

*Final*  
*Environmental Assessment*  
*Implementation of Base Realignment and Closure Recommendations*  
*at Fort Sill, Oklahoma*



prepared for

*Fort Sill, Oklahoma*

by

*US Army Corps of Engineers, Mobile District*

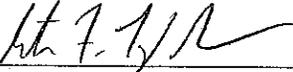
August 2006

**ENVIRONMENTAL ASSESSMENT**

**IMPLEMENTATION OF BASE REALIGNMENT AND CLOSURE (BRAC)  
RECOMMENDATIONS AND OTHER ARMY ACTIONS AT FORT SILL,  
OKLAHOMA**

*Prepared by:*

U.S. ARMY CORPS OF ENGINEERS  
MOBILE DISTRICT

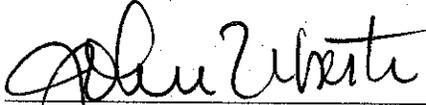


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## ENVIRONMENTAL ASSESSMENT

**LEAD AGENCY:** Fort Sill, Oklahoma

**TITLE OF PROPOSED ACTION:** Implementation of Base Realignment and Closure Recommendations at Fort Sill, Oklahoma

**AFFECTED JURISDICTION:** Comanche County, Oklahoma

**PREPARED BY:** Peter F. Taylor Jr., Colonel, U.S. Army Corps of Engineers, Mobile District, Commanding

**APPROVED BY:** John Uberti, Colonel, FA, Garrison Commander, Fort Sill, Oklahoma

**ABSTRACT:** This Environmental Assessment (EA) considers the proposed implementation of the Base Realignment and Closure (BRAC) Commission recommendations at Fort Sill, Oklahoma. The EA identifies, evaluates, and documents the environmental and socioeconomic effects of facility construction, renovation, maintenance, and operation 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 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. A Notice of Availability of the documents was published in *The Lawton Constitution* on August 27, 2006; the document review period will end on September 26, 2006. Copies of the EA and draft FNSI can be obtained by contacting Mr. Glen Wheat, Environmental Chief, EQD, DPW, Fort Sill, Oklahoma, at 580-442-2715, or by e-mail requests to wheatg@sill.army.mil. Copies of the EA and draft FNSI are available for review at the Lawton Public Library, 110 SW 4<sup>th</sup> Street, Lawton, Oklahoma, 73501; and on Fort Sill at the Environmental Quality Division (EQD) Office in Building 2592 at 2592 Currie Road, Fort Sill, Oklahoma, 73503. Comments on the EA and draft FNSI should be submitted to the Fort Sill EQD Office no later than September 27, 2006.

## ***ENVIRONMENTAL ASSESSMENT ORGANIZATION***

This Environmental Assessment addresses the proposed action to implement the BRAC Commission recommendations at Fort Sill, Oklahoma. It has been developed in accordance with the National Environmental Policy Act and implementing regulations issued by the Council on Environmental Quality (Title 40 *Code of Federal Regulations* [CFR] 1500–1508) and the Army (32 CFR 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.

### ***CONTENTS***

- 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 Fort Sill.
- SECTION 3.0:***     ***ALTERNATIVES*** examines alternatives to implementing the proposed action.
- SECTION 4.0:***     ***AFFECTED ENVIRONMENT AND CONSEQUENCES*** describes the existing environmental and socioeconomic setting at Fort Sill 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.
- SECTION 9.0:***     ***PERSONS CONSULTED*** provides a listing of persons and agencies consulted during preparation of this Environmental Assessment.
- SECTION 10.0:***    ***ACRONYMS AND ABBREVIATIONS*** provides a list of acronyms and abbreviations used in the document.
- APPENDICES***
- A*** Defense Base Closure and Realignment Commission Recommendations
  - B*** Emissions Calculations
  - C*** Comment Letters, Consultation Letters, and Responses
  - D*** Economic Impact Forecast System Model



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## EXECUTIVE SUMMARY

### INTRODUCTION

On September 8, 2005, the Defense Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission recommendations, and on November 9, 2005, the recommendations became law. 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. Under the BRAC law, the Army must initiate all realignments no later than September 14, 2007, and complete all realignments no later than September 14, 2011.

This Environmental Assessment (EA) describes and analyzes the effects of implementing the BRAC Commission recommendations with respect to Fort Sill, Oklahoma, and associated actions on the human environment. Fort Sill borders Lawton, Oklahoma. The installation's mission is to train soldiers and develop field artillery and Air Defense Artillery (ADA) leaders; design and develop fire support for the force; support unit training and readiness; mobilize and deploy operating forces; and maintain installation infrastructure and services. The post's principal operational units include the 17<sup>th</sup>, 75<sup>th</sup>, 212<sup>th</sup>, and 214<sup>th</sup> Field Artillery Brigades.

### BACKGROUND

The BRAC Commission made six recommendations concerning Fort Sill:

- *Operational Army.* ADA units at Fort Bliss, Texas, are to be relocated to Fort Sill, and an artillery brigade at Fort Sill is to be relocated to Fort Bliss.
- *Transformation of the Reserve Component in Oklahoma.* The Keathley and Burris U.S. Army Reserve Centers in Lawton and Chickasha, Oklahoma (consisting of Multiple Launch Rocket System (MLRS), conventional artillery, and communications units); the Wichita Falls U.S. Army Reserve Center in Wichita Falls, Texas; the 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, and 6<sup>th</sup> U.S. Army Reserve Centers; and Equipment Concentration Site located on Fort Sill, Oklahoma, are to be closed. The units at those locations are to be relocated into a new Armed Forces Reserve Center on Fort Sill, and a new U.S. Army Reserve Equipment Concentration Site is to be collocated with the Oklahoma Army National Guard Maneuver Area Training Equipment Site on Fort Sill.
- *Command and control of the U.S. Army Reserve in the southwestern United States.* The Major General Harry Twaddle U.S. Armed Forces Reserve Center, Oklahoma City, Oklahoma, is to be closed, and the 95<sup>th</sup> Division (Institutional Training) is to be relocated to Fort Sill.
- *Fires Center of Excellence* ("Net Fires Center" in the recommendations). The ADA Center and School at Fort Bliss, Texas, is to be relocated to Fort Sill, and that organization is to consolidate with the Field Artillery Center and School to establish a Fires Center of Excellence at Fort Sill.
- *Consolidation of correctional facilities.* Lackland Air Force Base, Texas, Fort Knox, Kentucky, and Fort Sill are to be realigned by relocating the correctional function of each

to Fort Leavenworth, Kansas, to form a single Midwest Joint Regional Correctional Facility.

- *Defense Finance and Accounting Service.* Twenty-one Defense Finance and Accounting Service nationwide sites, including the one at Fort Sill, are to be closed. The functions are to be relocated and consolidated in Ohio, Colorado, or Indiana.

The BRAC Commission recommendations involve establishment of a Fires Center of Excellence and relocations of both Active Component and Reserve Component organizations to Fort Sill, including an ADA Brigade and the ADA Center and School, as well as the Headquarters, 95<sup>th</sup> Division (Institutional Training) and other Reserve Component units. Organizations and functions recommended for realignment to locations other than Fort Sill include a field artillery brigade, correctional facilities, and the Defense and Accounting Service. An additional field artillery brigade would relocate to Fort Sill as a result of implementing the Integrated Global Presence and Basing Strategy (IGPBS). To enable implementation of the recommendations, the Army proposes to provide necessary facilities at Fort Sill to support the changes in force structure. In addition, other actions related to force structure and support services are proposed for Fort Sill.

## **PROPOSED ACTION AND ALTERNATIVES**

The proposed action is to implement the BRAC Commission recommendations and associated actions (see next paragraph). Consideration of all proposed actions (BRAC and associated actions) addressed in this EA shows that Fort Sill would experience a net increase of 2,588 military personnel and 407 civilian personnel. Implementation of the proposed action would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. Proposed new buildings would provide more than 2.15 million square feet of space. Assignment of additional personnel to Fort Sill would also require that the Post construct several ranges.

Four associated actions are also evaluated in the EA: (1) Relocation of the German Air Force Defense School and the German Air Force Command in the United States and Canada from Fort Bliss, Texas, to Fort Sill; (2) Reconfiguration of field artillery brigades into modular Fires Brigades; (3) Relocation of the Receipt-in-Place Location (RIPL), a facility operated by the Defense Reutilization and Marketing Service for receipt of tenant organizations' excess materiel before disposition by redistribution or sale; and (4) Construction of a Training Support Center warehouse.

## **ENVIRONMENTAL CONSEQUENCES**

The EA evaluates potential effects on land use and airspace, 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 substances. For each resource, the predicted effects from both the proposed action, identified as the Army's preferred alternative, and the no action alternative are briefly described below. The consequences of the preferred alternative and the no action alternative are summarized in Table ES-1.

**Table ES-1  
Summary of Potential Environmental and Socioeconomic Consequences**

Resource Area	Environmental and Socioeconomic Consequences	
	Proposed Action	No Action Alternative
<b>Land Use and Airspace</b>	No effects	No effects
<b>Aesthetic and Visual Resources</b>	Short-term minor adverse	No effects
<b>Air Quality</b>	Short- and long-term minor adverse	No effects
<b>Noise</b>	Short- and long-term minor adverse	No effects
<b>Geology and Soils</b>		
Geology/Topography	No effects	No effects
Soils	Short- and long-term minor adverse	No effects
Prime Farmland	No effects	No effects
<b>Water Resources</b>		
Surface Water and Groundwater	Short-term minor adverse	No effects
Floodplains, Coastal Zone	No effects	No effects
<b>Biological Resources</b>		
Vegetation	Short- and long-term minor adverse	No effects
Wildlife	Long-term minor adverse	No effects
Sensitive Species	No effects	No effects
Wetlands	No effects	No effects
<b>Cultural Resources</b>		
Historic Architecture	Long-term beneficial	No effects
Archaeological Sites	Short- and long-term minor adverse	No effects
<b>Socioeconomics</b>		
Economic Development	Short- and long-term significant beneficial	No effects
Housing	Short-term minor adverse	No effects
Law Enforcement, Fire Protection, and Medical Services	Short-term minor adverse	No effects
Schools	Short-term moderate adverse	No effects
Family Support and Social Services	Short-term minor adverse	No effects
Shops, Services, and Recreation	Short-term minor adverse	No effects
Environmental Justice	No effects	No effects
Protection of Children	Long-term minor adverse	No effects
<b>Transportation</b>	Short-term minor adverse	No effects
<b>Utilities</b>	Short- and long-term minor adverse	No effects
<b>Hazardous and Toxic Substances</b>	No effects	No effects

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## Consequences of the Realignment Alternative

**Land Use and Airspace.** No effects on land use or airspace would be expected. With only minor exception, the realignment plan was found to be compatible with existing land uses in the cantonment area. One of the BRAC parcels borders the Henry Post Army Airfield, but the analysis determined that a land use incompatibility due to noise from the airfield would not be created.

**Aesthetics and Visual Resources.** Short-term minor adverse effects on aesthetics and visual resources would be expected from the increase of construction activities, which are inherently aesthetically displeasing. In the long term, new and renovated facilities would be expected to improve the functionality of the cantonment area and improve the area's overall aesthetic and visual appeal.

**Air Quality.** Short- and long-term minor adverse effects on air quality would be expected. Emissions associated with construction and operation of facilities, however, would not exceed *de minimis* thresholds, be *regionally significant*, contribute to a violation of any federal, state, or local air regulation, or contribute to a violation of Fort Sill's air operating permit.

**Noise.** Short- and long-term minor adverse effects on the noise environment would be expected. A short-term increase in on-post noise would result from the use of heavy construction equipment, and a long-term increase in noise would result from the use of weapons up to and including 5.56-caliber rifles at the proposed small-arms ranges. All on- and off-installation areas would be compatible with the expected changes to the noise environment.

**Geology and Soils.** No effects on geology, seismicity, topography, or Prime Farmlands would be expected. Short- and long-term minor adverse effects on soils would be expected from construction activities.

**Water Resources.** Short-term minor adverse effects on surface waters and groundwaters would be expected. Construction activities would increase soil disturbance and potentially soil erosion, and total suspended solids could thus be increased in nearby waters. Also, leakage from construction equipment could increase petroleum hydrocarbon pollution in surface waters. Waterborne contaminants contributed by construction activities could be transported into the groundwater system, though the BRAC action would not change the long-term quantity or quality of groundwater. No effects on floodplains would be expected: There are no 100-year floodplains within the proposed impact areas.

**Biological Resources.** Short- and long-term minor adverse effects on vegetation and wildlife would be expected. Construction activities would cause the loss of small areas of native and non-native vegetation, but disturbed areas would be revegetated with native species. Construction activities would also cause losses of habitat at construction sites. Most effects on wildlife would result from their displacement because of being disturbed by construction activities. There would be no effect on threatened, endangered, or other species of concern, or wetlands: All known habitats for sensitive species would be avoided, and no known wetlands are located in the proposed areas.

**Cultural Resources.** No significant adverse effects would be expected. Long-term beneficial effects would be expected with regard to adaptive reuse and continued maintenance of historic architectural properties. Potential impacts could arise from the activities in the project areas, but

adherence to policies and guidelines in the ICRMP and consultation with the SHPO would be expected to avoid or mitigate potential adverse effects to a less than significant level. Construction of facilities would result in adverse impacts if NRHP-eligible archaeological resources were adversely impacted by ground disturbance or if construction resulted in visual impacts to a nearby historic property's setting. Before Fort Sill would begin construction activities, it would identify historic properties, determine whether adverse impacts would occur, and develop mitigation measures, all in consultation with the Oklahoma SHPO and appropriate federally recognized tribes.

***Socioeconomics.*** Short- and long-term significant beneficial effects on economic development would be expected. The expenditures associated with renovation and construction of facilities on Fort Sill would increase sales volume, employment, and income in the region of influence (ROI). Short-term minor adverse effects on housing and all services would be expected from an increased demand for and reduced availability of housing and services in the ROI, and the increase in population would create a need for additional law enforcement, fire protection, and medical services; family support and social services; and shops, other services, and recreation. In the long term, the housing market and all services could adapt to the demands of the increased population base. Short-term moderate adverse effects on schools would be expected. The incoming population would increase the number of school children in the ROI, and the Lawton Public School District schools would have to accommodate the increased student load. No adverse effects on Environmental Justice would be expected, as the realignment of Fort Sill would not create disproportionately high or adverse human health or environmental effects on minority or low-income populations in the ROI. Long-term minor adverse effects on children could occur if families moving to Fort Sill as a result of BRAC were to occupy housing with hazardous materials (such as lead-based paint or asbestos) on Fort Sill or in the surrounding area.

***Transportation.*** Short-term minor adverse effects on transportation would be expected during the construction and renovation phase due to additional traffic congestion and traffic delays caused by construction activities. Wear and tear on installation and surrounding roads would also likely increase.

***Utilities.*** Short-term minor adverse effects on utilities would be expected from service interruptions during construction while new and renovated facilities are being hooked up to existing utilities systems. Only the electrical system, in its current configuration, would be inadequate to meet the added demand of incoming BRAC elements, and the additional demand would be met by the installation of a new 40-mega-watt sub-station. Long-term minor adverse effects would be expected from the consumption of landfill capacity by the construction and demolition debris generated by the Realignment Alternative.

***Hazardous and Toxic Substances.*** No effects on hazardous or toxic materials or wastes would be expected. Facility renovations would adhere to local, federal, and Army regulations for the removal and disposal of hazardous materials, and new facilities would minimize the use of such materials. All materials handling, storage, and disposal, including that of munitions and explosives of concern, would be in accordance with applicable laws and regulations.

### ***Consequences of the No Action Alternative***

No effects on any of the resource areas considered in the EA would be expected to result from implementation of the no action alternative.

## **CUMULATIVE EFFECTS**

No adverse cumulative effects would be expected: No specific concurrent projects have been identified, and as such no cumulative impacts are expected.

## **MITIGATION**

Section 1508.20 of the Council on Environmental Quality's implementing regulations for NEPA define mitigation to include (a) Avoiding the impact altogether by not taking a certain action or parts of an action, (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and (e) Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation actions for the proposed BRAC projects at Fort Sill would be undertaken largely in accordance with existing regulations and policies. Such regulatory or policy driven actions to reduce, avoid, or compensate for adverse effects would include, for example, following all applicable laws and regulations for handling all hazardous materials and wastes; implementing state-approved, best management practices for storm water control during construction; designing facilities according to the principles of low-impact development; recycling construction debris where possible; and revegetating disturbed sites. Sound engineering practices and best management practices, current and future, would be used to the maximum extent practicable to mitigate any adverse environmental impacts. Only one project-specific mitigation measure has been identified that does not fall within the scope of regulatory mitigation: To the extent practicable, the Army will not locate or design new facilities such that they obscure mountain views from existing facilities.

## **CONCLUSIONS**

Based on the analysis performed in this EA, implementation of the realignment alternative 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 Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress. Congress did not alter any of the BRAC Commission recommendations, and on November 9, 2005, the recommendations became law. 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.

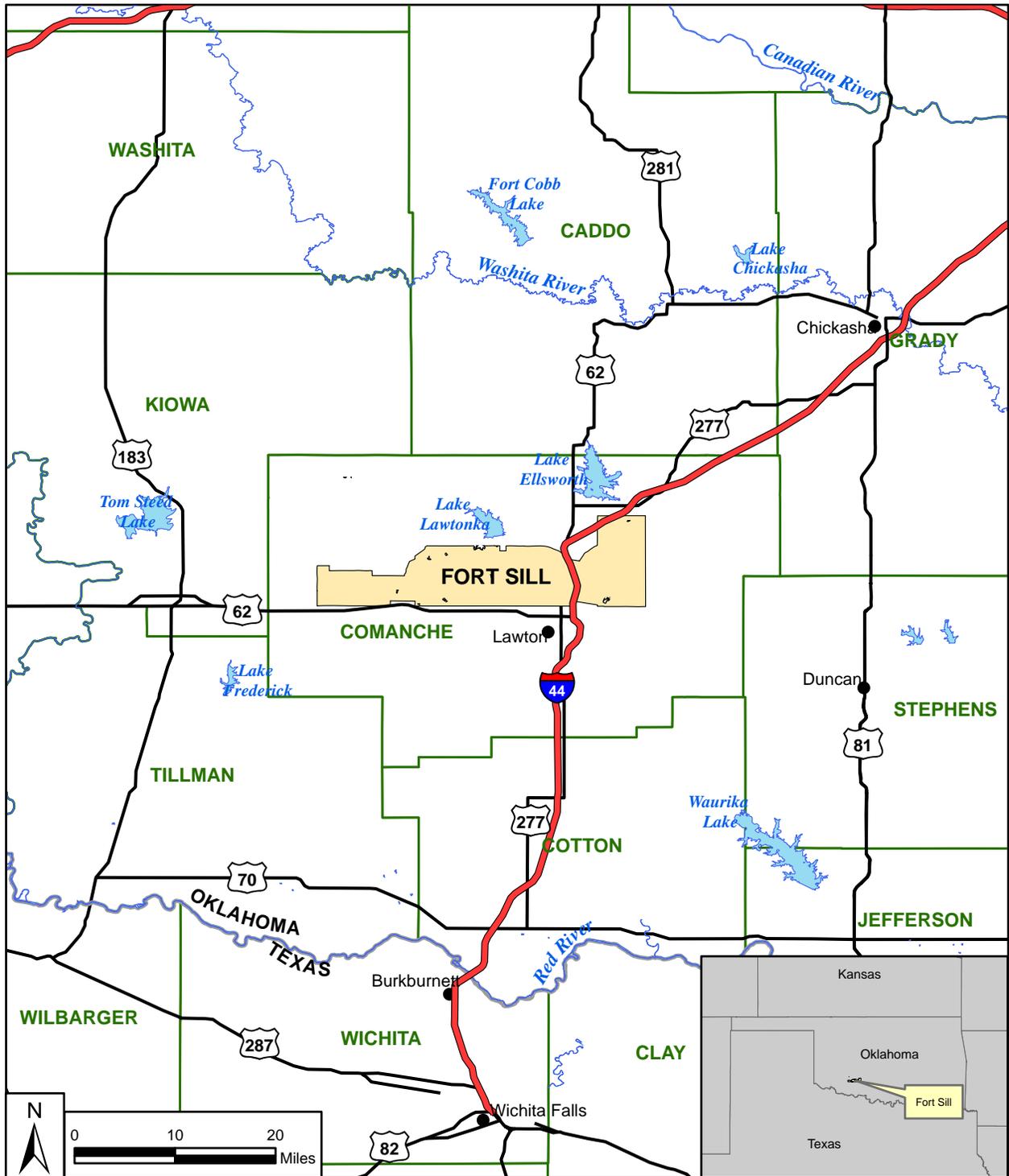
The BRAC Commission recommendations involve establishment of a Fires Center of Excellence (“Net Fires Center” in the recommendations) and relocations of both Active Component and Reserve Component organizations to Fort Sill, including an Air Defense Artillery (ADA) Brigade and the ADA Center & School, as well as the Headquarters, 95<sup>th</sup> Division (Institutional Training) and other Reserve Component units. Organizations and functions recommended for realignment to locations other than Fort Sill include a field artillery brigade, correctional facilities, and the Defense Finance and Accounting Service. An additional field artillery brigade would relocate to Fort Sill as a result of implementing the Integrated Global Presence and Basing Strategy (IGPBS). To enable implementation of the recommendations, the Army proposes to provide necessary facilities at Fort Sill to support the changes in force structure. In addition, other actions related to force structure and support services are proposed for Fort Sill. This Environmental Assessment (EA) analyzes and documents environmental effects associated with the Army’s proposals at Fort Sill, details of which are set forth in Section 2.0.

Fort Sill borders Lawton, Oklahoma (Figure 1-1). The installation’s mission is to train Soldiers and develop field artillery and ADA leaders; design and develop fire support for the force; support unit training and readiness; mobilize and deploy operating forces; and maintain installation infrastructure and services. The post’s principal operational units include the 17<sup>th</sup>, 75<sup>th</sup>, 212<sup>th</sup>, and 214<sup>th</sup> Field Artillery Brigades.

### **1.2 PURPOSE AND NEED**

The purpose of the proposed action is to implement the BRAC Commission recommendations pertaining to Fort Sill and associated actions affecting Fort Sill.

The need for the proposed action is to improve the ability of the Nation to respond rapidly to challenges of the 21<sup>st</sup> century. The Army is legally bound to defend the United States and its territories, support national policies and objectives, and 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 following discusses four major initiatives that contribute to the Army’s need for the proposed action.



- LEGEND**
-  Interstate Highway
  -  U.S. Route
  -  County Boundary
  -  River/Water

# Installation Location

Fort Sill, Oklahoma

Figure 1-1

**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) 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 value. The Army must carry out the BRAC recommendations at Fort Sill to achieve the objectives for which Congress established the BRAC process and to comply with the law.

**Army Transformation and the Army Modular Force.** On October 12, 1999, the Secretary of the Army and the Chief of Staff articulated a vision about people, readiness, and transformation of the Army to meet challenges emerging in the 21<sup>st</sup> century and the need to be able to respond more rapidly to different types of operations requiring military action. The strategic significance of land forces continues to lie in their ability to fight and win the Nation’s wars and in their providing options to shape the global environment to the benefit of the United States and its allies. Transformation responds to the Army’s need to become more strategically responsive and dominant at every point on the spectrum of operations. In March 2002, the Army published its *Programmatic Environmental Impact Statement for Army Transformation* for its proposal to conduct a multiyear, phased, and synchronized program of transformation. Over a 30-year period, the Army will conduct a series of transformation activities affecting virtually all aspects of Army doctrine, training, leader development, organizations, installations, materiel, and Soldiers. On April 11, 2002, the Army issued a Record of Decision (ROD) reflecting its intent to transform the Army. This EA evaluates a proposed action that comports with the transformation process, which is designed to provide the Nation with combat forces that are more responsive, deployable, agile, versatile, lethal, survivable, and sustainable.

Consistent with guidance contained in the Army Campaign Plan, by 2007 the Army proposes to convert the force structure and equipment of its existing combat brigades (and 10 new combat brigades) to “modular” brigade combat team units of action. The Army will reorganize its division and corps headquarters to create modular units of employment to provide command and control of organic, assigned, and attached forces. The Army’s combat service and combat service support personnel and equipment will be reorganized into various types of support units of action. Restructuring of Army organizations is needed to create forces that are more stand-alone and alike (modular) while retaining their broad-spectrum capability. The Army needs to change its forces to create a larger pool of units to fulfill strategic commitments; standardize combat unit designs; make units more adaptable to the range of missions, from peacekeeping to war; move from division-level (larger) to brigade-level (smaller) stand-alone units; make units capable of deploying more rapidly; and improve the Army’s ability to tailor units and integrate them among components and with other Services and nations.

Relocating ADA assets from Fort Bliss to Fort Sill supports the establishment of the Fires Center of Excellence, an organization combining the U.S. Army Artillery Center and School and U.S. Army ADA Center and School at Fort Sill. The artillery brigade that would be relocated to Fort Bliss would transform to a fires brigade. That action would provide for collocation of artillery units and maneuver units at Fort Bliss. Facilities vacated by the out-bound artillery brigade would become available for use by the in-bound ADA brigade being relocated to Fort Sill.

**Integrated Global Presence and Basing Strategy.** At the request of the Chairman of the Joint Chiefs of Staff, combatant commanders submitted a series of recommendations for overseas basing plans for their respective areas of responsibility. The recommendations were part of an

interagency assessment of the DoD's long-term overseas force projection and basing needs. The assessment resulted in a series of recommendations known as the IGPBS, the blueprint outlining the size, character, and location of long-term overseas force presence. On the basis of the IGPBS results, the Secretary of Defense announced that some forces currently based overseas will return to the United States over a period of years. The 2005 BRAC recommendations take into account and adopt some of the basing recommendations of the IGPBS. The relocation of the 6<sup>th</sup> Battalion, 52<sup>nd</sup> ADA Regiment to Fort Sill is part of the IGPBS recommendations.

**Installation Sustainability.** On October 1, 2004, the Secretary of the Army and the Chief of Staff issued *The Army Strategy for the Environment*. The strategy focuses on the interrelationships of mission, environment, and community. A sustainable installation simultaneously meets current and future mission requirements, safeguards human health, improves quality of life, and enhances the natural environment. A sustained natural environment is necessary to allow the Army to train and maintain military readiness.

### 1.3 SCOPE

This EA has been developed in accordance with the National Environmental Policy Act (NEPA) of 1969 and implementing regulations issued by the President's Council on Environmental Quality (CEQ) and the Army (40 CFR 1500–1508, 32 CFR 651). Its purpose is to inform decision makers and the public of the likely environmental consequences of the proposed action and alternatives.

This EA identifies, documents, and evaluates environmental effects of realignments at Fort Sill, Oklahoma. 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, and alternatives, including the no action alternative, are described in Section 3.0. Conditions existing as of 2005, considered to be the "baseline" conditions, 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 addressed in the EA. Section 4.0 also addresses the potential for cumulative effects, and mitigation measures are identified where appropriate.

The Defense Base Closure and Realignment Act of 1990 specifies that NEPA does not apply to actions of the President, the Commission, or the Department of Defense, 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" (Sec. 2905(c)(2)(A), Public Law 101-510, as amended). The law further specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider "(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation which has been selected as the receiving installation, or (iii) military installations alternative to those recommended or selected" (Sec. 2905(c)(2)(B)). The Commission's deliberation and decision, and the need for closing or realigning a military installation, are exempt from NEPA. Accordingly, this EA does not address the need for realignment for actions specified by the BRAC Commission.

In July 2006, an advance party of the 6<sup>th</sup> Battalion of the 52<sup>nd</sup> ADA Regiment relocated from Europe to Fort Sill. The remainder of the battalion will arrive in approximately the same time frame as its parent, the 31<sup>st</sup> ADA Brigade. To address the arrival of the advance brigade, Fort Sill complied with NEPA by using two categorical exclusions (B-12 and C-1) as provided in Appendix B of 32 CFR Part 651. Relocation of the entire battalion to Fort Sill, as part of the 31<sup>st</sup> ADA Brigade, is addressed in this EA.

#### **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 decision making. All agencies, organizations, and members of the public having a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision-making process.

Public participation opportunities with respect to this EA and decision making on the proposed action are guided by 32 CFR Part 651. Upon completion, the EA will be made available to the public for 30 days, along with a draft Finding of No Significant Impact (FNSI). At the end of the 30-day public review period, the Army will consider any comments submitted by individuals, agencies, or organizations on the proposed action, the EA, or draft FNSI. As appropriate, the Army may then execute the FNSI and proceed with implementation of the proposed action. If it is determined prior to issuance of a final FNSI that implementation of the proposed action would result in significant impacts, the Army will publish a notice of intent to prepare an Environmental Impact Statement in the *Federal Register*, commit to mitigation actions sufficient to reduce impacts below significance levels, or not take the action.

Throughout this process, the public may obtain information on the proposed action and EA through the Fort Sill Public Affairs Office by calling Mr. Jon Long at (580) 442-4500.

#### **1.5 REGULATORY FRAMEWORK**

A decision on whether to proceed with the proposed action rests on numerous factors such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, Fort Sill is guided by relevant statutes (and their implementing regulations) and Executive Orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. These include the Clean Air Act, Clean Water Act, Noise Control Act, Endangered Species Act, National Historic Preservation Act, Archaeological Resources Protection Act, Resource Conservation and Recovery 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 13101 (*Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*), EO 13123 (*Greening the Government Through Efficient Energy Management*), EO 13148 (*Greening the Government Through Leadership in Environmental Management*), EO 13175 (*Consultation and Coordination with Indian Tribal Governments*), and EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*). These authorities are addressed in various sections throughout this EA when relevant to particular environmental

resources and conditions. The full text of the laws, regulations, and EOs is available on the Defense Environmental Network & Information Exchange Web site at <http://www.denix.osd.mil>.

## **SECTION 2.0 PROPOSED ACTION**

### **2.1 INTRODUCTION**

Consistent with procedures Congress established in the Defense Base Closure and Realignment Act of 1990, the BRAC Commission recommendations became law on November 9, 2005, and now must be implemented.

The Army's proposal for carrying out base realignment at Fort Sill center's on the BRAC Commission recommendations. Stationing of units from other installations and overseas and transforming units at Fort Sill involves providing Garrison facilities for their day-to-day operations. It also involves ensuring adequate ranges and maneuver areas for training. This section describes the Army's preferred alternative for implementing the BRAC Commission recommendations by identifying the force structure changes involved in the proposed action and the proposed changes in Garrison facilities and training facilities. In addition, other actions, not directed by BRAC, are addressed. These associated actions are taken to posture the Army to best carry out its assigned responsibilities. The time frame for accomplishing the proposed action is provided in Section 2.6.

### **2.2 BRAC COMMISSION RECOMMENDATIONS**

The BRAC Commission made six recommendations concerning Fort Sill.

- *Operational Army.* ADA units at Fort Bliss, Texas, are to be relocated to Fort Sill, and an artillery brigade at Fort Sill is to be relocated to Fort Bliss.
- *Transformation of the Reserve Component in Oklahoma.* The Keathley and Burris US Army Reserve Centers in Lawton and Chickasha, Oklahoma (consisting of Multiple Launch Rocket System (MLRS), conventional artillery, and communications units); the Wichita Falls US Army Reserve Center in Wichita Falls, Texas; the 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, and 6<sup>th</sup> U.S. Army Reserve Centers; and Equipment Concentration Site located on Fort Sill, Oklahoma, are to be closed. The units at those locations are to be relocated into a new Armed Forces Reserve Center on Fort Sill, and a new US Army Reserve Equipment Concentration Site is to be collocated with the Oklahoma Army National Guard Maneuver Area Training Equipment Site on Fort Sill.
- *Command and control of the U.S. Army Reserve in the southwestern United States.* The Major General Harry Twaddle U.S. Armed Forces Reserve Center, Oklahoma City, Oklahoma, is to be closed, and the 95<sup>th</sup> Division (Institutional Training) is to be relocated to Fort Sill.
- *Fires Center of Excellence* ("Net Fires Center" in the recommendations). The ADA Center & School at Fort Bliss, Texas, is to be relocated to Fort Sill, and that organization is to consolidate with the Field Artillery Center & School to establish a Fires Center of Excellence at Fort Sill.
- *Consolidation of correctional facilities.* Lackland Air Force Base, Texas, Fort Knox, Kentucky, and Fort Sill are to be realigned by relocating the correctional function of each to Fort Leavenworth, Kansas, to form a single Midwest Joint Regional Correctional Facility.

- *Defense Finance and Accounting Service.* Twenty-one Defense Finance and Accounting Service nationwide sites, including the one at Fort Sill, are to be closed. The functions are to be relocated and consolidated in Ohio, Colorado, or Indiana.

Major Active Component organizations affected by the foregoing include the 31<sup>st</sup> ADA Brigade at Fort Bliss and the 212<sup>th</sup> Field Artillery Brigade at Fort Sill. Approximately 1,400 Reserve Component personnel and their equipment for unit training and annual training, presently in Lawton, Frederick, Anadarko, Chickasha, Marlow, Walters, Healdton, Duncan, and Oklahoma City, would be relocated to the proposed Armed Force Reserve Center. Modularization to transform other units at Fort Sill would affect the 17<sup>th</sup>, 75<sup>th</sup>, and 214<sup>th</sup> Field Artillery Brigades.

The BRAC Commission calculated that implementation of the foregoing six recommendations would result in a net increase at Fort Sill of 3,445 military personnel and 105 civilian personnel. Consideration of all proposed actions (BRAC actions and associated actions, see Section 2.4) addressed in this EA shows that Fort Sill would experience a net increase of 2,588 military personnel and 407 civilian personnel. Appendix A contains a more detailed recitation of the BRAC Commission recommendations.

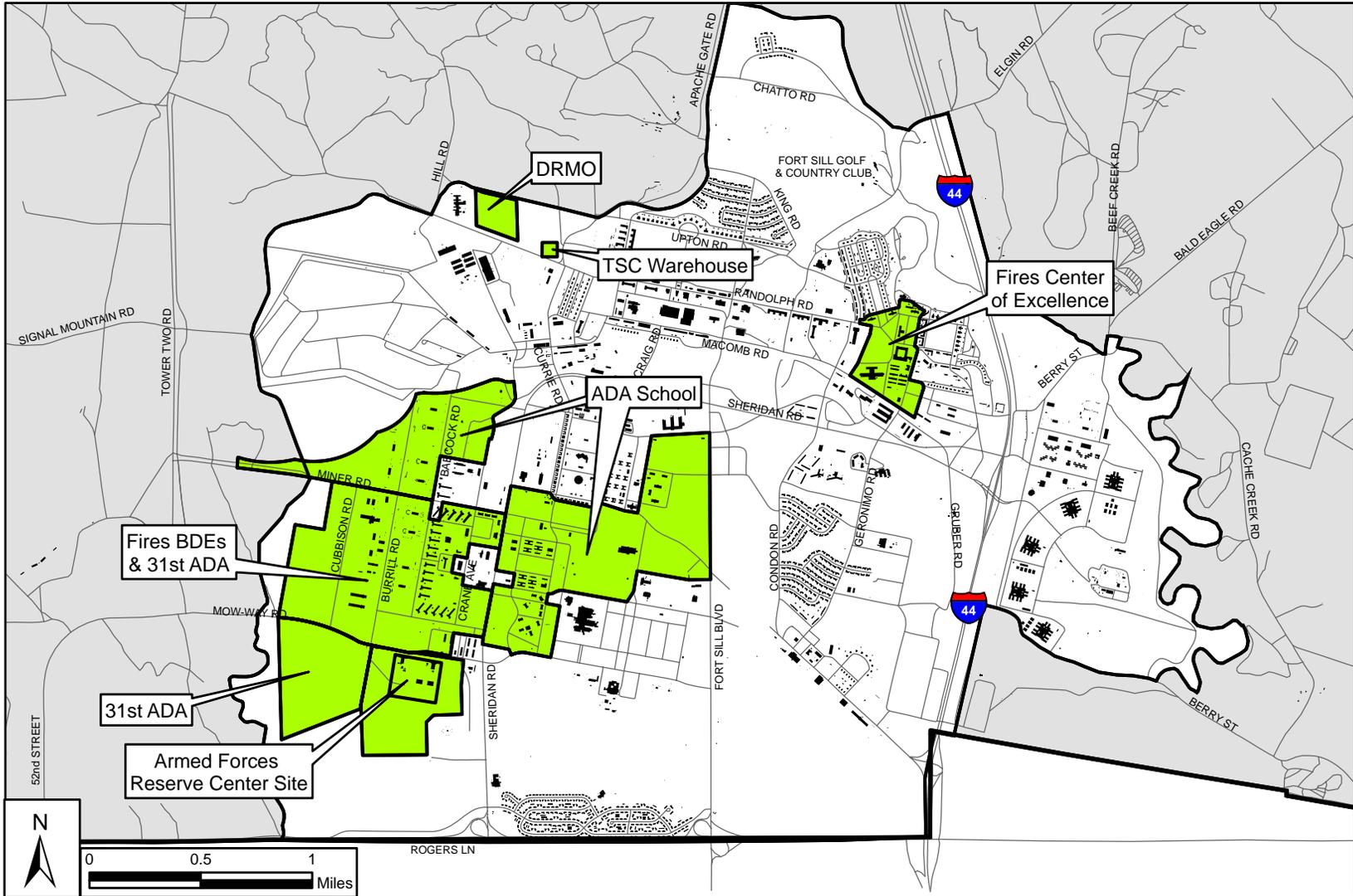
### **2.3 ACTIONS REQUIRED TO SUPPORT BRAC RECOMMENDATIONS**

***Renovation and Construction of Facilities.*** Implementation of the proposed action would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The locations of the proposed projects are shown in Figure 2-1. Table 2-1 identifies proposed facilities projects. For each project, the table shows project number, facility title, size (square feet), and notes. The proposed new buildings would provide more than 2.15 million square feet of space.

***Training Ranges.*** Assignment of additional personnel to Fort Sill require that the post construct several ranges. Fort Sill has identified the following training resources and ranges (with Project Number) that would be constructed as part of its proposed action.

- Military Operations of Urban Terrain Site (PN 65301)
- Basic 25-meter Zero Range (PN 65364)
- Automated Record Fire Range (PN 65365)
- Night Infiltration Course (PN 65368)
- Fire and Movement Range (PN 65369)
- Squad Defense Range (PN 65370)
- Fires and Movement Range (PN 62399)

Several additional small-arms ranges are being considered at Fort Sill, including a multipurpose machine gun range and several live-fire and inert small-arms ranges. All small-arms ranges would be oriented so that fired rounds would fall in Fort Sill's existing impact areas. Figure 2-2 identifies where these projects would be sited outside the cantonment area.



**LEGEND**

- Road
- ▭ Cantonment Area
- ▭ Installation Property
- ▭ Building
- ▭ Future Projects

# Proposed Project Locations

**Figure 2-1**

Source: Fort Sill, 2006.

Table 2-1. Proposed facility projects

Project Number	Project title	Size	User/Notes
63426	Joint Net Fires training facility	112,466 sf	Fires Center of Excellence
64164	Hospital	79,371 sf	Alternation of existing facility
64728	Shoppette with gas and car wash	6,103 sf	
64738	ADA School (schoolhouse complex)		6th ADA
	Brigade HQ	10,528 sf	
	Dining facility	30,257 sf	
	Company operations bldgs	97,475 sf	
	Battalion HQ bldgs	23,253 sf	
	General instruction bldg	160,750 sf	
	General item repair instructional bldg	87,600 sf	
	Vehicle maintenance instructional bldg	52,400 sf	
	Laboratory instructional bldg	26,800 sf	
	Automation-aided instructional bldg	12,700 sf	
	Materiel handling instructional bldg	5,000 sf	
	Simulator bldg	16,650 sf	
	Moving target simulator bldg	9,000 sf	
	Organizational classrooms	13,497 sf	
	Administrative space renovations	215,384 sf	Multiple building renovation
64784	Armed Forces reserve center		
	Army Reserve center bldg	51,657 sf	
	Organizational unit storage	610 sf	
64810	Child development center	25,827 sf	
64996	Aboveground fuel storage		
	Office bldg	320 sf	
	Electrical facility	150 sf	
	Aboveground tanks	100,000 gal	
	Spill containment	193,500 sf	
	POL handstand	193,500 sf	
65296	Road improvements	TBD	
65297	Remote switching unit	TBD	
65298	Central issue point	TBD	
65299	Central issue facility	100,000 sf	
65300	Physical fitness center	TBD	
65402	Chapel	TBD	
65428	ADA HQ facility	19,898 sf	Convert/repair existing facility
65672	Restation ADA school (increment 2)		
	Maintenance shop	35,631 sf	
	Barracks	79,788 sf	
	Transient training barracks	125,904 sf	
	Compact item repair instructional bldg	5,738 sf	
	Tracked vehicle maintenance shop	41,302 sf	
	Oil storage bldg	792 sf	
	General item repair instructional bldg	4,995 sf	
	Engineering/housing maintenance shop	5,798 sf	
	Organizational unit storage	22,711 sf	
	Laboratory instructional bldg	24,192 sf	
	Joint Net Fires training facility	187,448 sf	

Project Number	Project title	Size	User/Notes
	Central initial issue facility	12,000 sf	
	Museum	130,000 sf	
	Automation-aided instructional bldg	23,350 sf	
	Materiel handling instruction bldg	8,023 sf	
	Avenger Fires trainer	2,000 sf	
	Simulations center	46,950 sf	
	Patriot fire trainer	14,000 sf	
	Unit fire trainer	2,000 sf	
	Organizational vehicle parking	800,010 sf	
	Patriot parking hardstand	2,364,768 sf	
65690	ADA HQ – administrative facility	40,266 sf	Convert/repair existing space
65816	ADA Brigade		
	Brigade HQ	15,378 sf	
	Battalion HQ	16,225 sf	
	Company operations bldgs	144,705 sf	
	Organizational classrooms	4,585 sf	
	Vehicle maintenance shop	112,557 sf	
	Organizational vehicle parking	886,239 sf	
	Oil storage bldg	1,800 sf	
	Organizational unit storage	19,600 sf	
	Barracks	219,968 sf	

Notes: Facility size may change as planning progresses.; bldg = building; sf = square feet; TBD = to be determined; HQ = Headquarters; gal = gallon.

