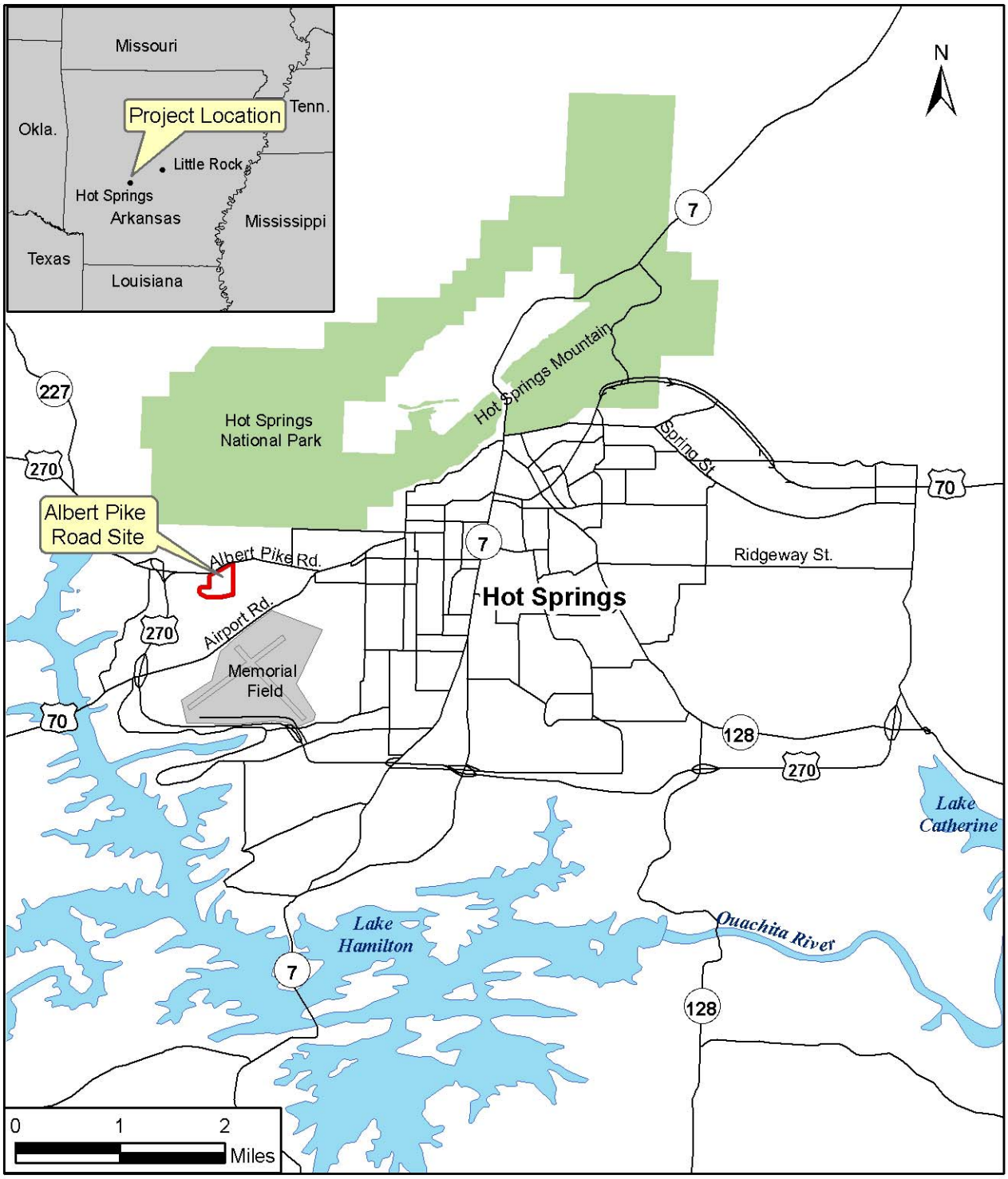
In accordance with the National Environmental Policy Act (NEPA), Clean Air Act, Clean Water Act, Noise Control Act, Resource Conservation and Recovery Act, Toxic Substances Control Act, and other regulations, an evaluation of potential effects (both beneficial and adverse) associated with implementing this action is required. We are requesting your input regarding any environmental concerns you might have regarding this action.

Please provide your input within 30 days of receipt of this letter if you are interested in this matter. If you have questions or concerns about this project, please do not hesitate to call me at (501) 771-7992.

Sincerely,

James Wheeler II
Chief, Environmental Division
90th RRC

Enclosures (2)