## 2.4 DISCRETIONARY ACTION

Discretionary actions are those taken by the Army outside the prescriptions of the BRAC Commission recommendations. Discretionary actions reflect the Army's continuing efforts to achieve optimal force structure and basing to best carry out assigned missions.

**Modularization.** The Army would reconfigure field artillery brigades into modular Fires Brigades. Principal organizations at Fort Sill include the 17<sup>th</sup>, 75<sup>th</sup>, 212<sup>th</sup>, and 214<sup>th</sup> Field Artillery Brigades. The following would occur under the proposed action:

Headquarters and Headquarters Battery, III Corps Artillery would inactivate.

The 75<sup>th</sup> Field Artillery Brigade would transform to a Fires Brigade at Fort Sill. Two battalions of the brigade are currently equipped with the M270 MLRS, and one battalion is equipped with self-propelled 155-mm cannons (M109A6, known as the Paladin system). Upon transformation to modular design, the two MLRS battalions would be equipped with the M270A1. This newer system incorporates an improved fire control system and an improved launcher mechanical system. The newer system also provides for improved survivability, reduced operating costs, increased munitions options, and a global positioning system.

- The 214<sup>th</sup> Field Artillery Brigade would transform to a Fires Brigade at Fort Sill. Two battalions are currently equipped with the M270A1 MLRS and one with the M270 MLRS. Upon transformation to modular design, there would be two MLRS battalions (one with the M270 and one with the M270A1) and one Paladin battalion.



- The 17<sup>th</sup> Field Artillery Brigade would re-station to Fort Lewis after its current deployment. The two MLRS battalions of that brigade would no longer train at Fort Sill.
- The 19<sup>th</sup> Maintenance Battalion would be inactivated. Personnel and equipment would become Base Support Battalions for the 75<sup>th</sup> and 214<sup>th</sup> Fires Brigades at Fort Sill.
- Headquarters and Headquarters Battery, 212<sup>th</sup> Field Artillery Brigade would be inactivated. The Brigade Colors would be transferred to Fort Bliss and eventually become the 212<sup>th</sup> Fires Brigade at that installation.
- The 231<sup>st</sup> Target Acquisition Detachment would be inactivated. The detachment's personnel and assets would subsequently become the basis for formation of Target Acquisition Batteries for the 75<sup>th</sup> and 214<sup>th</sup> Fires Brigades at Fort Sill.
- Four field artillery battalions would be inactivated: 1<sup>st</sup> Battalion, 77<sup>th</sup> Field Artillery Regiment; 1<sup>st</sup> Battalion, 12<sup>th</sup> Field Artillery Regiment; 6<sup>th</sup> Battalion, 27<sup>th</sup> Field Artillery Regiment; and 6<sup>th</sup> Battalion, 32<sup>nd</sup> Field Artillery Regiment. All four are MLRS battalions (M270).

## 2.5 ADDITIONAL ACTIONS

**Federal Republic of Germany Contingent.** The German Air Force Defense School and the German Air Force Command in the United States and Canada are presently located at Fort Bliss, Texas, which has historically been the Army's principal installation for ADA units and training. As proposed, the Fires Center of Excellence at Fort Sill would become the Army's focal point for ADA functions.

The Army anticipates a request by the Federal Republic of Germany to relocate its command and training functions to Fort Sill. On the basis of such expectation, the Army now conditionally proposes the relocation to evaluate its potential environmental effects and to be able to provide the Federal Republic of Germany a timely response on the feasibility of such a move.

**Receipt in Place Location (RIPL).** The Army proposes to relocate the RIPL, a facility operated by the Defense Reutilization and Marketing Service for receipt of tenant organizations' excess materiel before disposition by redistribution or sale. The existing RIPL is inadequately sized for the volume of excess materiel expected to be generated by tenant organizations upon completion of BRAC realignment actions. The Army proposes to relocate the RIPL to an undeveloped area east of the Fort Sill Correctional Facility (Buildings 1489 and 1490) and north of Randolph Road. The replacement RIPL at this site would occupy approximately 20 acres. Major components of the new RIPL would include a warehouse (42,000 square feet), administrative building (2,000 square feet), vehicle storage building (4,000 square feet), and truck scale (80 feet by 12 feet). There would also be a paved open storage area (75,000 square yards), reinforced concrete storage pad (10,000 square yards), and vehicle parking area (6,400 square yards).

**Training Support Center (TSC) Warehouse.** The Army proposes to construct a standard design, medium Training Support Center warehouse to support BRAC-related activities. Fort Sill's TSC is responsible for providing storage, instruction, loan/issue, accountability, and maintenance for training aids, devices, simulators, and simulations (TADSS) for all active Army, Reserve Component, and Cadet Command units within a three-state area (Oklahoma, Arkansas, and North Texas) of responsibility, as well as support of other DoD, federal, and local government agencies. TSC is responsible for controlling all TADSS that are procured, received, or fabricated, as well as for requesting, receiving, accounting for, issuing, inventorying, and disposing of TADSS. Fort

Sill's TSC is responsible for approximately 8,500 TADSS items, and 10,200 additional items are due in to fill shortages in support of existing requirements. Due to lack of space in the existing TSC warehouses, many of the current items are stored at other locations, including sensitive items that are stored in the arms rooms of two different units on the installation. Several thousand items of Multiple Integrated Laser Engagement System equipment are stored at Fort Chaffee and not readily available to meet the requirements of other units. During FY05, the Fort Sill TSC processed 7,091 transactions, for a total 125,545 individual items received, loaned or issued, and turned in. It is projected that these numbers will approximately triple if all projected increases materialize.

## 2.6 TRAINING

Training is the instruction of personnel to increase their capacity to perform specific military functions and tasks both individually and collectively. Training is the Army's top priority because it is the cornerstone of combat readiness. Training prepares Soldiers, leaders, and units to fight and win in combat. The goal of Army training is to produce a force trained to mobilize, deploy, fight, and win anywhere in the world. The objective of all Army training is unit readiness. Training of Soldiers and leaders in schools or units serves to enhance the ability of units to perform to standard. Training enables Soldiers and units to fight—and win—under challenging operational environments or conditions.

The Army's standardized training doctrine, contained in Field Manual 25-100 (*Training the Force*), provides the necessary guidelines on how to plan, execute, and assess training at all levels. *Training the Force* provides authoritative foundations for individual, leader, and unit training. Individual training develops Soldiers who are proficient in battlefield skills, disciplined, physically tough, and highly motivated. Leader training, an imperative for every echelon, is an investment in the Army of today and tomorrow. Unit training, also known as “collective” training, prepares forces for the rigors of the battlefield.

Essential to fighting and winning is that the Army train to fight at every echelon. Training programs must result in demonstrated tactical and technical competence, confidence, and initiative in Soldiers and their leaders. Training the Force applies to leaders at all levels and to every type of organization. Although the principal focus is on active and reserve component battalion-equivalent and higher-level commanders, the manual also recognizes the extremely important role of junior leaders in training and providing feedback.

Unit commanders from corps to company publish a list, approved by the next higher wartime commander, of “mission-essential tasks” that their units must perform in wartime. A mission-essential task is a collective task in which an organization must be proficient to accomplish an appropriate portion of its wartime missions. An organization's mission-essential task list (METL) is a compilation of collective mission essential tasks that must be successfully performed if an organization is to accomplish its wartime mission. For each mission-essential task, conditions and standards are established or referred to in training publications. The METL and associated conditions and standards are used by leaders to achieve battle focus in unit training. Leaders assess their unit's ability to perform mission-essential tasks and then determine the best training strategy to build and sustain proficiency in each task. Each time training is planned, leaders adjust their assessment of unit proficiency in mission-essential tasks and consider the best training strategy to build and sustain proficiency in each task.

Training occurs at many locations and at many levels of complexity. Soldiers and leaders acquire advanced skills through a combination of schools operated by the U.S. Army Training and Doctrine Command, other major command schools, and experience gained through unit training at home station installations. Collective training of troops in the field occurs primarily at units' home stations.

The following identifies the various types of training exercises in which artillery, ADA, and other types of units at Fort Sill participate.

- *Combined Arms Live-Fire Exercises (CALFEX)*. Collective training that is jointly conducted by associated combat, combat support, and combat service support units.
- *Command Field Exercise (CFX)*. A field training exercise with reduced troop and vehicle density, but with full command and control and combat service support units.
- *Command Post Exercise (CPX)*. A medium-cost, medium-overhead exercise in which the forces are simulated; may be conducted from Garrison locations or between participating headquarters.
- *Deployment Exercise (DEPLEX)*. An exercise that provides training for individual Soldiers, units, and support agencies in the tasks and procedures for deploying from home stations or installations to potential areas of hostilities.
- *Field Training Exercise (FTX)*. A high-cost, high-overhead exercise conducted under simulated combat conditions in the field. It exercises command and control of all echelons in battle functions against actual or simulated opposing forces.
- *Fire Coordination Exercise (FCX)*. A medium-cost, reduced-scale exercise that can be conducted at the platoon, company/team, or battalion/task force level. It exercises command and control skills through the integration of all organic weapon systems, as well as indirect and supporting fires. Weapon densities may be reduced for participating units and subcaliber devices substituted for service or training ammunition.
- *Map Exercise (MAPEX)*. A low-cost, low-overhead training exercise that portrays military situations on maps and overlays that may be supplemented with terrain models and sand tables. It enables commanders to train their staffs in performing essential integrating and control functions under simulated wartime conditions.
- *Tactical Exercise Without Troops (TEWT)*. A low-cost, low-overhead exercise conducted in the field on actual terrain suitable for training units for specific missions. It is used to train subordinate leaders and battle staffs on terrain analysis, unit and weapons emplacement, and planning of the execution of the mission.

Future training operations at Fort Sill would be similar to those presently being conducted. Soldiers would continue to undergo individual and collective training. The mixture of types of training exercises would not materially change. The number of units would be approximately similar, with Fort Sill experiencing a net loss of two field artillery brigades—all equipped with heavy, tracked vehicles—and a gain of one air defense brigade. Due to impact area limitations at Fort Sill, live-fire exercises involving missile fire by the ADA brigade would be conducted at Fort Bliss.

## **2.7 SCHEDULE**

Under the BRAC law, the Army must initiate all realignments no later than September 14, 2007, and complete all realignments no later than September 14, 2011.<sup>1</sup> Implementation of the proposed action would occur over a span of approximately 5 years. Facilities renovations and new construction would be synchronized to meet the needs, on a priority basis, of units being relocated to Fort Sill.

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<sup>1</sup> Section 2904(a), Public Law 101-510, as amended, provides that the Army must "... initiate all closures and realignments no later than two years after the date on which the President transmits a report [by the BRAC Commission] to the Congress ... containing the recommendations for such closures or realignments; and ... complete all such closures and realignments no later than the end of the six year period beginning on the date on which the President transmits the report ... ." The President took the specified action on September 15, 2005.

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## **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. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be “ripe” for decision making (any necessary preceding events having taken place), affordable, capable of implementation, and satisfactory with respect to meeting the purpose of and need for the action. The following discussion identifies alternatives considered by the Army and identifies whether they are feasible and, hence, subject to detailed evaluation in this EA.

Alternatives to the proposed action have been examined according to three variables: means to physically accommodate force structure realignments, siting of new construction, and schedule. This section presents the Army’s development of alternatives and addresses alternatives available for the proposed action. The section also describes the no action alternative.

### **3.2 DEVELOPMENT OF ALTERNATIVES**

***Means to Accommodate Realignments.*** Realignment of units involves ensuring that the installation has adequate physical accommodations for personnel and their operational requirements. The Army considers four means of meeting increased space requirements: use of existing facilities, modernization or renovation of existing facilities, leasing of off-post facilities, and construction of new facilities.

Army Regulation (AR) 210-20, *Master Planning for Army Installations*, establishes Army policy to maximize use of existing facilities. New construction is not authorized when support for a new mission can be achieved by using existing underutilized adequate facilities, provided that using such facilities does not degrade operational efficiency. Selection and use of facilities to support mission requirements adheres to the foregoing four choices in the order in which they are listed. That is, if there are adequate existing facilities to accommodate requirements, and absent other overriding considerations, further examination of renovation, leasing, or construction alternatives is not required. Similarly, if a combination of use of existing facilities and renovation satisfies the Army’s needs, leasing or new construction need not be addressed. New construction may proceed only when using existing facilities, renovating, leasing, or a combination of such measures are inadequate to meet mission requirements.

***Siting of New Construction.*** The Army considers new construction of facilities when using existing facilities, renovation, or leasing would fail to provide for adequate accommodations of realigned functions. The Army considers both general and specific siting criteria for construction of new facilities.

General siting criteria include consideration of compatibility between the functions to be performed and the installation’s land use designation for the site, adequacy of the site for the function, proximity to related activities, distance from incompatible activities, availability and capacity of roads, efficient use of property, development density, potential future mission requirements, and special site characteristics, including potential environmental incompatibilities.

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

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

### **3.3 ALTERNATIVES TO THE PROPOSED ACTION**

#### **3.3.1 Means to Physically Accommodate Realignments and Other Actions**

Implementation of BRAC and discretionary actions at Fort Sill would result in a net increase of approximately 2,588 military personnel and 407 civilians to the post's present workforce.

Evaluation of all facilities at Fort Sill shows a substantial shortfall in built space to accommodate the additional personnel and their equipment. In limited instances, some units and functions could be assigned to existing facilities. Of these, some would require renovation to adequately support new occupants (see Table 2-1 for facilities renovation projects). Overall, however, the post requires more than 2 million square feet of additional space to support the proposed actions.

Using off-post leased space to meet Fort Sill's requirements would involve several major drawbacks. Force protection policies specify certain facility characteristics, such as physical security features, set-back from roadways, and "hardened" construction. Using leased space in the private sector—having personnel and equipment both on-post and off-post—would adversely affect command and control functions, result in higher operational costs, and impair efficient use of resources. For these reasons, use of leased space is not feasible and is not further evaluated in this EA.

Construction of new facilities is driven by the need to ensure that adequate space is available for mission requirements. Officials at Fort Sill have examined the post's existing inventory of approximately 13.6 million square feet of space and found, with very minor exception, that it is fully utilized for current mission requirements. Accordingly, new construction is required and potential environmental effects associated with new construction are evaluated in detail in this EA.

#### **3.3.2 Siting of New Construction**

As shown in Table 2-1, Fort Sill has identified several facilities projects required to support the proposed action. The majority of these projects involve new construction that would provide approximately 2.2 million square feet of built space. In addition, there would be new training ranges and related facilities. Siting of these new facilities reflects the following:

- The proposed sites would generally collocate like uses and separate incompatible uses. Reference to the Army's 12 general land use categories has aided in this effort.<sup>2</sup>
- Functionally similar activities would be collocated. Activities within a command or organization would also be collocated. Such proximities would enhance command and control and contribute to efficiency and effectiveness. For example, barracks and dining facilities for personnel attending a specific school would be located near the classrooms intended for those students' use.
- The sites for new facilities would not be located on steep terrain, in areas heavily incised by watercourses, or within any stream buffers, wetland buffers, or floodplains. In a similar vein, the facilities would not be constructed within airfield runway accident potential zones or clear zones, or within or near high-noise areas.
- Training ranges and maneuver areas would be located outside the cantonment area in the western, northern, and eastern portions of the post. Live-fire ranges would be oriented such that rounds fall in designated impact areas.

Proposed locations for new construction in the cantonment area are shown in Figures 2-1 and 2-2. These proposed locations adhere to the general and specific siting criteria set forth in Section 3.2. While numerous variations of the present proposal for siting of facilities could be developed, the locations shown in Figures 2-1 and 2-2 reflect a sound, compatible set of solutions. Alternative siting schemes would produce different, but not better, layouts.

### **3.3.3 Schedule**

The schedule for implementing the proposed action must balance facilities construction time frames and planned arrival dates of inbound units and activities, all within the 6-year limitation of the BRAC law (see Section 2.6). Realignment earlier than that shown in the schedule in Section 2.6 is not feasible in light of the time required to renovate and build facilities. Shifting of schedules to accomplish realignment at a later date would unnecessarily delay realizing benefits to be gained. Because earlier implementation is not possible and because delay is avoidable and unnecessary, alternative schedules are not further evaluated in this EA.

## **3.4 NO ACTION ALTERNATIVE**

CEQ regulations require inclusion of the no action alternative. The no action alternative serves as a baseline against which the impacts of the proposed action and alternatives can be evaluated.

Under the no action alternative, Fort Sill would not implement the proposed action. Organizations presently assigned to Fort Sill would continue to train at and operate from the post. Units would not be relocated from other posts or overseas locations, various elements of the Reserve Component would not be collocated at a single site, the RIPL would not be relocated, and a TSC warehouse would not be constructed. Modularizing existing brigades into Fires Brigades would not occur. Fort Sill would use its current inventory of facilities, though routine renovation or replacement actions could occur through normal military maintenance and construction procedures as circumstances independently warrant. The BRAC recommendations have the force

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<sup>2</sup> Management of Army lands recognizes the following 12 land use categories: Airfields, Maintenance, Industrial, Supply/Storage, Administration, Training/Ranges, Unaccompanied Personnel Housing, Family Housing, Community Facilities, Medical, Outdoor Recreation, and Open Space.

of law and must be implemented; the no action alternative is not possible. Consistent with CEQ requirements, however, the no action alternative is evaluated in detail in this EA.

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## **SECTION 4.0**

### **AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

#### **4.1 INTRODUCTION**

Sections 4.2 through 4.13 describe the affected environment for each resource area at Fort Sill and the consequences of implementing the proposed action and the no action alternative on those resource areas. Sections 4.14 and 4.15 describe cumulative effects and mitigation measures, respectively.

#### **4.2 LAND USE AND AIRSPACE**

##### **4.2.1 Affected Environment**

###### **4.2.1.1 Land Use**

Fort Sill is in Comanche County in southwest Oklahoma; adjacent to the city of Lawton, Oklahoma; approximately 90 miles southwest of Oklahoma City, Oklahoma; and 50 miles north of Wichita Falls, Texas. The Wichita Mountains National Wildlife Refuge is adjacent to Fort Sill on the installation's northwest boundary. Interstate 44 is the key transportation corridor connecting Fort Sill to Oklahoma City and Wichita Falls. The installation's climate is mild and its terrain is varied, ranging from low mountains to forested and open areas. It has 48,664 acres of maneuver area and 37,189 acres of impact area, which provide excellent training opportunities.

The city of Lawton, Oklahoma, borders the installation to the south of the cantonment area. It is the only major metropolitan area near the installation. Mixed land uses, including sparsely populated residential and agricultural areas lie along other boundaries of the installation, except to the north and west where the Wichita Mountain National Wildlife Refuge is located.

Fort Sill is an artillery training installation under the command of the U.S. Army Training and Doctrine Command (TRADOC). The installation also provides training for active Army units, National Guard units, Reserve Officer Training Corps, Army Reserve units, Marine Corps units, Air Force Reserve units, Air National Guard units, and Soldiers from allied nations.

The cantonment area is functionally divided by the type of activity that must occur in an area. Family housing communities are in the northern, eastern, and southern sections of the cantonment area. The Henry Post Army Airfield (HPAAF) is east-centrally located, bounded to the west by a golf course and a community area and family housing area. Other community areas are near other family housing areas. One historical area is centrally located, while others lie along the eastern cantonment boundary. Industrial areas are in the northwest near the outlying ranges.

Administrative areas, medical facilities, a cemetery, barracks and other Soldier quarters are dispersed among the areas mentioned above. All told, the cantonment area is laid out like a well-planned small city with associated surrounding communities.

Fort Sill does not have an approved Master Plan; therefore its land is not officially designated by the land use categories defined in AR 210-20, *Real Property Master Planning for Army Installations*. Installation master planning staff have, however, developed a land use map that divides the cantonment area into 11 existing and planned land use zones (Figure 4-1). Areas outside the cantonment area are designated ranges.



Fort Sill has three training areas (see Figure 2-2). Each training area has an impact area and associated firing points surrounding it. The three training areas are Quanah, West, and East Ranges. A public road, Oklahoma Route 115 (OK-115), passes between the Quanah and West ranges, and the cantonment area lies between the West and East ranges. The East Range is used primarily for small-arms weapons training. The West Range is used primarily for artillery and live aircraft bombing training. The Quanah Range is used primarily by the United States Air Force (USAF). The Falcon Bombing Range is in the Quanah Range Impact Area. The range is a USAF Reserve Facility used by all military services. Firing from the Quanah Range into the West Range requires closing OK-115 for the duration of the live-fire training event. Units are not permitted to fire over the cantonment area under any circumstance.

Fort Sill has noise contours that extend off its range property (Fort Sill, 2004). Noise issues are discussed further in section 4.3.

Fort Sill has obtained Department of the Army (DA) approval for six Army Compatible Use Buffer (ACUB) zones along the northeastern, eastern, southern, and western installation boundaries to limit the encroachment of training activities onto lands outside the installation (Fort Sill Undated a). The total area of the six buffers is 19,415 acres. The Army has appropriated money for the purchase of the buffer areas and has a cooperative agreement with DoD, its partners Land Legacy and the U.S. Department of Agriculture, and the first cooperating landowner. The buffers will neither increase nor decrease available training land, but will help to ensure that units at Fort Sill can use the full extent of available training land.

#### **4.2.1.2      Airspace**

Airspace use within the immediate area surrounding Fort Sill is influenced by the proximity of the Lawton-Fort Sill Regional Airport south of Fort Sill, the Wichita Mountains Wildlife Refuge north of Fort Sill, the Restricted Area R-5601 (which consists of the subareas R-5601A, B, C, D, and E), the Washita Military Operating Area (MOA) north of R-5601, and the Sheppard MOA southwest of R-5601, as depicted on the *Dallas-Ft Worth Sectional Aeronautical Chart*, dated March 16, 2006 (Figure 4-2). The HPAAF at Fort Sill and the Lawton-Fort Sill Regional Airport are each surrounded by a Class D airspace with a 3,700-foot ceiling (NOAA, Dallas-Ft Worth, 2006).

Fort Sill is the Using Agency for R-5601 and the Fort Worth Air Route Traffic Control (ARTC) Center is the Controlling Agency. In accordance with 14 CFR Part 73.13-17, the Federal Aviation Administration (FAA) established procedures for joint use of R-5601 by Fort Sill and the Fort Worth ARTC. Under the procedures, Fort Sill will release R-5601, or subareas A, B, C, D, and E, to the Fort Worth ARTC when the areas are not in use, during severe weather, and for emergency traffic situations, and the Fort Worth ARTC will return the use of R-5601 to Fort Sill upon request (FAA, 1996).

Fort Sill has requested that the FAA create a new Special Use Airspace (SUA), R-5601F (Fort Sill, 2005a). The new SUA would eliminate gaps between the Washita MOA and R-5601, provide adequate maneuvering area for participating pilots, and allow for the use of Unmanned Aerial Vehicles (UAVs). The SUA would allow longer-look tactics such as joint Direct Attack Munitions approaches and laser-guided bomb medium attacks, which require as much as a 15-mile run-in to the target area with advance targeting systems. The FAA published a *Proposed Establishment of Restricted Area 5601F* in the *Federal Register* on November 2, 2005, and



**Airspace of Fort Sill and Lawton, Oklahoma**

Source: NOAA, 1997.

**Figure 4-2**

accepted and responded to comments on the proposal. On March 6, 2006, the Army Regional Representative to the FAA Southwest Region recommended that the SUA be formally established (Smith, 2006). The Army is preparing an environmental assessment of the proposed action. It must be completed before the FAA would take any formal regulatory action to establish the SUA.

## **4.2.2 Environmental Consequences**

### **4.2.2.1 Realignment Alternative**

No effects would be expected. The Army has designated areas shaded light green on Figure 4-3 to receive the BRAC elements moving to Fort Sill. The bulk of the parcels are centrally located in the western half of the cantonment area. Two isolated BRAC parcels are the Fires Center of Excellence in the northeastern part of the cantonment area and the Defense Reutilization and Marketing Office (DRMO) area along the northern cantonment boundary. Land uses near the centrally located BRAC parcels are designated as Administrative, Airfield, Airfield Safety Zone, Ammunition Supply, Community, Historical, Housing (Noncommissioned Officer's (NCO) quarters), Industrial, and Recreation (golf course). The Fires Center of Excellence BRAC parcel in the northeastern cantonment area is bounded by Administrative, Army Family Housing, Community, Historical, Housing, Industrial, Medical, Recreation, and Training areas.

The centrally located BRAC parcel, designated for the Fires Brigade (BDE) and 31<sup>st</sup> ADA and the ADA School, are for the most part surrounded by compatible land uses. The outlying Fires Center of Excellence BRAC parcel—bounded by Army family housing, administrative, and historical areas—and the DRMO parcel—bounded by an industrial area—are completely compatible with the land uses surrounding them.

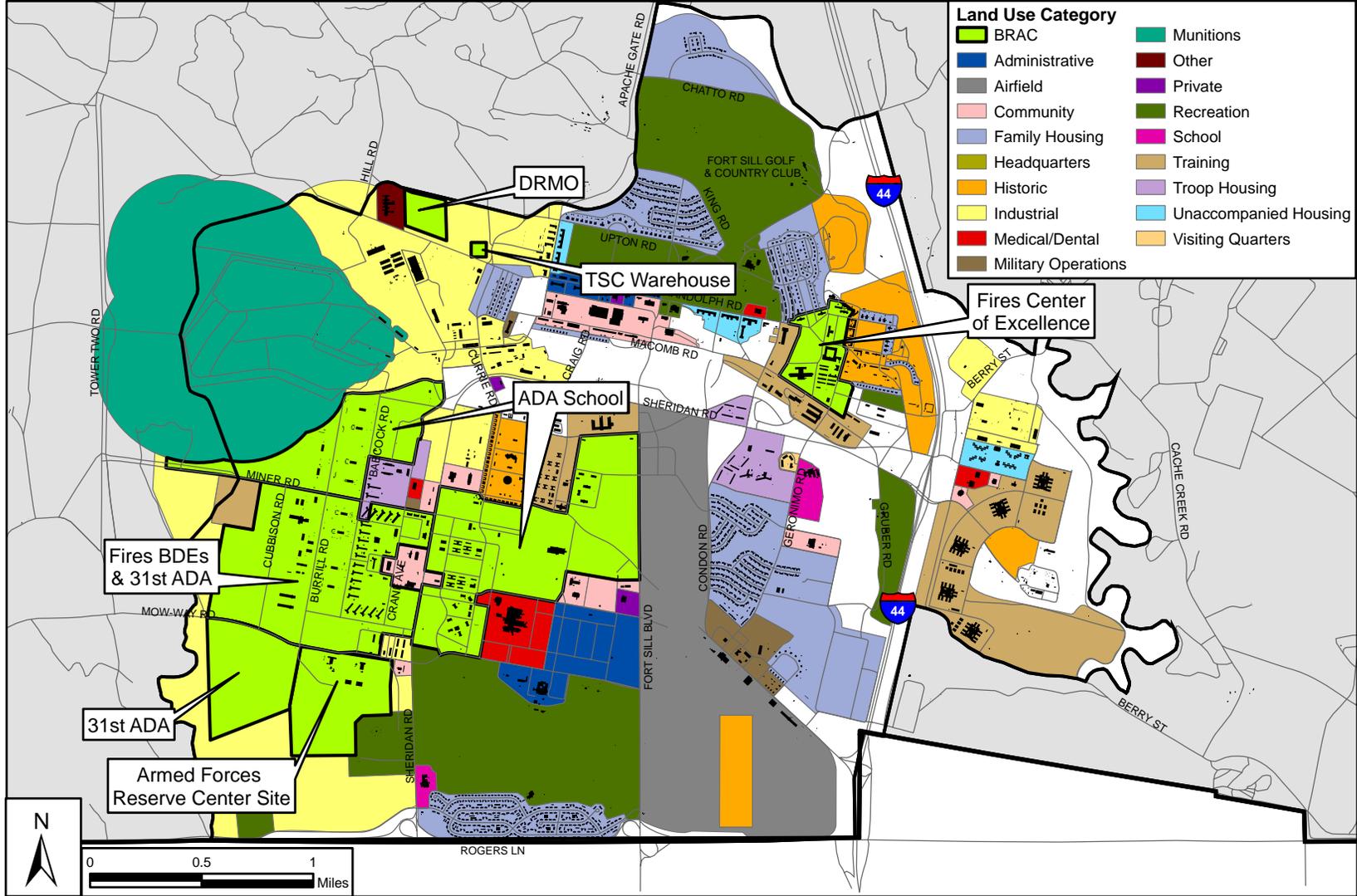
A potential exception to compatibility includes the safety zone for the Ammunition Supply area at the northwestern edge of the large BRAC parcel. The ammunition safety zone, however, borders the BRAC parcel but does not overlap it. A land use incompatibility, therefore, would not exist.

Another potential exception would be the airfield, which borders the central BRAC parcel at its eastern edge. Noise contours from the airfield affect only a small portion of the BRAC parcel at the very northeastern corner of the parcel. (See section 4.3 for a complete assessment of noise impacts.) The airfield safety zone also overlaps the parcel in the same location. Because of the small overlap of noise contours and the safety zone, no significant effect on the proposed administrative and educational activities proposed to occur in this area of the BRAC parcel would be expected.

No effects on airspace would be expected. The proposed SUA R-5601F would accommodate all air mission training operations foreseen to be necessary for the incoming BRAC elements. No additions to the proposed and existing airspace would be needed.

### **4.2.2.2 No Action Alternative**

No impacts would be expected. No land use designations would change under the no action alternative, no new activities that could create land use incompatibilities would be introduced, and no changes to existing or proposed airspace would occur.



# Proposed Land Use

Figure 4-3

Source: Fort Sill, 2006.

## **4.3 AESTHETICS AND VISUAL RESOURCES**

### **4.3.1 Affected Environment**

Fort Sill, which is virtually a small city, operates much like a municipality. The installation's Garrison Commander oversees the services necessary for the daily operations of the post, just as a city manager would. The post has engineers, police and fire departments, housing, banks, stores, food outlets, a contracting office, civilian and military personnel office, community activities, logistics, an Equal Employment Opportunity office, and the Army Career and Alumni Program.

The cantonment area has a feel much like a large, dispersed office complex and functions somewhat as an extension of Lawton, Oklahoma. Large, open areas lie between built-up spaces. Architecture on the Post is a mixture of old, including historic districts and traditional cultural properties (which are discussed more fully in section 4.9), and new construction. The Wichita Mountains accent the view to the north and northwest. Activity levels on the Post are typical of a mixed-use area. There are rush hours in the morning as off-post Soldiers, civilians, and contractors arrive for the work day and in the evening as they leave. During the day, the cantonment area has a moderate level of activity and traffic, but most people are busy working in their offices. Except for occasional noise from training areas, the installation is relatively quiet and serene. On weekends, very little activity is evident on the post. Family housing areas are similar to typical suburban communities, with some parents and children outside working and playing, getting children to school in the morning and picking them up in the afternoon, and with generally more activity on weekends when the whole family is home than during the week.

The three ranges mentioned in Section 4.2.1.1, the Quannah, West, and East ranges, are also well-planned for functionality. As also mentioned in Section 4.2.1.1, each range has a number of firing points surrounding a centrally located impact area, and each serves a particular type of military training activity. The East Range is used for small-arms weapons training, the West Range is used primarily for artillery and live aircraft bombing training, and the Quannah Range is used primarily for bombing exercises.

The ranges are relatively remote, undeveloped areas and they are bordered for the most part by sparsely populated agricultural and residential areas. Overall, outside of Lawton and the cantonment area, the installation and its surroundings have a rural character, interrupted only by the intermittent noise of training activities.

### **4.3.2 Environmental Consequences**

#### **4.3.2.1 Realignment Alternative**

Short-term minor adverse effects would be expected. Construction activities are inherently aesthetically displeasing. Demolition and construction activities and equipment would diminish the aesthetic quality of the cantonment area. These effects, however, would be short-term and localized. In the long term, new and renovated facilities would be expected to improve the functionality of the cantonment by collocating missions and their activities and enhancing the overall aesthetic and visual appeal of the area by adding new facilities. (Note: Aesthetic and visual impacts on cultural and historic properties are considered in section 4.9.) All buildings would be constructed in accordance with Army Master Planning siting criteria (i.e., located within an area of compatible land use and constructed to minimize the loss of natural and ecological resources) and Installation Design Guide criteria, historic and cultural properties would

be fully protected in accordance with applicable laws, and native vegetation would be maintained wherever possible. Construction of all BRAC facilities would be based on sustainable design and development concepts. In accordance with DA policy, new military construction through FY 07 must achieve the Gold rating of the Army's Sustainable Project Rating Tool (SPiRiT) program, and new military construction from FY 08 and beyond will be required to achieve a Silver level of the Leadership in Energy and Environmental Design (LEED) Green Building Rating System (Whitaker 2006). The LEED System, based on sustainable design and development concepts, assesses the degree to which the design of a building successfully incorporates consideration of matters such as sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Use of the SPiRiT program and LEED system improves the environmental and economic performance of facilities through the use of established and advanced industry principles, practices, materials, and standards.

Ranges would also be affected in the short term by construction of new ranges and training facilities. No long-term effects on range areas would be expected.

#### **4.3.2.2 No Action Alternative**

No effects would be expected. No changes to the cantonment area or ranges would occur under the no action alternative.

### **4.4 AIR QUALITY**

#### **4.4.1 Affected Environment**

##### **4.4.1.1 National Ambient Air Quality Standards and Ambient Air Quality**

The U.S. Environmental Protection Agency (EPA), Region 6 and the Oklahoma Department of Environmental Quality (ODEQ) regulate air quality in Oklahoma. The Clean Air Act (CAA) (42 *United States Code* (U.S.C.) 7401-7671q), as amended, gives EPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: fine particles matter (PM<sub>10</sub>), very fine particle (PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), nitrous oxides (NO<sub>x</sub>), ozone (O<sub>3</sub>), and lead (Pb). Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term standards (annual averages) have been established for pollutants that contribute to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, Oklahoma accepts the federal standards. Federal regulations designate Air-Quality Control Regions (AQCRs) that are in violation of the NAAQS as *nonattainment* areas and those in accordance with the NAAQS as *attainment* areas. *Maintenance* areas are AQCRs that have previously been designated nonattainment and have been redesignated to attainment for a probationary period.

ODEQ monitors background levels of criteria pollutants at representative sites in each region throughout Oklahoma. It has several monitoring stations in the Fort Sill region. Table 4-1 tabulates the highest monitored concentrations of criteria pollutants in the region. These are a conservative estimate of the worst-case air quality conditions at Fort Sill. Although the 8-hour maximum (ppm) primary ozone NAAQS is 0.08 and the most recent monitored data is 0.085, the 3-year average of the fourth highest daily maximum has never exceeded the NAAQS in AQCR 189. The nearest monitoring station is at the Indian Hospital to the east of I-44. The prevailing

**Table 4-1  
National Ambient Air Quality Standards and monitored air quality  
concentrations**

<b>Pollutant and averaging time</b>	<b>Primary NAAQS<sup>a</sup></b>	<b>Secondary NAAQS<sup>a</sup></b>	<b>Monitored data<sup>b</sup></b>	<b>Monitoring station Located near Fort Sill</b>
<b>CO</b>				
8-hour maximum <sup>c</sup> (ppm)	9	(None)	0.9	Lawton
1-hour maximum <sup>c</sup> (ppm)	35	(None)	1.6	Lawton
<b>NO<sub>2</sub></b>				
Annual arithmetic mean (ppm)	0.053	0.053	NA	None
<b>Ozone</b>				
8-hour maximum <sup>d</sup> (ppm)	0.08	0.12	0.085	Fort Sill Indian Hospital
<b>PM<sub>2.5</sub></b>				
Annual arithmetic mean <sup>e</sup> (µg/m <sup>3</sup> )	15	15	11.8	McAlester
24-hour maximum <sup>f</sup> (µg/m <sup>3</sup> )	65	65	29.0	McAlester
<b>PM<sub>10</sub></b>				
Annual arithmetic mean <sup>g</sup> (µg/m <sup>3</sup> )	50	50	21	McAlester
24-hour maximum <sup>c</sup> (µg/m <sup>3</sup> )	150	150	46	McAlester
<b>SO<sub>2</sub></b>				
Annual arithmetic mean (ppm)	0.03	(None)	NA	None
24-hour maximum <sup>c</sup> (ppm)	0.14	(None)	NA	None
3-hour maximum <sup>c</sup> (ppm)		0.5	NA	None

Notes:

<sup>a</sup> - Source: 40 CFR 50.1-50.12.

<sup>b</sup> - Source: USEPA 2006

<sup>c</sup> - Not to be exceeded more than once per year.

<sup>d</sup> - The 3-year average of the fourth highest daily maximum 8-hour average ozone concentrations over each year must not exceed 0.08 ppm.

<sup>e</sup> - The 3-year average of the weighted annual mean PM<sup>2.5</sup> concentrations from must not exceed 15.0 µg/m<sup>3</sup>.

<sup>f</sup> - The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor must not exceed 65 µg/m<sup>3</sup>.

<sup>g</sup> - The 3-year average of the weighted annual mean PM<sub>10</sub> concentration at each monitor within an area must not exceed 50 µg/m<sup>3</sup>.

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

NO<sub>2</sub> = Nitrogen dioxide

NA= Not Applicable/ Not monitored in this region

winds at Fort Sill are southwest and it is unlikely that existing operations at Fort Sill contribute significantly to regionally monitored ozone levels.

#### **4.4.1.2 Attainment Status**

Comanche County (and therefore Fort Sill) is in the Southwestern Oklahoma AQCR (AQCR 189) (40 CFR 81.125). Federal regulations designate AQCR 189 as an attainment area for all criteria pollutants (40 CFR 81.338). Fort Sill is not in an EPA-designated ozone transport region. Because Fort Sill is in an attainment AQCR, an air conformity analysis is not required. The nearest nonattainment area is the Dallas—Forth Worth area, which is in nonattainment for the 8-hour O<sub>3</sub> standard. Because O<sub>3</sub> can be transported regionally, its precursors NO<sub>x</sub> and VOC were carried forward for more detailed analysis to ensure the proposed action would not jeopardize the current attainment status of this region.

#### 4.4.1.3 Installation-Wide and Regional Emissions

The primary source of emissions at Fort Sill is the range activities associated with artillery maneuvering, firing, and projectile explosion. These activities are conducted in the center of the Post for safety reasons and any particulate matter generated would mostly have settled to the ground before reaching the Post. Fort Sill also tracks air emissions from many stationary emission sources on the installation. These include several boilers, emergency generators, aboveground storage tanks for fuel, degreasing operations, spray paint booths, and the burning of unused munitions powder. Table 4-2 lists the overall emissions for Fort Sill.

**Table 4-2. Existing air emissions for Fort Sill**

Criteria pollutants	Fort Sill emissions, FY05 (tpy)
CO	16.37
NO <sub>x</sub>	30.0
SO <sub>x</sub>	0.2
VOCs	21.12
PM <sub>10</sub>	2.42
PM <sub>2.5</sub>	2.42

Source: U.S. Army 2006

Tpy = tons per year

#### 4.4.2 Environmental Consequences

Air quality impacts would be considered minor unless the anticipated emissions would exceed *de minimis* thresholds, be *regionally significant*, contribute to a violation of any federal, state or local air regulation, or contribute to a violation of Fort Sill's air operating permit.

##### 4.4.2.1 Realignment Alternative

Short- and long-term minor adverse effects on air quality would be expected from implementation of the Realignment Alternative. Emissions associated with the proposed action would not be expected to exceed *de minimis* thresholds, be *regionally significant*, contribute to a violation of any federal, state, or local air regulation, or contribute to a violation of Fort Sill's air operating permit.

The CAA contains the legislation that mandates the general conformity rule to ensure that federal actions in nonattainment and maintenance areas do not interfere with a state's timely attainment of the NAAQS. The general conformity process requires federal agencies to determine whether their action(s) would increase emissions of criteria pollutants above preset threshold levels (40 CFR 93.153). These threshold rates vary depending on the severity of the nonattainment and geographic location. For the purposes of this EA, these threshold levels were used to determine whether implementation of the Realignment Alternative would threaten the attainment status of AQCR 189.

*De minimis* emissions are limits on total emissions of a criteria pollutant caused by a federal action in a nonattainment or maintenance area. The least restrictive *de minimis* levels of 100 tons per year (tpy) were used in this analysis (Table 4-3). *Regionally significant* emissions are defined as emissions that represent 10 percent or more of an area's total emissions for a criteria pollutant.