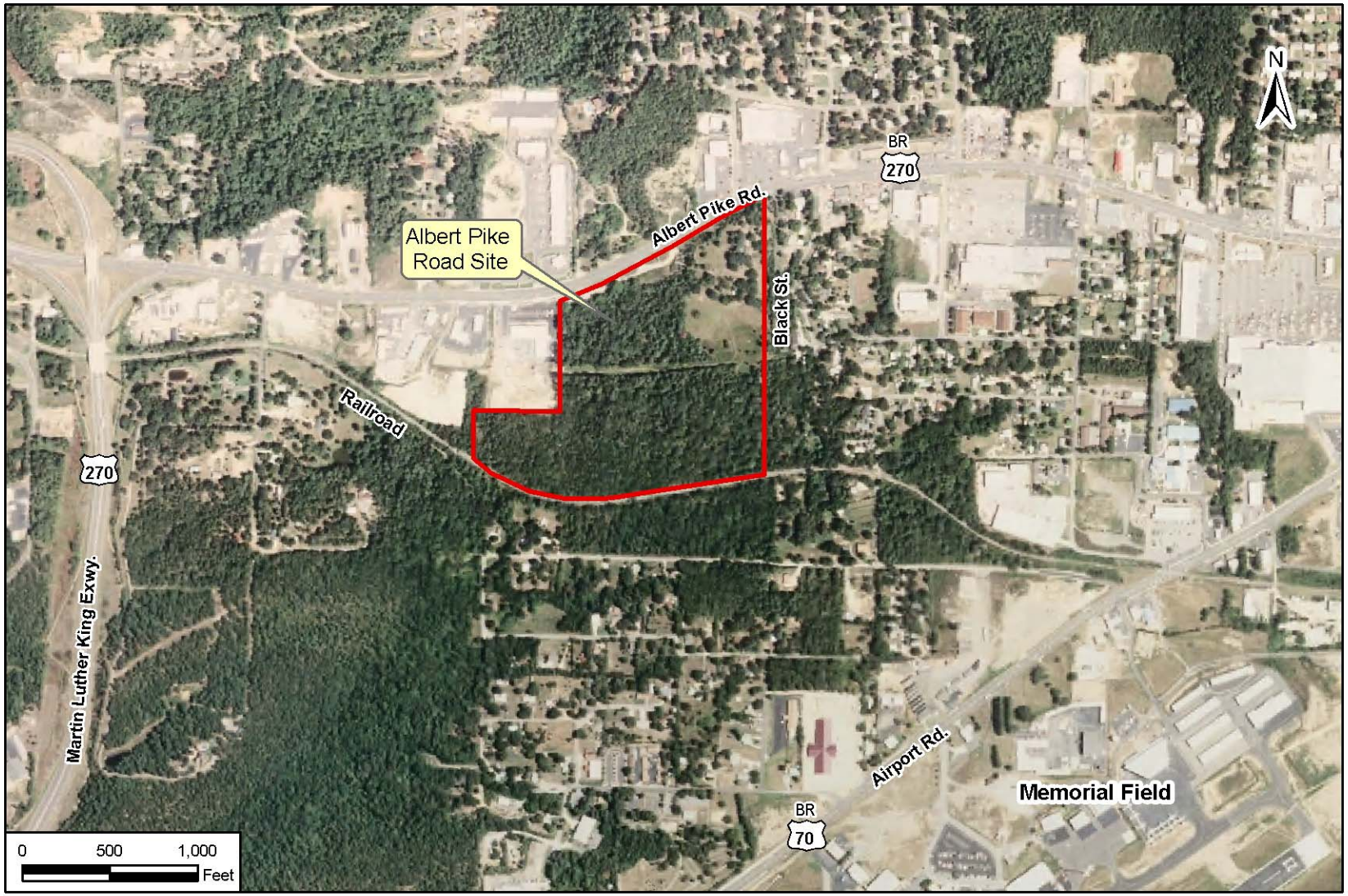


LEGEND

- Site Boundary
- Road
- Surface Water
- National Park

Location Map

Figure 1



LEGEND

Site Boundary

Albert Pike Road Site

Figure 2

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

November 24, 2008

Reply to the Attention of the Environmental Office

Robert Leonard, Biologist
Arkansas Game & Fish Commission
2 Natural Resources Drive
Little Rock, Arkansas 72205

Dear Mr. Leonard:

The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended, implements recommendations made during the fall of 2005, by the Defense Base Closure and Realignment Commission (BRAC Commission). One of the proposed actions is to close the Hot Springs U.S. Army Reserve Center (USARC) in Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS) in Malvern, Arkansas, and relocate the units to a new Armed Forces Reserve Center (AFRC) in Hot Springs. The new AFRC is to have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, if the state of Arkansas decides to relocate those units. No additional weapons systems or demands on training ranges are required for the proposed action.

After review of nine potential locations in Hot Springs, one preferred site was identified as suitable for the construction of the AFRC (see Figure 1). The U.S. Army Corps of Engineers (USACE), Mobile District is in the process of preparing an Environmental Assessment (EA), which will assess the potential impacts of constructing and operating the new AFRC.

The preferred site (Albert Pike Road site as shown in Figure 2) consists of 41 acres, although the total amount of area to be acquired is expected to be approximately 10 acres. It is largely undeveloped and forested, with the exception of a single residential unit in the northeast corner of the site. It is surrounded by a variety of developments including a residential area, commercial areas, four-lane road, and a railroad.

In accordance with the National Environmental Policy Act (NEPA), Endangered Species Act, Fish and Wildlife Coordination Act, and other regulations, an evaluation of potential effects (both beneficial and adverse) associated with implementing this action is required. We are requesting your input regarding any environmental concerns you might have regarding this action.

Please provide your input within 30 days of receipt of this letter if you are interested in this matter. If you have questions or concerns about this project, please do not hesitate to call me at (501) 771-7992.

Sincerely,

James Wheeler II
Chief, Environmental Division
90th RRC

Enclosures

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

November 24, 2008

Reply to the Attention of the Environmental Office

Cindy Osborne
Arkansas Natural Heritage Commission
1500 Tower Building
323 Center Street
Little Rock, Arkansas 72201

Dear Ms. Osborne:

The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended, implements recommendations made during the fall of 2005, by the Defense Base Closure and Realignment Commission (BRAC Commission). One of the proposed actions is to close the Hot Springs U.S. Army Reserve Center (USARC) in Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS) in Malvern, Arkansas, and relocate the units to a new Armed Forces Reserve Center (AFRC) in Hot Springs. The new AFRC is to have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, if the state of Arkansas decides to relocate those units. No additional weapons systems or demands on training ranges are required for the proposed action.