**Table 4-3**  
**Applicability thresholds for nonattainment areas**

Criteria pollutants	TPY <sup>a</sup>
O <sub>3</sub> (VOCs or NO <sub>x</sub> )	
Serious NAAs <sup>b</sup>	50
Severe NAAs	25
Extreme NAAs	10
Other O <sub>3</sub> NAAs outside an O <sub>3</sub> transport region	100
Marginal and moderate NAAs inside an O <sub>3</sub> transport region	
VOC	50
NO <sub>x</sub>	100
CO	
All NAAs	100
SO <sub>2</sub> or NO <sub>x</sub>	
All NAAs	100
PM <sub>10</sub>	
Moderate NAAs	100
Serious NAAs	70
Pb	
All NAAs	25

Notes:

<sup>a</sup>TPY = tons per year<sup>b</sup>NAA

Source: 40 CFR 93.153

**Air Emissions.** The Army estimated the construction emissions associated with the implementation of the Realignment Alternative for years 2006 through 2011 (Table 4-4). The Army included in the analysis equipment use for site preparation, construction, and landscaping of the proposed new and renovated facilities. Air emission factors and subsequent air emissions were estimated using EPA's NONROAD2005 Model. NONROAD2005 reports emissions from the use of fuel in a diverse collection of vehicles and equipment, including construction, industrial, and commercial lawn and garden equipment.

The Army also estimated the operational emissions associated with implementation of the Realignment Alternative after the construction (Table 4-4). The facility's operational emissions would primarily be due to heating and cooling emissions from natural gas boilers for the new facilities. Hours of operation of emergency generators at Fort Sill have traditionally been extremely small, and emissions from personal vehicles used in operations are minor (ODEQ 1999a). Therefore, emissions of emergency generators and personal vehicles used in operations were not included in the analysis. The estimated emissions from the Realignment Alternative would be *de minimis* (Table 4-4). Because AQCR 189 is an attainment area, there is no existing emission budget. However, due to the limited size and scope of the Realignment Alternative, it is not anticipated that the estimated emission would make up 10 percent or more of regional emissions for any criteria pollutant. Detailed methodologies for estimating both construction and operational air emissions are in Appendix B.

**Table 4-4. Air emissions compared to applicability thresholds**

Construction year	CO [tpy]	NOx [tpy]	PM10 [tpy]	PM2.5 [tpy]	SO2 [tpy]	VOC [tpy]	De minimis threshold [tpy]	Would emissions equal/exceed de minimis levels? [Yes/No]
2007	9.4	0.3	0.0	0.0	0.0	0.4	100	No
2008	42.9	18.5	1.2	1.2	2.8	2.2	100	No
2009	60.8	24.5	1.7	1.6	4.0	2.9	100	No
2010	58.4	30.3	2.3	2.2	5.4	3.2	100	No
2011	15.4	5.5	0.5	0.5	1.0	0.7	100	No
Operational Emissions	9.0	17.7	0.8	0.8	0.1	0.6	100	No

tpy = tons per year

**Regulatory Review and Air Permit Requirements.** The Army would equip new facilities with several natural gas boilers, emergency generators, and other stationary sources of air pollutions. These sources of air emissions would be subject to federal and state air permitting regulations. These requirements include, but would not be limited to prevention of significant deterioration (PSD) for sources in attainment areas and new source performance standards (NSPS) for selected categories of industrial sources. PSD requirements include the use of best available control technologies, evaluation of emission impacts on vegetation and soils, and dispersion modeling. In addition, under the National Emission Standards for Hazardous Air Pollutants (NESHAP), new and modified stationary sources of air emissions may be subject to Maximum Achievable Control Technology (MACT) requirements if their potential to emit Hazardous Air Pollutants (HAPs) exceeds either 10 tons per year of a single HAP, or 25 tons per year of all regulated HAPs. Table 4-5 tabulates estimated potential emissions and a regulatory review of proposed stationary sources.

**Table 4-5  
Air quality regulatory review for proposed stationary sources**

Regulation	Project status
New Source Review (NSR)	Fort Sill is located in an attainment AQCR. Therefore, the new stationary sources would be exempt from NSR.
Prevention of Significant Deterioration (40 CFR Part 52)	Potential emissions would not exceed the 250-tpy PSD threshold. Therefore, the project would not be subject to PSD review.
Title V Permitting Requirements	Fort Sill is a minor source of air emission under the Title V provisions. As such, it operates under a synthetic minor air operating permit.
National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Parts 61 and 63)	Potential HAP emissions would not be expected exceed NESHAP thresholds. Therefore, the use of MACT would not be required.
New Source Performance Standards (40 CFR Part 60)	Emergency generators are not included in NSPS. However, any boilers rated greater than ten million BTU installed would have to comply with NSPS.
Open Burning (Oklahoma Administrative Code (OAC) 252:100-13)	Open burning of refuse and other combustible material would not be conducted, except as authorized in the specific examples and under the conditions listed in OAC 252:100-13.
ODEQ Minor New Source Construction Permits (OAC 252:100-7)	ODEQ may require a general construction permit prior to construction of the new facilities.

Fort Sill operates under a synthetic minor Permit to Operate Air Pollution Control Facility (Permit # 97-373-O). ODEQ issued this permit on April 14, 1999 (ODEQ 1999b). Increases due to the Realignment Alternative would not be expected to contribute to a violation of this permit. Emergency generators and natural gas boilers in new facilities would fall under Oklahoma's air permitting regulations. When the project reaches the final design phases, Fort Sill would obtain all required construction and operating permits for new emission sources. The Army would perform a review of new emission sources with respect to the installation's current facility-wide emissions limits to ensure compliance with Title V provisions.

There are no specific emissions limitations on range operational activities in Fort Sill's air operation permit. The detonation of munitions conducted with firing range operations, open detonation, and open burning are *grandfathered* activities at Fort Sill. However, Fort Sill is required to track and record the consumption of munitions.

Fort Sill's air operating permit does not outline specific installation-wide limitations on construction-phase emissions of criteria pollutants. However, Fort Sill's permit and Oklahoma's Administrative Code require reasonable precautions to prevent particulate matter from becoming airborne. Such precautions could include the following:

- Using water for controlling dust in the demolition of existing buildings or structures, conducting construction operations, grading roads, or clearing land
- Applying water on dirt roads, materials stockpiles, and other surfaces that could create airborne dust
- Installing and using hoods, fans, and fabric filters to enclose and vent the handling of dusty material, including implementing of adequate containment methods during sandblasting or other similar operations
- Covering open equipment for conveying or transporting material likely to create objectionable air pollution when airborne
- Promptly removing spilled or tracked dirt or other materials from paved streets

#### **4.4.2.2 No Action Alternative**

No effects would be expected. No changes in ambient air quality conditions would result from the no action alternative. No construction activities would be undertaken and no changes in operations would take place. Air quality conditions would remain as described in Section 4.4.1.

## **4.5 NOISE**

### **4.5.1 Affected Environment**

#### **4.5.1.1 Overview and Regulatory Requirements**

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. 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; distance between the noise source and the receptor; receptor sensitivity; and time of day. The military noise environment consists primarily of three types of noise: transportation noise from aircraft and vehicles, impulsive noise from large-caliber weapons firing and demolition

operations, and noise from firing at small-arms ranges. AR 200-1 defines land use compatibility concerning environmental noise for Army activities. The regulation defines the following three noise zones:

- **Zone I (compatible):** Housing, schools, medical facilities, and other noise-sensitive land uses are compatible with noise levels in the zone (all areas not in Zone II or Zone III)
- **Zone II (normally incompatible):** Noise-sensitive land uses (e.g., housing, schools, and medical facilities) are normally incompatible with noise levels in this zone unless measures have been taken to attenuate interior noise levels
- **Zone III (incompatible):** Noise-sensitive land uses (e.g., housing, schools, and medical facilities) are incompatible in this zone

The metric used in defining noise zones for small-arms ranges is Peak Level (dBP). Peak Level is the maximum instantaneous level that occurs during an acoustic event. In the case of small-arms weapons, it is the maximum instantaneous noise level made by a weapon, at a given distance. Peak level for small-arms weapons is strongly correlated with community annoyance (Hede 1982). Other metrics used by the Army to quantify the noise environment at Army installations is both C-weighted and A-weighted Day-night Average Sound Level (DNL). DNL is a useful descriptor for noise because (1) it averages continuous noise, such as a busy highway, and (2) it measures total sound energy over a 24-hour period. DNL is used to assess more continuous noise sources such as aircraft noise and blast noise (large-caliber weapons and demolition noise) (Table 4-6).

**Table 4-6. Noise limits and zones for land use planning**

Noise zone	Small arms (dBP) <sup>a</sup>	Aircraft (ADNL) <sup>b</sup>	Large-caliber weapons (> 20 mm) and demolition (CDNL) <sup>c</sup>
I	< 87 dBP	< 65 dBA <sup>d</sup>	< 62 dBC <sup>e</sup>
II	87–104 dBP	65–75 dBA	62–70 dBC
III	> 104 dBP	> 75 dBA	> 70 dBC

Notes:

Source: U.S. Army 1997

<sup>a</sup> dBP = Peak Level

<sup>b</sup> ADNL = A-weighted Day-night Average Sound Level

<sup>c</sup> CDNL = C-weighted Day-night Average Sound Level

<sup>d</sup> dBA = A-Weighted Decibel

<sup>e</sup> dBC = C-Weighted Decibel

#### 4.5.1.2 Existing Conditions

Existing noise conditions on Fort Sill are predominantly influenced by sounds associated with small-arms ranges, large-caliber weapons ranges, and airfields (off- and on-post). The discussion of existing conditions in this EA focuses on noise and current land use.

The Small Arms Range Noise Assessment Model (SARNAM2) was used to predict the noise conditions associated with existing conditions and the implementation of the Realignment Alternative. SARNAM2 accounts for spectrum and directivity of both muzzle blast and projectile bow shock, which helps to accurately calculate propagation and sound attenuation by barriers. In

the evaluation, the Army considered the type of weapon and ammunition, number and time of rounds fired, range attributes such as size and barriers, metrics, and assessment procedures. The small-arms ranges are primarily northeast of the cantonment area, well within the installation boundary. The noise from these small-arms range activities is overshadowed by large-caliber noise activities. The land within noise zones III and II is used for range and training operations. There are no incompatible land uses within the existing small-arms range noise contours (USACHPPM 2005) (Figure 4-4).

Noise zones II and III from large-caliber weapons firing extend beyond the installation boundary. Zone III extends beyond the boundary in five areas (2,028 acres off-post). Zone II extends beyond the majority of the installation boundary (65,518 acres off-post). The off-post areas affected are agricultural/undeveloped, residential, and commercial land uses (USACHPPM 2004) (Figure 4-5).

The HPAAF is in the southern portion of Fort Sill, adjacent to the city of Lawton. Flight activities include fixed-wing C17, T37, T38 and the rotary-wing UH-60. Lawton Regional Airport has 65 percent military usage consisting of T-37 aircraft. Noise zones II and III associated with HPAAF extend beyond the installation boundary. The areas impacted by airfield activity are agricultural/undeveloped, residential, and commercial land uses. For HPAAF, noise zones II and III, extend beyond the installation boundary into the city of Lawton (USACHPPM 2004) (Figure 4-6).

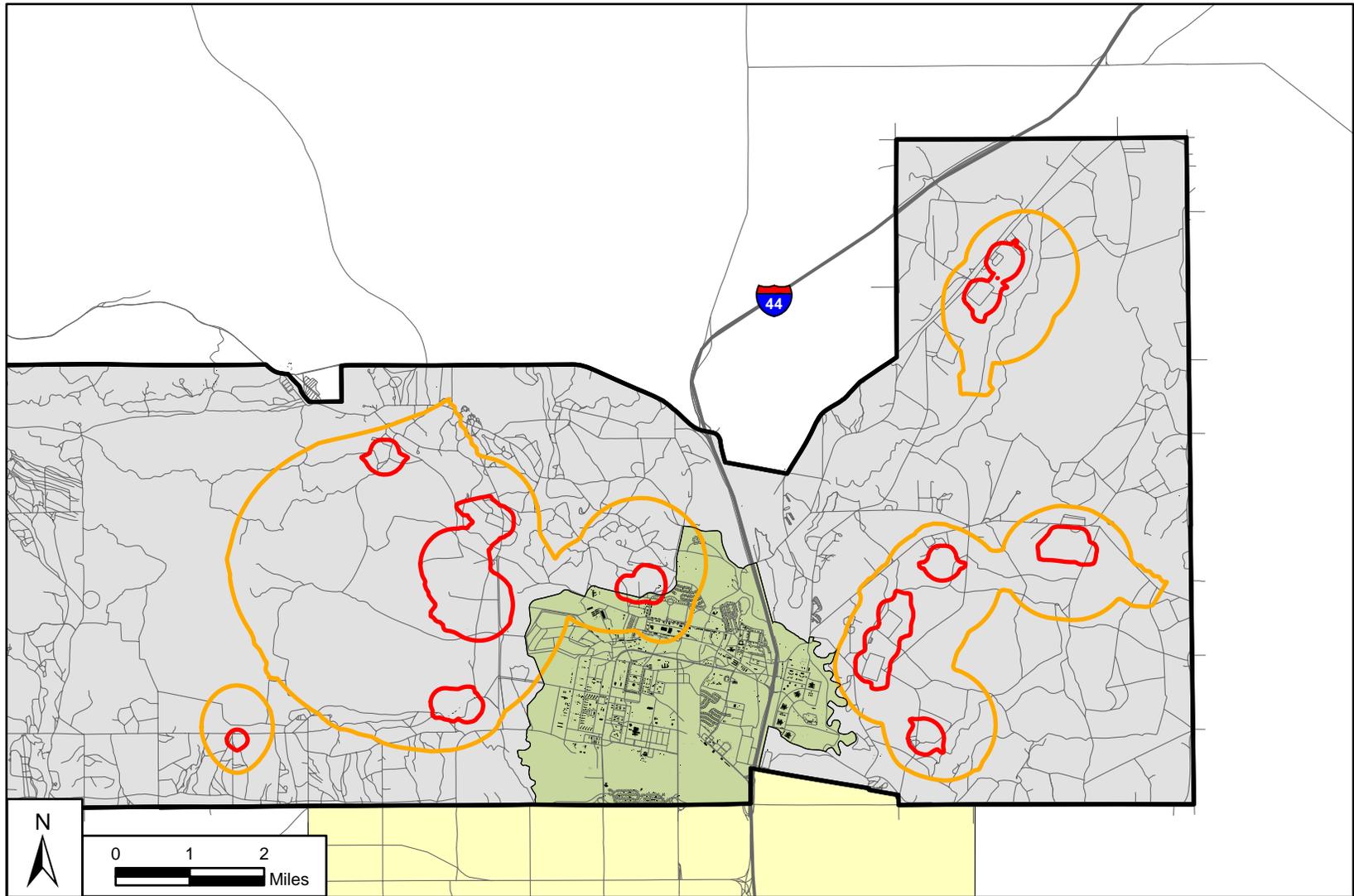
#### **4.5.2 Environmental Consequences**

This EA evaluates potential changes to the noise environment that would result from implementation of the Realignment and No Action Alternatives. Range construction and range operational noise and its potential impacts on nearby receptors are addressed. Impacts would be considered major if there were expected long-term increases in the number of people highly annoyed by the noise environment or unacceptable increases to the noise environment for sensitive receptors.

##### **4.5.2.1 Realignment Alternative**

Short- and long-term minor adverse effects on the noise environment from implementation of the Realignment Alternative. A minor short-term increase in the on-post noise environment would be expected with the use of heavy construction equipment. Additionally, a minor long-term increase in the on-post noise environment would be expected with the use of weapons up to and including 5.56-caliber rifles at the proposed small-arms ranges. All on- and off-post areas would be compatible with the expected changes to the existing noise environment.

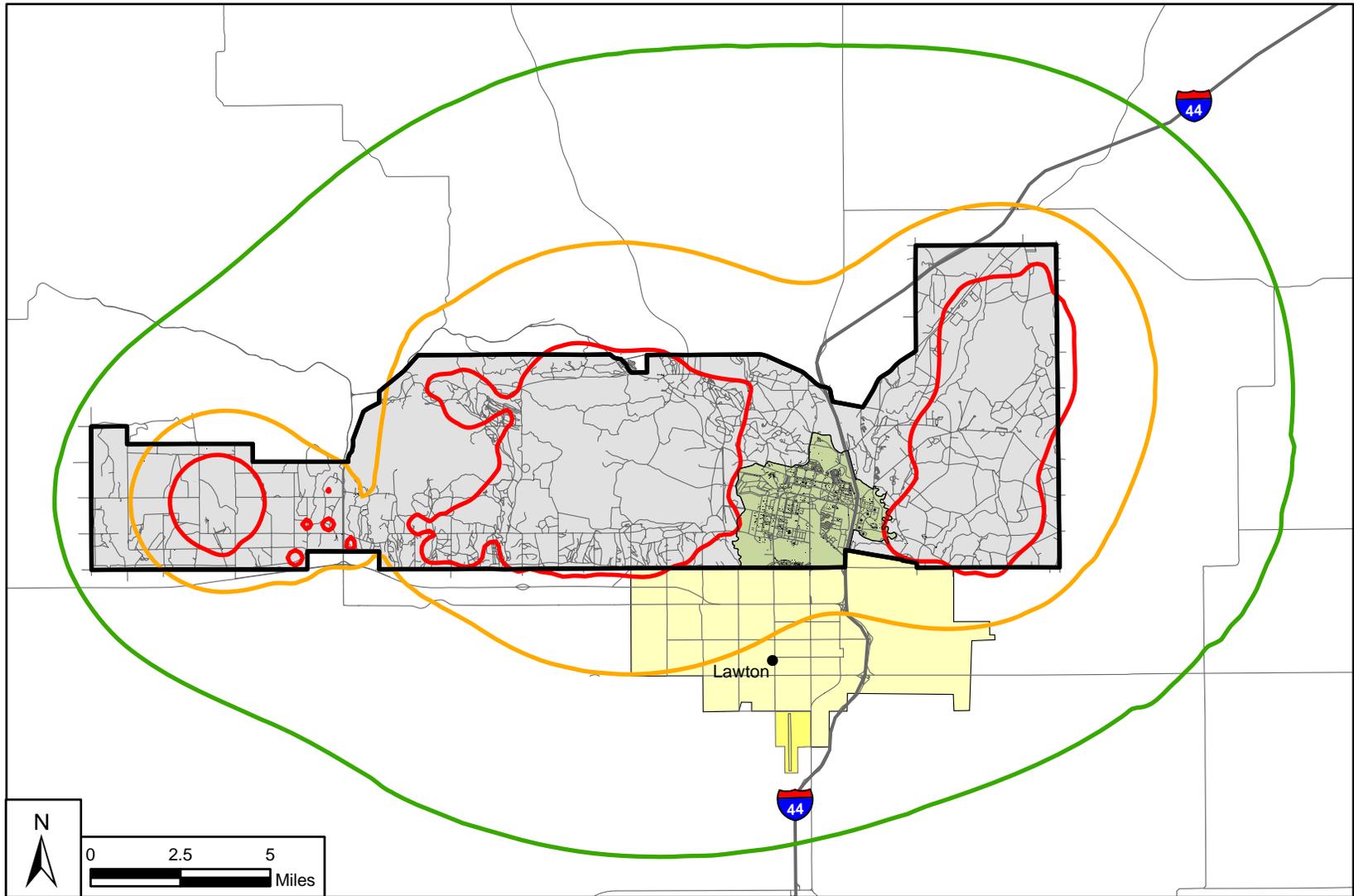
**Construction Noise.** The Realignment Alternative would require the construction of new ranges and facilities at Fort Sill. Individual pieces of construction equipment typically generate noise levels of 80 to 90 A-weighted decibels (dBA) at a distance of 50 feet. With multiple items of equipment operating 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 substantial levels of construction noise. Table 4-7 presents typical noise levels (dBA at 50 feet) that EPA has estimated for the main phases of outdoor construction. Given the temporary nature of proposed.



<b>LEGEND</b>	
Road	Urban Area
Installation Property	<b>Noise Zones</b>
Cantonment Area	Zone II
Building	Zone III

**Existing Small Arms  
Range Noise Contours**  
Figure 4-4

Source: Fort Sill, 2006; USACHPPM, 2006.

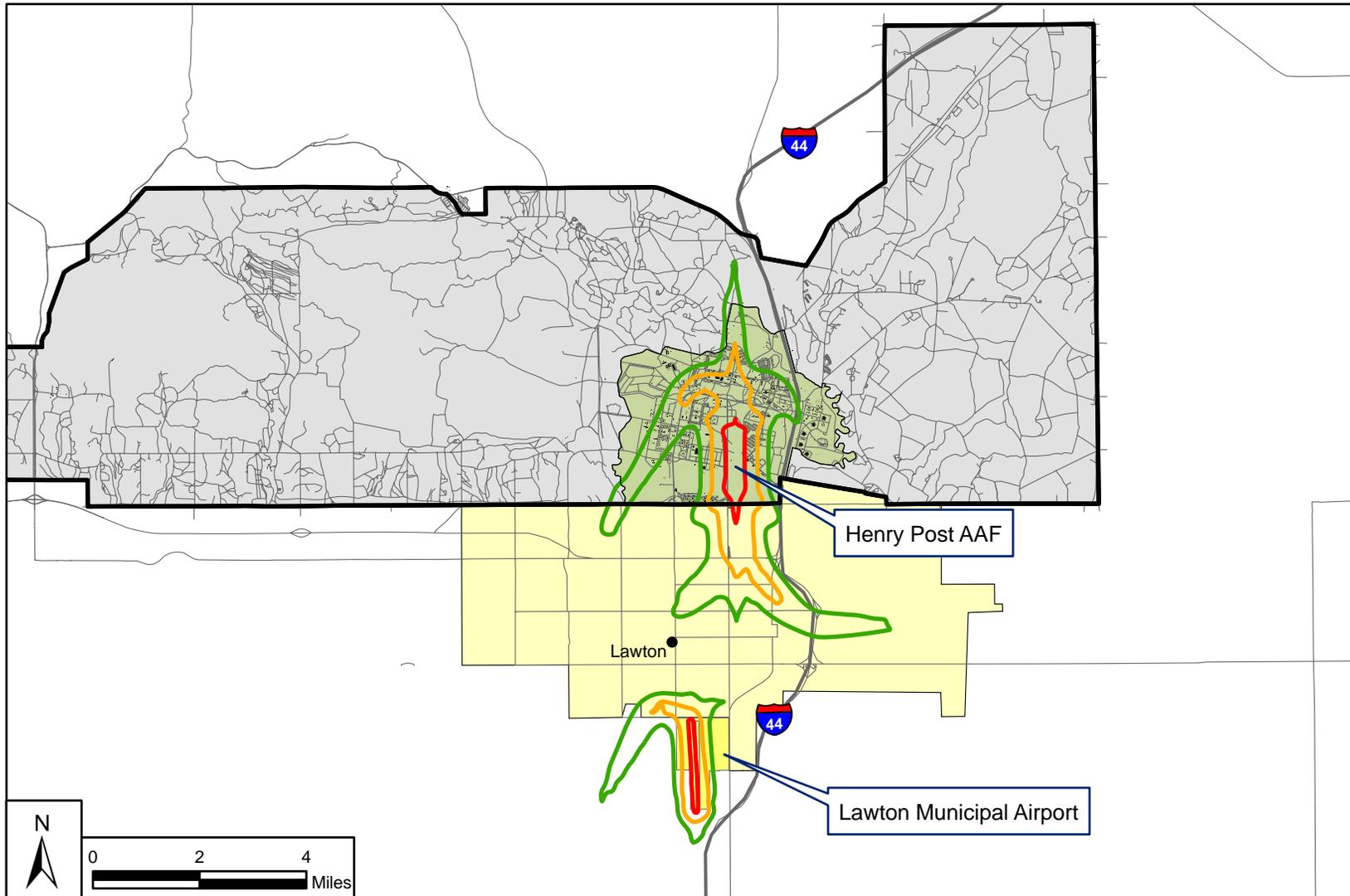


<b>LEGEND</b>		
Road	Urban Area	<b>Noise Zones</b>
Installation Property		LUPZ
Cantonment Area		Zone II
Building		Zone III

# Existing Large Caliber Weapons Noise Contours

Figure 4-5

Source: Fort Sill, 2006; USACHPPM, 2006.



**Existing HPAAF and Lawton Municipal Airport (Military Only) Noise Contours**

**Figure 4-6**

Source: Fort Sill, 2006; USACHPPM, 2006.

construction activities and the limited amount of noise that construction equipment would generate, effects due to construction noise would likely be minor.

**Table 4-7. 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

Although construction-related noise impacts would be minor, best management practices (BMPs) such as those mentioned below would be used to reduce noise impacts:

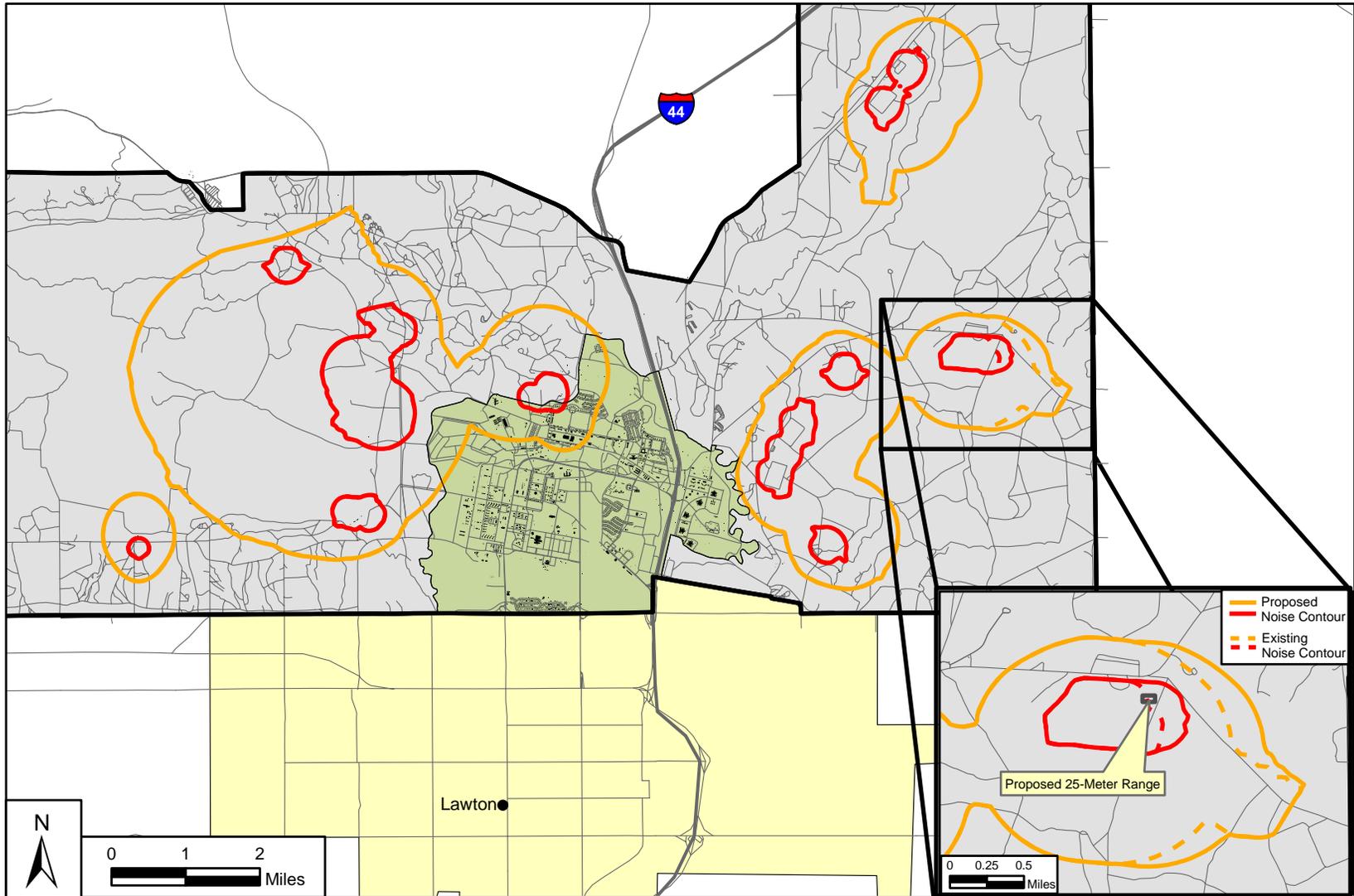
- Construction would occur during normal weekday business hours in areas adjacent to noise-sensitive land uses such as residential areas, recreational areas, and any off-post areas
- Construction equipment mufflers would be properly maintained
- Occupants adjacent to construction areas would be notified of the construction activity and the anticipated duration of construction prior to the onset of work

Construction noise would be expected to dominate the soundscape for all on-site personnel. Construction personnel, and particularly equipment operators, would don adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

**Operational Noise.** A long-term minor adverse impact on the noise environment would be expected in very limited on-post areas adjacent to new small-arms ranges. The new training activities associated with the Realignment Alternative would not introduce changes in the types or sizes of small-arms weapons used at existing ranges. The 25-m Zero range would be the only range that would introduce changes to the small-arms noise contours. Therefore, the 25-m range was carried forward for detailed analysis. No other activities or ranges associated with the Realignment Alternative would be expected to generate substantial changes in noise contours.

The Army calculated peak noise levels and developed critical noise zone contours for firing operations at small-arms ranges with the addition of proposed 25-meter Zero range (Figure 4-7). Establishing the proposed 25-meter Zero range would not introduce areas of incompatible land uses. No residences would be exposed to increased peak noise levels, there would be no changes in the noise environment off the installation, and no increase in the number of people annoyed would be expected.

Other proposed ranges would be located within and oriented away from the facility boundary. Noise contours associated with the facilities could introduce small changes in the small-arms range contours at Fort Sill. Because of the limited size and operations of these additional ranges, however, these changes would not be expected to introduce new off-post areas of incompatible land use. Therefore, the cumulative noise effect of these ranges, if any, would be minor.



**LEGEND**

- Road
- Installation Property
- Cantonment Area
- Building
- Urban Area
- Noise Zones**
- Zone II
- Zone III

# Proposed Small Arms Range Noise Contours

Figure 4-7

Source: Fort Sill, 2006; USACHPPM, 2006.

#### **4.5.2.2 No Action Alternative**

No effects would be expected. Under the No Action Alternative, no changes in the noise conditions in project and surrounding areas would occur. There would be no construction and no changes to operational activities at Fort Sill.

### **4.6 GEOLOGY AND SOILS**

#### **4.6.1 Affected Environment**

##### **4.6.1.1 Geologic and Topographic Conditions**

The geology of this region represents some of the oldest geologic strata outcropping in Oklahoma. The Wichita Mountains, north of the Post, were formed during the Cambrian Period 550 to 525 million years before present (B.P.) and are composed primarily of igneous rocks such as granite and rhyolite. The eastern portion of the Post is underlain by Permian aged—280 to 230 million B.P.—*red beds* typically composed of iron-rich sandstone and siltstone. Underlying these formations are a vast assortment of limestones, dolomites, conglomerates, and other igneous rocks. In floodplains and near streams, Quaternary sands and gravels are associated with the alluvial activity (USACE 2005).

Fort Sill is in a region of low to moderate seismic events. Since 1900 there have been at least 20 earthquakes recorded with intensities of IV or greater within a 100-mile radius of Fort Sill. More than half of these have occurred near El Reno, about 20 miles west of Oklahoma City. An earthquake with its epicenter on Fort Sill and a magnitude of 3.8 occurred on February 8, 2002 (Ahern 2002). The earthquake was recorded by the Oklahoma Geological Survey near Leonard, Oklahoma, 168 miles from its epicenter. The earthquake was felt on Fort Sill mostly as shaking structures and a loud noise.

The topography of Fort Sill is classified as Central Rolling Red Prairies Land Resource Area. The land on the post is characterized as follows: 51 percent of the land area is level or gently sloping, 20 percent of the land area is rolling hills or undulations having slopes between 3 percent and 5 percent, and 29 percent of the land area has slopes greater than 5 percent. The maximum elevation is approximately 2,200 feet at the summit of Mount Sheridan, and the minimum elevation is approximately 1,080 feet at the point where East Cache Creek leaves Fort Sill (Fort Sill 2002).

##### **4.6.1.2 Soils**

Soils across the military reservation vary widely from thick, well-developed loams to hydric soils to thin, rocky, immature series. Rock outcrops are common. Soils in the area of potential effect are largely in the Foard, Tillman, Vernon, and Hollister soil series—each with extensive distribution in the region. The Foard series are very deep and well-drained soils occurring on nearly level to gently sloping, broad summits and shoulder slopes of terrace pediments. The National Hydric Soils List for 2005 identifies two hydric soils from this series as occurring in Comanche County: Foard silt loam, 0 to 1 percent slopes and Foard-Hinkle complex, 0 to 1 percent slopes. The Tillman series are very deep and well-drained soils found on alluvial plains and alluvial plain remnants. Vernon soils are well-drained, moderately deep soils over claystone bedrock on broad, gently sloping to steep plains and escarpments. Hollister soils are very deep and well-drained occurring on broad, flat, plain terraces.

Erosion problem areas on Fort Sill include the eastern boundary, particularly in the Potato Hill area, the Adams Hill area, the area just to the southwest of the cantonment area, the northwestern portion of the West Range, and the far western portion of the Quanah Range. These areas erode significantly regardless of man-made disturbance. There are numerous locations where military mission impacts remove vegetation and cause significant erosion. Many central portions of impact areas are in this category due to the physical impact of shells and bombs, as well as wildfires associated with shelling. Other areas of particular erosion concern are regularly used bivouac sites, commonly used firing points or other assembly areas, unimproved creek crossings, and roads and trails in shallow, rocky soils, especially in the West Range (Fort Sill 2002).

#### **4.6.1.3 Prime Farmland**

Prime Farmland soils are protected under the Farmland Protection Policy Act (FPPA) of 1981. The intent of the act is to minimize the extent to which federal programs contribute to the unnecessary or irreversible conversion of farmland soils to nonagricultural uses. The FPPA also ensures that federal programs are administered in a manner that, to the extent practicable, would be compatible with private, state, and local government programs and policies to protect farmland. The Natural Resources Conservation Service (NRCS) is responsible for overseeing compliance with the FPPA and has developed rules and regulations for implementation of the act (see 6 CFR Part 658; revised January 1, 1998).

There are no farmlands in Comanche County classified as *unique*. However, the county has nine soil series classified as Prime Farmland soils. Four of these series occur on Fort Sill, but only two of these cover substantial amounts of land. Major areas of Lawton loam (1–5 percent slope) on Fort Sill are adjacent to East Cache and Medicine creeks on the higher slopes. Major areas of Zaneis loam (1–5 percent slope) are in the northeastern portion of North Arbuckle Impact Area, east of Beef Creek. The North Arbuckle area is not farmed, with exception of impact area buffer zones. High-quality areas along East Cache and Medicine creeks are heavily farmed, primarily for alfalfa. This farming is done in conjunction with the Fort Sill agricultural lease (Section 4.9) (U.S. Army 2002).

### **4.6.2 Environmental Consequences**

#### **4.6.2.1 Realignment Alternative**

No effect on geology or topography would be expected from implementation of the Realignment Alternative. Short- and long-term minor adverse effects on soils would be expected due to excavation, grading, removal of vegetation, and exposure of soil during construction. Proposed construction of facilities and range areas at Fort Sill would involve standard construction activities. Other sites associated with this alternative would involve locations that are already disturbed or have existing facilities. Erosion control designs would be incorporated into construction plans. Soil erosion management would be consistent with Fort Sill's Integrated Natural Resources Management Plan (INRMP). In accordance with the Clean Water Act (CWA) and ODEQ regulations, construction contractors would be required to submit draft site-specific Storm Water Pollution Prevention Plans (SWPPPs) to the Fort Sill Environmental Quality Division for review and approval before construction could begin.

No effects on Prime Farmland would be expected. Activities associated with the Realignment Alternative would not occur in areas designated as farmland. Therefore, a Farmland Conversion

Impact Rating (Form AD-1006) of the project area is not needed and no further action is required under the FPPA.

#### **4.6.2.2 No Action Alternative**

No effects would be expected. There would be no effect on geology, topography, or soils under the No Action Alternative.

### **4.7 WATER RESOURCES**

#### **4.7.1 Affected Environment**

##### **4.7.1.1 Surface Water**

**Surface Water Features.** Fort Sill is in the surface drainage basin of the Red River and its tributaries. The Cache Creek system, the primary tributary in the Lawton-Fort Sill area, drains from the north to south, ending in the Red River. Cache Creek has two main forks, East Cache and West Cache, which merge just before reaching the Red River. East Cache Creek is the main fork. On East Cache Creek and its primary tributary, Medicine Creek, two lakes (Lawtonka and Ellsworth) supply Fort Sill and Lawton with potable water.

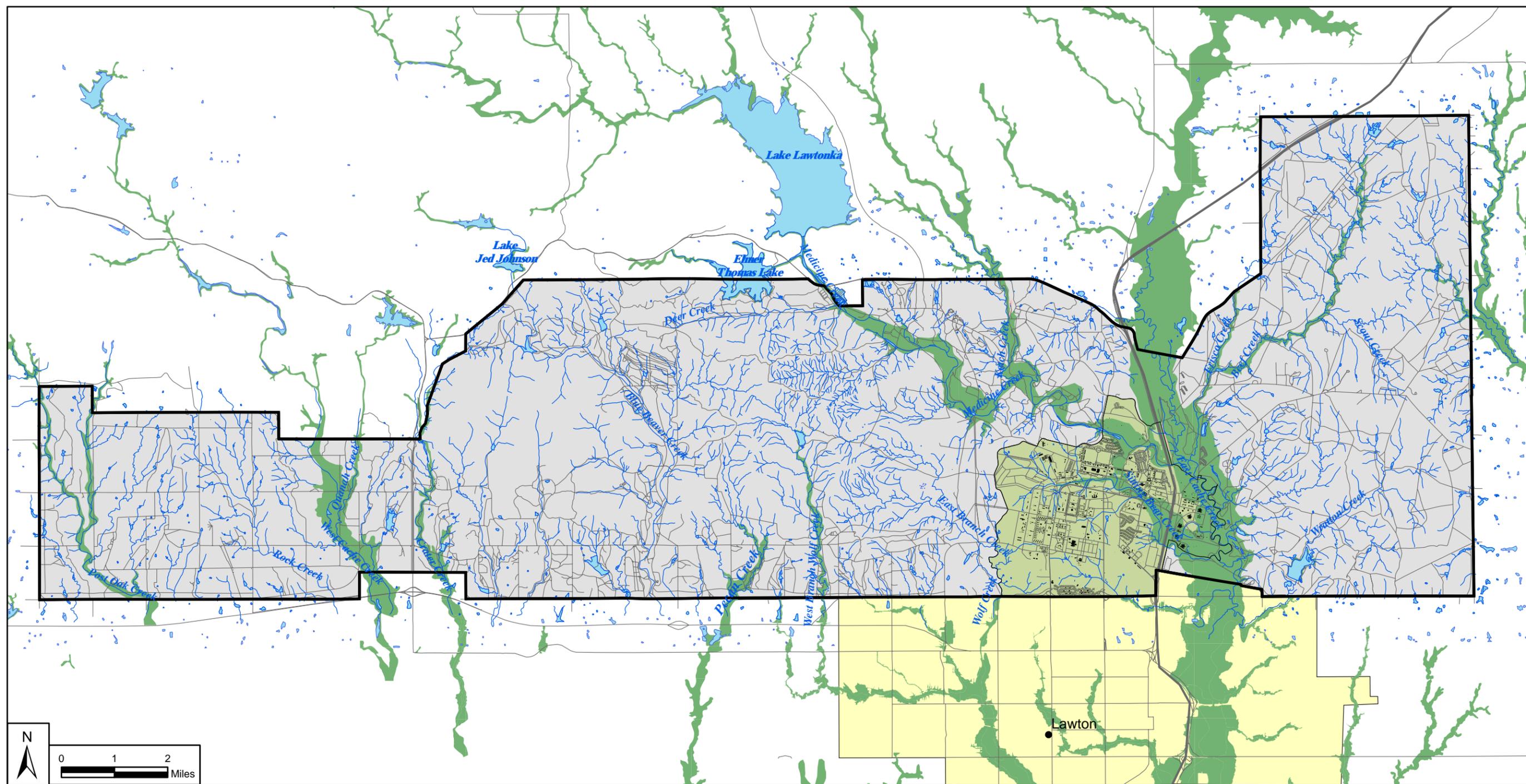
Fort Sill's storm sewer outfalls discharge into Medicine Creek, Sitting Bear Creek, an unnamed tributary of East Cache Creek, and Wolf Creek. Many storm sewer outfalls drain to Sitting Bear Creek, which roughly bisects the cantonment area. Medicine Creek drains far northern portions of the cantonment area. An unnamed tributary of East Cache Creek and Wolf Creek drain far southern portions of the cantonment area.

Just east of Lawton and Fort Sill is the drainage basin of Beaver Creek, which supplies Waurika Reservoir. This reservoir supplements the two aforementioned lakes to provide Lawton-Fort Sill and other communities with water. Portions of the East Range drain into Beaver Creek.

Beef Creek is another sizable tributary of the East Cache Creek on Fort Sill. Blue Beaver, Rock, and Post Oak Creeks are important Fort Sill tributaries of West Cache Creek. About 52 percent of Fort Sill is in the East Cache Creek watershed; 40 percent is in the West Cache Creek watershed; and 8 percent is in the Beaver Creek watershed.

All substantial lakes and ponds are outside the cantonment area in the range areas. Many small impoundments have been constructed on Fort Sill. There are 227 ponds and lakes ranging in size from less than one acre to the 293-acre Lake Elmer Thomas. Important lakes and ponds include Lake George, Ketch Lake, West Lake, Menard, Engineer, Logan, and Pottawatomii Twins. Fort Sill manages 161 ponds and lakes for fisheries (601 acres on Fort Sill including Lake Elmer Thomas). Other ponds are designated for wildlife use. All ponds are used for fire fighting. Figure 4-8 shows the surface water features on Fort Sill, and Figure 4-9 shows the surface water features in the cantonment area.

**Surface Water Quality.** The water quality of lakes and streams on Fort Sill is generally good. Total dissolved solids and hardness are generally lower in Comanche County than in surrounding counties. These waters are generally of sufficient quality to support their designated uses.

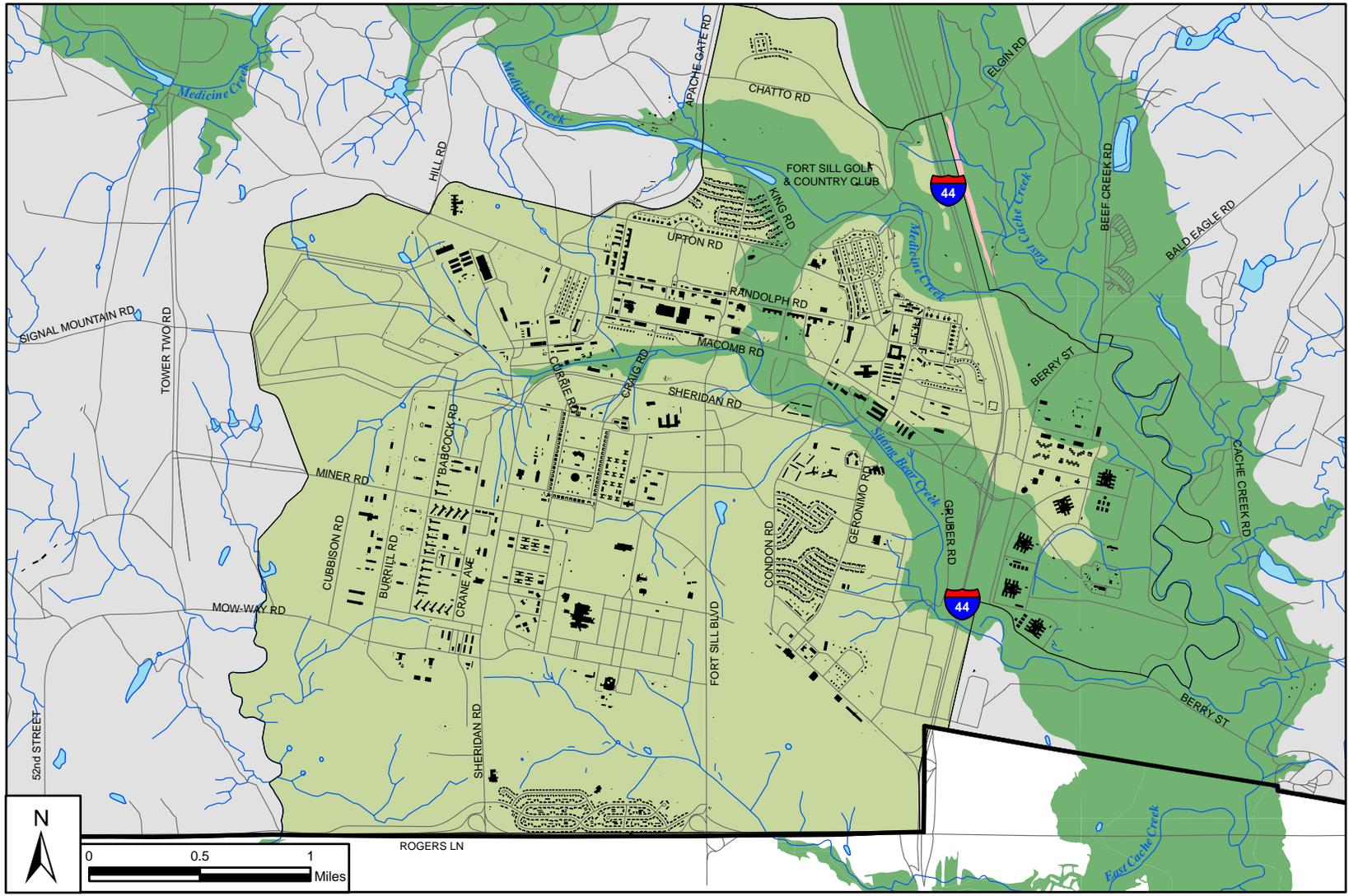


**LEGEND**

— Road	■ Cantonment Area	■ Wetland
— River/Stream	■ Urban Area	■ 100-Year Floodplain
■ Installation Property	■ Surface Water	
■ Building		

## Surface Water Features on Fort Sill

Figure 4-8



**LEGEND**

Road	Cantonment Area
River/Stream	Surface Water
Installation Property	Wetland
Building	100-Year Floodplain

# Surface Water Features on Fort Sill Cantonment

Figure 4-9

Source: Fort Sill, 2006.

Water quality impairments to the surface water within the cantonment area could arise from storm water runoff from impervious surfaces, such as vehicle parking lots, chemicals used for lawn maintenance, and highly erodible soils. Vehicle parking lots contribute small, unquantified amounts of fuel, oils, grease, antifreeze, and other contaminants from leakage and routine activities. Because of the presence of potentially erodible soils in the cantonment area (see Section 4.6, Geology and Soils), sedimentation and high turbidity could be caused by soil erosion from storm water events in the absence of adequate vegetative cover.

Although East Cache and Wolf Creeks are 303(d) listed streams, the impaired sections of these water bodies are not in or near the Fort Sill cantonment area. As stated in the September 2005 Storm Water Management Plan (SWMP) titled *Headquarters, United States Army Garrison Fort Sill Phase II Small Municipal Separate Storm Sewer System Stormwater Management Plan, Fort Sill, Oklahoma*, it does not appear that storm water discharges from the Fort Sill storm sewer system contribute directly or indirectly to any 303 (d) listed (impaired) water body.

#### **4.7.1.2 Hydrogeology/Groundwater**

Groundwater in the area around Fort Sill occurs in three aquifers: the Arbuckle Group (Cambrian and Ordovician), the Post Oak Conglomerate (Permian and Cimarronian), and Alluvial (Quaternary). All are partially recharged from Fort Sill surface waters.

The Arbuckle Group aquifer is the largest source of groundwater in the immediate area of Lawton-Fort Sill, but it is generally poor quality. Several small communities in the area use this water source. This aquifer is characterized by limestone, dolomite, sandy dolomite, mudstone, and conglomerate, about 6,000 feet thick. It yields 90–600 gallons per minute to wells. Recharge is principally along the southern flank of the Wichita Mountains and through the overlying Post Oak Conglomerate. Oklahoma has designated beneficial uses for the Arbuckle Group as irrigation, municipal and domestic water supply, industrial, and non-irrigation agricultural.

The Post Oak conglomerate consists of limestone conglomerate, about 40 feet thick near limestone outcrops. It generally yields only about 10 gallons per minute to wells. It is considered a minor aquifer.

The Alluvial aquifer is made up of sand, clay, and gravel along flood plains, and it is as much as 32 feet thick. Water yields vary from 5 to 500 gallons per minute. Recharge is by precipitation on flood plains and stream bed infiltration. Most water produced is for domestic and stock use. It might occasionally exceed state drinking water primary or secondary standards.

#### **4.7.1.3 Floodplains**

The 100-year floodplain occurs in the cantonment area in low-lying areas along Medicine Creek, East Cache Creek, and Sitting Bear Creek.

#### **4.7.1.4 Coastal Zone**

Fort Sill is inland and the installation is not in a state-designated Coastal Zone area.

## 4.7.2 Environmental Consequences

### 4.7.2.1 Realignment Alternative

**Surface Water.** Short-term minor adverse effects would be expected on the quality of surface waters. In the short term, construction activities increase soil disturbance, the possibility of soil erosion, and the potential for increases in total suspended solids in nearby waters. Also, leakage from construction equipment can increase petroleum hydrocarbon pollution in surface waters.

Fort Sill's SWMP contains a plan for using BMPs as the basic vegetation and soil planning mechanism to prevent water quality impairment from storm water runoff. The SWMP includes a complete description of BMP activities planned including timetables. The Army has placed an emphasis on using sediment control techniques and BMPs. Examples of BMPs include silt fencing and straw bales to trap waterborne sediments and minimize erosion, and reseeding and revegetating affected areas following construction to minimize waterborne sediment. Following the protocols outlined in the SWMP and state sediment and erosion control guidelines would reduce the adverse effects.

**Groundwater.** Short-term minor adverse effects would be expected for groundwater resources. Waterborne contaminants contributed by construction activities could be transported into the groundwater system. Following water-protection protocols, as mentioned above, would reduce potential effects. The BRAC action will not change the long-term quantity or quality of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations during or after construction activities.

**Floodplains.** No effects on floodplains would be expected. No proposed facilities are within the 100-year floodplains.

**Coastal Zone.** No effects on the coastal zone would be expected.

### 4.7.2.2 No Action Alternative

No effects on surface water, groundwater, floodplains, or the coastal zone would be expected.

## 4.8 BIOLOGICAL RESOURCES

### 4.8.1 Affected Environment

#### 4.8.1.1 Vegetation

Fort Sill lies in an ecological transition area where tall-grass prairie merges with short-grass prairie, and soil variation has created diverse plant communities. Mesquite (*Prosopis glandulosa*) and oak thickets occur on much of the western two-thirds of the reservation. Riparian sites are vegetated with elm (*Ulmus* spp.), pecan (*Carya illinoensis*), hackberry (*Celtis occidentalis*), and various species of oak (*Quercus* spp.). Mesquite has encroached on the prairie and is competing with native short-, medium-, and tall-prairie grasses. Invasive grass species include Johnson grass (*Sorghum halepense*), three awn (*Aristida adscensionis*), and gumweed (*Grindelia* sp.). Eastern red cedar (*Juniperus virginiana*) has encroached in wooded and prairie areas where fire has been controlled, but this is relatively insignificant.

Grassland communities comprise more than 70 percent of Fort Sill. There are three major grassland types. Tall grasses such as big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), switchgrass (*Panicum virgatum*), and Indian grass (*Sorghastrum nutans*) dominate sites with deep soils. Native legumes and other forbs are also numerous in these areas. Medium and short grasses such as blue grama (*Bouteloua gracilis*) and sideoats grama (*B. curtipendula*) occupy more droughty hardland and slickspot soils. Medium and short grasses such as hairy and sideoats grama (*Bouteloua* spp.) and fall witchgrasses (*Leptoloma cognatum*) are abundant on very shallow rocky soils.

Table 4-8 indicates installation acreage by vegetation type.

**Table 4-8. Vegetation types on Fort Sill, Oklahoma**

Vegetation type	Acreage	% of Total
Riparian (RI)	2,572	2.7%
Bottomland forest (BF)	4,416	4.7%
Cross-timbers (CT)	4,404	4.7%
Mesquite savanna (MS)	5,348	5.7%
Old growth mesquite (OGM)	161	0.2%
Oak savanna (OS)	7,447	7.9%
Mosaic (MO)	4,680	5.0%
Short grass (SG)	13,226	14.1%
Mixed grass (MG)	35,239	37.5%
Tall grass (TG)	6,278	6.7%
Leased (M or W)	1,063	1.1%
Food plot (FP)	248	0.3%
Tree plot (TP)	347	0.4%
Cultivated (CU)	17	0.0%
Maintained, built-up, or disturbed areas (DA)	2,312	2.5%
Old landfills/fields (OL/F)	268	0.3%
Cantonment	4,374	4.7%
Ponds	769	0.8%
Cultivated Alfalfa	787	0.8%
Total	93,956	100%

Source: Data from Fort Sill GIS database with data rounded to nearest whole number.

Open areas in the cantonment area are primarily populated by weeds and nonnative grasses that are maintained by mowing. All sites being considered for new construction are either maintained open areas or otherwise disturbed, with the exception of the proposed DRMO site. Vegetation in the DRMO site consists of mixed grasses and mesquite.

#### 4.8.1.2 Wildlife

The diversity of natural environments at Fort Sill provides suitable habitat for a wide variety of animal species. Frequently encountered animal life includes a wide range of common invertebrates, birds, fish, reptiles, amphibians, and rodents. Less frequently encountered, although significantly present, are large herbivores and large carnivores such as mountain lions (*Felis concolor*) (USACE 2005). Game species found at Fort Sill include bobwhite quail (*Colinus virginianus*), white-tailed deer (*Odocoileus virginianus*), mourning dove (*Zenaida macroura*),

pheasants (*Phasianus colchicus*), elk (*Cervus elaphus*), raccoons (*Procyon lotor*), waterfowl species, and coyotes (*Canis latrans*). Common small mammals occurring on the installation include bobcat (*Lynx rufus*), striped skunk (*Mephitis mephitis*), cottontail rabbit (*Sylvilagus floridanus*), fox squirrel (*Sciurus niger*), beaver (*Castor canadensis*), opossum (*Didelphis virginiana*), prairie vole (*Microtus ochrogaster*), deer mouse (*Peromyscus maniculatus*), and white-footed mouse (*P. leucopus*). There are several bat species on Fort Sill (Fort Sill 2002).

Fish species commonly found on Fort Sill include largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), redear sunfish (*L. microlophus*), green sunfish (*L. cyanellus*), and channel catfish (*Ictalurus punctatus*).

Cantonment areas that are maintained are essentially devoid of wildlife except for a few common bird species and small mammals. No wildlife species were observed during brief site visits on March 29 and 31, 2006.

#### 4.8.1.3 Sensitive Species

The Endangered Species Act (ESA) (16 U.S.C. 1532 et. seq.) of 1973, as amended, was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. All federal agencies are required to implement protection programs for designated species and to use their authorities to further the purposes of the act.

Federally listed species that could occur in Comanche County are the bald eagle (*Haliaeetus leucocephalus*), black-capped vireo (*Vireo atricapillus*), least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), or the whooping crane (*Grus americana*). The American peregrine falcon (*Falco peregrinus anatum*), once listed as endangered, was delisted throughout its entire range on August 25, 1999. The black-capped vireo is the only of these federally listed species that is of concern for Fort Sill. Habitat for the black-capped vireo is scattered within the training areas north and west of the cantonment area. No habitat for the species exists within the cantonment area.

The presence of the black-capped vireo on Fort Sill is an important natural resource management challenge for the Army and the installation. In accordance with AR 200-3, Fort Sill has prepared an Endangered Species Management Plan (ESMP) (Fort Sill 1999), which provides guidelines for maintaining and enhancing populations and habitats of the species on Fort Sill, while maintaining mission readiness consistent with Army and federal environmental regulations. Black-capped vireos nest in an early-successional, deciduous scrub community. This habitat is generated as the result of various disturbances, including wildfire or mechanical removal of woody top growth. Good nesting habitat for black-capped vireos includes a wide diversity of hardwoods in a patchy, low-growing configuration with open, grassy spaces between patches of woody vegetation. Throughout the range of the species, the black-capped vireo is threatened by cowbird nest parasitism and by habitat loss from browsing animals (goats, deer, and exotics), fire suppression, and urban development. In managing the species on the installation, Fort Sill also complies with the Migratory Bird Treaty Act (16 U.S.C. 703–712, as amended), which prohibits harming the birds, their nests, or their eggs.

There are no federally protected plant species on the military reservation. Oklahoma does not have a rare-plant-species law, so no official list of state rare plants exists (Oklahoma Biological Survey 2002). Several plants of interest occur at Fort Sill. The Oklahoma penstemon (*Penstemon*

*oklahomensis*) is geographically restricted in the region and has been found on Fort Sill. Two other special-interest plant species potentially occurring at Fort Sill are Hall's bulrush (*Scirpus hallii*) and dodder (*Cuscuta* spp.) (Fort Sill 2002).

#### **4.8.1.4 Wetlands**

Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into waters of the United States, including deepwater habitats, special aquatic sites, and wetlands. The U.S. Army Corps of Engineers (USACE) has the authority to make decisions regarding the jurisdictional status of waters, including wetlands.

Fort Sill wetlands were inventoried using February 1983 and March 1984 photographs. The U.S. Fish and Wildlife Service (USFWS) completed verification of wetland information from aerial photographs in 1995. This survey indicated 1,174 acres of wetlands on Fort Sill. These 1,174 acres include 333 acres of Lacustrine and Limnetic type wetlands, 188 acres of Riverine type wetlands, and 653 acres of Palustrine type wetlands. In addition, 352 miles of linear wetlands were indicated in the mapping report (Fort Sill 2002).

There is a strip of designated wetlands in the cantonment area east of I-44 and west of East Cache Creek, beginning just below Elgin Road and stretching to Medicine Creek on the south.

### **4.8.2 Environmental Consequences**

#### **4.8.2.1 Realignment Alternative**

**Vegetation.** Short- and long-term minor adverse effects would be expected from construction associated with the Realignment Alternative. Long-term minor adverse effects from construction activities would include the loss of a small area of mesquite scrub and native grasses at the proposed DRMO site and of nonnative maintained grasses from the ADA school site.

Short-term minor adverse effects would be associated with construction of new range areas. Construction of the ranges would require temporary removal of vegetation, but only in those areas where ground contours are modified to accommodate additional of berms, or leveling for line of sight purposes. Ranges are typically on sites that are topographically suited to the purpose of the range, so that a minimum of ground-disturbing activities are required for creation of the range. Once constructed, those areas disturbed would be seeded with native grasses.

**Wildlife.** Long-term minor adverse effects on fish and wildlife from construction activities would include the direct losses of habitat at construction sites. Effects would result from the displacement of wildlife due to disturbance from ground-clearing operations and construction of new facilities. Similar habitat would remain in the area; therefore, implementation of the proposed action would not significantly affect wildlife communities on a regional basis.

Wildlife species have adapted to the live-fire, maneuver, and other training activities conducted on the ranges and would not be expected to react adversely to additional training area occupation. However, any loss of vegetation or other resources related to increased stress on the ecosystem would have long-term adverse effects on wildlife. Implementation of management measures consistent with the Fort Sill INRMP would minimize any such effects.

Operation of the PATRIOT radar system would not be expected to have adverse effects on wildlife. Studies and anecdotal evidence on the effects of exposure of wildlife, especially flying birds, to electro-magnetic radiation from radar systems such as the PATRIOT indicate that there would be little to no adverse effects of operating the radar at Fort Sill. PATRIOT radar systems have been operated in numerous locations for more than 20 years, and according to PATRIOT Office personnel, no adverse effects on birds or other animals have been reported (BMDO 2000). A July 2000 EA of testing of the PATRIOT radar at a municipal airport concluded the following:

Birds in flight are unlikely to be within the beam for more than a few moments, not generally long enough to absorb enough energy to cause biological effects. Birds or other animals foraging or resting at ground level in the area within the security zone could conceivably be adversely affected by the radar's energy. Information is not available to determine the exact extent of this risk. However, a risk assessment performed in 1993 for a radar operating in the 8–10 GHz frequencies (somewhat higher energies than the 4–6 GHz of the PATRIOT), determined that birds in flight had a small fraction of one percent risk of incurring harm from the beam. That same study analyzed the risk to wildlife at ground level and concluded that even small animals would not be adversely affected. These radars are not identical. But they are close enough in operating frequency to support a reasonable conclusion that the PATRIOT radar beam is not likely to have any significant effects on wildlife.

***Threatened and endangered species.*** No effects on threatened, endangered, or other species of concern would be expected by implementation of the proposed action. All known habitats for sensitive species would be avoided. All activities undertaken as a result of the Realignment Alternative would be consistent with terms and conditions outlined in the Fort Sill ESMP.

***Wetlands.*** No effects on wetlands would be expected as a result of implementing the Realignment Alternative. Fort Sill has adopted siting procedures that would prevent impacts on wetlands (see section 3.3.2) and no wetlands are known to be in the proposed facilities areas. Wetlands protection is required by Executive Order 11990, *Protection of Wetlands*. The 1977 Executive Order and the Clean Water Act (1977) require no net wetland losses on federal lands in the United States. When any activity is deemed to have a potential regulated impact on wetlands, therefore, Fort Sill delineates wetlands in the area and minimizes impacts on them through the project planning process. The primary means of detecting threats to wetlands on Fort Sill is by the Natural Resources and Enforcement Branch of the Environmental Quality Division conducting a thorough review of proposed projects and/or activities (Fort Sill 2002). If necessary, projects with potential impacts on wetlands are referred to the USACE to determine whether jurisdictional wetlands might be affected, establish mitigation procedures, and/or obtain permits. A jurisdictional determination of wetlands has not been performed for areas that would be affected by the proposed action, and the Army would contact the USACE before disturbing any potential wetland area.

#### **4.8.2.2 No Action Alternative**

No effect on vegetation, wildlife, threatened or endangered species, or wetlands would be expected under the No Action Alternative.

## **4.9 CULTURAL RESOURCES**

### **4.9.1 Affected Environment**

Cultural resources are aspects of the physical environment that relate communities to their culture and history. They provide definition for communities and link them to their surroundings. Cultural resources include tangible remains of past activities that show use or modification by people. This type of cultural resource can include prehistoric and historic archaeological sites, buildings, structures, objects, or districts. Cultural resources also include aspects of the natural environment, such as landscapes, specific places, topographic features, or biota, which are a part of traditional lifeways and practices and are associated with community values and institutions.

#### **4.9.1.1 Prehistoric and Historic Background of Fort Sill**

##### ***Prehistoric Period***

The earliest substantiated evidence for human use of the Southern Plains region begins around 11,750 years Before Present (B.P.) in what is called the Paleo-Indian stage. The Native American people living during this stage, which lasted until 8450 B.P., were primarily large game hunters, relying on now extinct species of mammoth and bison, but also exploiting plants and smaller animals for subsistence. The following Archaic stage, which lasted until 1950 B.P., is characterized by diverse use of a wide variety of plant and animal species, though bison remained the most important resource in the region. Grinding tools, roasting ovens, and the types of projectile points found at archaeological sites set this stage apart from the Paleo-Indian. Archaeological finds dating to the Archaic stage also indicate more restricted movement and an increase in the population of the region. The transition from the Archaic stage to the Formative (a.k.a. Plains Woodland) stage (dating from 1950 to 1150 B.P.) is marked by a number of technological changes. These include a shift from using spears and darts to the bow and arrow and the introduction of ceramics. After 1150 B.P., and lasting until contact with Euro-Americans around 409 B.P., sedentary or semi-sedentary agricultural societies occupied the region. This stage is known as the Florescent (a.k.a. Plains Village) stage, and is characterized by village sites mostly along major river or stream systems with fertile soil. In addition to limited agriculture, these people relied heavily on hunting, fishing, and wild plant gathering (Procter and Kahl 2002).

##### ***Protohistoric Period***

The Protohistoric Period encompasses that period following Coronado's initial exploration of the southwest in 1541 and before extensive presence of Euro-Americans in the region. During this time, many tribal groups from boundary areas (Mississippi Valley, Rocky Mountains, far Southern Plains) began to enter the western Southern Plains to exploit the vast herds of bison. Before about 1750, Apachean groups appear to have dominated the western portion of the Southern Plains. After this time, the Wichita, Comanche, and Kiowa tribes increasingly controlled the area (Procter and Kahl 2002).

##### ***Historic Period***

In 1819, the United States set the southern boundaries of the Louisiana Purchase. This land, later known as the Oklahoma Territory, was envisioned even then as a possible future home for Native Americans. Exploration of the Fort Sill area first occurred with the Dragoon Expedition of 1834. This expedition encountered villages of Wichita, Kiowa, and Comanche groups with populations

estimated at between 3,000 and 4,000 near where Fort Sill would eventually be established. Encroachment by settlers and relocated Indian groups onto the plains continued, pressures for survival increased, and unrest with the resident Comanche, Kiowa, and Wichita tribes continued, all culminating in establishment of a military Garrison at Fort Sill in 1869. Fort Sill became the location of the area's Indian agency and was charged with distributing good and supplies to the Comanche, Kiowa, and Kiowa-Apache reservation until 1879. Fort Sill was linked to the region by several roads and eventually by the Fort Worth and Denver railroad and continued to grow in force and size (Procter and Kahl 2002).

The internment of the Western Apache at Fort Sill occurred from 1894 to 1913. The Fort more than doubled in size to accommodate the incoming Apache prisoners by acquiring almost 27,000 acres of land from the Kiowa and Comanche reservation. Twelve POW villages were constructed by the Apache themselves, and in 1899, the Dutch Reformed Church established a mission north of Medicine Bluff to serve the prisoner families. In 1913, the Army released the Apache POW families (Procter and Kahl 2002).

In 1902, after considering Fort Sill for possible abandonment, the Army began using it as a field artillery training installation. As the military force outgrew the old post, the need for new buildings was recognized, and in 1909 the Army selected a site west of the Old Post Field for the expansion. When the Apache POWs were released in 1913, more than 20,000 acres to the north and west of the cantonment area became available for installation use. During the 20<sup>th</sup> century, the fort's field artillery training mission was secured with multiple additions of acreage to the fort, establishment of the School of Fire for Field Artillery and the United States Army Artillery Center, and the addition of guided missile training. The center continues to operate at Fort Sill (Procter and Kahl 2002).

#### **4.9.1.2 Cultural Resources Compliance at Fort Sill**

A number of federal statutes address cultural resources and federal responsibilities regarding them. The long history of legal jurisdiction over cultural resources, dating back to 1906 with the passage of the *Antiquities Act* (16 U.S.C. 431-433), demonstrates Americans' continuing concern for their cultural resources. Foremost among these statutes is the *National Historic Preservation Act* (NHPA) of 1966, as amended (16 U.S.C. 470). Section 106 of this statute requires federal agencies to take into account the effect of federal undertakings on *historic properties*. Historic properties are cultural resources that are included in or eligible for inclusion in the National Register of Historic Places (NRHP). Inclusion in the NRHP is granted if a resource retains its physical integrity and is evaluated as important to the culture. The regulations that implement Section 106 (36 CFR Part 800) describe the process for identification and evaluation of cultural resources, assessment of effects of federal actions on historic properties, and consultation to avoid, reduce, or mitigate adverse effects. The NHPA does not require preservation of historic properties, but does ensure that federal agency decisions concerning the treatment of these resources result from meaningful consideration of cultural and historic values and identification of options available to protect the resources.

The federal government recognizes its unique relationship with Native American tribal governments and respects tribal sovereignty and self-government. Various federal statutes have been enacted that establish and define a trust relationship with tribes. These include the NHPA, *American Indian Religious Freedom Act* of 1978 (42 U.S.C. 1996), *Native American Graves Protection and Repatriation Act* of 1990 (25 U.S.C. 3001), EO 13007 *Indian Sacred Sites* (61 FR 26771), EO 13175 *Consultation and Coordination with Indian Tribal Governments* (65 FR

67249), and the *Executive Memorandum on Government-to-Government Relations with Native American Tribal Governments* (59 FR 22951). They call on agencies to consult with Native American tribal leaders and others knowledgeable about cultural resources important to them. Consultation is conducted for federal actions, such as the decisions to be made with regard to the proposed action, with the potential to affect locations of traditional concern, religious practices and areas where they are carried out, areas of traditional cultural uses, archaeological sites, and other modern and ancestral tribal resources. The U.S. Army and USACE acknowledge their responsibilities to conduct government-to-government consultation with tribes for proposed federal government actions. They understand that meaningful consultation and coordination with Native American tribes are not only good practices, but also lead to better government decisions. The U.S. Army and USACE take government-to-government consultation very seriously and initiated consultation with tribes at the beginning of the EA process. Consultation has continued throughout development of the EA (see Section 4.9.1.5).

#### **4.9.1.3 Cultural Resources at Fort Sill**

Fort Sill's cultural resource management program operates under the guidance of the Integrated Cultural Resource Management Plan (ICRMP) prepared for the military reservation in 2002 (Procter and Kahl 2002). The Army is revising the document, but it was not ready for integration into this EA (Swain 2006a). Therefore, the information presented here on cultural resources is primarily based on the 2002 ICRMP.

Fort Sill has conducted extensive studies to identify significant cultural resources, including archaeological sites and architectural properties. Of the 3,300 buildings and structures on the installation, 878 (or 26.6 percent) have been recorded and evaluated for eligibility for listing on the NRHP. In addition, all architectural resources used during the Cold War have been assessed for eligibility to the NRHP under that theme. Of the 94,220 acres on the installation, 53,225 acres (or 56 percent) have been surveyed to identify archaeological resources and evaluate them for eligibility.

Within the boundaries of Fort Sill, 1,206 resources have been recorded, including 878 architectural resources, one engineering feature, 324 archaeological sites, and three other sites. Forty-seven of the architectural resources are included in the Fort Sill National Historic Landmark District. Seven other properties (three architectural properties, one engineering feature, and the three other sites) are listed on the NRHP individually. Properties that are considered eligible for listing on the NRHP include 251 architectural resources and 29 archaeological sites. Many of these architectural resources are included in three districts that have been determined eligible for listing on the NRHP: The Field Artillery District, the Post Field District, and the Concurrent Camp/Officer Training School District (Swain 2006b). Two other historic districts have been determined eligible because of their significance during the Cold War. These are the Pershing Complex Historic District and the Special Weapons Historic District (Gaither 2004). Another 208 architectural resources and 150 archaeological sites are considered potentially eligible or need further assessment to determine eligibility. Finally, 72 architectural resources and 145 archaeological sites have been determined not eligible for listing on the NRHP.

The Fort Sill cantonment contains all the recorded architectural resources, plus some archaeological sites and other important sites. There are a number of districts or areas of special importance within the cantonment that illustrate the various missions and roles of the installation throughout history. These include the Fort Sill National Historic Landmark District, which includes two properties (the Quarry Site and Flipper's Ditch) that are separate from the main

district. The three NRHP-eligible districts are also in the cantonment: The Field Artillery District, the Post Field District, and the Concurrent Camp/Officer Training School District. The Landmark District and the three NRHP-eligible districts are in the northern and eastern portions of the cantonment. The NRHP-eligible Special Weapons Historic District dating to the Cold War is in the northwest portion of the cantonment, and the Pershing Complex Historic District is in the eastern portion. Ten acres in the southeast corner of the HPAAF, which comprise the original airfield landing area for the 1<sup>st</sup> Aero Squadron, are listed on the NRHP. The Comanche Cemetery, southeast of the airfield, is one of four Native American cemeteries that comprise one listing on the NRHP. Three additional areas are known to be historic, though no formal recording and evaluation of NRHP eligibility has occurred. These are the Polo Field and Rucker Park, both in the east and north parts of the cantonment, and the World War I cantonment, which is just outside of the northwest cantonment boundary (Swain 2006b).

Due to the extent of development in the cantonment, not many archaeological resources are known. These are primarily historic archaeological remains in the Landmark District and sites in the undeveloped areas in the western portion of the cantonment. Although standing architectural resources are the primary concern in the cantonment, there are also important known archaeological sites to be considered. In addition, there is the potential for buried archaeological sites throughout the cantonment. Due to the long use of the installation, it is likely that any buried prehistoric sites have been destroyed. However, it is also likely that buried sites dating to historic use of the installation are still intact and would contain remains such as artifacts or building foundations.

The ranges at Fort Sill contain most of the known archaeological resources at the installation. Historic archaeological sites are generally west of the cantonment and include cultural materials from the 12 POW villages, use of the Apache allotments, and settlers. Prehistoric sites are often near flowing water, and the distribution of known sites indicates a preference for using terraces above drainages. Neither prehistoric nor historic archaeological sites are deeply buried at Fort Sill: They are found at or near the ground surface, making them very susceptible to vehicle traffic and military maneuvers.

#### **4.9.1.4 Native American Resources**

Fort Sill has initiated consultation with potentially interested tribes by sending a letter describing the proposed action and asking the tribes for comments or concerns (Swain 2006a) (Appendix C). The letters were sent in early June 2006 to nine tribes: Apache Tribe of Oklahoma, Caddo Indian Nation of Oklahoma, Cheyenne-Arapaho Tribe, Chickasaw Nation, Comanche Tribe, Delaware Tribe of West Oklahoma, Fort Sill Apache Tribe, Kiowa Tribe, and Wichita and Affiliated Tribes. No response has yet been received from any of the tribes.

Medicine Bluffs, north and outside the cantonment boundaries, is a landform listed on the NRHP. In addition to its historical significance for many cultures for navigating the area, it plays an important role in local Native American culture. It is the only traditional cultural property that any tribe has formally designated to Fort Sill. However, it is common knowledge that other places on the installation have been and continue to be used for tribal ceremonies and other important traditional uses. The Wichita Mountains and the vicinity of Rabbit Hill are two areas considered to be highly sensitive for traditional uses.

#### **4.9.1.5 Pending Investigations and Compliance**

Fort Sill conducts its cultural resource management in accordance with applicable federal legislation and with guidance from the ICRMP. Fort Sill does not have any agreements with the Oklahoma State Historic Preservation Officer (SHPO) or Advisory Council on Historic Preservation. The BRAC realignment could involve renovations of buildings that have not undergone formal evaluation for NRHP-eligibility, and could include areas that have not been inventoried for historic properties. Also, analysis of impacts on cultural resources requires somewhat detailed plans on the planned activities, such as how buildings would be renovated and where ground-disturbing activities would take place.

#### **4.9.2 Environmental Consequences**

The proposed activities would be considered to have a significant impact on cultural resources if they result in any of the following:

- Disturbance of cultural resources that are listed on or eligible for listing on the NRHP
- Disturbance of archaeological or historical resources
- Potential to cause physical change that would affect unique ethnic cultural values
- Restrict existing religious or sacred uses within the potential impact area.

##### **4.9.2.1 Realignment Alternative**

###### **Cantonment**

No significant adverse effects would be expected. Long-term beneficial effects would be expected with regard to adaptive reuse and continued maintenance of historic architectural properties. The Realignment Alternative would result in building or structure demolition, renovation, and construction activities in a number of project areas within the cantonment area. Each type of activity is addressed below. Potential impacts could arise from the activities in the project areas, but adherence to policies and guidelines in the ICRMP and consultation with the SHPO would be expected to avoid or mitigate potential adverse effects to a less than significant level. Measures that would occur to address these potential impacts are also discussed below.

Building demolition would have an adverse impact if the subject building was individually NRHP-eligible or if it was considered a contributing element to an eligible or listed district. Before demolition would take place on any building or structure, Fort Sill would evaluate the building to determine if it was an historic property. If the building was determined to be a historic property, Fort Sill would identify measures to mitigate the adverse impact in consultation with the Oklahoma SHPO. Such mitigation activities could include developing the history of the building, conducting intensive recordation of the building, or developing public interpretation projects centered on the building's role in Fort Sill history.

Renovating a building that is a historic property would result in adverse impacts if any features of the building that contribute to its eligibility were affected. Renovations could be conducted such that this would not occur and there would be no adverse impact. Before renovation activities would take place on any building or structure, Fort Sill would evaluate the building to determine whether it was a historic property. If the building was determined to be an historic property, Fort Sill would review the planned renovations and determine whether the changes would cause an adverse impact. If an adverse impact was determined, Fort Sill would take mitigation measures

such as those described for demolition above. Again, Fort Sill would make determinations of a historic property, adverse impact, and mitigation measures in consultation with the Oklahoma SHPO. Renovation and reuse of historic properties, such that no adverse impact occurs, would be beneficial for the property by ensuring its continued use and maintenance, preventing it from falling into disrepair.

Construction of facilities would result in adverse impacts if NRHP-eligible archaeological resources were adversely impacted by ground disturbance or if construction resulted in visual impacts to a nearby historic property's setting. Before Fort Sill would begin construction activities, it would conduct the same steps as described above: Identify historic properties, determine whether adverse impacts would occur, and develop mitigation measures, all in consultation with the Oklahoma SHPO and appropriate federally recognized tribes. Three archeological sites potentially eligible for the NRHP are in the area proposed for the AFRC and 31<sup>st</sup> ADA. The proposed area is also littered with munitions and explosives of concern (MEC). Early coordination with the SHPO has determined that removal of the MEC must occur prior to any cultural resource investigations being conducted at the site. The extensive munitions sweep required would likely render the archeological sites NRHP-ineligible. Visually impacting a setting would most likely occur near designated historic districts or traditional cultural areas. This would be a concern for three project areas: The Fires Center of Excellence project area, due to its location next to the Landmark District and the Field Artillery District; the ADA School project area, due to its location adjacent to the Concurrent Camp/Officer Training School District; and the DRMO project area, due to its location near the Medicine Bluffs traditional cultural property. Fort Sill would consult with the Oklahoma SHPO on potential impacts and appropriate mitigation measures.

### **Ranges**

The Realignment Alternative would also include expansion of existing ranges and development of new range areas. Resources of concern in these new ranges include prehistoric archaeological sites, which on Fort Sill tend to be at or near the ground surface. Also of note are historic archaeological sites from the POW villages, because these could also be of traditional cultural importance to affiliated tribes. Any type of surface disturbing activity, such as driving, road construction, or use of explosives, on or near NRHP-eligible archaeological sites could result in adverse impacts. The same steps as described above would occur before Fort Sill used any new range areas: Identify historic properties, determine whether adverse impacts would occur, and develop mitigation measures, all in consultation with the Oklahoma SHPO and appropriate federally recognized tribes.

It has been reported that areas on the installation are used for tribal ceremonies and other important traditional uses. It is likely that these traditional areas are away from the cantonment in the undeveloped portion of the installation where some ranges would be developed under the Realignment Alternative. Use of the ranges near these traditional areas would have an impact on these traditional practices. As part of identifying historic properties, the Army would consult with potentially interested tribes to identify areas of tribal concern and to develop processes to avoid, reduce, or mitigate impacts to traditional practices in the areas.

#### **4.9.2.2 No Action Alternative**

The No Action Alternative would result in no impacts to cultural resources. There would be no demolition or renovation of buildings, no construction activities, and no expansion of range areas.

## **4.10 SOCIOECONOMICS**

### **4.10.1 Affected Environment**

This section describes the contribution of Fort Sill to the economy and the social conditions in the region. The socioeconomic indicators used for this study include regional economic development (employment, income, and population), housing, and quality of life (availability of public and social services, recreational opportunities, community facilities). In addition, it discusses environmental justice and protection of children. These indicators characterize the region of influence (ROI) that would be most affected by the proposed action at Fort Sill.

A ROI is a geographic area selected to be the basis on which economic and social impacts of the proposed action are analyzed. The criteria used to determine the ROI are the residency distribution of Fort Sill employees; the commuting patterns, distances, and times; and the location of businesses providing goods and services to Fort Sill, its personnel, and their dependents. Using these criteria, the ROI for the socioeconomic environment is defined as Caddo, Comanche, Cotton, Grady, Kiowa, Stephens, and Tillman counties in Oklahoma. Fort Sill is in Comanche County. The ROI includes all counties within a 20-mile commuting distance from Fort Sill, and covers an area of 6,846 square miles in southwestern Oklahoma.

The baseline year for socioeconomic data is 2005, the date of the BRAC Commission's announcement of the Fort Sill realignment. Where 2005 data are not available, the most recent data available are presented. Projections beyond 2005 are also provided, as appropriate, to illustrate socioeconomic trends.

#### **4.10.1.1 Economic Development**

##### ***Employment and Industry***

Fort Sill provides a significant contribution to the economy. Fort Sill's total dollar economic impact exceeded \$1 billion in Fiscal Year (FY) 2005. This amount includes expenditures for payroll (active-duty and retired military, civilians, and contractors), construction and service contracts, travel, transportation, utilities, supplies and equipment, direct medical expenses, and federal school impact aid contributions. The installation employs approximately 9,400 permanent party military, 2,300 civilians, and 2,300 contractors. The majority of the civilians employed at Fort Sill reside in Comanche County (Fort Sill 2006).

The primary sources of employment in the ROI are government, retail trade, manufacturing, and farming. These four industries accounted for about 50 percent of regional employment. The largest source of jobs in the ROI was the government sector, which provided 27 percent of the total employment. Within the government sector, federal civilian jobs accounted for 3 percent of employment, military jobs accounted for 10 percent, and state and local jobs accounted for 13 percent. The other major employers in the ROI are the retail trade sector, which provided 11 percent of the jobs in the ROI, and the manufacturing and farming sectors, which each accounted for 7 percent of regional employment (BEA 2006).

The ROI civilian labor force totaled 114,320 in 2005, with 109,142 people employed and 5,178 unemployed. Comanche County accounted for 40 percent of the total ROI civilian labor force. The ROI unemployment rate was 4.5 percent, up from 3.4 percent in 2000, reflecting the national trend of rising unemployment rates. During the same time period, the United States

unemployment rate increased from 4.0 to 5.1 percent, and Oklahoma's unemployment rate changed from 3.1 to 4.4 percent (BLS 2006).