After review of nine potential locations in Hot Springs, one preferred site was identified as suitable for the construction of the AFRC (see Figure 1). The U.S. Army Corps of Engineers (USACE), Mobile District is in the process of preparing an Environmental Assessment (EA), which will assess the potential impacts of constructing and operating the new AFRC.

The preferred site (Albert Pike Road site as shown in Figure 2) consists of 41 acres, although the total amount of area to be acquired is expected to be approximately 10 acres. It is largely undeveloped and forested, with the exception of a single residential unit in the northeast corner of the site. It is surrounded by a variety of developments including a residential area, commercial areas, four-lane road, and a railroad.

In accordance with the National Environmental Policy Act (NEPA), Endangered Species Act, Fish and Wildlife Coordination Act, and other regulations, an evaluation of potential effects (both beneficial and adverse) associated with implementing this action is required. We are requesting your input regarding any environmental concerns regarding this action, such as the presence of listed threatened or endangered species.

Please provide your input within 30 days of receipt of this letter if you are interested in this matter. If you have questions or concerns about this project, please do not hesitate to call me at (501) 771-7992.

Sincerely,

James Wheeler II
Chief, Environmental Division
90th RRC

Enclosures

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

November 24, 2008

Reply to the Attention of the Environmental Office

Ms. Cathie Matthews
State Historic Preservation Officer
Department of Arkansas Heritage
323 Center Street
Suite 1500
Little Rock, AR 72201

Dear Ms. Matthews:

The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended, implements recommendations made during the fall of 2005, by the Defense Base Closure and Realignment Commission (BRAC Commission). One of the proposed actions is to close the Hot Springs U.S. Army Reserve Center (USARC) in Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS) in Malvern, Arkansas, and relocate the units to a new Armed Forces Reserve Center (AFRC) in Hot Springs. The new AFRC is to have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, if the state of Arkansas decides to relocate those units. No additional weapons systems or demands on training ranges are required for the proposed action.

After review of nine potential locations in Hot Springs, one preferred site was identified as suitable for the construction of the AFRC (see Figure 1). The U.S. Army Corps of Engineers (USACE), Mobile District is in the process of preparing an Environmental Assessment (EA), which will assess the potential impacts of constructing and operating the new AFRC.

The preferred site (Albert Pike Road site as shown in Figure 2) consists of 41 acres, although the total amount of area to be acquired is expected to be approximately 10 acres. It is largely undeveloped and forested, with the exception of a single residential unit in the northeast corner of the site. It is surrounded by a variety of developments including a residential area, commercial areas, four-lane road, and a railroad.

In accordance with the National Environmental Policy Act (NEPA), Native American Graves Protection and Repatriation Act (NAGPRA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act (ARPA), and other regulations, an evaluation of potential effects (both beneficial and adverse) associated with implementing this action is required. We are requesting your input regarding any environmental concerns you might have regarding this action.

Please provide your input within 30 days of receipt of this letter if you are interested in this matter. If you have questions or concerns about this project, please do not hesitate to call me at (501) 771-7992.

Sincerely,

James Wheeler II
Chief, Environmental Division
90th RRC

Enclosures

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

November 21, 2008

Reply to the Attention of the Environmental Office

Mr. Mark Sattelberg, Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services Field Office
Southeast Region (4)
110 South Amity Suite 300
Conway, AR 72032-8975

Dear Mr. Sattelberg:

The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended, implements recommendations made during the fall of 2005, by the Defense Base Closure and Realignment Commission (BRAC Commission). One of the proposed actions is to close the Hot Springs U.S. Army Reserve Center (USARC) in Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS) in Malvern, Arkansas, and relocate the units to a new Armed Forces Reserve Center (AFRC) in Hot Springs. The new AFRC is to have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, if the state of Arkansas decides to relocate those units. No additional weapons systems or demands on training ranges are required for the proposed action.

After review of nine potential locations in Hot Springs, one preferred site was identified as suitable for the construction of the AFRC (see Figure 1). The U.S. Army Corps of Engineers (USACE), Mobile District is in the process of preparing an Environmental Assessment (EA), which will assess the potential impacts of constructing and operating the new AFRC.

The preferred site (Albert Pike Road site as shown in Figure 2) consists of 41 acres, although the total amount of area to be acquired is expected to be approximately 10 acres. It is largely undeveloped and forested, with the exception of a single residential unit in the northeast corner of the site. It is surrounded by a variety of developments including a residential area, commercial areas, four-lane road, and a railroad.

In accordance with the National Environmental Policy Act (NEPA), Endangered Species Act, Fish and Wildlife Coordination Act, and other regulations, an evaluation of potential effects (both beneficial and adverse) associated with implementing this action is required. We are requesting your input regarding any environmental concerns regarding this action, such as the presence of listed threatened or endangered species or critical habitat.

Please provide your input within 30 days of receipt of this letter if you are interested in this matter. If you have questions or concerns about this project, please do not hesitate to call me at (501) 771-7992.

Sincerely,

James Wheeler II
Chief, Environmental Division
90th RRC

Enclosures (2)

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

December 7, 2008

Reply to the Attention of the Environmental Office

The Honorable LaRue Martin Parker, Chairwoman
Caddo Nation of Oklahoma
ATTN: Mr. Robert Cast,
Tribal Historic Preservation Officer
P.O. Box 487
Binger, OK 73009

Dear Chairwoman Parker:

The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended, implements recommendations made during the fall of 2005, by the Defense Base Closure and Realignment Commission (BRAC Commission). One of the proposed actions is to close the Hot Springs U.S. Army Reserve Center (USARC) in Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS) in Malvern, Arkansas, and relocate the units to a new Armed Forces Reserve Center (AFRC) in Hot Springs. The new AFRC is to have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, if the state of Arkansas decides to relocate those units. No additional weapons systems or demands on training ranges are required for the proposed action.

After review of nine potential locations in Hot Springs, one preferred site was identified as suitable for the construction of the AFRC (see Figure 1). The U.S. Army Corps of Engineers (USACE), Mobile District is in the process of preparing an Environmental Assessment (EA), which will assess the potential impacts of constructing and operating the new AFRC.

The preferred site (Albert Pike Road site as shown in Figure 2) consists of 41 acres, although the total amount of area to be acquired is expected to be approximately 10 acres. It is largely undeveloped and forested, with the exception of a single residential unit in the northeast corner of the site. It is surrounded by a variety of developments including a residential area, commercial areas, four-lane road, and a railroad.

The U.S. Army Corps of Engineers (USACE), Mobile District, has contracted with Tetra Tech, Inc. to complete environmental studies of the AFRC site in compliance with the National Environmental Protection Act (NEPA). Tetra Tech has subcontracted New South Associates to complete the cultural resource study of this site in accordance with NEPA and Section 106 of the National Historic Preservation Act (NHPA).

This notification is an invitation for your Tribe to participate in the cultural resources consultation during the NEPA process. The Army wishes to ensure that issues of concern to your Tribe are addressed, and welcomes any comments you may have about the proposed AFRC construction. If your Tribe, or members of your Tribe, have knowledge of traditional cultural properties, sacred sites, or burials on or near the sites of our project, please contact Mr. James Wheeler II, phone: (501) 771-7992, at your earliest convenience.

Sincerely,

Philip L. Hanrahan
Brigadier General, U.S. Army Reserve
Commanding

Enclosures

DEC 0 8 2008

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

December 7, 2008

Reply to the Attention of the Environmental Office

Ms. Carrie V. Wilson
NAGPRA and Section 106 Review Coordinator
Quapaw Tribe of Oklahoma
223 E. Lafayette
Fayetteville, AR 72701

Dear Ms. Wilson:

The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended, implements recommendations made during the fall of 2005, by the Defense Base Closure and Realignment Commission (BRAC Commission). One of the proposed actions is to close the Hot Springs U.S. Army Reserve Center (USARC) in Hot Springs, Arkansas, and the United States Army Reserve Organizational Maintenance Activity (OMS) in Malvern, Arkansas, and relocate the units to a new Armed Forces Reserve Center (AFRC) in Hot Springs. The new AFRC is to have the capability to accommodate Arkansas Army National Guard units from the Arkansas Army National Guard Readiness Center in Hot Springs, if the state of Arkansas decides to relocate those units. No additional weapons systems or demands on training ranges are required for the proposed action.

After review of nine potential locations in Hot Springs, one preferred site was identified as suitable for the construction of the AFRC (see Figure 1). The U.S. Army Corps of Engineers (USACE), Mobile District is in the process of preparing an Environmental Assessment (EA), which will assess the potential impacts of constructing and operating the new AFRC.

The preferred site (Albert Pike Road site as shown in Figure 2) consists of 41 acres, although the total amount of area to be acquired is expected to be approximately 10 acres. It is largely undeveloped and forested, with the exception of a single residential unit in the northeast corner of the site. It is surrounded by a variety of developments including a residential area, commercial areas, four-lane road, and a railroad.

The U.S. Army Corps of Engineers (USACE), Mobile District, has contracted with Tetra Tech, Inc. to complete environmental studies of the AFRC site in compliance with the National Environmental Protection Act (NEPA). Tetra Tech has subcontracted New South Associates to complete the cultural resource study of this site in accordance with NEPA and Section 106 of the National Historic Preservation Act (NHPA).

This notification is an invitation for your Tribe to participate in the cultural resources consultation during the NEPA process. The Army wishes to ensure that issues of concern to your Tribe are addressed, and welcomes any comments you may have about the proposed AFRC construction. If your Tribe, or members of your Tribe, have knowledge of traditional cultural properties, sacred sites, or burials on or near the sites of our project, please contact Mr. James Wheeler II, phone: (501) 771-7992, at your earliest convenience.

Sincerely,

Philip L. Hanrahan
Brigadier General, U.S. Army Reserve
Commanding

Enclosures

DEC 0 8 2008

Scott Henderson
Director

Mike Gibson
Deputy Director

Keeping the Natural State natural.

Arkansas Game and Fish Commission

David Goad
Deputy Director

Loren Hitchcock
Deputy Director

December 4, 2008

Mr. James Wheeler II
Chief Environmental Division
Department of The Army
800 Camp Robinson Road
North Little Rock, Arkansas 72118-2205

Dear Mr. Wheeler:

Your letter requesting a review of the preferred site for the new Armed Forces Reserve Center, which is located in Hot Springs, Garland County, Arkansas, has been referred to me for reply.

Biologists from our agency have reviewed the proposed project and we anticipate insignificant adverse impacts to fish and wildlife resources associated with these proposed activities.

If our agency can be of further assistance with the proposed project, don't hesitate to call us. We appreciate the opportunity to review this project proposal.