### **Income**

In 2004, the per capita personal income (PCPI) in the ROI was \$24,390, below the state PCPI of \$27,240 and the national PCPI of \$33,050. Within the ROI, Comanche County had the highest PCPI at \$26,438 (BEA 2006).

### **Population**

Population characteristics in the ROI are provided for the baseline year 2005. To illustrate trends, historical data are presented for 2000 and projections for 2010.

The population of the ROI as a whole was stable between 2000 and 2005, remaining at about 259,900 (Table 4-9). Within the ROI, all counties experienced little growth or a decline in population, with the exception of Grady County. Between 2000 and 2005, Grady County's population increased by about 8 percent, making it the seventh fastest-growing county in Oklahoma. The population growth was due to immigration and a higher birth rate than death rate. Tillman County had the largest population decline, decreasing by about 8 percent (U.S. Census Bureau 2000 and 2005). Population projections for the ROI estimate 5 percent population growth from 2005 to 2010, with strong growth predicted in Comanche and Tillman counties (ODOC 2006).

**Table 4-9. ROI population trends**

<b>City or County</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>Percent change, 2000–2005</b>	<b>Percent change, 2005–2010</b>
Caddo County	30,150	30,229	30,800	0.3	1.9
Comanche County	114,996	112,429	123,600	-2.2	9.9
Cotton County	6,614	6,589	6,600	-0.4	0.2
Grady County	45,516	49,369	48,800	8.5	-1.2
Kiowa County	10,227	9,848	9,900	-3.7	0.5
Stephens County	43,182	42,946	42,900	-0.5	-0.1
Tillman County	9,287	8,513	9,200	-8.3	8.1
ROI	259,972	259,923	271,800	0.0	4.6

Sources: U.S. Census Bureau 2000; ODOC 2006.

Note: 2005 data were estimated as of July 1, 2005.

#### **4.10.1.2 Sociological Environment**

##### **Housing**

**On-Post Housing.** Fort Sill has 1,415 family housing units with 310 replacement units planned. The houses are single-family homes, duplexes, or four-plex units, with yards (Fort Sill ACS 2006). The average wait for on-post family housing ranges from 12 to 14 months, depending on rank and number of bedrooms required (Fort Sill 2006). The installation has more than 11,000 sets of quarters for unaccompanied Soldiers. Most of the Soldier's barracks are new or completely refurbished (Fort Sill 2006).

**Off-Post Housing.** There were about 110,500 housing units in the ROI in 2000, of which about 96,000 (87 percent) were occupied. Of the occupied units, about 70 percent are owner occupied and 30 percent are renter occupied. The median value of owner-occupied housing units ranges from \$32,000 in Tillman County to \$70,000 in Comanche County, with an average of \$50,300, which is less than the national median value of \$119,600. Median rent in the ROI ranges from \$204 in Tillman and Kiowa counties to \$368 in Comanche County, less than the national median rent of \$602. Of the vacant housing units, about 4,400 were identified as available to rent and about 2,700 were for sale (U.S. Census Bureau, 2000). Table 4-10 presents housing data for the ROI.

The number of housing units in the ROI increased by less than 1 percent (about 1,800 units) between 2000 and 2004 (Table 4-11). Grady County had the highest increase in the number of housing units, which reflects the county's strong population growth since 2000 (discussed above in Section 4.10.1.1). Comanche County had the next highest increase in the number of housing units, followed by Stephens and Caddo counties.

**Table 4-10. ROI housing data**

	<b>Caddo County</b>	<b>Comanche County</b>	<b>Cotton County</b>	<b>Grady County</b>	<b>Kiowa County</b>	<b>Stephens County</b>	<b>Tillman County</b>	<b>ROI</b>
<b>Quantity</b>								
Total housing units	13,096	45,416	3,085	19,444	5,304	19,854	4,342	110,541
Occupied housing units	10,957	39,808	2,614	17,341	4,208	17,463	3,594	95,985
Owner-occupied	8,041	24,004	2,002	13,123	3,167	13,192	2,777	66,306
Renter-occupied	2,916	15,804	612	4,218	1,041	4,271	817	29,679
Vacant housing units	2,139	5,608	471	2,103	1,096	2,391	748	14,556
For rent	380	2,399	70	585	250	604	135	4,423
For sale only	279	1,087	163	353	186	454	132	2,654
Other	1,480	2,122	238	1,165	660	1,333	481	7,479
Homeowner vacancy rate	3.4%	4.3%	7.5%	2.6%	5.5%	3.3%	4.5%	N/A
Rental vacancy rate	11.5%	13.2%	10.3%	12.2%	19.4%	12.4%	14.2%	N/A
<b>Quality</b>								
Units lacking complete plumbing facilities	411	508	75	207	88	254	84	1,627
Percent	3%	1%	2%	1%	2%	1%	2%	1%
Units lacking complete kitchen facilities	490	743	93	380	156	358	127	2,347
Percent	4%	2%	3%	2%	3%	2%	3%	2%
<b>Cost</b>								
Median value of owner occupied units	\$44,800	\$70,500	\$50,300	\$61,400	\$37,200	\$55,900	\$32,100	\$50,300
Median rental rate	\$219	\$368	\$206	\$300	\$204	\$282	\$204	\$219

Source: U.S. Census Bureau 2000.

**Table 4-11. Number of housing units in the ROI, 2000 and 2004**

	Housing units in 2000	Housing units in 2004	Change in number of units	Percent change
Caddo County	13,096	13,336	240	0.02%
Comanche County	45,416	45,976	560	0.01%
Cotton County	3,085	3,128	43	0.01%
Grady County	19,444	20,086	642	0.03%
Kiowa County	5,304	5,329	25	0.00%
Stephens County	19,854	20,128	274	0.01%
Tillman County	4,342	4,337	-5	-0.00%
ROI	110,541	112,320	1,779	0.02%

### **Law Enforcement and Fire Protection**

The Fort Sill Directorate of Public Safety and Law Enforcement provides for the protection of lives and property on the installation through the Law Enforcement Branch and the Fort Sill Fire Department. The Law Enforcement Branch oversees policing operations, patrols, general and absent without leave (AWOL) investigations, training, and traffic accident and criminal investigations. Fort Sill has 110 law enforcement personnel, but it is authorized to have a maximum of 153 personnel (Fort Sill DPSLE 2006a). The Fort Sill Fire Department has four fire stations and 55 personnel, which meets the minimum staffing requirements for Fort Sill on the basis of building square footage and travel and response time allowances to reach an emergency incident per DoD Instruction 6055.6 (DoD 2006, Fort Sill DPSLE 2006a). The fire department responds to emergencies involving structures, facilities, aircraft, transportation equipment, hazardous materials, and natural and man-made disasters; directs fire prevention activities; and presents public education programs. The fire department's last Operational Readiness Inspection assessment, which was conducted in 2002, determined that the department needed three additional Army Rescue Firefighting crews staffed with three men each (Fort Sill DPSLE 2006b). Fort Sill has plans to build a fire station on the HPAAF, but it would be cross-manned with firefighters from other stations (Fort Sill DPSLE 2006b). There are 210 housing units under construction in Fire Station 2's jurisdiction, which would increase the number of incident calls to that station (Fort Sill DPSLE 2006b).

The Fort Sill Military Police and Fire Department have mutual support agreements with the city of Lawton. The 911 dispatch is collocated with the city of Lawton dispatch, which facilitates coordination when incidents cross Fort Sill/Lawton boundaries (Fort Sill DES 2006).

City, county, and state police departments provide law enforcement in the ROI. There were about 160 total law enforcement employees (officers and civilians) for the 7-county ROI as of 2004 (DOJ-FBI 2006). Fire protection in the ROI is provided by 68 career or volunteer fire departments with a total of 86 fire stations. The majority of the fire departments (62 departments, or 91 percent) are volunteer, which is typical for fire departments in smaller, more rural communities (USFA 2006).

### **Medical Services**

The Reynolds Army Community Hospital (RACH) is a 32-bed hospital (with expansion capability) on Fort Sill that provides a full array of services, including emergency medical services, inpatient care, and outpatient medical clinics. Facilities include primary care clinics

(family practice, internal medicine, and pediatrics), specialty care clinics (general surgery, oral surgery, chiropractic, physical therapy, and maternal child unit) a pharmacy, radiology center, and mental health clinic (RACH 2006). Fort Sill's Department of Preventative Medicine also provides public health support to the installation. The department has a community health nurse and a health promotion office, and offices for environmental health, occupational health, industrial hygiene, and radiation protection.

There are seven other hospitals in the ROI, with nearly 620 total patient beds (AHD, 2006), and a mental health facility in Lawton. Caddo County has two hospitals: The Carnegie Tri-County Municipal Hospital, a short-term, acute-care facility, and Physicians Hospital in Anadarko, a critical-access facility. In addition to RACH, Comanche County is also home to the Comanche County Memorial Hospital in Lawton, a short-term, acute-care facility that is the largest county hospital in the state. The Comanche County Memorial Hospital also operates a pharmacy and 10 rural health clinics throughout southwest Oklahoma, which offer primary and secondary care physicians, diagnostic services, and outpatient services (CCMH 2006). Grady County has the Grady County Memorial Hospital, Kiowa County has the Elkview General Hospital, Stephens County has the Duncan Regional Hospital, and Tillman County has the Memorial Hospital and Physicians Group, all of which are short-term, acute-care hospitals. Cotton County does not have a hospital.

## **Schools**

The U.S. Department of Education provides federal impact aid to school districts that have federal lands within their jurisdiction. This federal impact aid is authorized under Public Law 103-282 as payment in lieu of taxes that would have been paid if the land were not held by the federal government. School districts receive federal impact aid for each federally connected student whose parent or parents live or work on federal property. The amount of federal impact aid a school receives depends on the number of federal students the district supports in relation to the total district student population. Schools receive more federal impact aid for those students whose parents both live and work on federal property. Total federal impact aid varies year by year according to congressional appropriations for the program, but in general, federal impact aid has ranged from \$450 to \$2,200 per student.

Children living on Fort Sill attend schools in the Lawton Public School District. This district is the largest in the ROI and serves the majority of the military-connected children. The Lawton Public School District has a total of 29 elementary schools (grades prekindergarten [PK]–6), four junior high schools (grades 7–9), and three high schools (grades 10–12) (NCES, 2005). In the 2006–2007 school year, Lawton Public School District will move the sixth grade to junior high and the 9<sup>th</sup> grade to the high school, so the elementary schools will serve PK–5, junior high will be grades 6–8, and high school will be grades 9–12. Bus service is provided from the on-post housing areas to the off-post schools. The district operates two elementary schools on-post and the Geronimo Road Elementary School and Sheridan Road Elementary School. Both elementary schools are operating at capacity. Many of the Lawton District schools are operating at or above capacity and are using portable classrooms to maintain class size. The district is short 120 teachers and classrooms and needs additional teachers for special needs children. The district is expanding two of the junior high schools. The Fort Sill School Liaison Office works closely with the Lawton District and is planning for the next 5 years. By 2011, they have estimated the district will have 1,600 to 1,800 more school-age children, and about 13 percent of these children could be special needs children (Fort Sill School Liaison Services 2006).

Military-connected children residing off-post attend the school district for the area in which they live. The ROI has 55 school districts and about 170 schools (including Lawton Public School District) (NCES 2005). Total enrollment for the 2003–2004 school year was almost 49,500 students. The ROI average student/teacher ratio was 14.6:1, lower than the state of Oklahoma student/teacher ratio of 16:1 (NCES 2005).

### ***Family Support and Social Services***

Fort Sill has a number of programs and services in place to assist employees and their families. The Army Substance Abuse Program provides treatment to individuals or families dealing with substance abuse as well as preventative education services. Army Family Team Building at the Family Readiness Center provides educationally based programs and training to Soldiers and their family members to help families adapt to Army life. Financial guidance and assistance is available through several programs. Army Emergency Relief provides financial assistance in the form of no-interest loans or grants to active-duty military families whose resources are not sufficient to meet emergency needs. The Financial Planning and Consumer Affairs Program provides budget counseling, check writing classes, money management guidance, and assistance in resolution of consumer complaints. The Family Member Employment Readiness Program helps military family members find employment. Fort Sill Child and Youth Services has a child development center, a family child care in-home daycare program, a School Age Services program, and a Youth Services Center (Fort Sill ACS 2006). The Armed Forces YMCA provides quality of life support ranging from recreation and fitness to educational and financial support for junior enlisted military personnel and their families (ASYMCA 2006).

The region has a number of shelters and assistance programs for individuals and families in need of temporary placement because of a lack of fixed, regular, or adequate residence. These programs are supported by a mix of government and private funding. The Oklahoma Department of Human Services operates a number of these programs, including adult protective services, child care, food stamps, low-income energy assistance, support for children with special health care needs, and substance abuse counseling (OKDHS 2006). The Child Guidance Program is an Oklahoma State Department of Health program operating through county health departments and provides counseling to promote optimal development, healthy behavior, and effective interaction for families with children (OSDH 2006).

### ***Shops, Services, and Recreation***

On-post shopping includes the commissary, post exchange (PX), and the PXtra, which offer a wide variety of food, clothing, furniture, and household goods; a military clothing store; a lending closet that has small appliances, kitchen items, folding tables and chairs, and such; and a shoppette. Service operations include a barber and beauty shop; a bank and a credit union; travel agency; dry cleaner; laundromat; and a post office. Fort Sill also has a Burger King, a Church's Fried Chicken, and two dining clubs (the Patriot Club and the Impact Zone Club) (Fort Sill ACS 2006).

The seven-county ROI has typical shopping venues, including shopping malls, plazas, national chain discount stores, and downtown shopping areas. The closest mall to Fort Sill is the Central Mall in Lawton. Financial, real estate, automotive, travel, and other service establishments are readily available.

On-post recreation facilities include physical fitness centers, a bowling alley, swimming pools (indoor and outdoor), two golf courses, playgrounds, and walking trails. The Lake Elmer Thomas Recreational Area on Fort Sill has a small beach, water slides, mini-golf, water sports, a recreational vehicle park, and a restaurant. Other recreational opportunities include competitive intramural sports teams, an auto crafts facility, a movie theater, an arcade, a museum, a library, and a youth center and sports teams for children. Army Community Service offers a number of seasonal events and programs year-round for families and single Soldiers (Fort Sill ACS 2006).

The ROI has a variety of recreation opportunities. The city of Lawton has a YMCA with a fitness center, an arcade, several bowling alleys, paintball, a roller skating rink, golf courses, mini golf, a swimming pool, movie theaters, a community theater and orchestra, a museum, tennis courts, a skate board park, playgrounds, parks, and walking trails. Lake Lawtonka and Lake Ellsworth are popular recreational spots for fishing and boating. The Wichita Mountains Wildlife Refuge is a 59,000 acre refuge managed by USFWS. Recreational activities in the refuge include picnicking, camping, hiking, rock climbing and rappelling, photography, fishing, observing wildlife, attending a bison or longhorn auction, and scheduled tours (USFWS 2006). The Great Plains State Park in Kiowa County has fishing, boating, skiing, swimming, camping, picnic areas, and hiking trails.

#### **4.10.1.5 Environmental Justice**

Environmental justice addresses race, ethnicity, and the poverty status of populations within the ROI. On February 11, 1994, the President issued EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority and low-income communities. Environmental justice analyses are performed to identify potential disproportionately high and adverse impacts from proposed actions and to identify alternatives that might mitigate these impacts.

Minority populations are identified as Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and other Pacific Islander; or of Hispanic origin; persons of some other race; and persons of two or more races. 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 the 2000 Census, 72 percent of the ROI population was white, and 28 percent was of a minority population (10 percent black; 7 percent American Indian or Alaskan Native; 1 percent Asian; 0.2 percent Native Hawaiian and other Pacific Islander; 7 percent of Hispanic origin; 0.1 percent of some other race; and 3 percent of two or more races) (U.S. Census Bureau 2000).

Poverty thresholds established by the 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 2000 Census defines the poverty level as \$8,794 of annual income or less for an individual and \$17,603 of annual income or less for a family of four. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another or a set of individuals (such as migrant workers or Native Americans) where either type of group experiences common conditions of environmental exposure or effect (CEQ 1997). Fort Sill used the geographic defined community of the ROI in identifying low-income populations. As of the 2000 Census, 16 percent of ROI residents were

classified as living in poverty, just above the 15 percent poverty rate for the state of Oklahoma. The national poverty rate was 12 percent (U.S. Census Bureau 2000).

#### **4.10.1.6 Protection of Children**

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, seeks to protect children from disproportionately incurring environmental health or safety risks that might arise as a result of Army policies, programs, activities, and standards. Children have been present at Fort Sill either as dependents living in family housing or as occasional visitors. The Army has taken several precautions for their safety, including use of fencing, limitations on access to certain areas, and provision of adult supervision. Additionally, under Fort Sill's Vacant Quarters Management process, lead-based paint (LBP) that is deteriorating in vacant quarters is addressed.

### **4.10.2 Environmental Consequences**

#### **4.10.2.1 Realignment Alternative**

##### ***Economic Development***

*Methodology.* The economic effects of implementing the proposed action were 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 Fort Sill employment and spending represent the direct effects of the action. From the input data and calculated multipliers, the model estimated ROI changes in sales volume, income, employment, and population, accounting for the direct and indirect effects of the action.

For purposes of this analysis, a change is considered significant if it falls outside the historical range of ROI economic variation. To determine the historical range of economic variation, 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 positive and negative 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 to be significant. Appendix D discusses this methodology in more detail and presents the model input and output tables developed for this analysis.

*EIFS Model Results.* Short- and long-term significant beneficial effects would be expected. The expenditures associated with renovation and construction of facilities on Fort Sill would generate short-term increases in local spending and income and generate jobs in the construction industry. The expenditures for these facilities would result in short-term significant increases in local business sales volumes, increasing sales above the RTV (Table 4.12 and Appendix D). The economic benefits from construction would be for a short term, lasting only for the duration of the renovation and construction period. The proposed action would also result in long-term significant beneficial economic effects. The proposed action would increase the number of military and civilian jobs at Fort Sill. The incoming Soldiers and their dependents would generate income and spending and create secondary jobs in the ROI. The total increase in employment directly attributable to the proposed action in combination with the induced, secondary jobs would be slightly above the RTV, indicating a long-term significant increase in regional employment. In total, the EIFS model estimated the proposed action would create about 5,800 jobs, increase income by about \$178.3 million, increase business sales by about \$501.4 million,

and increase ROI population by about 6,400 (Table 4.12 and Appendix D). The increase in population and income would fall within historical fluctuations (i.e., within the RTV range) and be considered minor.

**Table 4-12**  
**EIFS model output for the proposed BRAC action at Fort Sill**

Indicator	Projected change	Percentage change	RTV range
Direct sales volume	\$210,657,800		
Induced sales volume	\$290,707,800		
Total sales volume	\$501,365,600	10.49%	-10.14% to 8.51%
Direct income	\$121,353,000		
Induced income	\$56,959,510		
Total income	\$178,312,500	3.82%	-8.14% to 9.46%
Direct employment	4,182		
Induced employment	1,638		
Total employment	5,820	4.48%	-3.6% to 4.1%
Local population	6,444	2.46%	-1.68% to 4.28%

### ***Sociological Environment***

**Housing.** Short-term minor adverse effects would be expected. The incoming population would increase the demand for ROI housing. A portion of this demand would be met by the barracks that would be constructed on Fort Sill and the remainder by the housing available in the ROI. There are about 7,100 vacant housing units in the ROI (about 4,400 for rent and 2,700 for sale). The housing demand by the incoming 2,600 military personnel could be absorbed by the local housing market. Some new housing development has occurred during the past 5 years in Comanche, Grady, Stephens, and Caddo counties (see Table 4-11). However, some of the Soldiers might have to live further from the installation than they would prefer. The increased demand for housing could also increase housing prices in the short term. In the long term, the increased population and housing demand could stimulate construction of new housing in communities near Fort Sill.

**Law Enforcement, Fire Protection, Medical Services.** Short-term minor adverse effects would be expected. The increase in population under this alternative would create a need for additional law enforcement, fire protection, and medical services. In the long term, public support services could adapt to the demands of the increased population base, funded by new property tax revenues and sales taxes. Fort Sill would need to expand law enforcement, fire fighting, and medical services (i.e., increasing staff or acquiring new facilities or equipment).

Fort Sill has a law enforcement staff of 110, but it is authorized up to 153 and would request the additional staff to reach the maximum allowance of 153 personnel (Fort Sill DPSLE 2006a). Fort Sill would also request the additional three Army Rescue Firefighting crews of three staff each, increasing the fire department staff by nine, so stations would not have to be cross-manned (Fort Sill DPSLE 2006b).

The ROI community outside of Fort Sill also would need additional law enforcement and fire department staff. With an estimated increase in local population of about 6,400 (see Table 4-12), and using a rate of 2.7 law enforcement personnel per 1,000 inhabitants, an estimated additional 17 law enforcement employees could be needed to serve the new ROI population.<sup>3</sup> Using a rate of 2.7 firefighters per 1,000 inhabitants, an additional 17 firefighters could be needed to serve the new ROI population.<sup>4</sup>

The incoming Soldiers and their dependents would also create new demand for medical services. RACH has estimated the need for additional staff, equipment, and modifications to the facility and submitted the request to U.S. Army Medical Command for approval and funding (RACH 2006).

**Schools.** Short-term moderate adverse effects would be expected. The incoming population would increase the number of school children in the ROI. Many of the Lawton Public School District schools are operating at or above capacity and are using portable classrooms. The Fort Sill School Liaison Office and the potentially affected school districts are conferring on potential student increases, so the schools have as much time as possible to prepare budgets, add facilities, and hire new teachers, as necessary. Fort Sill determined that the proposed action would require the local school district to have 100 to 120 new classrooms to house the increased student load (Fort Sill 2005b). The Fort Sill School Liaison Service estimated that about 13 percent of the new children could be special needs children (Fort Sill School Liaison Services 2006).

In the long term, public support services could adapt to the demands of the increased population base, funded by new property tax revenues. The impacts on the schools would be somewhat offset by federal impact aid that would be made available to local schools to compensate for the increased burden through the Federal Impact Aid Program. Such aid could take the form of basic support payments or grants for new school facilities (e.g., portable classroom trailers, expansion of existing schools, or construction of new schools) to accommodate increased school enrollments. Although the local school districts receive federal impact aid for military dependents attending public school, the school districts would bear some of the costs for additional teachers and physical space.

**Family Support and Social Services.** Short-term minor adverse effects would be expected. The incoming population would increase demand for family support and social services on- and off-post. In the short term, some family and social services could be overburdened until additional personnel or facilities could be acquired. Fort Sill determined that the on-post child care facility would be inadequate to meet the new population, so the installation would construct an additional child development center where full- and part-time care would be provided for children less than 6 years of age. Fort Sill's Youth Services has the capacity to meet the incoming population with the existing programs and facilities (Fort Sill 2005b).

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<sup>3</sup> The rate of law enforcement personnel per 1,000 inhabitants is based on annual data reported to the Department of Justice–Federal Bureau of Investigations' Uniform Crime Report (UCR) program. The rate is based on data reported to the UCR program by law enforcement agencies throughout the United States and does not reflect a recommended rate or some defined law enforcement standard and should be viewed only as a guide (DOJ–FBI 2006). The rate reported for the West South Central Division of the United States, which includes Oklahoma, was used for this EA analysis.

<sup>4</sup> The rate of firefighters per 1,000 inhabitants is taken from the National Fire Protection Association's *U.S. Fire Department Profile Through 2004*. The rate is based on data reported to the National Fire Protection Association by fire departments throughout the United States and does not reflect a recommended rate or some defined fire protection standard (NFPA 2005). The national rate of volunteer firefighters per 1,000 inhabitants was used for this EA, because almost all the fire departments in the ROI are volunteer departments.

**Shops, Services, and Recreation.** Short-term minor adverse effects would be expected. The incoming population would increase the demand for shopping, recreation, and service facilities. Fort Sill would construct new dining facilities, a shoppette with a gas station and car wash, and a physical fitness center to provide adequate facilities for the increased population. In the long term, the incoming population could stimulate the development of new service and recreation facilities in the ROI, such as grocery and retail stores, restaurants, fitness centers, dry cleaners, and movie theaters.

### **Environmental Justice**

No adverse effects would be expected. Realignment of Fort Sill would not create disproportionately high or adverse human health or environmental effects on minority or low-income populations in the ROI. Low-income populations could benefit from the creation of any low-skill or unskilled jobs associated with implementation of this alternative.

### **Protection of Children**

Long-term minor adverse effects on the protection of children would be expected. EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, recognizes a growing body of scientific knowledge that demonstrates that children might suffer disproportionately from environmental health risks and safety risks. These risks arise because children's bodily systems are not fully developed; children eat, drink, and breathe in proportion to their body weight moreso than adults; their size and weight might diminish protection from standard safety features; and their behavior patterns might make them more susceptible to accidents.

Previous investigations found hazardous substances (such as asbestos-containing materials, LBP, and possibly pesticides) in or around the housing units on Fort Sill (see section 4.13 Hazardous and Toxic Substances). These materials also could be found in off-post housing units. Although these materials are now known to be hazardous and under certain conditions they are addressed to reduce exposure (for instance, under Fort Sill's Vacant Quarters Management process), they were widely used in the building products industry and for housing maintenance for many years. Their presence in housing units or recreational areas does not constitute a health hazard under normal circumstances. It is possible, however, that children could be subject to environmental health risks from exposure to hazardous materials such as chipping LBP or cracked asbestos tiles.

#### **4.10.2.2 No Action Alternative**

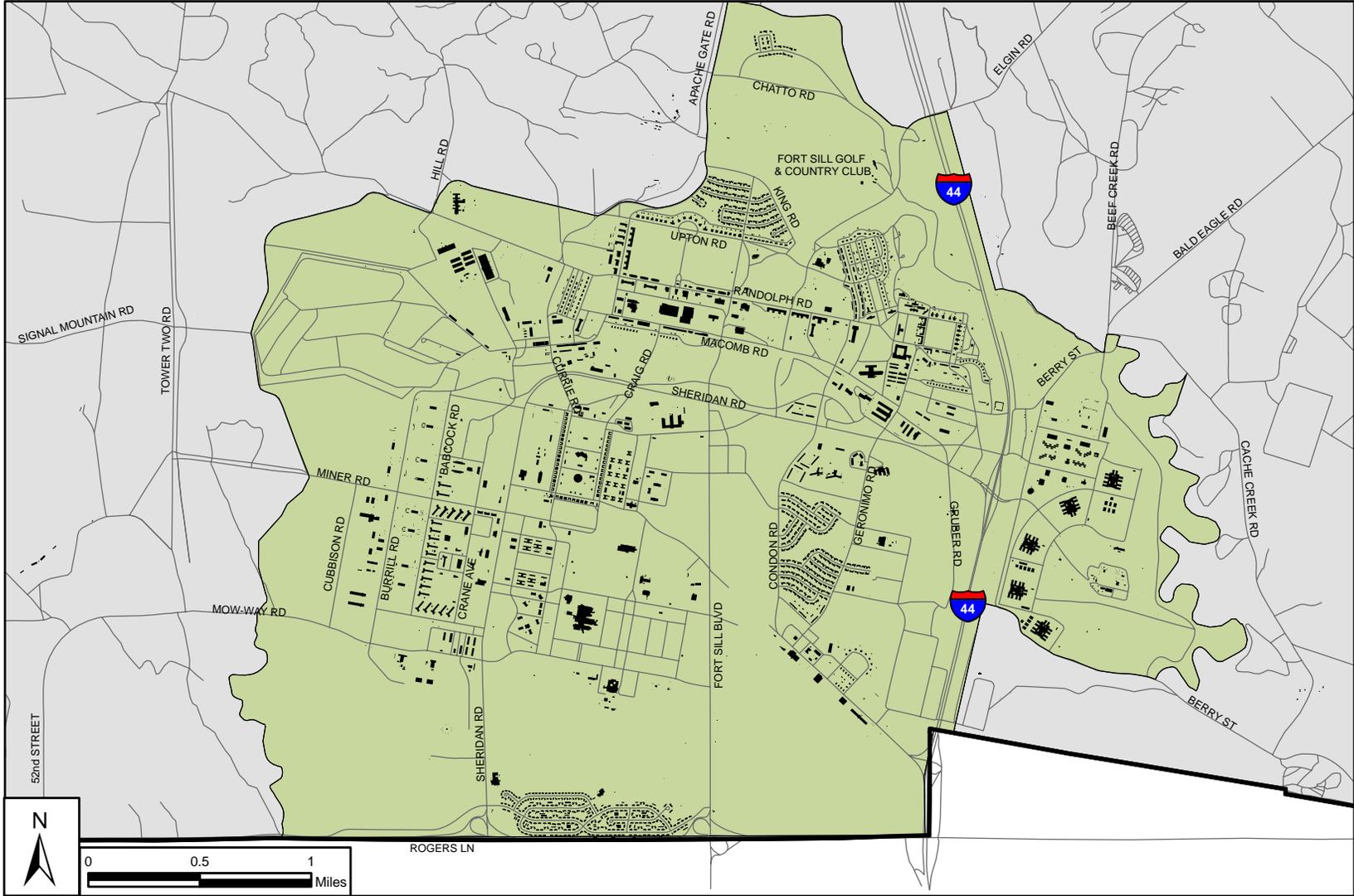
No effects would be expected on the economic or sociological environment.

### **4.11 TRANSPORTATION**

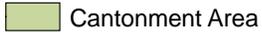
#### **4.11.1 Affected Environment**

##### **4.11.1.1 Roadways and Traffic**

The installation road and street network is, for the most part, a grid system with a vast majority of the installation's roads and streets running north-south or east-west. There are six access gates onto Fort Sill (Figure 4-10). Key Gate East and Key Gate West gates are at the intersection of Sheridan Road and I-44 on the east side of the installation. Scott Gate and Bentley Gate are on the southern side of the installation at Fort Sill Boulevard and Sheridan Road, respectively, adjoining the city of Lawton. The 52<sup>nd</sup> Street Gate enters the installation on the southwestern portion at the



**LEGEND**

-  Road
-  Installation Property
-  Building
-  Cantonment Area

# Fort Sill Roads Cantonment Area

Figure 4-10

Source: Fort Sill, 2006.

intersection of 52<sup>nd</sup> Street and Rogers Lane. Apache Gate enters the installation to the north on Apache Gate Road. The busiest gates are Bentley, Scott, Key West, 52<sup>nd</sup> Road, Key East, and Apache. Traffic volume through the three highest-volume gates contribute directly to the installation's two primary arterial routes—Sheridan Road and Fort Sill Boulevard.

Interstate 44 runs through the eastern portion of Fort Sill and east of the Lawton central business district. Fort Sill Boulevard and Sheridan Road are the two primary north-south arterials leading from the city of Lawton. From the south, Sheridan Road goes north and passes Miner Road, turns a 90-degree angle, then passes Currie Road, Craig Road, Fort Sill Boulevard, Condon Road, Geronimo Road, and Gruber Road before it intersects I-44 on the east side of the cantonment area. From the south, Fort Sill Boulevard goes north and crosses Sheridan Road and Randolph Road and crosses Upton Road at the north side of the cantonment area and ends at King Road south of the Fort Sill Golf & Country Club.

The *Fort Sill, Oklahoma Traffic and Transportation Analysis—Projected Impact from the 2005 Base Realignment and Closure Recommendations* estimated that daily traffic volume through the Fort Sill gates is approximately 24,554 vehicles. Average daily traffic volume on weekends and holidays through the gates is approximately 11,673 vehicles. Data for traffic volumes at each of the six entrances to Fort Sill was collected during the period of 9 May to 7 June 2005. All the gates show a similar trend of surge entrances before 6:00 a.m., from 7:00 to 9:00 a.m. and from 11:30 a.m. to 1:30 p.m. The traffic volume curve for the Apache Gate does not follow the trend of the other gates because it does not have peak traffic flow at either the 5:00 a.m. to 6:00 a.m. or 11:30 a.m. to 1:30 p.m., time periods.

A total of 437 traffic accidents were reported on Fort Sill from January 1 to August 24, 2005. Of those, 22 occurred at the installation's gates. There is no data indicating the number of accidents at any specific gate. A total of 246 occurred in parking lots. Another 47 occurred in housing areas and adjoining roadways. The remaining 122 occurred on installation's arterial and secondary routes. Of those accidents, 62 occurred on either Sheridan Road (41) or Fort Sill (21) Roads.

#### **4.11.1.2 Public Transportation**

**Air.** The Fort Sill area is served by the Lawton-Fort Sill Regional Airport, which is south of the city of Lawton and Fort Sill and approximately 12 miles from Fort Sill. All flights are routed through the Dallas-Fort Worth airport in northern Texas, approximately 150 miles from Lawton.

**Mass Transit.** The Lawton Area Transit System runs five routes in the greater Lawton area. The Orange route operates in a circular pattern between the Lawton Central Business District and Fort Sill.

**Rail.** The city of Lawton does not have a light rail system for public transportation.

#### **4.11.1.3 Installation Transportation**

There is no other public transportation that serves Fort Sill, other than the bus lines mentioned above, and taxi cabs. Lawton area residents rely on personally owned vehicles as their primary means of transportation to work. During one study, of 41,947 trips to work, more than 30,000, or approximately 72 percent, were single occupants in their personal vehicle. Approximately 13.6 percent participate in carpools.

## 4.11.2 Environmental Consequences

### 4.11.2.1 Realignment Alternative

Short-term minor adverse effects on transportation would be expected during the construction and renovation phase. Traffic congestion could increase, especially during rush hours because of additional traffic caused by construction vehicles and traffic delays near construction sites. Wear and tear on installation roads and major roads in the ROI would likely increase because of use by construction vehicles. In addition, road closures or detours to accommodate utility system work would be expected, creating short-term traffic delays. Such effects would be minimized by directing all construction vehicles to access the installation via the gates closest to the project site, minimizing construction vehicle movement during peak rush hours, and placing construction staging areas where they least interfere with traffic.

The *Fort Sill, Oklahoma Traffic and Transportation Analysis—Projected Impact from the 2005 Base Realignment and Closure Recommendations* made the following conclusions about long-term impacts to the transportation system:

- Traffic volume upon completion of all restationing and BRAC actions would be expected to increase to about 27,019 vehicles, or about a 10 percent over current weekday traffic volume.
- Fort Sill would expect to experience an increase of approximately 2,588 military personnel and 407 civilians. As many as 3,284 family members could accompany the military personnel. All the civilians, about half of the Soldiers, and virtually all of the military family members would reside off-post. This would have the effect of increasing traffic volume in and around the city of Lawton and Comanche County, and increase the traffic volume of commuters through the six gates on Fort Sill.
- Five of the six gates onto Fort Sill gates experience three periods of weekday peak traffic flow: From 5:00 a.m. to 6:00 a.m., from 7:00 a.m. to 9:00 a.m., and from 11:30 a.m. to 1:30 p.m. It is anticipated traffic volume during these peak hours would increase by about 9 percent. Both the Scott and Bentley gates would likely experience morning (7:00 a.m.–9:00 a.m.) peak traffic volume exceeding 650 vehicles per hour. Morning peak volume at the 52<sup>nd</sup> Street and Key West gates would approach 490 and 450 vehicles per hour, respectively. These traffic flow rates could cause traffic back ups to extend beyond the installation boundary.
- Projected increases in traffic volume on Fort Sill would not be expected to pose increased safety threat to children who walk or bicycle to the two community schools in the installation.
- New tenants assigned to Fort Sill as a result of BRAC would be adjacent to, or in close proximity to the two primary arterial routes (Fort Sill Boulevard and Sheridan Road) on the installation. These routes are the most efficient to accommodate the increased traffic volume, but these routes also have the highest accident rates on the installation. A traffic volume analysis of intersecting collector routes and traffic light timing might be necessary to safely accommodate the increased traffic volume on these routes.
- Several intersections on principal arterials (Fort Sill Boulevard and Sheridan Road) leading to Fort Sill in Lawton have been identified among Lawton's top traffic accident spots.

The study also made the following recommendations to mitigate impacts to the transportation system:

- Fort Sill should consider alternatives to preclude congestion extending onto the city of Lawton and Comanche County streets and roads during in-bound traffic at peak. Options could include increasing the number of in-bound lanes or moving security checkpoints further inside the installation boundary.
- Fort Sill should conduct a thorough traffic analysis of the traffic signals on Fort Sill Boulevard and Sheridan Road to seek opportunities to reduce the frequency of traffic accidents at the intersections with collector streets.
- The Lawton Metropolitan Planning Organization (LMPO) should conduct a traffic and transportation study to quantify projected traffic volume increases in the region resulting from BRAC. From such the LMPO could identify, and program funding for, transportation improvement projects to address congestion and safety problems resulting from increased traffic resulting from the BRAC actions at Fort Sill.

#### **4.11.2.2 No Action Alternative**

No effects on transportation resources would be expected because there would be no change to the road network or increase in traffic volume.

## **4.12 UTILITIES**

### **4.12.1 Affected Environment**

The entire Fort Sill cantonment area is served by all utility systems, including electric, gas, water, sewer, and communications.

All primary electric power for the installation is supplied by American Electric Power from one power distribution point, a 50-megawatt, 69,000-volt substation (J.R. Yago and Associates 2005).

Fort Sill uses 600,000–700,000 Deka Therms (DTH) of natural gas per year depending on weather. The installation has a contract with Center Point Energy to transport 10,800 DTH per day if required (Longfellow, personal communication, 2006).

Fort Sill receives potable water from the City of Lawton under a contract that stipulates a supplied pressure independent of volume or flow. Raw water for the City of Lawton comes from Lake Lawtonka. Lakes Ellsworth and Waurika are able to supply raw water if Lake Lawtonka cannot meet the demand. The Lawton water treatment plant has a design capacity of 40 million gallons per day (mgd). According to American Water Services, which owns and operates the potable water system at Fort Sill, the post uses an annualized average of 2 mgd including a maximum of 4 mgd (Fort Sill 2005c).

Fort Sill has a wastewater treatment plant with a design capacity of 4.3 mgd. According to American Water Services, the wastewater system owner and operator, the annualized average flow is 1.7 mgd. The wastewater treatment plant discharges treated wastewater to East Cache Creek (Fort Sill 2005c).

Fort Sill has a general permit for storm water discharge to East Cache Creek. HPAAF has a designated wash rack area where aircraft are washed. This area is designed to contain wash water and protect storm water from contamination (Fort Sill 2005c).

Telephone lines and Internet access are available in all facilities in the cantonment area.

Fort Sill operates a permitted solid waste landfill, which has an area for general refuse and an area for construction and demolition debris. A contract with El Dorado directs the collection and transport of solid waste from facilities on-post to the landfill (Fort Sill 2005c). Construction and demolition (C&D) waste from installation operations is disposed of at the C&D unit of the Dodge Hill landfill. In 2002 and 2003, C&D waste averaged 1,422 tons per month and 2,262 tons per month, respectively. Some C&D materials are recycled through DRMO or directly by contractors. The quantity of C&D waste that would be generated by the BRAC facility construction and renovation is estimated in Table 4-13. The annual average quantity of C&D waste from the BRAC action, using a 5-year time frame during which all construction and renovation would be completed, would be approximately 2,944 tons per year, or 245 tons per month.

**Table 4-13. Estimated Construction and Demolition Debris from Facility Construction and Renovation**

Action	Debris (lb/sf)	Subtotal Square Feet	Subtotal Pounds	Subtotal Tons
Renovation	20	335,021	6,700,420	3,350
Demolition	115	0	0	0
Construction	4	5,167,443	22,736,749	11,368
<b>TOTALS</b>		5,502,464	29,437,169	<b>14,719</b>

Source: USEPA 1998.

## 4.12.2 Environmental Consequences

### 4.12.2.1 Realignment Alternative

Short-term minor adverse effects would be expected from service interruptions during construction while new and renovated facilities are being hooked up to existing utilities systems. Only the electrical system, in its current configuration, would be inadequate to meet the added demand of incoming BRAC elements. The move of the ADA school from Fort Bliss to Fort Sill would involve more than 1 million square feet of construction. An increase of more than 13-megawatts of electrical load would be required (J.R. Yago and Associates 2005). The Public Service Company of Oklahoma (American Electric Power) has indicated a willingness to install a new 40-megawatt substation to accommodate the additional electrical demand, and the installation has determined that the additional power supply would easily meet the electrical needs of the ADA school and many years of future expansion at Fort Sill. The proposed new occupancy and functions of the existing facilities that would be renovated for the ADA school would have utility loads similar to existing ones.

Existing system distribution lines and system capacities for water, sewer, and gas have excess capacity to accommodate all of the new buildings, though some of the smaller utility lines in the immediate area of the ADA School would have to be relocated (J.R. Yago and Associates 2005).

Long-term minor adverse effects on landfill capacity would be expected. The quantity of C&D debris that would be generated by the proposed action would be small compared to the existing waste stream, and while some landfill capacity would be consumed by the extra debris, installation and regional landfills would easily accommodate the additional waste.

#### **4.12.2.2 No Action Alternative**

No effects would be expected.

### **4.13 HAZARDOUS AND TOXIC SUBSTANCES**

#### **4.13.1 Affected Environment**

Specific environmental statutes and regulations govern hazardous material and hazardous waste management activities at Fort Sill. For the purpose of this analysis, the terms hazardous waste, hazardous materials, and toxic substances include those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), or the Toxic Substances Control Act (TSCA). In general, they include substances that, because of their quantity, concentration, or physical, chemical, or toxic characteristics, may present substantial danger to public health or welfare or the environment when released into the environment. Numerous maintenance activities, such as vehicle operation and maintenance, hospital services, and grounds maintenance, require the use and storage of regulated and nonregulated hazardous materials. Examples of hazardous wastes generated at the installation include waste paint, spent solvents, photographic waste, contaminated fuel, battery waste, pharmaceutical waste, aerosols, alcohols, acids, pesticides, and paint thinners.