Sincerely,

Robert K. Leonard

Robert K. Leonard, Biologist
River Basins Division

Cc: Doyle Shook
Mike Armstrong
USFWS, Conway Office

The Department of
Arkansas Heritage

Mike Beebe
Governor

Cathie Matthews
Director

Arkansas Arts Council
*
Arkansas Natural Heritage Commission
*
Delta Cultural Center
*
Historic Arkansas Museum
*
Mosaic Templars Cultural Center
*
Old State House Museum

Arkansas Historic Preservation Program

1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501) 324-9880
fax: (501) 324-9184
tdd: (501) 324-9811
e-mail:
info@arkansaspreservation.org
website:
www.arkansaspreservation.com

An Equal Opportunity Employer

December 2, 2008

Mr. James Wheeler II
Chief, Environmental Division
United States Army 90th Regional Readiness Command
8000 Camp Robinson Road
North Little Rock, Arkansas 72118-2205

RE: Garland County - Hot Springs
Section 106 Review - USA
New Armed Forces Reserve Center
AHPP Tracking No: 68242

Dear Mr. Wheeler:

This letter is written in response to your inquiry regarding properties of architectural, historical, or archeological significance in the area of the referenced project.

For the Arkansas Historic Preservation Program to complete its review of the proposed project, we will need the additional information checked below:

- [X] A 1:24,000 scale USGS topographic map clearly delineating the facilities to be abandoned and the location of the new facility.
- [ ] A project description detailing all aspects of the proposed project
- [X] The location, age and photographs of structures to be renovated, removed, demolished, or abandoned as a result of this project.
- [ ] Photographs of any structures on property directly adjacent to the project area.

Once we have received the above information, we will complete our review as expeditiously as possible. If you have any questions, please contact me at (501) 324-9880.

Sincerely,

Steven M. Imhoff
Staff Archeologist

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

February 26, 2008

Reply to the Attention of the Environmental Office

Ms. Cathie Matthews
State Historic Preservation Officer
Department of Arkansas Heritage
323 Center Street
Suite 1500
Little Rock, AR 72201

Dear Ms. Matthews:

Thank you for your response to our letter of November 24, 2008 describing the proposed action to construct a new Armed Forces Reserve Center in Hot Springs, Arkansas, on the site referred to as the Albert Pike Road site. A copy of the original letter and your response are attached to this letter for your reference. You requested additional information, including photographs of and information on the structures on the site and a map clearly delineating the location of the new facility. Since the time of that letter, which described a 41-acre parcel of land of which the Army intended to purchase only 10 acres, the Army has determined the portion of the 41 acres that will be purchased. A map of that 10-acre parcel and a preliminary layout of the new facilities are also attached to this letter.

The Army will not affect any existing structures on the parcel. All existing facilities on the parcel are at the eastern edge of the 41-acre parcel and are not on the area that will be purchased and developed by the Army. In light of this new information, and in accordance with the National Environmental Policy Act, Native American Graves Protection and Repatriation Act, National Historic Preservation Act, Archaeological Resources Protection Act, and other regulations, a re-evaluation of potential effects (both beneficial and adverse) associated with implementing this action is required. We are requesting your input regarding any environmental concerns you might have regarding this action.

Please provide your input within 30 days of receipt of this letter if you are interested in this matter. If you have questions or concerns about this project, please do not hesitate to call me at (501) 771-7992.