Fort Sill operates as a large-quantity generator under a single EPA identification number (Fort Sill 2004). Storage and disposal of hazardous wastes on Fort Sill are detailed in Fort Sill's Hazardous Material and Waste Management Plan (HWMP).

#### **4.12.1.2 Storage and Handling Areas**

Specific generators on post are managed as satellite accumulation points (SAPs). SAPs are areas located at or near the point of generation where 55 gallons (or less) of hazardous waste may be accumulated. The Environmental Quality Division operates a less-than-90-day lot where wastes are stored prior to transport to a Treatment, Storage, and Disposal Facility (TSDF) through a Defense Reutilization and Marketing Office (DRMO) contractor. In keeping with Army policy, Fort Sill uses the Defense Reutilization and Marketing Service and the regional DRMO to transport its hazardous waste off-post to a designated TSDF for proper treatment, disposal and/or reuse/recycling. An installation Hazardous Waste Management Plan (Fort Sill, 2004) contains all guidelines, policies, and procedures for the use, storage, and disposal of hazardous materials on the installation. In addition, in accordance with DA PAM 200-1, Fort Sill has incorporated hazardous waste reduction and Pollution Prevention into its hazardous waste management operations.

Underground storage tanks (USTs) and aboveground storage tanks (ASTs) on Fort Sill are used to store heating fuel oil, diesel fuel, and gasoline. All active USTs and ASTs are in compliance with state requirements.

An area near the proposed site for the new AFRC was previously used for construction and demolition debris disposal (primarily concrete culverts and other concrete material). No hazardous materials disposal is suspected of having occurred at the site.

#### **4.12.1.6 Special Hazards**

**Asbestos.** EPA and the Occupational Safety and Health Administration (OSHA) regulate remediation for asbestos-containing materials (ACM). Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the CAA, which established the National Emissions Standards for Hazardous Air Pollutants. These standards address demolition or renovation of buildings with ACM.

Supervisors, maintenance workers, facility managers, project engineers, and contractors are required to review existing asbestos records before starting any maintenance, repair, renovation, or demolition activities. All ACM subject to disturbance in such projects must be abated by trained and qualified asbestos personnel before a work order is turned over to maintenance personnel or a general contractor. The Asbestos Management Plan details the requirements for asbestos abatement, including the notification requirements, organizational roles and responsibilities, training, and record-keeping. Fort Sill has established policies and procedures for the safe and proper operational procedures and responsibilities for handling, removing, and disposing of ACM, and all operations involving the disturbance or removal of ACM are done in compliance with applicable state, federal, and Army policies and regulations.

**Polychlorinated Biphenyls.** Polychlorinated biphenyls (PCBs) are industrial compounds used in electrical equipment, primarily capacitors, and transformers because they are electrically nonconductive and remain stable at high temperatures. Because of their chemical stability, PCBs persist in the environment, bioaccumulate in organisms, and become concentrated in the food chain. The disposal of PCBs is regulated by TSCA, which regulates the removal and disposal of contaminated equipment containing PCBs at concentrations greater than 50 parts per million.

**Lead-based Paint.** Current Army policy calls for controlling lead-based paint (LBP) by using in-place management. In-place management is used to prevent deterioration over time of those surfaces likely to contain LBP, followed by replacement as necessary. Maintenance staff and residents are given instructions on routine cleaning procedures leading to capture of LBP fragments from suspected locations. LBP materials on existing facilities are be encapsulated and/or removed in accordance with Army and OSHA guidelines. LBP debris from renovation and demolition activities are managed and disposed of as construction debris in accordance with applicable regulations.

**Pesticides.** Cantonment area pest management on Fort Sill is primarily accomplished by the DPW Pest Management Section. Fort Sill employees who apply or oversee the application of pesticides are DoD-certified. Natural Resources and Enforcement personnel provide technical advice when requested.

The Fort Sill Pest Management Plan (US Army Field Artillery Center Fort Sill 2004) identifies and prioritizes pests and their destructive effects to determine particular levels of protection. The plan emphasizes pest management within the cantonment area.

Integrated pest management (IPM) is used at Fort Sill, and typically a combination of IPM techniques is required to resolve a problem on a sustained basis. IPM includes the implementation

and coordination of cultural prevention, biological control, chemical control, and mechanical and physical control. IPM avoids damage and minimizes adverse side effects to nontarget organisms and the environment (Fort Sill, 2002).

The Fort Sill pest management program is consistent with the Presidential directive to reduce pesticide use by using IPM. IPM practices have been an important part of the Fort Sill pest management program for many years. Chemical control is used only when non-chemical techniques are inadequate or impractical (Fort Sill, 2002).

All chemicals used on Fort Sill are EPA-approved. IPM techniques have enabled the installation to reduce its use of pesticides. Pesticide applicators meet certification requirements (Fort Sill, 2002).

Chlordane may have been used on the installation before it was banned from further use by EPA. However, chlordane is generally not considered to be a hazardous waste if it was applied for its intended use as a pesticide, as opposed to storage, disposal as waste material, or migration to its current location from the application site. Although pesticide is not considered a hazardous waste as defined by the Solid Waste Disposal Act, materials leaching Chlordane at concentrations greater than 0.03 milligrams per liter upon excavation are defined as hazardous by the Toxic Characteristic under RCRA and must be dealt with accordingly.

**Radon.** Radon is a gaseous radioactive element that occurs by the decay of radium associated with the breakdown of minerals in the earth. Radon can be found in high concentrations in soils and rocks containing uranium, granite, shale, and phosphate. Atmospheric radon is diluted to insignificant levels; however, when concentrated in enclosed areas, radon can present human health risks. Fort Sill is in EPA's Radon Zone III (areas with a predicted average indoor radon screening level of less than 2 pCi/L (EPA, 2006).

**Radioactive Materials.** . Radioactive materials are used by the Fort Sill hospital. Fort Sill holds a RCRA Part B permit for the collection, storage, and disposal of radioactive medical wastes. Radioactive materials that require disposal are processed through the Defense Reutilization and Marketing Office.

**Medicinal/Biohazardous Waste and Silver Recovery.** Fort Sill hospital generates medical, biological, and silver wastes. The wastes are collected at satellite accumulation points for hazardous waste, then transported to the 90-day storage yard when full for pick-up by the DRMO contractor. Biohazardous material is transported to an incinerator in Stroud, OK.

**Mold.** Mold spores continuously migrate through indoor and outdoor air, and can grow and reproduce in wet mediums on wood, paper, carpet, and foods. When excessive moisture or water accumulates indoors, mold growth often occurs, particularly if the moisture problem remains undiscovered or unaddressed. Moisture problems in buildings can be caused by a variety of conditions, including roof and plumbing leaks, condensation, and excess humidity. Some of the potential effects and symptoms associated with mold exposures are allergic reactions, asthma, and other respiratory complaints. Mold problems are controlled on the installation on an as-needed basis by eliminating sources of mold followed, where required, by repairing and cleaning mold-affected substrates.

**Ordnance.** AR 385-63 and TRADOC Regulation 385-2 require weapons ranges within Army installations to comply with established safety standards. Fort Sill has three impact areas, with

numerous firing ranges that shoot into each impact area. The areas proposed for the 31<sup>st</sup> ADA and the Armed Forces Reserve Center potentially have munitions and explosives of concern (MEC) (also known as unexploded ordnance [UXO]). The areas would be surveyed for MEC and cleared before any construction activities would begin. Finding ordnance during construction activities would cause operations to cease temporarily until the ordnance was disposed of by appropriate licensed ordnance disposal personnel.

#### **4.13.2 Environmental Consequences**

##### **4.13.2.1 Realignment Alternative**

No environmental or health effects resulting from the removal, handling, and disposal of hazardous materials would be expected during construction or renovation activities. All BRAC-related activities would be conducted in accordance with the HWMP. Demolition waste that contains ACM and LBP would be handled in accordance with all applicable regulatory requirements. Wastes generated during demolition activities that contain ACM would be handled, remediated, and removed by a licensed contractor, and all hazardous materials would be properly disposed of at an authorized disposal site. All renovation wastes determined to be hazardous would be managed in accordance with applicable federal and state regulations. Fort Sill would also evaluate demolition that involves LBP for compliance with Army Engineering and Housing Support Center Technical Note 420-70-2 and the OSHA Standard at 29 CFR 1926.62, and implement measures to control airborne asbestos and lead dust. In addition, Fort Sill would ensure that all housing would meet HUD regulations for Clean and Healthy Homes and that housing occupants would receive an LBP pamphlet notifying them of the potential risk as individual quarters were leased.

No effects from pesticide use would be expected. Pesticides, including chlordane, present in soils of lawns and housing units are not considered hazardous waste if used at their current location for their intended purpose, instead of being stored, disposed of as waste material, or allowed to migrate to their current location from the site of application.

Additional potentially hazardous materials that could be found on-site during BRAC-related activities include paints, asphalt, and fuel and motor oils for construction vehicles and equipment. The construction contractors would be responsible for preventing or responding to paint and fuel spills. The construction contractors would be responsible for collecting and storing potentially hazardous materials used or found on-site in proper containers for a limited amount of time, properly disposing of them in accordance with applicable federal and state laws, and preventing spills of paint and fuels. Spills could be prevented by proper storage and handling, attention to the task at hand, and responsible driving. Some materials, while essentially inert under normal conditions, can be potentially hazardous under specific circumstances. Wood and dry concrete can generate airborne particulates as they are cut or sanded. To protect against adverse effects, workers should wear facemasks and safety glasses when performing these tasks. Wood and other construction materials are also flammable. Establishing smoking areas and prohibiting open flames near flammable materials would greatly reduce the risk of fire.

No adverse environmental impacts from MEC would be expected. All proposed construction areas where MEC is suspected would have to be cleared and swept for its removal before any construction was initiated.

No effects would be expected from hazardous waste disposal. The current hazardous waste disposal procedures would continue with implementation of the proposed action. All contractors associated with implementation of the Preferred Alternative would be responsible for adherence to Fort Sill's HWMP policies and procedures and state and federal regulations for storage, handling, and disposal of hazardous wastes.

No effects from radon and mold would be expected with implementation of the proposed action.

#### **4.13.2.2 No Action Alternative**

No effects would be expected. Current operations and activities would continue and hazardous substances would continue to be generated from these operations and disposed in accordance with applicable regulations.

### **4.14 CUMULATIVE EFFECTS**

Cumulative effects are defined by CEQ in 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."

Short-term adverse cumulative effects could occur as a result of the occurrence of BRAC projects in the vicinity and within the general timeframe as other master planning or transformation projects. The time frame within which cumulative effects could occur would generally be from completion of environmental documentation for the Fort Sill BRAC action and September 2011, by which time all BRAC realignments must have been completed. While no specific concurrent projects have been identified, any such project could contribute to collective impacts on soil erosion, water quality, air quality, traffic, and noise. The effects of construction projects, however, are short-lived and generally confined to a small area surrounding the projects. Additionally, Fort Sill would adhere to laws and regulations pertaining to the protection of all resource areas, including soils, storm water runoff, endangered species, and air quality, when conducting any construction project. Any post-construction operational cumulative effects would have to be analyzed when specific details of any concurrent projects are known. No substantial cumulative effects, therefore, would be expected to result from projects undertaken concurrently with the projects identified in this EA.

### **4.15 MITIGATION SUMMARY**

Section 1508.20 of the Council on Environmental Quality's implementing regulations for NEPA define mitigation to include (a) Avoiding the impact altogether by not taking a certain action or parts of an action, (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and (e) Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation actions for the proposed BRAC projects at Fort Sill would be undertaken largely in accordance with existing regulations and policies. Such regulatory or policy driven actions to reduce, avoid, or compensate for adverse effects would include, for example, following all applicable laws and regulations for handling all hazardous materials and wastes; implementing

state-approved, best management practices for storm water control during construction; designing facilities according to the principles of low-impact development; recycling construction debris where possible; and revegetating disturbed sites. Sound engineering practices and best management practices, current and future, would be used to the maximum extent practicable to mitigate any adverse environmental impacts. Only one project-specific mitigation measure has been identified that does not fall within the scope of regulatory mitigation: To the extent practicable, the Army will not locate or design new facilities such that they obscure mountain views from existing facilities.

## **SECTION 5.0 CONCLUSIONS**

This EA has been prepared to evaluate the potential effects on the natural and human environment from activities associated with implementation of the BRAC Commission's recommendations pertaining to Fort Sill, Oklahoma. The EA has examined the Army's preferred alternative (realignment) and the no action alternative.

The EA has evaluated potential effects on land use, aesthetic 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 substances.

Evaluation of the proposed action, identified as the Army's preferred alternative, indicates that the physical and socioeconomic environments at Fort Sill and in the ROI would not be significantly affected. The predicted consequences on resource areas are briefly described below. Table 5-1 provides a summary and comparison of the consequences of the realignment alternative versus the no action alternative.

### **5.1 SUMMARY OF CONSEQUENCES**

#### **5.1.1 Realignment Alternative**

##### **5.1.1.1 Land Use and Airspace**

No effects on land use or airspace would be expected. With only minor exception, the realignment plan was found to be compatible with existing land uses in the cantonment area. One of the BRAC parcels borders the Henry Post Army Airfield, but the analysis determined that a land use incompatibility due to noise from the airfield would not be created.

##### **5.1.1.2 Aesthetics and Visual Resources**

Short-term minor adverse effects on aesthetics and visual resources would be expected from the increase of construction activities, which are inherently aesthetically displeasing. In the long term, new and renovated facilities would be expected to improve the functionality of the cantonment area and improve the area's overall aesthetic and visual appeal.

##### **5.1.1.3 Air Quality**

Short- and long-term minor adverse effects on air quality would be expected. Emissions associated with construction and operation of facilities, however, would not exceed *de minimis* thresholds, be "regionally significant," contribute to a violation of any federal, state, or local air regulation, or contribute to a violation of Fort Sills air operating permit.

##### **5.1.1.4 Noise**

Short- and long-term minor adverse effects on the noise environment would be expected. A short-term increase in on-post noise would result from the use of heavy construction equipment, and a

**Table 5-1  
Summary of Potential Environmental and Socioeconomic Consequences**

Resource Area	Environmental and Socioeconomic Consequences	
	Proposed Action	No Action Alternative
<b>Land Use and Airspace</b>	No effects	No effects
<b>Aesthetic and Visual Resources</b>	Short-term minor adverse	No effects
<b>Air Quality</b>	Short- and long-term minor adverse	No effects
<b>Noise</b>	Short- and long-term minor adverse	No effects
<b>Geology and Soils</b>		
Geology/Topography	No effects	No effects
Soils	Short- and long-term minor adverse	No effects
Prime Farmland	No effects	No effects
<b>Water Resources</b>		
Surface Water and Groundwater	Short-term minor adverse	No effects
Floodplains, Coastal Zone	No effects	No effects
<b>Biological Resources</b>		
Vegetation	Short- and long-term minor adverse	No effects
Wildlife	Long-term minor adverse	No effects
Sensitive Species	No effects	No effects
Wetlands	No effects	No effects
<b>Cultural Resources</b>		
Historic Architecture	Long-term beneficial	No effects
Archaeological Sites	Short- and long-term minor adverse	No effects
<b>Socioeconomics</b>		
Economic Development	Short- and long-term significant beneficial	No effects
Housing	Short-term minor adverse	No effects
Law Enforcement, Fire Protection, and Medical Services	Short-term minor adverse	No effects
Schools	Short-term moderate adverse	No effects
Family Support and Social Services	Short-term minor adverse	No effects
Shops, Services, and Recreation	Short-term minor adverse	No effects
Environmental Justice	No effects	No effects
Protection of Children	Long-term minor adverse	No effects
<b>Transportation</b>	Short-term minor adverse	No effects
<b>Utilities</b>	Short- and long-term minor adverse	No effects
<b>Hazardous and Toxic Substances</b>	No effects	No effects

long-term increase in noise would result from the use of weapons up to and including 5.56-caliber rifles at the proposed small-arms ranges. All on- and off-installation areas would be compatible with the expected changes to the noise environment.

#### **5.1.1.5 Geology and Soils**

No effects on geology, seismicity, topography, or Prime Farmlands would be expected. Short- and long-term minor adverse effects on soils would be expected from construction activities.

#### **5.1.1.6 Water Resources**

Short-term minor adverse effects on surface waters and groundwaters would be expected. Construction activities would increase soil disturbance and potentially soil erosion, and total suspended solids could thus be increased in nearby waters. Also, leakage from construction equipment could increase petroleum hydrocarbon pollution in surface waters. Waterborne contaminants contributed by construction activities could be transported into the groundwater system, though the BRAC action would not change the long-term quantity or quality of groundwater. No effects on floodplains would be expected: There are no 100-year floodplains within the proposed impact areas.

#### **5.1.1.7 Biological Resources**

Short- and long-term minor adverse effects on vegetation and wildlife would be expected. Construction activities would cause the loss of small areas of native and non-native vegetation, but disturbed areas would be revegetated with native species. Construction activities would also cause losses of habitat at construction sites. Most effects on wildlife would result from their displacement because of being disturbed by construction activities. There would be no effect on threatened, endangered, or other species of concern, or wetlands: All known habitats for sensitive species would be avoided, and no wetlands are located in the proposed areas.

#### **5.1.1.8 Cultural Resources**

No significant adverse effects would be expected. Long-term beneficial effects would be expected with regard to adaptive reuse and continued maintenance of historic architectural properties. Potential impacts could arise from the activities in the project areas, but adherence to policies and guidelines in the ICRMP and consultation with the SHPO would be expected to avoid or mitigate potential adverse effects to a less than significant level. Construction of facilities would result in adverse impacts if NRHP-eligible archaeological resources were adversely impacted by ground disturbance or if construction resulted in visual impacts to a nearby historic property's setting. Before Fort Sill would begin construction activities, it would identify historic properties, determine whether adverse impacts would occur, and develop mitigation measures, all in consultation with the Oklahoma SHPO and appropriate federally recognized tribes.

#### **5.1.1.9 Socioeconomics**

Short- and long-term significant beneficial effects on economic development would be expected. The expenditures associated with renovation and construction of facilities on Fort Sill would increase sales volume, employment, and income in the region of influence (ROI). Short-term minor adverse effects on housing and all services would be expected from an increased demand for and reduced availability of housing and services in the ROI, and the increase in population would create a need for additional law enforcement, fire protection, and medical services; family

support and social services; and shops, other services, and recreation. In the long-term, the housing market and all services could adapt to the demands of the increased population base. Short-term moderate adverse effects on schools would be expected. The incoming population would increase the number of school children in the ROI, and the Lawton Public School District schools would have to accommodate the increased student load. No adverse effects on Environmental Justice would be expected, as the realignment of Fort Sill would not create disproportionately high or adverse human health or environmental effects on minority or low-income populations in the ROI. Long-term minor adverse effects on children could occur if families moving to Fort Sill as a result of BRAC were to occupy housing with hazardous materials (such as lead-based paint or asbestos) on Fort Sill or in the surrounding area.

#### **5.1.1.10 Transportation**

Short-term minor adverse effects on transportation would be expected during the construction and renovation phase due to additional traffic congestion and traffic delays caused by construction activities. Wear and tear on installation roads would also likely increase.

#### **5.1.1.11 Utilities**

Short-term minor adverse effects on utilities would be expected from service interruptions during construction while new and renovated facilities are being hooked up to existing utilities systems. Only the electrical system, in its current configuration, would be inadequate to meet the added demand of incoming BRAC elements, and the additional demand would be met by the installation of a new 40-mega-watt sub-station. Long-term minor adverse effects would be expected from the consumption of landfill capacity by the construction and demolition debris generated by the Realignment Alternative.

#### **5.1.1.12 Hazardous and Toxic Substances**

No effects on hazardous or toxic materials or wastes would be expected. Facility renovations would adhere to local, federal, and Army regulations for the removal and disposal of hazardous materials, and new facilities would minimize the use of such materials. All materials handling, storage, and disposal, including that of munitions and explosives of concern, would be in accordance with applicable laws and regulations.

#### **5.1.1.13 Cumulative Effects**

No adverse cumulative effects would be expected: No specific concurrent projects have been identified, and as such no cumulative impacts are expected.

#### **5.1.2 No Action Alternative**

No effects on any of the resource areas considered in the EA would be expected to result from implementation of the no action alternative.

### **5.2 CONCLUSIONS**

Based on the analysis performed in this EA, implementation of the Realignment alternative 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 FNSI would be appropriate.

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## **SECTION 10.0**

### **ACRONYMS AND ABBREVIATIONS**

AAF	Army Airfield
ACUB	Army Compatible Use Buffer
AD	Agriculture Department (form)
ADA	Air Defense Artillery
ADNL	A-weighted Day-night Average Sound Level
AFRC	Armed Forces Reserve Center
AQCR	Air-Quality Control Region
AR	Army Regulation
AWOL	absent without leave
BACT	Best Available Control Technology
BCT	brigade combat team
BDE	brigade
bldg	building
BMP	best management practice
BOLC	Basic Officer Leadership Course
B.P.	before present
BRAC	Base Realignment and Closure
BTU	British Thermal Unit
CAA	Clean Air Act
CALFEX	Combined Arms Live Fire Exercises
CDNL	C-weighted Day-night Average Sound Level
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulation
CFX	Command Field Exercise
CO	carbon monoxide
CPX	Command Post Exercise
DA	Department of the Army
dba	A-weighted decibels
dbc	C-weighted decibels
dBp	Peak Level
DD	Defense Department (form)
DEPLEX	Deployment Exercise
DFAS	Defense Finance and Accounting Service
DTH	Deka Therm
DNL	Day-night Average Sound Level
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
ECS	Equipment Concentration Site
EEO	Equal Employment Opportunity
EIFS	Economic Impact Forecast System
EO	Executive Orders
ESA	Endangered Species Act
ESMP	Endangered Species Management Plan
FAA	Federal Aviation Administration
FCX	Fire Coordination Exercise

FNSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FTX	Field Training Exercise
FY	fiscal year
gal	gallon
HAP	Hazardous Air Pollutant
HPAAF	Henry Post Army Airfield
HQ	Headquarters
ICRMP	Integrated Cultural Resources Management Plan
IGPBS	Integrated Global Presence and Basing Strategy
ISBC	Institution Simulation Battle Center
LMPO	Lawton Metropolitan Planning Organization
MACT	Maximum Achievable Control Technology
MAPEX	Map Exercise
METL	mission-essential task list
MG	Major General
MGD	million gallons per day
MLRS	Multiple Launch Rocket System
MOA	Military Operating Area
NAAQS	National Ambient Air Quality Standards
NCO	Noncommissioned Officer
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO <sub>x</sub>	oxides of nitrogen
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
O <sub>3</sub>	ozone
OAC	Oklahoma Administrative Code
ODEQ	Oklahoma Department of Environmental Quality
PCPI	per capita personal income
PK	prekindergarten
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in diameter
PN	Project Number
POL	petroleum, oil, and lubricants
POW	Prisoner of War
ppm	parts per million
PSD	Prevention of Significant Exteriorization
PX	Post Exchange
RACH	Reynolds Army Community Hospital
RDT&E	Research, Development, Test and Evaluation
RETS	Remote Electronic Target System
RIPL	Receipt in Place Location
ROD	Record of Decision
ROI	region of influence
RTV	rational threshold value
SARNAM2	Small Arms Range Noise Assessment Model

sf	square feet
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SPiRiT	Sustainable Project Rating Tool
SPOTC	Security Protection Officer Training Course
SUA	Special Use Airspace
SUAs	support units of action
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
TADSS	training aids, devices, simulators, and simulations
TBD	to be determined
TEWT	Tactical Exercise Without Troops
tpy	tons per year
TRADOC	US Army Training and Doctrine Command
UA	unit of action
UCR	Uniform Crime Report
UE	unit of employment
µg/m <sup>3</sup>	micrograms per cubic meter
US	United States
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compounds
ybp	years before present
YMCA	Young Men's Christian Association

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## **APPENDIX A DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION RECOMMENDATIONS**

In relevant part, the BRAC Commission recommended the following actions related to Fort Sill.

### **OPERATIONAL ARMY (IGPBS)**

- *Secretary of Defense Recommendation:* “Realign Fort Bliss, TX, by relocating air defense artillery units to Fort Sill.... Realign Fort Sill by relocating an artillery (Fires) brigade to Fort Bliss.”
- *Commission Recommendations:* “The Commission found the Secretary’s recommendation consistent with the final selection criteria and force structure plan. Therefore, the Commission approved the recommendation of the Secretary.”

### **RESERVE COMPONENT TRANSFORMATION IN OKLAHOMA**

- *Secretary of Defense Recommendation:* “Close the Keathley and Burriss US Army Reserve Centers located in Lawton and Chickasha, OK; close the Wichita Falls US Army Reserve Center in Wichita Falls, TX; close the 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, and 6<sup>th</sup> US Army Reserve Centers and Equipment Concentration Site (ECS) located on Fort Sill, OK, and relocate units into a new Armed Forces Reserve Center on Fort Sill and a new US Army Reserve Equipment Concentration Site to be collocated with the Oklahoma Army National Guard Maneuver Area Training Equipment Site on Fort Sill. The new AFRC shall have the capability to accommodate Oklahoma Army National Guard units from the following Oklahoma Army National Guard Readiness Centers: Lawton, Frederick, Anadarko, Chickasha, Marlow, Walters, and Healdton; realign B/1-158 Field Artillery (MLRS) from the Oklahoma Army National Guard Readiness Center located in Duncan if the state of Oklahoma decides to relocate those National Guard units.”
- *Commission Recommendations:* “The Commission found the Secretary’s recommendation consistent with the final selection criteria and force structure plan. Therefore, the Commission approved the recommendation of the Secretary.”

### **USAR Command and Control – Southwest**

- *Secretary of Defense Recommendation:* “Close the Major General Harry Twaddle US Armed Forces Reserve Center, Oklahoma City, OK, and relocate the 95<sup>th</sup> DIV (IT) to Fort Sill, OK.”
- *Commission Recommendations:* “The Commission found the Secretary’s recommendation consistent with the final selection criteria and force structure plan. Therefore, the Commission approved the recommendation of the Secretary.”

### **Net Fires Center**

- *Secretary of Defense Recommendation:* “Realign Fort Bliss, TX, by relocating the Air Defense Artillery (ADA) Center & School to Fort Sill, OK. Consolidate the ADA Center & School with the Field Artillery Center & School to establish a Net Fires Center.”
- *Commission Recommendations:* “The Commission finds the Secretary’s recommendation consistent with the final selection criteria and the Force Structure Plan. Therefore, the Commission approves the recommendation of the Secretary.”

### **Consolidate Correctional Facilities into Joint Regional Correctional Facilities**

- *Secretary of Defense Recommendation:* “Realign Lackland Air Force Base, TX, Fort Knox, KY, and Fort Sill, OK by relocating the correctional function of each to Fort Leavenworth, KS, and consolidating them with the correctional function already at Fort Leavenworth, KS, to form a single Level II Midwest Joint Regional Correctional Facility.”
- *Commission Recommendations:* “The Commission found the Secretary’s recommendation consistent with the final selection criteria and the Force Structure Plan. Therefore, the Commission approves the recommendation of the Secretary.”

### **Defense Finance and Accounting Service**

- *Secretary of Defense Recommendation:* “Close the Defense Finance and Accounting Service (DFAS) sites at Rock Island IL; Pensacola Saufley Field, FL; Norfolk Naval Station, VA; Lawton, OK; Pensacola Naval Air Station, FL; Omaha, NE; Dayton, OH; St. Louis, MO; San Antonio, TX; San Diego, CA; Pacific Ford Island, HI; Patuxent River, MD; Limestone, ME; Charleston, SC; Orlando, FL; Rome, NY; Lexington, KY; Kansas City, MO; Seaside, CA; San Bernardino, CA; and Oakland, CA. Relocate and consolidate business, corporate, and administrative functions to the Defense Supply Center-Columbus, OH, the Buckley Air Force Base Annex, Denver, CO, or the MG Emmett J. Bean Federal Center, Indianapolis, IN.”
- *Commission Recommendations:* “The Commission found that the Secretary of Defense deviated substantially from final selection criteria . . . and from the Force Structure Plan. Therefore, the Commission recommends the following: Close the Defense Finance and Accounting Service (DFAS) sites at Denver, CO; Rock Island, IL; Pensacola Saufley Field, FL; Naval Station, Norfolk, VA; Lawton, OK; Naval Air Station, Pensacola, FL; Omaha, NE; Dayton, OH; St. Louis, MO; San Antonio, TX; San Diego, CA; Pacific Ford Island, HI; NAS Patuxent River, MD; Charleston, SC; Orlando, FL; Lexington, KY; Kansas City, MO; Seaside, CA; San Bernardino, CA; and Oakland, CA. Relocate the functions performed at these locations to the DFAS sites at Cleveland, OH; Columbus, OH; Indianapolis, IN; Limestone, ME; and Rome, NY. . . . Assign functions among the DFAS sites retained to provide for strategic redundancy in all critical tasks. The Commission found this change and the recommendation as amended are consistent with the final selection criteria and the Force Structure Plan.”

## **APPENDIX B EMISSION CALCULATIONS**

### **CONSTRUCTION EMISSIONS CALCULATIONS**

Hours of operation and emissions from construction activities were estimated (Tables B-1, B-2 and B-3). These estimates include emissions from the following activities:

- Use of construction equipment; and
- Movement of trucks carrying construction materials.

Construction equipment emissions were based on the estimated hours of use and emission factors for each motorized source outlined in the following documents:

- Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling --Compression-Ignition (USEPA 2004a);
- Exhaust Emission Factors for Nonroad Engine Modeling -- Spark-Ignition (USEPA 2004b);
- Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling (USEPA 2004c); and
- Nonroad Engine Population Estimates (USEPA 2004d).

The equipment and vehicle operation hours are estimated based on R.S.Means Building Cost Construction Data, 64th Annual Edition (Waier 2006) and field experience from similar projects.

### **HEATING AND COOLING EMISSIONS**

Emissions from the heating and cooling of the new facilities were estimated (Table B-4). These estimates were developed using emission factors from AP 42, Chapter 1.4: External Combustion Sources: Natural Gas Combustion and heating and cooling values from the latest U.S. Department of Energy, Commercial Buildings Energy Consumption Survey (DOE 1999).

**Table B-1**  
**Estimated Equipment Use [Hours]**

<b>Equipment Type</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Total Hours</b>
Chain Saws < 6 HP	796.8	443.9	561.2	1542.3	161.1	3505.2
Trimmers/Edgers/Brush Cutter	103.4	60.6	72.9	27.4	19.1	283.4
Lawn mowers	155.1	91	109.3	41.1	28.7	425.1
Shredders < 6 HP	51.7	30.3	36.4	13.7	9.6	141.7
Lawn & Garden Tractors	181	106.1	127.5	47.9	33.4	496
Chippers/Stump Grinders	796.8	443.9	561.2	1542.3	161.1	3505.2
Generator Sets	7821.4	4157.2	6084.7	3984.5	1553.1	23600.9
Air Compressors	4417.7	2345.2	3440.5	2263.2	877.9	13344.5
Pavers	35.3	35.3	0	787.4	0	858.1
Plate Compactors	703.4	393.4	488.3	1739.9	142	3467
Rollers	1248.7	706	854.5	3438.6	248.4	6496.3
Scrapers	1213.4	670.7	854.5	2651.1	248.4	5638.2
Trenchers	1213.4	670.7	854.5	2651.1	248.4	5638.2
Excavators	1386.7	766.5	976.6	3029.9	283.9	6443.6
Cement & Mortar Mixers	6517.6	3433.4	5166.4	1309.4	1287.9	17714.7
Cranes	6517.6	3433.4	5166.4	1309.4	1287.9	17714.7
Graders	2426.7	1341.4	1709.1	5302.3	496.9	11276.4
Off-highway Trucks	9070.1	4863.2	6939.2	7423.1	1801.5	30097.2
Tractors/Loaders/Backhoes	8944.3	4774.8	6875.5	6611.7	1784.8	28991.1
Crawler Tractor/Dozers	2426.7	1341.4	1709.1	5302.3	496.9	11276.4

Sources: Waier 2006

**Table B-2  
Construction Emissions by Select Project**

<b>Project</b>	<b>CO [tons]</b>	<b>NO<sub>x</sub> [tons]</b>	<b>PM<sub>10</sub> [tons]</b>	<b>PM<sub>2.5</sub> [tons]</b>	<b>SO<sub>2</sub> [tons]</b>	<b>VOC [tons]</b>
31st ADA - Administrative space renovations- Multi	0	0	0	0	0	0
Armed forces reserve center -Organizational unit s	0	0	0	0	0	0
Restation ADA - Oil storage building	0	0	0	0	0	0
31st ADA - Brigade HQ	0.05	0	0	0	0	0
31st ADA - Dining facility	0.21	0.01	0	0	0	0.01
Army reserve center building	0.51	0.02	0	0	0	0.02
Restation ADA -Barracks	1.15	0.04	0	0	0	0.04
Restation ADA - Transient training barracks	1.74	0.06	0.01	0.01	0.01	0.06
Aboveground fuel storage - Pol handstand	0.17	0.01	0	0	0	0.01
Aboveground fuel storage -Electrical facility	0	0	0	0	0	0
Aboveground fuel storage -Office building	0	0	0	0	0	0
ADA Brigade -Oil storage building	0.01	0	0	0	0	0
Restation ADA -General item repair instructional b	0.02	0	0	0	0	0
Restation ADA -Compact item repair instructional b	0.03	0	0	0	0	0
ADA Brigade HQ	0.06	0	0	0	0	0
ADA Brigade -Battalion HQ	0.06	0	0	0	0	0
31st ADA - Battalion HQ buildings	0.17	0.01	0	0	0	0.01
Armed forces reserve center - Child development center	0.21	0.01	0	0	0	0.01
Restation ADA -Tracked vehicle maintenance shop	0.31	0.01	0	0	0	0.01
31st ADA - Company operations buildings	1.24	0.04	0	0	0.01	0.04
31st ADA - General instruction building	1.98	0.07	0.01	0.01	0.01	0.07
Aboveground fuel storage -Aboveground tanks	1.41	0.05	0.01	0.01	0.01	0.05
Aboveground fuel storage -Spill containment	1.92	1.21	0.09	0.08	0.19	0.12
Restation ADA -Avenger Fires trainer	0.11	0.05	0	0	0.01	0.01
ADA Brigade -Organizational classrooms	0.18	0.08	0.01	0.01	0.01	0.01
Remote switching unit	0.19	0.08	0.01	0.01	0.01	0.01
Central issue point	0.19	0.08	0.01	0.01	0.01	0.01
Restation ADA -Engineering/housing maintenance shop	0.31	0.14	0.01	0.01	0.02	0.02
Restation ADA -Laboratory instructional building	1.5	0.64	0.04	0.04	0.1	0.08
ADA Brigade -Organizational unit storage	0.73	0.32	0.02	0.02	0.05	0.04
Restation ADA -Organizational unit storage	1.65	0.72	0.05	0.05	0.11	0.09
Restation ADA -Automation-aided instructional building	1.69	0.74	0.05	0.05	0.11	0.09
Restation ADA -Simulations center	2.65	1.11	0.07	0.07	0.17	0.13
Restation ADA - Maintenance shop	2.4	1.04	0.07	0.07	0.16	0.12
31st ADA - General item repair instructional build	9.41	3.92	0.26	0.25	0.6	0.47
31st ADA - Vehicle maintenance instructional build	5.01	2.18	0.15	0.14	0.34	0.26
ADA Brigade -Company operations buildings	14.98	6.21	0.41	0.39	0.95	0.74
ADA HQ-administrative facility - Convert/repair ex	0	0	0	0	0	0
Restation ADA -Materiel handling instruction build	0.37	0.16	0.01	0.01	0.03	0.02
ADA Brigade -Vehicle maintenance shop	13.37	5.46	0.37	0.36	0.89	0.64
Restation ADA -Unit fire trainer	0.11	0.05	0	0	0.01	0.01
31st ADA - Materiel handling instructional building	0.18	0.08	0.01	0.01	0.01	0.01
31st ADA - Automation-aided instructional building	0.52	0.22	0.02	0.01	0.04	0.03
Restation ADA -Patriot Fire trainer	0.56	0.23	0.02	0.02	0.04	0.03
31st ADA - Laboratory instructional building	1.87	0.78	0.05	0.05	0.13	0.09
Hospital - Alternation of existing facility	9.73	3.98	0.27	0.26	0.65	0.47

Central issue facility	12	4.9	0.33	0.32	0.8	0.57
ADA Brigade -Barracks	22.11	8.64	0.58	0.56	1.4	1.02
Joint Net Fires training facility	13.28	5.14	0.36	0.35	0.89	0.6
Restation ADA -Organizational vehicle parking	2.57	1.47	0.11	0.11	0.26	0.15
Restation ADA -Patriot parking hardstand	34.17	19.54	1.48	1.44	3.52	2
ADA Brigade -Organizational vehicle parking	2.85	1.63	0.12	0.12	0.29	0.17
Shoppette with gas and car wash	0.31	0.12	0.01	0.01	0.02	0.01
31st ADA - Moving target simulator building	0.4	0.16	0.01	0.01	0.03	0.02
Chapel	0.43	0.17	0.01	0.01	0.03	0.02
Road improvements	1.95	1.12	0.08	0.08	0.2	0.11
Physical fitness center	1.27	0.49	0.03	0.03	0.08	0.06
Restation ADA -Central initial issue facility	0.5	0.2	0.01	0.01	0.03	0.02
31st ADA - Simulator building	0.63	0.25	0.02	0.02	0.04	0.03
31st ADA - Organizational classrooms	0.53	0.2	0.02	0.02	0.04	0.02
Restation ADA -Museum	14.91	5.34	0.5	0.49	0.99	0.67

**Table B-3**  
**Construction Emissions Roll-Up by Year**

Year	CO [tons]	NO <sub>x</sub> [tons]	PM <sub>10</sub> [tons]	PM <sub>2.5</sub> [tons]	SO <sub>2</sub> [tons]	VOC [tons]
2007	9.36	0.33	0.04	0.04	0.04	0.35
2008	42.91	18.52	1.23	1.19	2.85	2.17
2009	60.83	24.49	1.66	1.61	4	2.88
2010	58.36	30.29	2.26	2.19	5.42	3.2
2011	15.44	5.54	0.52	0.5	1.02	0.69

Sources: USEPA 2004a, USEPA 2004b, USEPA 2004c, USEPA 2004d, NONROAD 2005 Emissions Model, USEPA 2005e

**Table B-4**  
**Heating and Cooling Emissions**

Year	Energy Used [MMBTU]	CO [tons]	NO <sub>x</sub> [tons]	PM <sub>10</sub> [tons]	PM <sub>2.5</sub> [tons]	SO <sub>2</sub> [tons]	VOC [tons]
2007	76133.12	3.13	6.23	0.28	0.28	0.02	0.21
2008	51600.47	2.12	3.91	0.19	0.19	0.02	0.14
2009	52798.05	2.17	4.59	0.2	0.2	0.02	0.14
2010	20448.98	0.84	1.55	0.08	0.08	0.01	0.06
2011	15770.32	0.65	1.4	0.06	0.06	0	0.04
Total	216750.94	8.93	17.68	0.81	0.81	0.06	0.58

Source: USEPA 1995, DOE 1999

**APPENDIX C**

**C1. COMMENT LETTERS AND RESPONSES**

**C2. CONSULTATION LETTERS AND RESPONSES**

## **C1. COMMENT LETTERS AND RESPONSES**

## Longfellow, Kelly L Ms

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**From:** Swain, Tegan Ms  
**Sent:** Thursday, June 22, 2006 8:27 AM  
**To:** Longfellow, Kelly L Ms  
**Subject:** FW: BRAC Commission response with NEPA

[I guess this means they will respond to the EA](#)

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**From:** Susan Hart [mailto:shart@c-a-tribes.org]  
**Sent:** Friday, June 16, 2006 8:32 AM  
**To:** Tegan.Swain@sill.army.mil  
**Subject:** BRAC Commission response with NEPA

Good morning,

The Cheyenne-Arapaho Tribes has received the letter dated June 5<sup>th</sup>, 2006 concerning the request for input regarding the implementation of the BRAC Commission recommendation for Fort Sill. We will respond in writing on this matter. Please provide further information.

Susan Hart  
Executive Office  
Cheyenne-Arapaho Tribes of Oklahoma



E-mail dated June 16, 2006, from Susan Hart, Cheyenne-Arapaho Tribes of Oklahoma:

Ms. Hart indicated that the Cheyenne-Arapaho Tribes would respond in writing regarding the BRAC-related activities at Fort Sill. No further correspondence from Ms. Hart or the Cheyenne-Arapaho Tribes was received, separately or in response to the Final EA that was made available for public review from August 28 through October 18. Fort Sill did not respond to the e-mail from Ms. Hart. No comments on the Final EA or draft FNSI were received from the Cheyenne-Arapaho Tribes, and no changes were made to the FNSI or EA on the basis of their correspondence.