Sincerely,

James Wheeler II

James Wheeler II
Chief, Environmental Division
90th RRC

Enclosures

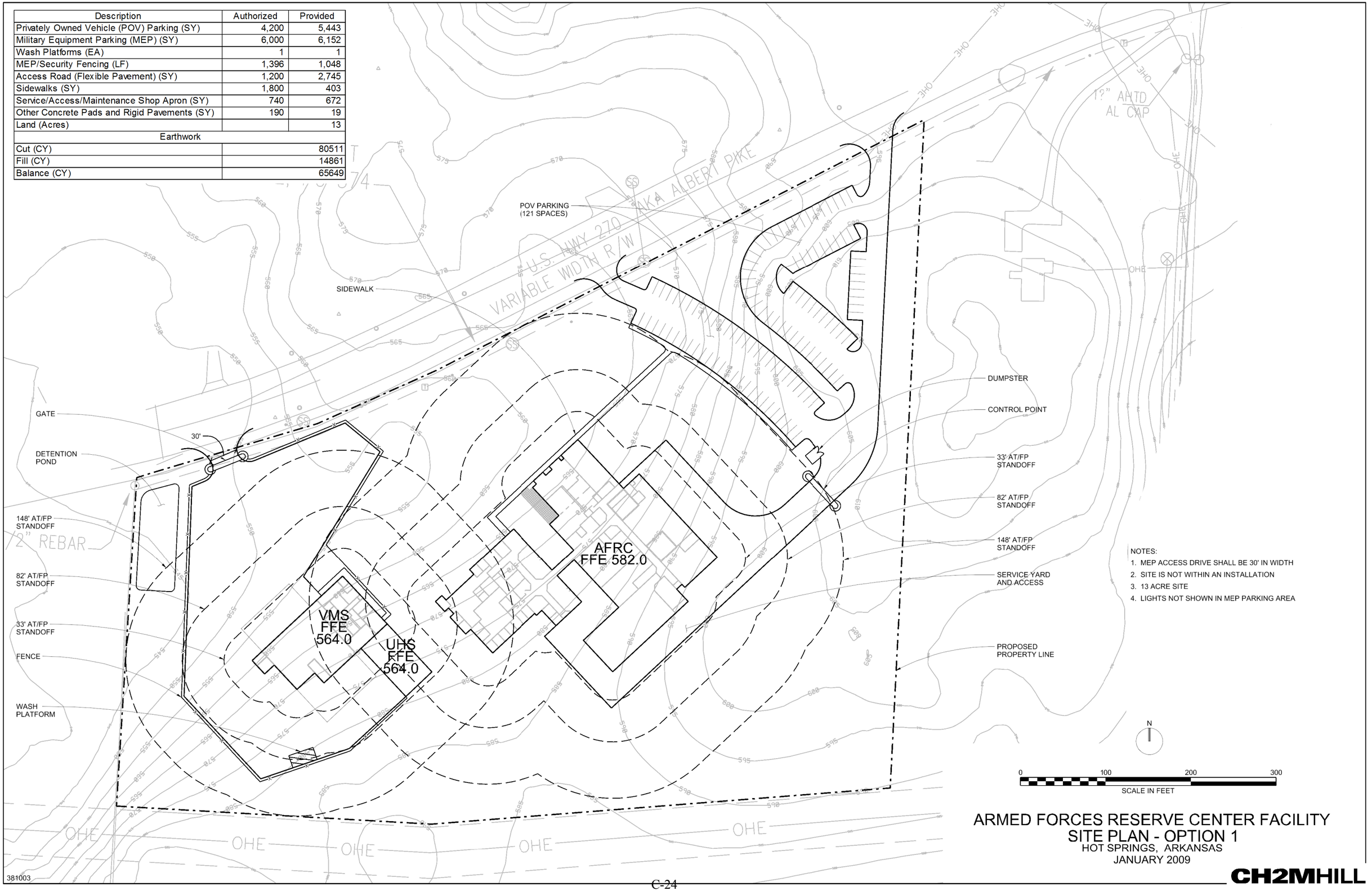
LEGEND

Site Boundary

Albert Pike Road Site

Figure 2-1

Description	Authorized	Provided
Privately Owned Vehicle (POV) Parking (SY)	4,200	5,443
Military Equipment Parking (MEP) (SY)	6,000	6,152
Wash Platforms (EA)	1	1
MEP/Security Fencing (LF)	1,396	1,048
Access Road (Flexible Pavement) (SY)	1,200	2,745
Sidewalks (SY)	1,800	403
Service/Access/Maintenance Shop Apron (SY)	740	672
Other Concrete Pads and Rigid Pavements (SY)	190	19
Land (Acres)		13
Earthwork		
Cut (CY)		80511
Fill (CY)		14861
Balance (CY)		65649



NOTES:
1. MEP ACCESS DRIVE SHALL BE 30' IN WIDTH
2. SITE IS NOT WITHIN AN INSTALLATION
3. 13 ACRE SITE
4. LIGHTS NOT SHOWN IN MEP PARKING AREA

ARMED FORCES RESERVE CENTER FACILITY
SITE PLAN - OPTION 1
HOT SPRINGS, ARKANSAS
JANUARY 2009

381003

CH2MHILL

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY 90TH REGIONAL READINESS COMMAND
CAPTAIN MAURICE L. BRITT UNITED STATES ARMY RESERVE CENTER
8000 CAMP ROBINSON ROAD
NORTH LITTLE ROCK, ARKANSAS 72118-2205

February 26, 2008

68242 USA

Reply to the Attention of the Environmental Office

RECEIVED
MAR 0 2 2009
Director's Office

AHPP
MAR 02 2009

Ms. Cathie Matthews
State Historic Preservation Officer
Department of Arkansas Heritage
323 Center Street
Suite 1500
Little Rock, AR 72201

Dear Ms. Matthews:

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Date 3-4-09
No known historic properties will be affected by this undertaking. This effect determination could change should new information come to light.
Frances McSwain, Deputy State Historic Preservation Officer

The Department of
Arkansas
Heritage

Mike Beebe
Governor

Cathie Matthews
Director

Arkansas Arts Council
*
Arkansas Natural Heritage Commission
*
Delta Cultural Center
*
Historic Arkansas Museum
*
Mosaic Templars Cultural Center
*
Old State House Museum

Arkansas Historic Preservation Program

1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501) 324-9880
fax: (501) 324-9184
tdd: (501) 324-9811
e-mail:
info@arkansaspreservation.org
website:
www.arkansaspreservation.com

An Equal Opportunity Employer

March 24, 2009

Ms. Christina Olson, Historian and Architectural Historian
New South Associates
6150 East Ponce de Leon Avenue
Stone Mountain, GA. 30083

RE: Garland County: Hot Springs
Section 106 Review – USA
Preliminary Findings for Historic Buildings Phase 1 Cultural Resource Survey for the Proposed Hot Springs AFRC
AHPP Tracking: #68242

Dear Ms. Olson:

This letter is written in response to your inquiry regarding properties of architectural significance in the areas of the referenced undertaking. The staff of the Arkansas Historic Preservation Program (AHPP) has reviewed the document that pertains to this project and determined that of the three structures with photo documentation, provided with your March 11th, 2009 letter, the following three structures located at 2015 Albert Pike Road, are ineligible for listing in the National Register of Historic Places

Thank you for your interest and concern for the cultural heritage of Arkansas. If you should have any questions or comments, please contact Tom Marr of the AHPP staff at (501) 324-9880.

Sincerely,

George McSwain for

Frances McSwain
Deputy State Historic Preservation Officer

C-27

The Department of
Arkansas Heritage
WE LOVE TO TELL THE STORY.
1500 Tower Building, 323 Center Street, Little Rock, AR 72201

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Ms. Cristina Olson, Historian and Architectural Historian
New South Associates
6150 East Ponce de Leon Avenue
Stone Mountain, GA 30083

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APPENDIX D

ECONOMIC IMPACT FORECAST SYSTEM MODEL RESULTS

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ECONOMIC IMPACT FORECAST SYSTEM (EIFS) MODEL

SOCIOECONOMIC IMPACT ASSESSMENT

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls and local procurement contribute to the economic base for the ROI. In this regard, construction of an AFRC and associated facilities in Hot Springs would have a multiplier effect on the local and regional economy. With the proposed action, direct jobs would be created (e.g., construction jobs), generating new income and increasing personal spending. This spending generally creates secondary jobs, increases business volume, and increases revenues for schools and other social services.

THE ECONOMIC IMPACT FORECAST SYSTEM

The U.S. Army, with the assistance of many academic and professional economists and regional scientists, developed EIFS to address the economic impacts of NEPA-requiring actions and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS should be used in NEPA assessments. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but still have firm, defensible bases in regional economic theory.

EIFS was developed under a joint project of the U.S. Army Corps of Engineers, the U.S. Army Environmental Policy Institute, and the Computer and Information Science Department of Clark Atlanta University. EIFS is implemented as an on-line system supported by the U.S. Army Corps of Engineers, Mobile District. The system is available to anyone with an approved user-id and password. U.S. Army Corps of Engineers staff is available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to define an economic ROI by identifying the counties, parishes, or cities to be analyzed. Once the ROI is defined, the system aggregates the data, calculates multipliers and other variables used in the various models in EIFS, and prompts the user for forecast input data.

THE EIFS MODEL

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to basic economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating aggregate impacts and makes the economic base model ideal for the EA and EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its base sector; for example, a dollar increase in local expenditures due to an expansion of its military installation. EIFS estimates its multipliers using a location quotient approach based

on the concentration of industries within the region relative to the industrial concentrations for the nation.

The user inputs into the model the data elements which describe the Army action: the change in expenditures, or dollar volume of the construction project(s); change in civilian or military employment; average annual income of affected civilian or military employees; the percent of civilians expected to relocate due to the Army's action; and the percent of military living on-post. Once these are entered into the EIFS model, a projection of changes in the local economy is provided. These are projected changes in sales volume, income, employment, and population. These four indicator variables are used to measure and evaluate socioeconomic impacts. Sales volume is the direct and indirect change in local business activity and sales (total retail and wholesale trade sales, total selected service receipts, and value-added by manufacturing). Employment is the total change in local employment due to the proposed action, including not only the direct and secondary changes in local employment, but also those personnel who are initially affected by the military action. Income is the total change in local wages and salaries due to the proposed action, which includes the sum of the direct and indirect wages and salaries, plus the income of the civilian and military personnel affected by the proposed action. Population is the increase or decrease in the local population as a result of the proposed action.

The BRAC action in Hot Springs would require construction of an AFRC training building, a vehicle maintenance shop, a storage building, military and privately owned vehicle parking area, and supporting facilities such electrical and mechanical systems, water, sewer, HVAC, plumbing, and force protection measures. The current working estimate for the cost of construction of these facilities ($15,000,000) over a projected 1-year development period was entered in the EIFS model as the change in expenditures.

THE SIGNIFICANCE OF SOCIOECONOMIC IMPACTS

Once model projections are obtained, the Rational Threshold Value (RTV) profile allows the user to evaluate the significance of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, income, employment, and population. These evaluations identify the positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries that provide a basis for comparing an action's impact on the historical fluctuation in a particular area. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

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

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary, but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economics than are expansion.

The major strengths of the RTV are its specificity to the region under analysis and its basis on actual historical data for the region. The EIFS impact model, in combination with the RTV, has proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

The following are the EIFS input and output data for construction and the RTV values for the ROI. These data form the basis for the socioeconomic impact analysis presented in Section 4.10.2.1.

EIFS REPORT

PROJECT NAME

Hot Springs BRAC AFRC EA

STUDY AREA

05051 Garland County, AR

FORECAST INPUT

Change In Local Expenditures	$15,000,000
Change In Civilian Employment	0
Average Income of Affected Civilian	$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	2.45	
Income Multiplier	2.45	
Sales Volume – Direct	$15,000,000	
Sales Volume – Induced	$21,750,000	
Sales Volume – Total	$36,750,000	1.13%
Income – Direct	$2,505,780	
Income - Induced	$3,633,382	
Income – Total (place of work)	$6,139,162	0.32%
Employment – Direct	68	
Employment – Induced	98	
Employment – Total	165	0.36%
Local Population	0	
Local Off-base Population	0	0.00%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	8.84%	7.44%	5.47%	2.62%
Negative RTV	-9.26%	-7.70%	-7.01%	-1.04%

RTV DETAILED

SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	102636	448519	0	0	0
1970	115882	478593	30073	12397	2.59
1971	134817	533875	55283	37607	7.04
1972	153586	588234	54359	36683	6.24
1973	173631	626808	38574	20898	3.33
1974	196624	639028	12220	-5456	-0.85
1975	201125	599353	-39675	-57351	-9.57
1976	233463	658366	59013	41337	6.28
1977	265507	700939	42573	24897	3.55
1978	297273	731292	30353	12677	1.73
1979	326299	721121	-10171	-27847	-3.86
1980	355422	689519	-31602	-49278	-7.15
1981	376154	662031	-27488	-45164	-6.82
1982	396837	658749	-3282	-20958	-3.18
1983	422922	680904	22155	4479	0.66
1984	458431	705984	25079	7403	1.05
1985	485438	723303	17319	-357	-0.05
1986	500364	730531	7229	-10447	-1.43
1987	529551	820804	90273	72597	8.84
1988	548817	746391	-74413	-92089	-12.34
1989	580093	748320	1929	-15747	-2.1
1990	608581	748555	235	-17441	-2.33
1991	649109	765949	17394	-282	-0.04
1992	707631	806699	40751	23075	2.86
1993	762695	846591	39892	22216	2.62
1994	812688	877703	31112	13436	1.53
1995	869283	912747	35044	17368	1.9
1996	899347	917334	4587	-13089	-1.43
1997	935428	935428	18094	418	0.04
1998	992493	972643	37215	19539	2.01
1999	1046653	1004787	32144	14468	1.44
2000	1090491	1014157	9370	-8306	-0.82