## Longfellow, Kelly L Ms

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**From:** Kevin L. Jackson [kljackson@cityof.lawton.ok.us]  
**Sent:** Monday, June 26, 2006 1:40 PM  
**To:** Kelly Longfellow  
**Cc:** Larry Mitchell  
**Subject:** Environmental Assessment

Kelly,

My name is Kevin Jackson. I'm the new Senior Planner with the City of Lawton Planning Division. Our City Manager, Larry Mitchell, has asked me to begin the work on a Growth Management Study for BRAC growth for Ft. Sill, Lawton, and surrounding areas. Right now I'm trying to play catch up on all the challenges we're faced with and absorb as much information as possible.

I'm looking over a letter, dated 06/05/06, from Col. Uberti to State Senator Don Barrington. I have the following questions:

- 1) Paragraph 2: "In accordance with the National Environmental Policy Act (NEPA), the U.S. Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill **or the surrounding areas.**"  
Questions:
  - a) I'm interested in the "surrounding areas". What all does that include?
  - b) May I get a copy of the EA for the "surrounding areas".
  - c) When will that be completed?

I would appreciate any information you could provide. Thank you for your assistance. I look forward to working with you in the future.

Kevin Jackson.

Kevin L. Jackson, ASLA  
Senior Planner  
103 SW 4th Street  
Lawton, Oklahoma 73501  
(580)581-3375 phone / (580)581-3573 fax  
kljackson@cityof.lawton.ok.us

## Longfellow, Kelly L CIV USA USAIMA

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**From:** Kevin L. Jackson [kljackson@cityof.lawton.ok.us]  
**Sent:** Friday, July 28, 2006 4:27 PM  
**To:** Longfellow, Kelly L Ms  
**Subject:** RE: Meeting

Kelly,

Fantastic! Thank you.

The one question that is highest on the priority of questions I have now is this:

I need to know where all the soldiers / military personnel live. I don't need street addresses. I need to know what towns. I'm working on my Growth Management Study and I need to know where the impacted area is. I used to think just Comanche County is where the soldiers live, but now I'm hearing Apache, Duncan, even Marlow. Brian Price told me that they stopped getting information on where soldiers live outside the Base back in 2000. But even so, there **has** to be some paperwork showing where everyone lives. Where do I find it?

I still want to get up there and meet with you.

Thanks again,  
klj.

Kevin L. Jackson, ASLA  
Senior Planner  
103 SW 4th Street  
Lawton, Oklahoma 73501  
(580)581-3375 phone / (580)581-3573 fax  
kljackson@cityof.lawton.ok.us

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**From:** Longfellow, Kelly L Ms [mailto:kelly.longfellow@us.army.mil]  
**Sent:** Friday, July 28, 2006 2:20 PM  
**To:** Kevin L. Jackson  
**Subject:** RE: Meeting

Kevin-

I have looked over your question. Most of them will be answered once we ask for public review. One particular question set under personnel:

1. Are there any changes in the number of personnel coming since the last chart I saw from Col. Uberti from the first week in June? **We are expected to gain 3500 soldiers including families. This particular number is determined by a statistical equation.**
2. What are the latest numbers of houses needed outside Fort Sill? **99%, there is a 2 year waiting list to live on the installation.**
3. What are the latest number of Children arriving? **The estimated numbers are in the EA.**
4. How many of each age group?
5. Where do you see personnel living off base? **Personal opinion-dependent on their income,**

willingness to commute, and personal preference.

FYI: Air Force and Navy is "Base", Army is "Post or Installation", and Marine is "Camp".

I am working on answering your other questions and working along with you

**Kelly Longfellow**  
IMSW-SIL-PWE, NEPA  
580-442-2792

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**From:** Kevin L. Jackson [mailto:kljackson@cityof.lawton.ok.us]  
**Sent:** Friday, July 21, 2006 2:21 PM  
**To:** Longfellow, Kelly L Ms  
**Subject:** RE: Meeting

Kelly,

Attached are the questions I sent to Tom. He forwarded them to Col Uberti. The questions in red are what I thought of today. I never sent them to Tom. I can be more annoying than George Castanza with my questions. I've heard of a Celebrations Station. Never heard of a Main Event. My 7 year old nephew told me about Chucky Cheese. If I could snowboard down Mount Scott, I would be completely satisfied and would not go other places for entertainment.

Looking forward to meeting with you and your staff.  
klj.

Kevin L. Jackson, ASLA  
Senior Planner  
103 SW 4th Street  
Lawton, Oklahoma 73501  
(580)581-3375 phone / (580)581-3573 fax  
kljackson@cityof.lawton.ok.us

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**From:** Longfellow, Kelly L Ms [mailto:kelly.longfellow@us.army.mil]  
**Sent:** Friday, July 21, 2006 8:09 AM  
**To:** Kevin L. Jackson  
**Subject:** RE: Meeting

Kevin

I was not cooler in Chicago, just as hot.

Glen Wheat is now on Leave until 31 Aug, but as you are suggesting, 4/5 Aug looks good for me. When he gets back I will confirm with you.

I don't know your questions, but Tom is right. At the moment we are conducting in-house review of the Environmental Assessment.

In my personal opinion what will directly effect the city of Lawton is the increase of population. We need to continue expand our schools, build more affordable homes, more eating establishments, more nice apartments, and more family oriented "to-do" places. As you are aware, families either travel to OKC, Wichita Falls, or DFW for family events. We need a Celebrations Station, Main Event, or bring back Chucky Cheese. Of course "rumor" is Target is coming which is great.

**Kelly Longfellow**  
IMSW-SIL-PWE, NEPA  
580-442-2792

---

**From:** Kevin L. Jackson [mailto:kljackson@cityof.lawton.ok.us]  
**Sent:** Wednesday, July 19, 2006 8:58 AM  
**To:** Kelly Longfellow  
**Subject:** Meeting

Kelly,

Welcome back. Hope it was cooler where you went. Before you left we were talking about getting together for an introductory meeting, seeing 1) what all the studies your office was performing, 2) if I could sit in on any meetings, & 3) having access to any events / information happening at Fort Sill that would directly affect Lawton. I met with Tom Kelly on Monday (07/17). I gave him a volume of questions that I will share with you as well. Tom said that if I could wait another 3 weeks or so, a lot of my questions could be answered. That's like asking a child to wait till January to open his Christmas presents, but I can do it. Can you still meet before that or would it be better to wait? This week is full and the end of next week I'm leaving for a Conference. How about 08/04 or 08/05? If not we can set up something for the week of 08/07.

Thanks.  
Kevin.

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103 SW 4th Street  
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kljackson@cityof.lawton.ok.us

**Longfellow, Kelly L CIV USA USAIMA**

---

**From:** Longfellow, Kelly L Ms  
**Sent:** Tuesday, August 01, 2006 11:35 AM  
**To:** 'Kevin L. Jackson'  
**Subject:** RE: Meeting  
**Signed By:** kelly.longfellow@us.army.mil

Kevin-

Brain Price is the chief of housing, and he should know what info we have on active duty housing on and off Post. If he says we don't, then we don't, sorry.

Due to September 11, 2001, a lot of personal information on military personnel is restricted and considered a security issue. Most of your questions, including your High Priority, should be answered in the EA. The EA is scheduled to be published for Public Review early September. You will receive another letter from me, signed from Uberti, at this time. What is a good address for you? I sent a letter to the Mayor, is this where you received it from?

I know I keep referring to the EA, which isn't ready for public review. If you have any additional questions after the review, I will be more than happy to answer them or direct you to the correct source.

**Kelly Longfellow**  
IMSW-SIL-PWE, NEPA  
580-442-2792

---

**From:** Kevin L. Jackson [mailto:kljackson@cityof.lawton.ok.us]  
**Sent:** Friday, July 28, 2006 4:27 PM  
**To:** Longfellow, Kelly L Ms  
**Subject:** RE: Meeting

Kelly,

Fantastic! Thank you.

The one question that is highest on the priority of questions I have now is this:

I need to know where all the soldiers / military personnel live. I don't need street addresses.

I need to know what towns. I'm working on my Growth Management Study and I need to know where the impacted area is. I used to think just Comanche County is where the soldiers live, but now I'm hearing Apache, Duncan, even Marlow. Brian Price told me that they stopped getting information on where soldiers live outside the Base back in 2000.

But even so, there **has** to be some paperwork showing where everyone lives. Where do I find it?

I still want to get up there and meet with you.

Thanks again,  
klj.

Kevin L. Jackson, ASLA  
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kljackson@cityof.lawton.ok.us

E-mails dated June 26, 2006 to July 28, 2006, from Kevin L. Jackson, City of Lawton:

Mr. Jackson requested further information on the EA for BRAC recommendations at Fort Sill, and in particular, he requested information pertinent to areas surrounding Fort Sill that would be useful for a growth management plan. Fort Sill contacted Mr. Jackson by e-mail (see the attached responses) and phone to answer his questions and provide him with useful information. Fort Sill explained that the Final EA would be issued for public review in August or September and that he would be able to review a copy at that time. Mr. Jackson's requests were for information and were not comments on the EA, and no changes to the EA or FNSI were made on the basis of his correspondence.



**Office of the Chairman**

**September 8, 2006**

**Col. John Uberti  
Commanding Officer  
Ft. Sill, Oklahoma Garrison  
ATTN: IMSW-SIL-ZA  
6607 NW Fort Sill Blvd, B462G  
Fort Sill, OK 73503-1899**

**RE: Comanche burial sites near construction activities at Fort Sill**

**Dear Col. Uberti:**

**I have been advised by the Comanche Nation's Museum staff responsible for Native American Graves Protection and Repatriation issues that a construction project presently underway at Fort Sill could impact burial sites of historic, cultural, and religious significance to the Comanche Nation. As you may be aware, the 1994 Memorandum of Understanding between the U.S. Army Field Artillery Center and Fort Sill and the Comanche Nation recognized that isolated Comanche burial sites exist throughout the post. Although many of these isolated burial sites have not yet been identified with ground penetrating radar, Comanche Nation Museum staff members recently informed me that they have located a number of isolated burial sites near the ongoing construction at Fort Sill.**

**The Comanche Nation is very concerned that the construction and related activities will disturb or destroy these isolated Comanche burial sites. For example, at least one burial site adjoins a heavily used roadway, and Museum staff members have reported seeing numerous vehicles driving directly over the site. There is some belief that many more isolated burial sites lie within the area of the construction project. In addition, Museum staff members are not aware of any efforts by Fort Sill to conduct certain environmental and historic assessments required by the National Environmental Policy Act and the National Historic Preservation Act before commencing work on the construction project.**

**Due to the importance of these burial sites to the Comanche Nation and the imminent threat of disturbance by the construction activities, I am requesting your urgent attention to this matter. To help me better understand the nature of the current situation, I respectfully request that you provide my office with copies of the documents authorizing the ongoing construction at Fort Sill and any documentation concerning historic or environmental assessments conducted prior to the commencement of construction.**

**Fort Sill also has obligations to the Comanche Nation in regard to unidentified burial sites that may be disturbed by the construction activity. In fact, both Section 7 of the 1994 Memorandum of Understanding and Section 3 (d) of the Native American Graves Protection and Repatriation Act require that Fort Sill notify the Comanche Nation of any inadvertent discoveries of Comanche graves.**

**I convey these concerns to you in the hope that we might work together to quickly resolve the matter in a mutually satisfactory way, and ask that you contact me as soon as possible to discuss these issues.**

**Sincerely,**

A handwritten signature in black ink, appearing to read "Wallace Coffey". The signature is written in a cursive style with a large initial "W".

**Chairman Wallace Coffey**



September 28, 2006

Via Facsimile 580.442.7971 and U.S. Mail

Col. John Uberti  
Commanding Officer  
Ft. Sill, Oklahoma Garrison  
ATTN: IMSW-SIL-ZA  
6607 NW Fort Sill Blvd, B462G  
Fort Sill, OK 73503-1899

Re: Comanche burial sites near construction activities at Fort Sill

Dear Col. Uberti:

On September 8, 2006, I advised you of my concerns regarding current housing construction activities at the Fort Sill Military Reserve and their potential impact on historically and culturally significant burial sites of the Comanche Nation. I have recently been informed that the construction activities of Harper Construction have unearthed human remains and artifacts over the course of several months. Clearly, therefore, the Fort Sill Military Reserve, its construction contractor and its employees have triggered the inadvertent discovery provisions of the Native American Graves Protection and Repatriation Act ("NAGPRA"). 25 U.S.C. §3002(d).

In accordance with NAGPRA and implementing regulations, 43 C.F.R. part 10, the contractor was required to provide "immediate telephone notification" to the responsible Army official at Ft. Sill, follow up with written confirmation, cease construction activities, and make a reasonable effort to protect the human remains and other cultural items discovered. 43 C.F.R. §10.4. After receiving such notification, you were required, "as soon as possible, but no later than three (3) working days after receipt of the written confirmation of notification, to take further steps to secure and protect the site and to provide notice to the Indian tribes "likely to be culturally affiliated" with the discovered human remains, and to initiate consultation with such tribes. 43 C.F.R. §§10.4(d), 10.5. The Comanche Nation is one such tribe.

The actions required under NAGPRA to prevent further damage to the graves of our ancestors have not been taken. We insist that those actions be taken immediately. Construction activities in the vicinity of sites at which human remains have been discovered, and sites at which human remains are known to exist, must cease immediately.

We must also point out that damage to, and removal of, human remains and artifacts constitute violations of the Archaeological Resources Protection Act. 16 U.S.C. §470cc. The Army must secure the area where these violations of federal law have occurred and initiate an investigation of the crime scene.

COMANCHE NATION P.O. BOX 908 / LAWTON, OK 73502  
PHONE: 580-492-4988 TOLL FREE: 1-877-492-4988 FAX: 580-492-3796

Col. John Uberti  
September 28, 2006  
Page 2

Sincerely,



Chairman Wallace Coffey

**Enclosures**

cc: Paul Lumley, Sr. Tribal Liaison, U.S. Department of Defense (*via facsimile (703)607-4237*)  
C. Timothy KcKeown, Nat'l NAGPRA Program Officer (*via facsimile (202)371-5197*)  
Kelly Fanizzo, Historic Preservation Specialist (*via facsimile (202)606-8647*)

Letter dated September 8, 2006, and facsimile and letter dated September 28, 2006, from Chairman Wallace Coffey, Comanche Nation:

In his September 8 letter, Chairman Coffey referenced a “construction project presently underway at Fort Sill.” Chairman Coffey’s letter of September 28, like his letter of September 8, referenced disturbances from ongoing construction activities. Implementation of the BRAC recommendations discussed in the Final EA had not begun at the time that Chairman Coffey sent the letters, and it was clear that the subject of the letters was non-BRAC-related activities on the installation. The letters did not deal with the subject matter of the EA or the draft FNSI, and no changes were made to the FNSI or EA on the basis of the letter. Fort Sill responded to Chairman Coffey’s letters in writing (see the attached response).



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

September 29, 2006

Chairman Wallace Coffey  
Comanche Nation  
P. O. Box 908  
Lawton, OK. 73502

Dear Chairman Coffey,

We received your letters of 8 and 28 September, 2006 expressing the Comanche Nation's concerns over possible disturbance of burial sites on Fort Sill. Fort Sill is fully committed to protecting all burials found on its property. We are also committed to abiding by our obligations under NAGPRA and any agreement documents with the Comanche Nation.

Please be assured that to the best of our knowledge there have been no human remains or cultural materials of any kind discovered on the housing construction site. In addition, all construction contracts require workers to come forward if during their work any cultural materials are discovered. To date, none of Fort Sill's contractors have reported the discovery of human remains or artifacts that have been unearthed.

In reviewing the MOU mentioned in your letter, Section 7 regards human remains that have been exposed inadvertently. To the best of our knowledge, there has been no unearthing of human remains on Fort Sill since the last discovery and disposition in 1999. In the event that an inadvertent discovery is confirmed NAGPRA procedures will be initiated as well as any agreements between the Comanche and Fort Sill regarding such a discovery.

Fort Sill has halted all ground-disturbing activities associated with the new family housing project north of Henry Post Field at this time. An internal inquiry will be initiated to determine if there is evidence an inadvertent discovery of human remains has occurred at this site. Be advised that vertical construction will continue. Please be assured that Fort Sill shares your concerns and is committed to completing this inquiry in a proper and thorough manner.

Sincerely,

John Uberti  
Colonel, U.S. Army  
Garrison Commander



September 25, 2006

COL John Uberti, Garrison Commander  
Department of the Army  
Headquarters United States Army Garrison  
Office of Garrison Commander  
Fort Sill, OK 73505-5000

Re: Final Environmental Assessment for the Implementation of Base Realignment and Closure  
Recommendations at Fort Sill, Oklahoma

Dear COL Uberti:

I have read the majority of the Environmental Assessment (EA) for the BRAC relocation implementation. I have a question about the location of the RIPL. In the EA it gives the location of the RIPL as east of building 1489 and 1490 and north of Randolph Road. I am not familiar enough with Fort Sill to know the location of buildings by numbers. I cannot find any map that shows the location of the RIPL. Could you please give me additional information about the RIPL's location?

At this time, the Comanche Nation does not have any concerns or issues with the proposed construction of buildings west of Sheridan Road. The areas that the Comanche people are interested in investigating is South, Southeast, and Northeast of Gate 3 especially near the airport; North and Northeast of Gate 2; North and Northeast of Key Gate; Northeast of Randolph Road especially near the old coral, the old ice house, and the old post chapel. These areas have been orally indicated by the Comanche Elders as possible burial sites for unmarked graves.

If in the process of the construction human remains or archaeological items are discovered, we request that you **immediately cease** the work and notify us so that we may discuss appropriate disposition with you and the other Tribal Nations that may be affected by such discoveries.

Sincerely,

Lee Wait  
Museum Program Assistant

## Longfellow, Kelly L CIV USA USAIMA

---

**From:** Longfellow, Kelly L Ms  
**Sent:** Friday, September 29, 2006 12:34 PM  
**To:** 'Lelain Wait'  
**Cc:** Falcone, Michael W SWF; Sam Pett; Wheat, Glen Mr  
**Subject:** Fort Sill BRAC EA Response

**Attachments:** RIPL.pdf



RIPL.pdf (1 MB)

Lelain-

Thank you for your response of concerns to the Fort Sill BRAC 2005 Environmental Assessment printed in the Lawton Constitution 27 Aug 2006.

I have attached a location map of the Receipt-in-Place-Location (RIPL) construction site.

Thank you again for your interest

Kelly Longfellow  
Fort Sill NEPA Cordinator  
580-442-2792

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

From: Lelain Wait [mailto:lelainwait@hotmail.com]  
Sent: Thursday, September 28, 2006 8:38 AM  
To: kelly.longfellow@us.army.mil  
Subject: RE: test

Going to try this again! I received your email this morning.

I have read the majority of the Environmental Assessment (EA) for the BRAC relocation implementation. I have a question about the location of the RIPL. In the EA it gives the location of the RIPL as east of building 1489 and 1490 and north of Randolph Road. I am not familiar enough with Fort Sill to know the location of buildings by numbers. I cannot find any map that shows the location of the RIPL. Could you please give me additional information about the RIPL's location?

At this time, the Comanche Nation does not have any concerns or issues with the proposed construction of buildings west of Sheridan Road. The areas that the Comanche people are interested to investigating is South, Southeast, and Northeast of Gate 3 especially near the airport; North and Northeast of Gate 2; North and Northeast of Key Gate; Northeast of Randolph Road especially near the old corral, the old ice house, and the old post chapel. These areas have been orally indicated by the Comanche Elders as possible burial sights for unmarked graves.

If in the process of the construction human remains or archaeological items are discovered, we request that you IMMEDIATELY cease the work and notify us so that we may discuss appropriate disposition with you and the other Tribal Nations that may be affected by such discoveries.

Lee Wait  
Museum Program Assistant

>From: "Longfellow, Kelly L Ms" <kelly.longfellow@us.army.mil>  
>To: "'lelainwait@hotmail.com'" <lelainwait@hotmail.com>  
>Subject: test



## Longfellow, Kelly L CIV USA USAIMA

---

**From:** Lelain Wait [lelainwait@hotmail.com]  
**Sent:** Thursday, October 05, 2006 1:29 PM  
**To:** kelly.longfellow@us.army.mil  
**Cc:** lelainwait@hotmail.com  
**Subject:** RIPL

Thank you for the fast return about my question concerning the RIPL's location.

After checking the location throughly, the Comanche Nation does not have any concerns or issues with the location.

If in the process of the project human remains or archaeological items are discovered, we request that you IMMEDIATELY CEASE the project work and notify us so that we may discuss appropriate disposition with you and the other Tribal Nations that may be affected by such discoveries.

Thank you for your help

Lee Wait  
Museum Program Assistant

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28 September 2006  
Fort Sill OK GIS

Land East of B1490,  
RIPL is designated to be built



October 9, 2006

Samuel Pett, Project Manager  
TETRA TECH, INC.  
10306 Eaton Pl  
Suite 340  
Fairfax, VA 22030

Re: Final Environmental Assessment for the Implementation of Base Realignment and Closure Recommendations at Fort Sill, Oklahoma also enclosed is a letter sent to COL Uberti

Dear Mr. Pett:

I have read the majority of the Environmental Assessment (EA) for the BRAC relocation implementation. I had a question regarding the location of the RIPL which location was described in the EA as east of building 1489 and 1490 and north of Randolph Road. Upon requesting further information concerning the RIPL location from Ms. Kelly Longfellow, which she supplied immediately, I no longer have any questions about the RIPL or have any concerns about its location.

At this time, the Comanche Nation has no concerns or issues with the proposed construction of buildings west of Sheridan Road. The areas that the Comanche people are interested in investigating is South, Southeast, and Northeast of Gate 3 especially near the airport; North and Northeast of Gate 2; North and Northeast of Key Gate; Northeast of Randolph Road especially near the old corral, the old ice house, and the old post chapel. These areas have been orally indicated by the Comanche Elders as possible burial sights for unmarked graves.

If in the process of the construction human remains or archaeological items are discovered, we request that you **immediately cease** the work and notify us so that we may discuss appropriate disposition with you and the other Tribal Nations that may be affected by such discoveries.

Sincerely,

Lee Wait  
Museum Program Assistant

Letters and e-mails dated September 25 to October 9, 2006, from Lelain Wait, Museum Program Assistant, Comanche Tribe:

Ms. Wait sent an initial letter and e-mail of inquiry to Fort Sill, in which he requested information on the location of the RIPL and noted that the Comanche Nation did not have concerns about the majority of construction mentioned in the Final EA. Fort Sill responded to Ms. Wait by e-mail and included a location map (copy included) for the RIPL in the e-mail. Ms. Wait reviewed the map and responded that the Comanche Nation had no concerns about the RIPL's location. The correspondence from Ms. Wait referenced the subject action of the EA, but no shortcomings in the analysis or conclusions of the EA or draft FNSI were noted. No changes to the FNSI or EA were made on the basis of the correspondence.



October 17, 2006

Mr. Glen Wheat, EQD, DPW  
2592 Currie Rd.  
Fort Sill, OK 73503

RE: Final Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Sill, Oklahoma (August 2006)

Dear Mr. Wheat:

This letter supplements the two letters sent by the Comanche Tribe's NAGPRA Office, dated September 25 and October 9, 2006, addressed, respectively, to Colonel John Uberti, Garrison Commander, and Samuel Pett, Project Manager for Tetra Tech, Inc. Those letters said that the locations in which construction activities are planned and discussed in the EA are not of concern to the Tribe, except in the event that human remains or archaeological items are discovered during construction. In the event of any inadvertent discovery, the Tribe's previous letters requested that construction activity immediately cease and that the Tribe be notified.

The previous letters also noted several areas that the Comanche Tribe believes should be investigated for the presence of unmarked graves, in light of information given by Comanche elders: South, Southeast, and northeast of Gate 3 especially near the airport; North and Northeast of Gate 2; North and Northeast of Key Gate; Northeast of Randolph Road especially near the old corral, the old ice house, and the old post chapel. It is our understanding that those areas will not be affected by construction described in the EA.

***Native American Graves Protection and Repatriation Act (NAGPRA).*** In the event of inadvertent discovery of Native American human remains or "cultural items" within the meaning of that term as used in the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. §3001(3), (a term that includes funerary objects, sacred objects and objects of cultural patrimony), then cessation of activity and notice to the Tribe is required by NAGPRA and its implementing regulations. 25 U.S.C. §3003(d); 43 C.F.R. §10.4.

Notice to the Comanche Tribe in the event of discoveries of unmarked burials is also required by the Memorandum of Understanding (MOU) between the U.S. Army and the Comanche Tribe, which was executed by the Army on January 6, 1994. We note that,

while that MOU was executed after the enactment of NAGPRA, the final regulations implementing NAGPRA were issued after the MOU was executed, and the provision in the MOU relating to isolated burials is somewhat inconsistent with the applicable provisions of the final regulations. Section 7 of the MOU provides:

“7. Isolated Burials. Any isolated human remains found in the Fort Sill Military Reservation will be evaluated first by the proper law enforcement agencies as a potential crime scene. If the remains are historic or pre-historic, the Museum will be notified for documentation and study. Any remains and associated grave goods attributed to the Comanche Tribe will be brought to the Tribe’s attention by the Museum for further evaluation. Final disposition will be as directed by the Comanche Tribe.”

This section of the MOU is inconsistent with the final regulations in that, whenever there is an inadvertent discovery of human remains or cultural items (as defined in NAGPRA), the Army is required to provide notice to “the Indian tribes ... likely to be culturally affiliated with the inadvertently discovered human remains, funerary objects, sacred objects, or object of cultural patrimony.” 43 C.F.R. §10.4(d)(1)(iii). The Army is then required to engage such tribes in consultation with all such tribes and any known lineal descendants. 43 C.F.R. §10.5. One of the main purposes of this consultation is to determine who has the right under NAGPRA to take custody of the human remains and/or cultural items in the event that the Army determines that they must be removed from the earth. If there are no known lineal descendants, then the right to take custody is generally with the tribe that has the closest cultural affiliation with the human remains and/or cultural items. 43 C.F.R. §10.6.

Section 7 of the MOU is inconsistent with the regulations in that it implies that the determination of cultural affiliation will be made by the Museum, while the regulations require the Army to make this determination in consultation with tribes that are likely to be culturally affiliated.

Section 7 of the MOU is also inconsistent with the regulations in that it does not explicitly require notice to the Comanche Tribe until the Museum has determined that the human remains and funerary objects are “attributed” to the Comanche Tribe. What the regulations require is that whoever makes the inadvertent discovery “must provide immediate telephonic notification of the inadvertent discovery, with written confirmation, to the responsible Federal agency official.” 43 C.F.R. §10.4(b). The Federal agency official is then required, “[a]s soon as possible, but no later than three (3) working days after receipt of the written confirmation of notification” to “[n]otify by telephone, with written confirmation, the Indian tribes ... likely to be culturally affiliated with the human remains” or cultural items. 43 C.F.R. §10.4(d)(1).

In light of the fact that section 7 of the MOU is inconsistent with the NAGPRA regulations, we must insist that any inadvertent discovery of human remains or cultural items be governed by the provisions of the regulations until such time as an amendment to the MOU is negotiated. The regulations expressly authorize federal agencies to enter into comprehensive agreements with tribes to deal with inadvertent discoveries on federal lands. 43 C.F.R. §10.5(f).

***National Historic Preservation Act (NHPA).*** Although the Comanche Tribe is not particularly concerned with the specific locations of the planned construction that are discussed in this EA, we nevertheless have some concerns about the treatment of cultural resources issues in the EA.

In particular, while the EA acknowledges that there will be some adverse effects on historic properties and on archaeological sites that have not yet been evaluated for National Register eligibility, the EA essentially assumes that any adverse effects will not be significant and that adequate mitigation measures will be possible. EA at pp. ES-5, 5-3. The EA makes this assumption without having taken any of the steps of the consultation process mandated by NHPA section 106, 16 U.S.C. §470f, and the implementing regulations of the Advisory Council on Historic Preservation (ACHP). 36 C.F.R. part 800. The EA, at p. 5-3, states: "Before Fort Sill would begin construction activities, it would identify historic properties, determine whether adverse impacts would occur, and develop mitigation measures, all in consultation with the Oklahoma SHPO [State Historic Preservation Officer]." A similar statement appears on page 3 of the draft FONSI. These statements indicate that the NHPA section 106 process has not yet commenced.

In light of this, we do not believe that there is sufficient information in the EA to support a finding of no significant impact (FONSI) with respect to impacts on historic properties. Accordingly a FONSI should not be signed until adequate steps are taken for compliance with NHPA section 106.

In addition, we note that the EA fails to acknowledge that the Army has a duty under the statutory language of NHPA section 101(d)(6), 16 U.S.C. §470a(d)(6), and the ACHP regulations to make a reasonable and good faith effort, as part of the section 106 process, to consult with any Indian tribe that attaches religious and cultural importance to any historic property that might be affected by the proposed undertaking. These points should have been included in the discussion on page 4-33 of the EA. Moreover, the Army has a statutory duty under NHPA section 110, 16 U.S.C. §470h-2, to consult with Indian tribes in carrying out its historic preservation program.

The historic Indian cemeteries within Fort Sill are historic properties. It is our understanding that these cemeteries are included in the National Register of Historic Places. The cemeteries in which Comanche ancestors are buried hold religious and

cultural importance for the Comanche Tribe. All the graves of our ancestors hold religious and cultural importance for us. Moreover, we believe that isolated graves from the same general time period in which the historic cemeteries were in use should be presumed to be part of the historic cemeteries. We believe that there should be a presumption that, by drawing on the knowledge of our Comanche elders, such isolated graves can yield important information about the history of Fort Sill and the relations between the Army and the Comanche Tribe.

In light of the extensive plans for new construction at Fort Sill, we believe that it would be mutually beneficial to negotiate a programmatic agreement (PA) for historic preservation compliance, pursuant to section 800.14 of the ACHP regulations. Such a PA could provide a standard procedure for consultation between the Army and the Comanche Tribe on future construction projects. A PA might also provide for greater involvement of the Comanche Tribe in the development of an Integrated Cultural Resources Management Plan (ICRMP) for Fort Sill.

The historical significance of Fort Sill is to a large extent bound up in the relations between the Army and the Comanche, Kiowa and Apache Tribes. While much of this history is painful, it is nevertheless an important part of American history. The Comanche Tribe seeks to develop a proactive and cooperative relationship with the Army to help inform the American public about the chapters of American historic that were written at Fort Sill.

Sincerely,

A handwritten signature in cursive script that reads "Wallace Coffey".

Wallace Coffey  
Chairman

Letter dated October 17, 2006, from Chairman Wallace Coffey, Comanche Nation:

Chairman Coffey's letter referenced the correspondence from Lelain Wait to Fort Sill. Mr. Coffey raised a number of issues in this letter. First, Chairman Coffey noted that the areas of potential construction on Fort Sill discussed in the EA are not of concern to the Comanche Nation except in the event of the discovery of human or archeological remains. Second, Chairman Coffey discussed areas on Fort Sill of interest to the Comanche Nation because of the potential for unmarked graves to be in the areas. The areas mentioned in the letter are not the subject matter of the EA, and Chairman Coffey noted as such in his letter. Third, Chairman Coffey discussed at length Fort Sill's responsibilities under NAGPRA and an MOU between the Comanche Nation and Fort Sill. The discussion, while accurate and informative, did not concern the subject matter of the EA or draft FNSI, and no changes to the EA or FNSI were made on the basis of these issues raised in the letter.

Chairman Coffey then noted that, "the Comanche Tribe is not particularly concerned with the specific locations of the planned construction that are discussed in the EA," but indicated that the Comanche Nation had some "concerns about the treatment of cultural resources issues in the EA." The first concern Chairman Coffey discussed was that Fort Sill had not followed the Section 106 process of the National Historic Preservation Act and had concluded prematurely in the EA that no significant impacts on historic properties and archeological sites would occur from the implementation of the BRAC recommendations on the installation. Chairman Coffey referenced specific text from the EA and, on the basis of those passages, concluded, "[t]hese statements indicate that the NHPA section 106 process has not yet commenced." In fact, Fort Sill complied with Section 106 throughout the EA process. Consultation letters dated June 5, 2006, concerning the potential impacts of the project were sent to the Oklahoma SHPO and representatives of all potentially affected tribes. Fort Sill, through its cultural resources protection activities and development of its ICRMP, had already identified known cultural resources on the areas of potential impact and had developed Standard Operating Procedures (SOPs), contained in the ICRMP, for dealing with new finds of cultural or archeological resources. The EA notes on page 4-37 that the SHPO had been consulted regarding archeological sites potentially eligible for the NRHP that could be disturbed by the proposed action, and that the SHPO had concurred that the presence of unexploded ordnance on the sites will require an ordnance sweep and removal before any archeological surveys can be performed. Section 106 implementing regulations (36 CFR 800.4(b)(2), *Phased identification and evaluation*) permit such an approach. The regulations state, "...where access to properties is restricted, the agency official may use a phased process to conduct identification and evaluation efforts. The agency official may also defer final identification and evaluation of historic properties if it is specifically provided for in... the documents used by an agency official to comply with the National Environmental Policy Act..." (36 CFR 800.4(b)(2)). Fort Sill, therefore, had begun the Section 106 consultation and identification processes and clearly indicated in the EA that applicable laws and regulations and the SOPs contained in the installation's ICRMP would be followed throughout the process of implementing the BRAC recommendations. No changes, therefore, were made to the EA or FNSI on the basis of this concern.

The next concern raised by Chairman Coffey was that the EA failed to acknowledge that the Army has a duty under NHPA and ACHP regulations to make a reasonable and good faith effort to consult with potentially affected Indian tribes. He noted that these points should have been included on page 4-33 of the EA. On page 4-33, section 4.9.1.2, *Cultural Resources Compliance at Fort Sill*, the EA discusses the federal statutes that govern the treatment of cultural resources and acknowledges the responsibilities that federal agencies have under those statutes. In the same section, the EA mentions the laws, Executive Orders, and executive memorandum that direct federal agencies to consult with Native American Tribes, and states clearly that Fort Sill had consulted with tribes throughout the development of the EA. Fort Sill acknowledges, however, that its duty to consult with tribes was misstated in the EA. The text of the EA was amended, therefore, to correctly state that, if it is determined that implementation of the proposed action discussed in the EA would result in adverse effects on archeological or cultural resources, Fort Sill

would consult with both the Oklahoma SHPO and any applicable federally recognized tribes. This text was added in the following places:

- o Page ES-5, 1<sup>st</sup> paragraph, last sentence (added after “Oklahoma SHPO”)
- o Page 4-37, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> sentence (added after “Oklahoma SHPO”)
- o Page 4-37, 3<sup>rd</sup> paragraph, last sentence (added after “Oklahoma SHPO”)
- o Page 5-3, 5<sup>th</sup> paragraph (section 5.1.1.8), last sentence (added after “Oklahoma SHPO”)

Additionally, The FNSI was modified by adding a statement to the paragraph subtitled *Cultural Resources* on the third page. The last sentence of that paragraph was amended by adding at the end, “and the eight Native American Tribes ( Delaware, Wichita, Kiowa, Fort Sill Apache, Comanche, Chickasaw, Cheyenne and Arapaho, and Caddo) having cultural and historic affiliation at Fort Sill, Oklahoma.”

Chairman Coffey reiterated that historic Indian cemeteries on Fort Sill are historic properties, but, as he had previously mentioned in his letter, the areas where cemeteries are located and unmarked graves might be located are not the subject of the EA. No changes to the EA or FNSI were made on the basis of this concern.

Finally, Chairman Coffey noted that a programmatic agreement between Fort Sill and the Comanche Tribe for historic preservation would be mutually beneficial in light of plans for extensive construction at the installation. Fort Sill responded to Chairman Coffey regarding the possibility of such a programmatic agreement, but again, because the specific construction that is the subject of the EA in question does not affect the Indian archeological sites referenced in Mr. Coffey’s letter, negotiating a programmatic agreement is a separate issue. No changes to the EA or FNSI were made on the basis of this concern.



**DEPARTMENT OF THE ARMY**  
**HEADQUARTERS, UNITED STATES ARMY GARRISON**  
**FORT SILL, OKLAHOMA 73503-5100**

October 16, 2006

REPLY TO  
ATTENTION OF

Environmental Quality Division

Chairman Wallace Coffey  
Comanche Nation  
P. O. Box 908  
Lawton, OK 73502

RE: Alleged Native American Graves and Repatriation Act (NAGPRA) Violations

Dear Chairman Coffey,

This letter is in response to previous correspondence from your office expressing concerns over possible NAGPRA violations at Fort Sill's new housing construction site. I hope this letter clarifies the situation and satisfies the Comanche Nation's concerns.

In response to concerns that burials or isolated human remains were discovered and disturbed, I initiated an internal inquiry into those allegations. After interviewing construction workers and supervisors on site, as well as military and civilian personnel involved in the project, it has been determined that no human remains or cultural items have been unearthed or removed from the construction site or the adjacent area where the Ground Penetrating Radar (GPR) survey was conducted.

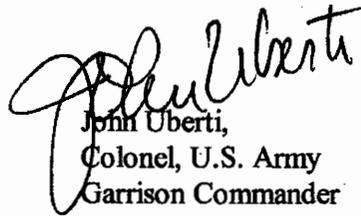
Out of respect for tribal concerns, ground disturbing activities were halted at the construction site until the investigation was completed. Since the results of the investigation indicate that no human remains or cultural items were found or disturbed, these construction activities will resume immediately so that our Soldiers and their families will be able to occupy these new homes as soon as possible.

If the GPR survey indicates ground disturbances that could be burials, then the area will be protected until the cause of these disturbances can be determined. The Comanche Nation and other tribes will be consulted on methods to make these determinations. At this time the area where the GPR survey is being conducted is not scheduled for ground disturbing or other construction activities.

We ask that you consider sharing with Fort Sill the location of areas of tribal concern, to reduce the potential of adversely impacting a sensitive site. Fort Sill's Cultural Resource Manager is keenly aware of the sensitivity of site information and provides that data only on a need to know basis to select individuals of the Fort Sill Command. If there are areas on Fort Sill that need protection, then our staffs must work in tandem to ensure preservation of these sites. In the event of an unanticipated discovery of human remains anywhere on Fort Sill, NAGPRA will be initiated and the Comanche Nation, as well as other tribes, will be immediately notified.

Again, be assured that Fort Sill is committed to protecting all burial sites found within its boundaries. We look forward to working toward a mutually satisfactory resolution of this matter.

Sincerely,



John Uberti,  
Colonel, U.S. Army  
Garrison Commander

**KIOWA, COMANCHE & APACHE  
INTERTRIBAL LAND USE COMMITTEE  
P.O. Box 885  
Lawton, Oklahoma 73502**



September 15, 2006

Tegan Swain  
Cultural Resources Manager  
Headquarters, United States Army Garrison  
Fort Sill, Oklahoma 73503-5100

RE: Kiowa, Comanche and Apache Intertribal Land Use Committee/Native  
American Graves or Sacred Sites.

Dear Mr. Swain:

This letter is written in regard to the recent construction pursuant to the Base Realignment and Closure (BRAC) Commission occurring on Fort Sill Military Base and the unearthing of what could be sacred sites or graves of Native American Tribes. The Kiowa, Comanche, and Apache Intertribal Land Use Committee (KCA) is composed of delegates from each respective tribe's Business Committees. By and through the constitutions of the three tribes the committee members are delegated the authority to manage the jointly owned lands of the three tribes.

Considering that the property in question was once held in title by the Kiowa Tribe, Comanche Nation and Apache Tribe pursuant to the Treaty of Medicine Lodge, 1867, and conveyed to the U.S. by three executive orders in the late 1800's and early 1900's, the three tribes maintain a significant interest in the current situation. Therefore, the KCA are requesting the following items as described below.

First, the KCA are requesting copies of any and all documents pertaining to any and all archeological studies, historical studies and environmental studies. After meeting with tribal delegates from the three tribes it seems that only the Comanche Nation was provided notice of such construction. Pursuant to the National Historic Preservation Act, 16 U.S.C. §470 f, and the accompanying regulations, 36 CFR Part 800, a Historical Review must be conducted prior to Fort Sill's current construction. Notice should have been provided to all three tribes so the proper studies and consultation could have occurred to prevent the current situation.

Second, the KCA is requesting that notice and correspondence be sent to the KCA along with the above request for documents. The KCA has not received any notice thus far, and feels that the consultation of Fort Sill should have included not only the Comanche Nation but all three tribes and possibly all tribes in the area. Moreover, a meeting with the Bureau of Indian Affairs, Anadarko Agency (BIA) revealed that the Archeological department had no information of such endeavors by Fort Sill. It is our understanding that the BIA will immediately begin a study next week.

Third, the KCA is requesting that the construction cease immediately and all equipment and devices utilized by Fort Sill be removed immediately. Damage may have already occurred to what may be termed Native American sacred sites or graves. The KCA want to ensure that from this point and on that all precautions are taken to preserve these sites. The Apache Tribe of Oklahoma has adopted its own version of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA). Therefore, if the above sites are discovered to be sacred sites or graves the Tribes wish to exert their rights under such federal law and tribal law. The NAGPRA provisions at 25 U.S.C. § 3002 (a) states that the ownership or control of Native American cultural items excavated or discovered after 1990 shall be given with priority to (1) the lineal descendants of the Native American; (2) if no definite lineal descendant then the tribe who occupies the land; or if on federal land to be determined by the Indian Claims Commission; or (3) or the aboriginal occupiers or the tribe that demonstrate by a preponderance of the evidence a stronger cultural relationship.

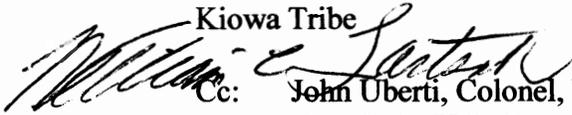
Fourth, in order for the KCA to exercise its rights under NAGPRA the KCA is also requesting that the BIA and the KCA its officials be allowed access to these sites and other areas that it determines to have cultural and historical significance. The KCA only wish access so that the properly trained officials can conduct the proper studies to further determine ownership and control of these sites and graves.

Further, on June 4, 2002, the Department of Defense, Office of the Deputy under Secretary of Defense (Installations and Environment) issued a prepared statement by Mr. Philip W. Grone, Principal Assistant Deputy under Secretary of Defense at the Oversight Hearing before the Committee on Indian Affairs, United States Senate on Protection of Native American Sacred Places. Pursuant to this statement the Department of Defense (DOD) participated with the Sacred Lands Coalition and assured the U.S. Senate Committee on Indian Affairs that it will continue to work cooperatively with organizations and help protect these sites. In this statement the DOD adopted a policy that included four guiding principles: Trust Responsibilities, Government to Government Relations, Consultation, and Natural and Cultural Resources Protection. Therefore, the KCA hopes that the DOD will abide by such statements and policies and adhere to the requests of the KCA.

We anxiously await your response and further consultation with the KCA.

Sincerely,

Kiowa Tribe



Cc:

John Uberti, Colonel, U.S. Army

Tom Cole, U.S. Senate

Tom Coburn, U.S. Senate

Caddo Tribe of Oklahoma

Wichita and Affiliated Tribes

Delaware Nation

Cheyenne and Arapaho Tribes

Fort Sill Apache Tribe of Oklahoma

Dana M. Deere, KCA Legal Counsel

Betty Tippeconnie, Superintendent BIA

Dan Deerinwater SPRO Regional Director

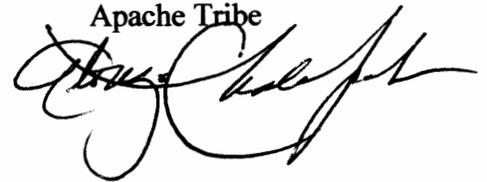
Cheyenne Arapaho Tribes

Patrick Ragsdale, Director BIA/DOI

Comanche Nation



Apache Tribe



Letter dated September 15, 2006, from representatives of the Kiowa, Comanche & Apache (KCA) Intertribal Land Use Committee:

In this letter, the KCA representatives referenced, as did Chairman Coffey of the Comanche Nation, construction that had already occurred on Fort Sill and incorrectly identified the construction as related to the BRAC recommendations and proposed action that is the subject of the EA. Implementation of the BRAC recommendations discussed in the Final EA had not begun at the time that the KCA letter was received, and the letter relates to construction on Fort Sill that is not related to BRAC or the EA. No changes were made to the FNSI or EA on the basis of the letter. Fort Sill responded to the letter from the KCA, noting what steps had been taken to address the concerns of the committee with respect to the other construction project (see the attached response).



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
FORT SILL, OKLAHOMA 73503-5100

Environmental Quality Division

Kiowa, Comanche & Apache  
Intertribal Land Use Committee  
P.O. Box 885  
Lawton, Oklahoma 73502

RE: Alleged Native American Graves Protection and Repatriation Act (NAGPRA) Violations

Dear Sirs,

This letter is in response to previous correspondence from your office expressing concerns over possible NAGPRA violations at Fort Sill's new housing construction site. I hope this letter clarifies the situation and satisfies the KCA Committee's concerns.

In response to concerns that burials or isolated human remains were discovered and disturbed, I initiated an internal inquiry into those allegations. After interviewing construction workers and supervisors on site, as well as military and civilian personnel involved in the project, it has been determined that no human remains or cultural items have been unearthed or removed from the construction site or the adjacent area where the Ground Penetrating Radar (GPR) survey was conducted.

Out of respect for tribal concerns, ground disturbing activities were halted at the construction site until the investigation was completed. Since the results of the investigation indicate that no human remains or cultural items were found or disturbed, these construction activities will resume immediately so that our Soldiers and their families will be able to occupy these new homes as soon as possible.

If the GPR survey indicates ground disturbances that could be burials, then the area will be protected until the cause of these disturbances can be determined. Your organization will be consulted on methods to make these determinations. At this time, the area where the GPR survey is being conducted is not scheduled for ground disturbing or other construction activities.

We ask that you consider sharing with Fort Sill the location of areas of tribal concern to reduce the potential of adversely impacting a sensitive site. Fort Sill's Cultural Resource Manager is keenly aware of the sensitivity of site information and provides that data only on a need to know basis to select individuals of the Fort Sill Command. If there are areas on Fort Sill that need protection, then our staffs must work in tandem to ensure preservation of these sites. In the event of an unanticipated discovery of human remains anywhere on Fort Sill, NAGPRA will be initiated and the KCA Committee will be immediately notified.

Again, be assured that Fort Sill is committed to protecting all burial sites found within its boundaries. We look forward to working toward a mutually satisfactory resolution of this matter.

Sincerely,

**John Uberti,  
Colonel, U.S. Army  
Garrison Commander**

*Caddo Nation of Oklahoma*  
Post Office Box 487  
Binger, Oklahoma 73009  
(405) 656-2344 405-656-2345  
FAX # 405/656-2892

September 19, 2006

Mr. Glen Wheat  
EQD, DPW  
2592 Currie Road  
Fort Sill, Oklahoma 73503

Re: Final Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for Implementation of Base Closure and Realignment (BRAC) Recommendations and Other Army Actions at Fort Sill, Oklahoma (August 2006)

Dear Mr. Wheat:

I believe it is far too early to even think about issuing a FONSI on the above-mentioned implementation of the base closure and realignment recommendations because from our understanding, the BRAC recommendations have already had an adverse impact with the amount of construction that has taken place on the base in regard to more barracks being built.

It is also our understanding that the Comanche Nation had a number of concerns with cemeteries and burials in locations that should have been identified under Section 106 of the National Historic Preservation Act prior to any construction activities going on in the area. It is our understanding that one of the locations where graves were reported was also being used as a staging area for construction vehicles.

The Comanche Nation contacted our office on several occasions regarding identifying these graves and possible cemeteries using Ground Penetrating Radar equipment to try to detect the locations of the burials. From my reading of the regulations, it is the agency official's responsibility to be consulting with Indian tribes that have an interest in the project and to make a reasonable and good faith effort to identify historic properties that may be affected by the agency's undertaking. Part of the identification process is bearing the financial burden, which again, according to our understanding has been done only by the Comanche Nation.

It has further come to our attention that there may be several other tribes represented in these particular cemeteries. When is Fort Sill going to sit down and have a consultation with them regarding these construction projects? The Caddo Nation asks that Fort Sill consult on a government-to-government level with our tribal government. There are many issues regarding these graves and cemetery locations and one of the biggest that has

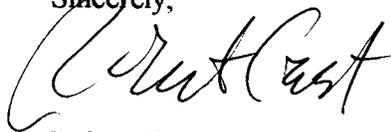
*Caddo Nation of Oklahoma*  
Post Office Box 487  
Binger, Oklahoma 73009  
(405) 656-2344 405-656-2345  
FAX # 405/656-2892

been brought to the attention of a number of individuals is that some of the human remains may still be carrying diseases.

I was told this morning by a concerned tribal member that one of the contractor's doing the work at the fort actually recovered a skull from the construction site, showed it to some individuals, and then reburied it. Whether true or not, this is a serious, serious, concern for the tribal governments whose history is a part of Fort Sill. This should be a serious concern for Fort Sill as well, as the lack of consultation regarding the area of potential effects or the construction projects in general is a clear violation of Section 106 of the National Historic Preservation Act, if human remains have been disturbed through these construction activities, all the while with the Comanche Nation stating that there were burials in these areas, then these are violations of ARPA and NAGPRA as well.

I hope that Fort Sill will sit at the table and consult with the tribal Nations that are an integral part of its history.

Sincerely,



Robert Cast  
Tribal Historic Preservation Officer  
Caddo Nation of Oklahoma

Cc: Valerie Hauser, ACHP  
Samuel Pett, Tetra Tech  
Bob Brooks, OAS

Letter dated September 19, 2006, from Mr. Robert Cast, Caddo Nation of Oklahoma:

In this letter, Mr. Cast referenced construction that had already occurred on Fort Sill and incorrectly identified the construction as related to the BRAC recommendations and proposed action that is the subject of the EA, as did Chairman Coffey of the Comanche Nation in his letter of September 8 and the KCA in their letter. Implementation of the BRAC recommendations discussed in the Final EA had not begun at the time that Mr. Cast's letter was received, and the letter relates to construction on Fort Sill that is not related to BRAC or the EA. No changes were made to the FNSI or EA on the basis of the letter. Fort Sill responded to Mr. Cast and to LaRue Parker, Tribal Chair of the Caddo Tribe of Oklahoma, noting what steps had been taken to address their concerns with respect to the other construction project (see the attached responses).



**DEPARTMENT OF THE ARMY**  
**HEADQUARTERS, UNITED STATES ARMY GARRISON**  
**FORT SILL, OKLAHOMA 73503-5100**

October 16, 2006

REPLY TO  
ATTENTION OF

Environmental Quality Division

Caddo Tribe of Oklahoma  
LaRue Parker, Tribal Chair  
POB 487  
Binger, OK 73009

RE: Alleged Native American Graves and Protection Act (NAGPRA) Violations

Dear Chairman Parker:

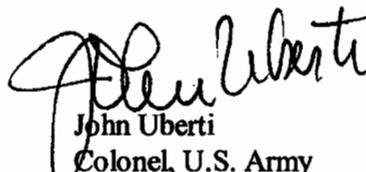
In response to recent concerns that burials or isolated human remains were discovered and disturbed at the Fort Sill new housing project, I initiated an internal inquiry into those allegations. After interviewing construction workers and supervisors on site, as well as military and civilian personnel involved in the project, it has been determined that no human remains or cultural items have been unearthed or removed from the construction site or the adjacent area where the recent Ground Penetrating Radar (GPR) survey was conducted.

Out of respect for tribal concerns and to insure that a NAGPRA violation had not occurred, ground disturbing activities were halted at the construction site until the inquiry was completed. Since the results of the inquiry indicate that no human remains or cultural items were found or disturbed, these construction activities will resume immediately so that our soldiers and their families will be able to occupy these new homes as soon as possible.

We ask that you consider sharing with Fort Sill the location of areas of tribal concern; otherwise, a sensitive site might be adversely impacted. Fort Sill's Cultural Resources Manager is keenly aware of the sensitivity of site information and provides that data only on a need to know basis to just a few in the Fort Sill Command. If there are culturally sensitive areas on Fort Sill that need protection, then our staffs must work in tandem to ensure preservation of these sites.

Be assured that that Fort Sill is committed to protecting all burial sites found within its boundaries. As in the past, in the event of an unanticipated discovery of human remains anywhere on Fort Sill, NAGPRA will be initiated and you will be immediately notified.

Sincerely,

  
John Uberti  
Colonel, U.S. Army  
Garrison Commander



**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
FORT SILL, OKLAHOMA 73503-5100

REPLY TO  
ATTENTION OF

Environmental Quality Division

Caddo Indian Nation of Oklahoma  
Attn: Robert Cast, THPO  
POB 487  
Binger, OK 73009

RE: Final Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for Implementation of Base Realignment and Closure (BRAC) Recommendations and Other Army Actions at Fort Sill, Oklahoma (August 2006)

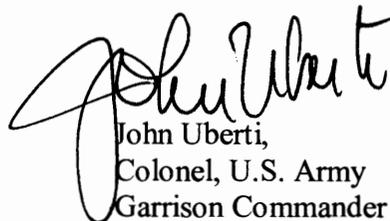
Dear Mr. Cast:

We received your letter expressing concerns over possible burial sites at Ft. Sill's new housing location and actions that are proposed under the Base Realignment and Closure (BRAC) process. These are two different actions, not related, and each was subject to separate NEPA reviews. The housing project was initiated in FY 2003 and the BRAC actions in FY06. BRAC actions are currently under review. A separate correspondence addressing purported burials was recently prepared by me and sent to concerned tribes.

No construction activities are underway that are associated with BRAC. An Environmental Assessment addressing proposed BRAC actions was prepared and submitted to the various tribes for review and comment. If you have concerns over BRAC, contact Fort Sill's NEPA Coordinator, Kelly Longfellow, at 580-442-4737.

As always, Fort Sill looks forward to working with your office on the preservation of our cultural heritage. If you should have any questions concerning NAGPRA or cultural issues, please contact Fort Sill's Cultural Resources Manager, Tegan Swain, at (580) 442-1142/2256.

Sincerely,

  
John Uberti,  
Colonel, U.S. Army  
Garrison Commander

## **C2. CONSULTATION LETTERS AND RESPONSES**



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Comanche County Commissioners  
Comanche County Court House  
Lawton, OK 73501

Dear Commissioners:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

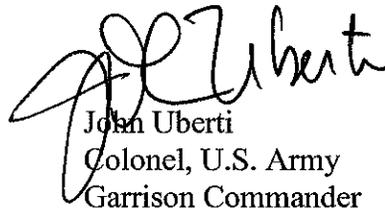
Fort Sill's current mission is to train soldiers and develop field artillery leaders; design and develop fire support for the force; support unit training and readiness; mobilize and deploy operating forces; and maintain installation infrastructure and services. The Installation's principal operational units include the 17<sup>th</sup>, 75<sup>th</sup>, 212<sup>th</sup>, and 214<sup>th</sup> Field Artillery Brigades. The BRAC Commission recommendations are summarized in Enclosure 1. The complete text of these recommendations can be found at <http://www.brac.gov/Deliberations.aspx>. The EA will analyze and document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Sill.

The BRAC recommendations/actions will result in an approximate net increase of 3,445 military personnel and 105 civilian personnel at Fort Sill, Oklahoma. Implementation of the proposed actions will require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The proposed new structures will provide more than 2.15 million square feet of space. The locations of the proposed projects are shown in the enclosed Figure 2-1.

Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Nan Terry  
ASW 520  
Environmental Protection Specialist  
FAA Southwest Region Head  
2601 Beacham Blvd  
Fort Worth, TX 76137

Dear Ms Terry:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

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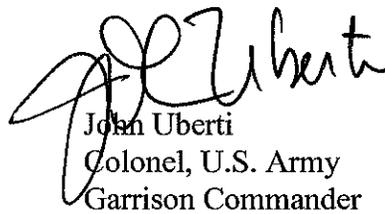
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If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Brad Henry  
Governor of Oklahoma  
2300 N Lincoln Blvd, Room 212  
Oklahoma City, OK 73105

Dear Governor Henry:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

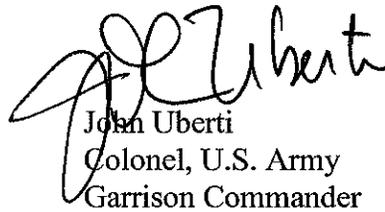
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If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

John Percell  
Mayor of City of Lawton  
103 SW 4<sup>th</sup> St  
Lawton, OK 73501

Dear Mayor Percell:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

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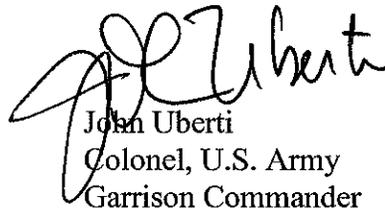
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Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Steve Thompson  
OK Department of Environmental Quality  
Director  
PO Box 1677  
Oklahoma City, OK 73101-1677

Dear Mr. Thompson:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

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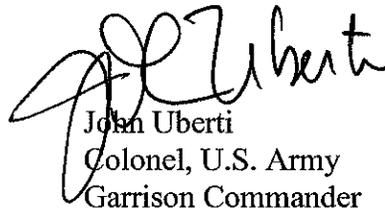
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Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Mr. Robert Brooks  
Oklahoma Archeological Survey  
111. E. Chesapeake  
Norman, OK 73019-0575

Dear Mr. Brooks:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for implementation of the BRAC Commission recommendations for Fort Sill. This assessment will determine potential impacts the proposed actions could have on Fort Sill or the surrounding areas (Figure 1-1), to include historic properties. Any impacts, or lack of, will be documented in a final EA report, which will be made available to the public as well as state and federal agencies in September 2006.

Fort Sill requests your input regarding historic preservation issues that should be considered in this assessment. A copy of the draft EA will be forwarded for your review. Since implementation of BRAC is on an accelerated timeline, it is respectfully requested that you provide input within 30 days of receipt, if possible.

The BRAC recommendations/actions will result in an approximate net increase of 3,445 military personnel and 105 civilian personnel at Fort Sill, Oklahoma. Implementation of the proposed actions would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The proposed new structures would provide more than 2.15 million square feet of space. The locations of the proposed projects are shown in the enclosed Figure 2-1.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please contact Ft. Sill's Cultural Resources Manager, Tegan Swain, at 580-442-1142 or [Tegan.Swain@sill.army.mil](mailto:Tegan.Swain@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Joe Dorman  
Oklahoma State House of Representatives  
District 65  
PO BOX 559  
Rush Springs, OK 73082

Dear Representative Dorman:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

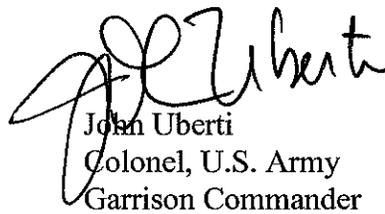
Fort Sill's current mission is to train soldiers and develop field artillery leaders; design and develop fire support for the force; support unit training and readiness; mobilize and deploy operating forces; and maintain installation infrastructure and services. The Installation's principal operational units include the 17th, 75th, 212th, and 214th Field Artillery Brigades. The BRAC Commission recommendations are summarized in Enclosure 1. The complete text of these recommendations can be found at <http://www.brac.gov/Deliberations.aspx>. The EA will analyze and document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Sill.

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Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Don Armes  
Oklahoma State House of Representatives  
District 63  
10506 SW Tinney Rd  
Faxon, OK 73550

Dear Representative Armes:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

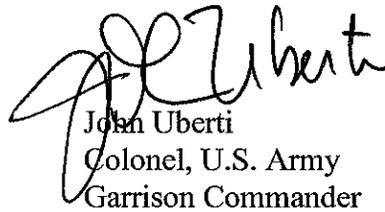
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Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Ann Coody  
Oklahoma State House of Representatives  
District 64  
104 S SH 65  
Lawton, OK 73501

Dear Representative Coody:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

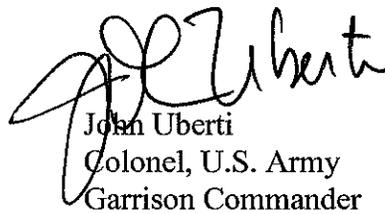
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If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Don Barrington  
Oklahoma State Senate  
District 31  
4506 NE Highlander Circle  
Lawton, OK 73507

Dear Senator Barrington:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

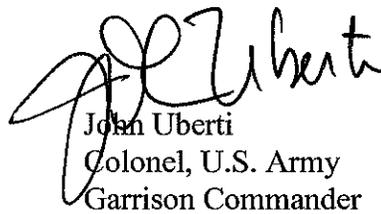
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Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Randy Bass  
Oklahoma State Senate  
District 32  
1803 NW 32<sup>nd</sup> St  
Lawton, OK 73505

Dear Senator Bass:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

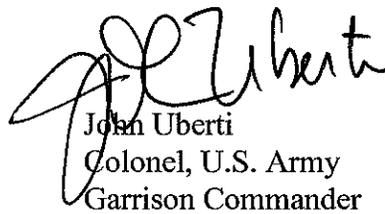
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If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Tom Coburn  
US Senate  
State of Oklahoma  
PO Box 977  
Muskogee, OK 74402

Dear Senator Coburn:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

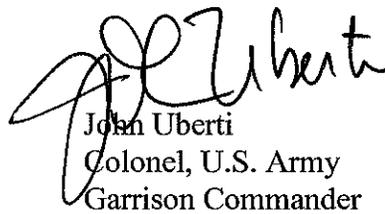
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Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Jim Inhofe  
US Senate  
State of Oklahoma  
1924 S Utica, Suite 530  
Tulsa, OK 74104-6511

Dear Senator Inhofe:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

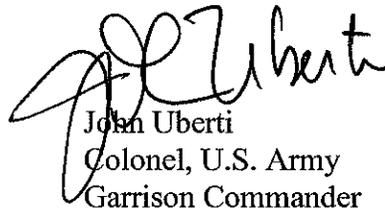
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Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
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HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Greg Duffy  
Oklahoma Department of Wildlife Conservation  
PO Box 53465  
Oklahoma City, OK 73105

Dear Mr. Duffy:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1). Furthermore, this assessment will comply with the Endangered Species Act and Fish and Wildlife Coordination Act in its assessment of the potential effects on protected species.

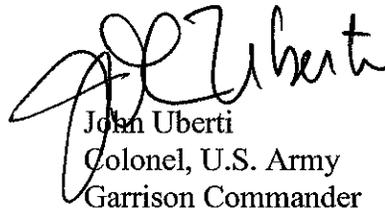
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Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
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**DEPARTMENT OF THE ARMY**  
**HEADQUARTERS, UNITED STATES ARMY GARRISON**  
**OFFICE OF THE GARRISON COMMANDER**  
**FORT SILL, OKLAHOMA 73503-5000**

June 5, 2006

Environmental Quality Division

Duane Smith, Director  
Oklahoma Water Resources Board  
3800 N Classen  
Shepherd Mall  
Oklahoma City, OK 73118

Dear Dr. Smith:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

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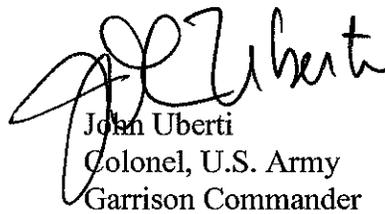
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The BRAC recommendations/actions will result in an approximate net increase of 3,445 military personnel and 105 civilian personnel at Fort Sill, Oklahoma. Implementation of the proposed actions will require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The proposed new structures will provide more than 2.15 million square feet of space. The locations of the proposed projects are shown in the enclosed Figure 2-1.

Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Ralph Bryant  
Acting Manager of Wichita Mountains Wildlife Refuge  
32 Refuge Headquarters  
Indiahoma, OK 73552

Dear Mr. Bryant:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1). Furthermore, this assessment will comply with the Endangered Species Act and Fish and Wildlife Coordination Act in its assessment of the potential effects on protected species.

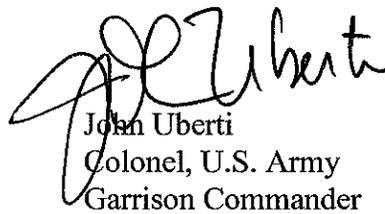
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John Uberti  
Colonel, U.S. Army  
Garrison Commander

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HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Bob Blackburn, Ph. D.  
State Historic Preservation Officer  
2704 Villa Prom  
Shepherd Mall  
Oklahoma City, OK 73107

Dear Dr. Blackburn:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for implementation of the BRAC Commission recommendations for Fort Sill. This assessment will determine potential impacts the proposed actions could have on Fort Sill or the surrounding areas (Figure 1-1), to include historic properties. Any impacts, or lack of, will be documented in a final EA report, which will be made available to the public as well as state and federal agencies in September 2006.

Fort Sill requests your input regarding historic preservation issues that should be considered in this assessment. A copy of the draft EA will be forwarded for your review. Since implementation of BRAC is on an accelerated timeline, it is respectfully requested that you provide input within 30 days of receipt, if possible.

The BRAC recommendations/actions will result in an approximate net increase of 3,445 military personnel and 105 civilian personnel at Fort Sill, Oklahoma. Implementation of the proposed actions would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The proposed new structures would provide more than 2.15 million square feet of space. The locations of the proposed projects are shown in the enclosed Figure 2-1.

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Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
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**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Miroslav Kurka  
US Army Corps of Engineers Tulsa District Commander  
1645 S 101<sup>st</sup> E Ave  
Tulsa, OK 74128

Dear COL Miroslav Kurka:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

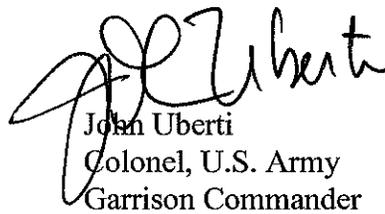
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OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Nathan Tselee, Chairman  
Apache Tribe  
PO Box 1220  
Anadarko, OK 73005

Dear Chairman Tselee:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for implementation of the BRAC Commission recommendations for Fort Sill. This assessment will determine potential impacts the proposed actions could have on Fort Sill or the surrounding areas (Figure 1-1), to include historic properties. Any impacts, or lack of, will be documented in a final EA report, which will be made available to the public as well as state and federal agencies in September 2006.

Fort Sill requests your input regarding historic preservation issues that should be considered in this assessment. A copy of the draft EA will be forwarded for your review. Since implementation of BRAC is on an accelerated timeline, it is respectfully requested that you provide input within 30 days of receipt, if possible.

The BRAC recommendations/actions will result in an approximate net increase of 3,445 military personnel and 105 civilian personnel at Fort Sill, Oklahoma. Implementation of the proposed actions would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The proposed new structures would provide more than 2.15 million square feet of space. The locations of the proposed projects are shown in the enclosed Figure 2-1.

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Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



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**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

LaRue Parker, Chairperson  
Caddo Tribe  
PO Box 487  
Binger, OK 73009

Dear Chairperson Parker:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for implementation of the BRAC Commission recommendations for Fort Sill. This assessment will determine potential impacts the proposed actions could have on Fort Sill or the surrounding areas (Figure 1-1), to include historic properties. Any impacts, or lack of, will be documented in a final EA report, which will be made available to the public as well as state and federal agencies in September 2006.

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Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

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HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Darrell Flyingman Chairman  
Cheyenne-Arapaho Tribes  
PO Box 38  
Concho, OK 73022

Dear Chairman Flyingman:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

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Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

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REPLY TO  
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**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Bill Anoatubby, Governor  
Chickasaw Nation  
PO Box 1548  
Ada, OK 74820

Dear Governor Anoatubby:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

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Sincerely,



John Uberti  
Colonel, U.S. Army  
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HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Wallace Coffey, Chairman  
Comanche Nation  
PO Box 908  
Lawton, OK 73502

Dear Chairman Coffey:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

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Sincerely,



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HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Edgar French, Chairman  
Delaware Nation  
PO Box 825  
Anadarko, OK 73005

Dear Chairman French:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

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Sincerely,



John Uberti  
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Enclosures



REPLY TO  
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HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Jeff Houser, Chairman  
Fort Sill Apache Tribe  
Route 2 Box 121  
Apache, OK 73006

Dear Chairman Houser:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

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Enclosures



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HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Billy Evans Horse, Chairman  
Kiowa Tribe  
PO Box 369  
Carnegie, OK 73015

Dear Chairman Evans Horse:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

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Colonel, U.S. Army  
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Enclosures



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**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Gary McAdams, President  
Wichita and Affiliated Tribes  
PO Box 729  
Anadarko, OK 73005

Dear President McAdams:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These 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 complete text of these recommendations can be found at: <http://www.brac.gov/Deliberations.aspx>).

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for implementation of the BRAC Commission recommendations for Fort Sill. This assessment will determine potential impacts the proposed actions could have on Fort Sill or the surrounding areas (Figure 1-1), to include historic properties. Any impacts, or lack of, will be documented in a final EA report, which will be made available to the public as well as state and federal agencies in September 2006.

Fort Sill requests your input regarding historic preservation issues that should be considered in this assessment. A copy of the draft EA will be forwarded for your review. Since implementation of BRAC is on an accelerated timeline, it is respectfully requested that you provide input within 30 days of receipt, if possible.

The BRAC recommendations/actions will result in an approximate net increase of 3,445 military personnel and 105 civilian personnel at Fort Sill, Oklahoma. Implementation of the proposed actions would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The proposed new structures would provide more than 2.15 million square feet of space. The locations of the proposed projects are shown in the enclosed Figure 2-1.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please contact Ft. Sill's Cultural Resources Manager, Tegan Swain, at 580-442-1142 or [Tegan.Swain@sill.army.mil](mailto:Tegan.Swain@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Jerry Brabander  
US Fish and Wildlife Service  
222 S Houston, Suite A  
Tulsa, OK 74127

Dear Mr. Brabander:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1). Furthermore, this assessment will comply with the Endangered Species Act and Fish and Wildlife Coordination Act in its assessment of the potential effects on protected species.

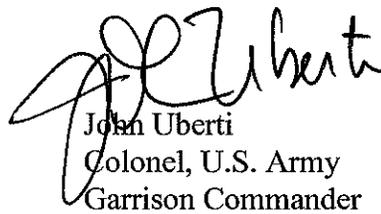
Fort Sill's current mission is to train soldiers and develop field artillery leaders; design and develop fire support for the force; support unit training and readiness; mobilize and deploy operating forces; and maintain installation infrastructure and services. The Installation's principal operational units include the 17<sup>th</sup>, 75<sup>th</sup>, 212<sup>th</sup>, and 214<sup>th</sup> Field Artillery Brigades. The BRAC Commission recommendations are summarized in Enclosure 1. The complete text of these recommendations can be found at <http://www.brac.gov/Deliberations.aspx>. The EA will analyze and document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Sill.

The BRAC recommendations/actions will result in an approximate net increase of 3,445 military personnel and 105 civilian personnel at Fort Sill, Oklahoma. Implementation of the proposed actions would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The proposed new structures would provide more than 2.15 million square feet of space. The locations of the proposed projects are shown in the enclosed Figure 2-1.

Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
OFFICE OF THE GARRISON COMMANDER  
FORT SILL, OKLAHOMA 73503-5000

June 5, 2006

Environmental Quality Division

Tom Cole  
US House of Representatives  
State of Oklahoma, District 4  
711 SW D Ave, Suite 201  
Lawton, OK 73501

Dear Representative Cole:

On September 8, 2005, the Base Realignment and Closure (BRAC) Commission recommended that certain realignment actions occur at Fort Sill, Oklahoma. These recommendations were approved by the President on September 15, 2005, and forwarded to Congress (Enclosure 1). Congress did not alter any of the BRAC Commission's recommendations and on November 9, 2005, the recommendations became law. These recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the US Army is performing an Environmental Assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Sill, Oklahoma. This assessment will determine potential impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Sill or the surrounding areas (Figure 1-1).

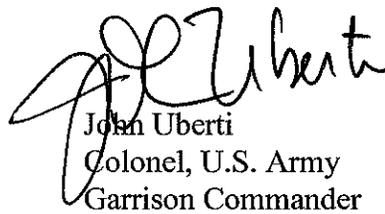
Fort Sill's current mission is to train soldiers and develop field artillery leaders; design and develop fire support for the force; support unit training and readiness; mobilize and deploy operating forces; and maintain installation infrastructure and services. The Installation's principal operational units include the 17th, 75th, 212th, and 214th Field Artillery Brigades. The BRAC Commission recommendations are summarized in Enclosure 1. The complete text of these recommendations can be found at <http://www.brac.gov/Deliberations.aspx>. The EA will analyze and document anticipated environmental effects associated with the implementation of the BRAC actions at Fort Sill.

The BRAC recommendations/actions will result in an approximate net increase of 3,445 military personnel and 105 civilian personnel at Fort Sill, Oklahoma. Implementation of the proposed actions will require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The proposed new structures will provide more than 2.15 million square feet of space. The locations of the proposed projects are shown in the enclosed Figure 2-1.

Fort Sill respectfully requests your input regarding the potential effects of the proposed actions on the human and natural resources that may be of concern to you. A copy of the draft EA will be provided to you for your review and comments. It is requested that your input be provided by 30 days of receipt.

If you have any questions or require further information regarding the BRAC action at Fort Sill, please call Kelly Longfellow, Fort Sill NEPA coordinator, at 580-442-2792 or [Kelly.Longfellow@sill.army.mil](mailto:Kelly.Longfellow@sill.army.mil).

Sincerely,



John Uberti  
Colonel, U.S. Army  
Garrison Commander

Enclosures

## **APPENDIX D**

### **ECONOMIC IMPACT FORECAST SYSTEM 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 region of influence (ROI). In this regard, base realignment at Fort Sill would have a multiplier effect on the local and regional economy. With the proposed action, direct jobs would be created, 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 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 for RCI. 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 are 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 EIFS model the data elements which describe the Army action: the change in expenditures for local supplies and services; 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.

The proposed realignment action at Fort Sill would result in a net increase of 2,588 military personnel and 407 civilian personnel. Average annual income for the military personnel was estimated at \$30,000 (Webster, 2005). Annual income for civilian personnel was input as \$27,860, based on the mean annual wage estimate for the Lawton Metropolitan Statistical Area (BLS, 2005). Based on labor force and unemployment data for the ROI, it was assumed that the new civilian jobs would be filled by persons living in the ROI. On-post housing is at capacity; however there are plans under the proposed action to build new barracks that would house some unaccompanied personnel; therefore, the percent of the incoming military personnel who would live on-post was estimated to be 10 percent.

Implementation of the proposed realignment action also would require renovation of existing facilities and construction of new facilities to accommodate the increase in personnel and functions assigned to Fort Sill. The installation estimated that the renovation and construction of facilities would begin in mid-2006 and be completed by about 2009 (about 3.5 years), with all new incoming personnel arriving by 2011. The current working estimate for the cost of renovation and construction of facilities (\$578.3 million) was divided over the estimated 3.5-year development period and input into the EIFS model as the change in expenditures (\$165,229,000 per year, rounded) (Fort Sill, 2005).

Once the input variables are entered into the EIFS model, the model is run and projects changes to the local economy's business 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 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:

		<b>Increase</b>	<b>Decrease</b>
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 inputs and output data 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: Fort Sill BRAC EA**

**STUDY AREA**

- 40015 Caddo, OK
- 40031 Comanche, OK
- 40033 Cotton, OK
- 40051 Grady, OK
- 40075 Kiowa, OK
- 40137 Stephens, OK
- 40141 Tillman, OK

**FORECAST INPUT**

Change In Local Expenditures	\$165,229,000
Change In Civilian Employment	407
Average Income of Affected Civilian	\$27,860
Percent Expected to Relocate	0
Change In Military Employment	2,588
Average Income of Affected Military	\$30,000
Percent of Military Living On-post	10

**FORECAST OUTPUT**

Employment Multiplier	2.38	
Income Multiplier	2.38	
Sales Volume – Direct	\$210,657,800	
Sales Volume – Induced	\$290,707,800	
Sales Volume – Total	\$501,365,600	10.49%
Income – Direct	\$121,353,000	
Income - Induced	\$56,959,510	
Income – Total (place of work)	\$178,312,500	3.82%
Employment – Direct	4,182	
Employment – Induced	1,638	
Employment – Total	5,820	4.48%
Local Population	6,444	
Local Off-base Population	5,800	2.46%

**RTV SUMMARY**

	Sales Volume	Income	Employment	Population
Positive RTV	8.51%	9.46%	4.10%	4.28%
Negative RTV	-10.14%	-8.14%	-3.60%	-1.68%

**RTV DETAILED****SALES VOLUME**

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	514632	2248942	0	0	0
1970	539237	2227049	-21893	-44705	-2.01
1971	561999	2225516	-1533	-24345	-1.09
1972	598483	2292190	66674	43862	1.91
1973	661119	2386640	94450	71638	3
1974	742822	2414172	27532	4720	0.2
1975	819652	2442563	28391	5579	0.23
1976	955605	2694806	252243	229431	8.51
1977	1065311	2812421	117615	94803	3.37
1978	1195847	2941784	129363	106551	3.62
1979	1334554	2949364	7581	-15231	-0.52
1980	1502256	2914377	-34988	-57800	-1.98
1981	1717596	3022969	108592	85780	2.84
1982	1927155	3199077	176108	153296	4.79
1983	1916793	3086037	-113040	-135852	-4.4
1984	2079258	3202057	116020	93208	2.91
1985	2162354	3221907	19850	-2962	-0.09
1986	2117892	3092122	-129785	-152597	-4.94
1987	2155351	3340794	248672	225860	6.76
1988	2178635	2962944	-377850	-400662	-13.52
1989	2205174	2844674	-118269	-141081	-4.96
1990	2280613	2805154	-39520	-62332	-2.22
1991	2371715	2798624	-6530	-29342	-1.05
1992	2637530	3006784	208161	185349	6.16
1993	2650504	2942059	-64725	-87537	-2.98
1994	2691586	2906913	-35146	-57958	-1.99
1995	2707465	2842838	-64075	-86887	-3.06
1996	2810207	2866411	23573	761	0.03
1997	2902377	2902377	35966	13154	0.45
1998	2992842	2932985	30608	7796	0.27
1999	3054849	2932655	-330	-23142	-0.79
2000	3203154	2978933	46278	23466	0.79

**INCOME**

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	684631	2991837	0	0	0
1970	734747	3034505	42668	-14632	-0.48
1971	764087	3025785	-8721	-66021	-2.18
1972	834381	3195679	169895	112595	3.52
1973	995256	3592874	397195	339895	9.46
1974	1074190	3491118	-101757	-159057	-4.56
1975	1177029	3507546	16429	-40871	-1.17
1976	1330893	3753118	245572	188272	5.02
1977	1433742	3785079	31961	-25339	-0.67
1978	1638235	4030058	244979	187679	4.66
1979	1907273	4215073	185015	127715	3.03
1980	2121051	4114839	-100234	-157534	-3.83
1981	2525412	4444725	329886	272586	6.13
1982	2805410	4656981	212255	154955	3.33
1983	2881510	4639231	-17749	-75049	-1.62
1984	3114352	4796102	156871	99571	2.08
1985	3245889	4836375	40273	-17027	-0.35
1986	3249033	4743588	-92786	-150086	-3.16
1987	3276896	5079189	335600	278300	5.48
1988	3367707	4580082	-499107	-556407	-12.15
1989	3470397	4476812	-103270	-160570	-3.59
1990	3634128	4469978	-6834	-64134	-1.43
1991	3715980	4384856	-85121	-142421	-3.25
1992	4063323	4632188	247332	190032	4.1
1993	4138908	4594188	-38000	-95300	-2.07
1994	4222260	4560041	-34147	-91447	-2.01
1995	4319370	4535338	-24703	-82003	-1.81
1996	4515010	4605310	69972	12672	0.28
1997	4667815	4667815	62505	5205	0.11
1998	4848466	4751497	83682	26382	0.56
1999	4980076	4780873	29376	-27924	-0.58
2000	5188638	4825433	44561	-12739	-0.26

**EMPLOYMENT**

Year	Value	Change	Deviation	%Deviation
1969	109139	0	0	0
1970	105997	-3142	-3831	-3.61
1971	102087	-3910	-4599	-4.5
1972	101748	-339	-1028	-1.01
1973	104093	2345	1656	1.59
1974	105555	1462	773	0.73
1975	106435	880	191	0.18
1976	111707	5272	4583	4.1
1977	114676	2969	2280	1.99
1978	116828	2152	1463	1.25
1979	119395	2567	1878	1.57
1980	122959	3564	2875	2.34
1981	125987	3028	2339	1.86
1982	130772	4785	4096	3.13
1983	127825	-2947	-3636	-2.84
1984	128527	702	13	0.01
1985	127138	-1389	-2078	-1.63
1986	121312	-5826	-6515	-5.37
1987	122614	1302	613	0.5
1988	122121	-493	-1182	-0.97
1989	120250	-1871	-2560	-2.13
1990	120402	152	-537	-0.45
1991	119085	-1317	-2006	-1.68
1992	124306	5221	4532	3.65
1993	124692	386	-303	-0.24
1994	124208	-484	-1173	-0.94
1995	125881	1673	984	0.78
1996	128283	2402	1713	1.34
1997	129954	1671	982	0.76
1998	129474	-480	-1169	-0.9
1999	128966	-508	-1197	-0.93
2000	131190	2224	1535	1.17

**POPULATION**

Year	Value	Change	Deviation	%Deviation
1969	242165	0	0	0
1970	234786	-7379	-7918	-3.37
1971	236844	2058	1519	0.64
1972	231445	-5399	-5938	-2.57
1973	234655	3210	2671	1.14
1974	237970	3315	2776	1.17
1975	241603	3633	3094	1.28
1976	252982	11379	10840	4.28
1977	255823	2841	2302	0.9
1978	259458	3635	3096	1.19
1979	259163	-295	-834	-0.32
1980	259887	724	185	0.07
1981	264100	4213	3674	1.39
1982	275471	11371	10832	3.93
1983	281742	6271	5732	2.03
1984	277062	-4680	-5219	-1.88
1985	273976	-3086	-3625	-1.32
1986	269326	-4650	-5189	-1.93
1987	266264	-3062	-3601	-1.35
1988	262307	-3957	-4496	-1.71
1989	256453	-5854	-6393	-2.49
1990	253046	-3407	-3946	-1.56
1991	252812	-234	-773	-0.31
1992	263064	10252	9713	3.69
1993	261710	-1354	-1893	-0.72
1994	261919	209	-330	-0.13
1995	260702	-1217	-1756	-0.67
1996	261702	1000	461	0.18
1997	261591	-111	-650	-0.25
1998	261303	-288	-827	-0.32
1999	261037	-266	-805	-0.31
2000	259411	-1626	-2165	-0.83

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