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	152611	666910	0	0	0
1970	172867	713941	47031	5406	0.76
1971	199190	788792	74852	33227	4.21
1972	225232	862639	73846	32221	3.74
1973	258391	932791	70153	28528	3.06
1974	296997	965240	32449	-9176	-0.95
1975	320883	956231	-9009	-50634	-5.3
1976	367279	1035727	79495	37870	3.66
1977	416533	1099647	63920	22295	2.03
1978	472649	1162717	63069	21444	1.84
1979	532951	1177822	15105	-26520	-2.25
1980	609774	1182962	5140	-36485	-3.08
1981	686164	1207649	24687	-16938	-1.4
1982	734246	1218848	11200	-30425	-2.5
1983	774457	1246876	28027	-13598	-1.09
1984	849827	1308734	61858	20233	1.55
1985	912449	1359549	50815	9190	0.68
1986	954071	1392944	33395	-8230	-0.59
1987	999925	1549884	156940	115315	7.44
1988	1049615	1427476	-122407	-164032	-11.49
1989	1154486	1489287	61810	20185	1.36
1990	1225306	1507126	17840	-23785	-1.58
1991	1299392	1533282	26156	-15469	-1.01
1992	1416507	1614818	81535	39910	2.47
1993	1522098	1689529	74711	33086	1.96
1994	1606443	1734959	45430	3805	0.22
1995	1698628	1783559	48601	6976	0.39
1996	1788739	1824514	40954	-671	-0.04
1997	1896736	1896736	72222	30597	1.61
1998	2003888	1963810	67074	25449	1.3
1999	2048445	1966507	2697	-38928	-1.98
2000	2149381	1998924	32417	-9208	-0.46

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	22396	0	0	0
1970	23343	947	150	0.64
1971	25538	2195	1398	5.47
1972	26847	1309	512	1.91
1973	28784	1937	1140	3.96
1974	29917	1133	336	1.12
1975	27805	-2112	-2909	-10.46
1976	29096	1291	494	1.7
1977	30809	1713	916	2.97
1978	31534	725	-72	-0.23
1979	31983	449	-348	-1.09
1980	31818	-165	-962	-3.02
1981	31785	-33	-830	-2.61
1982	32121	336	-461	-1.44
1983	32870	749	-48	-0.15
1984	33700	830	33	0.1
1985	34298	598	-199	-0.58
1986	34406	108	-689	-2
1987	34741	335	-462	-1.33
1988	35100	359	-438	-1.25
1989	35883	783	-14	-0.04
1990	36015	132	-665	-1.85
1991	37273	1258	461	1.24
1992	38589	1316	519	1.34
1993	40736	2147	1350	3.31
1994	41587	851	54	0.13
1995	43594	2007	1210	2.78
1996	44325	731	-66	-0.15
1997	45825	1500	703	1.53
1998	46579	754	-43	-0.09
1999	47115	536	-261	-0.55
2000	47914	799	2	0

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	53535	0	0	0
1970	54620	1085	-4	-0.01
1971	57207	2587	1498	2.62
1972	59206	1999	910	1.54
1973	61347	2141	1052	1.71
1974	63691	2344	1255	1.97
1975	64058	367	-722	-1.13
1976	65728	1670	581	0.88
1977	67520	1792	703	1.04
1978	68495	975	-114	-0.17
1979	70026	1531	442	0.63
1980	70545	519	-570	-0.81
1981	70445	-100	-1189	-1.69
1982	70534	89	-1000	-1.42
1983	71455	921	-168	-0.24
1984	72172	717	-372	-0.52
1985	72209	37	-1052	-1.46
1986	72487	278	-811	-1.12
1987	73244	757	-332	-0.45
1988	72821	-423	-1512	-2.08
1989	73195	374	-715	-0.98
1990	73563	368	-721	-0.98
1991	74844	1281	192	0.26
1992	76553	1709	620	0.81
1993	78568	2015	926	1.18
1994	80673	2105	1016	1.26
1995	82015	1342	253	0.31
1996	83615	1600	511	0.61
1997	85021	1406	317	0.37
1998	86172	1151	62	0.07
1999	87177	1005	-84	-0.1
2000	88368	1191	102	0.12

****** End of Report ******

Acronyms and Abbreviations

ADEQ	Arkansas Department of Environmental Quality
AFRC	Armed Forces Reserve Center
APE	Area of Potential Effect
AQCR	Air Quality Control Region
ARHP	Arkansas Register of Historic Places
BRAC Commission	Base Closure and Realignment Commission
BRAC	Base Realignment and Closure
CEQ	Council on Environmental Quality
CFR	*Code of Federal Regulations*
CO	Carbon Monoxide
dB	decibel
dBA	A-weighted decibel
de minimis	of minimal importance
DNL	Day-night Average Sound Level
DoD	Department of Defense
EA	environmental assessment
ECP	Environmental Condition of Property
EIFS	Economic Impact Forecast System
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FNSI	finding of no significant impact
L_{eq}	Equivalent Sound Level
LOS	Level of Service
mgd	million gallons per day
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NO_x	nitrogen oxides
NRHP	National Register of Historic Places
O_3	ozone
OMS	Organizational Maintenance Shop
PCPI	per capita personal income
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	very fine particulate matter
POV	personal operating vehicle
ppm	parts per million
ROI	region of influence
RTV	rational threshold value
SO_2	sulfur dioxide
USARC	U.S. Army Reserve Center
VOC	volatile organic compounds