FINAL

ENVIRONMENTAL ASSESSMENT

CONSTRUCTION PROJECTS AT THE 189TH AIRLIFT WING ARKANSAS AIR NATIONAL GUARD

LITTLE ROCK AIR FORCE BASE LITTLE ROCK, ARKANSAS

AIR NATIONAL GUARD

12 September 2003

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14. ABSTRACT

The 189th Airlift Wing (189 AW) is proposing to implement construction projects associated with their Master Plan update that would include new construction of a Maintenance Hangar and supporting taxiway extension; a Fuel Cell Hangar; and a Refueler Vehicle Parking area. The 189 AW also proposes to demolish four buildings that are obsolete and/or in the footprint of the proposed new facilities. The 189 AW currently maintains 33 facilities at Little Rock AFB. Facility space currently assigned to the 189 AW is substantially less than the amount of space authorized for their mission, as specified by Air National Guard (ANG) Handbook 32- 1084, ANG Facility Requirements. The 189 AW currently maintains 264,081 gross square feet (gsf); while ANG facility requirements authorize 332,143 gsf for the category codes supporting their current mission. This represents a space deficiency of 69,062 gsf. The purpose of the Proposed Action is to provide the 189 AW with properly sized and configured facilities that are required to accomplish their mission. The action is necessary to replace outdated facilities in one case, and non-existent facilities in other cases. To accomplish these construction activities, the 189 AW proposes to amend their current real estate license with the Little Rock AFB host organization, the 314th Airlift Wing, to add two parcels of land that are adjacent to the existing ANG facilities. Parcel A is 13.38 acres and would support the Maintenance Hangar and the Refueler Vehicle Parking. Parcel B is 1.88 acres and would support the Fuel Cell Hangar. Under the No Action alternative, the 189 AW would not implement any construction projects in support of their Master Plan update. Resources considered in the impact analysis were: earth resources; water resources; biological resources, air quality; noise; land use and visual resources socioeconomics and environmental justice; cultural resources; safety; infrastructure; and solid and hazardous materials and waste.

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ACRONYMS AND ABBREVIATIONS

189 AW	189th Airlift Wing
314 AW	314th Airlift Wing
463 AG	463rd Airlift Group
ACC	Air Combat Command
ACHP	Advisory Council on Historic Preservation
ADEQ	Arkansas Department of Environmental Quality
AETC	Air Education and Training Command
AFB	Air Force Base
AFI	Air Force Instruction
AIRFA	American Indian Religious Freedom Act
AMC	Air Mobility Command
ANG	Air National Guard
AOC	Area of Concern
AOP	Arkansas Ordnance Plant
AQCR	Air Quality Control Region
ARANG	Arkansas Air National Guard
AST	aboveground storage tank
BMP	Best Management Practice
CAA	Clean Air Act
CAAA	Clean Air Act Amendment
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
dBA	A-weighted decibel
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
F	Fahrenheit
FFCA	Federal Facility Compliance Act
FONSI	Finding of No Significant Impact
FONPA	Finding of No Practicable Alternative
FY	Fiscal Year
gsf	gross square feet
gpm	gallons per minute
Hz	hertz
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IRP	Installation Restoration Program
JP-4	jet propulsion 4
L_{dn}	Day-Night Average Sound Level
L_{eq}	equivalent sound level
$L_{eq(8)}$	8-hour equivalent sound level
$L_{eq(24)}$	24-hour equivalent sound level
L_{max}	maximum sound level
MAC	Military Airlift Command
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAS	National Audubon Society
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
PAH	polycyclic aromatic hydrocarbons
Pb	lead
PCB	polychlorinated biphenyl
PIF	Partners in Flight
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
PM_{10}	particulate matter less than 10 micrometers in diameter
POL	petroleum, oil, and lubricant
POV	privately owned vehicle
ppm	parts per million
PVC	poly vinyl chloride
PSD	prevention of significant deterioration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
ROI	region of influence
SAC	Strategic Air Command
SARA	Superfund Amendments and Reauthorization Act
SEL	sound exposure level
SF	square feet
SHPO	State Historic Preservation Office
SIC	Standard Industrial Code
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR	State Route
SWDA	Solid Waste Disposal Act
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
TAC	Tactical Air Command
TCE	Trichloroethylene
UFC	Unified Facilities Criteria
$\mu g/m^3$	micrograms per cubic meter
U.S.	United States
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound

COVER SHEET
ENVIRONMENTAL ASSESSMENT
Construction Projects at the 189th Airlift Wing, Arkansas Air National Guard,
Little Rock Air Force Base

Responsible Agency: Department of the Air Force, Air Education and Training Command, Little Rock Air Force Base (AFB), Arkansas.

Proposed Action: Construction Projects at the 189th Airlift Wing, Arkansas Air National Guard

Written comments and inquiries regarding this document should be directed to: Capt. Todd Stuff, Environmental Coordinator, 189th Airlift Wing, 101 CMSgt Williams Drive, Little Rock AFB, Arkansas 72099, (501)-987-8128.

Report Designation: Environmental Assessment (EA).

Abstract: The 189th Airlift Wing (189 AW) is proposing to implement construction projects associated with their Master Plan update that would include new construction of a Maintenance Hangar and supporting taxiway extension; a Fuel Cell Hangar; and a Refueler Vehicle Parking area. The 189 AW also proposes to demolish four buildings that are obsolete and/or in the footprint of the proposed new facilities. The 189 AW currently maintains 33 facilities at Little Rock AFB. Facility space currently assigned to the 189 AW is substantially less than the amount of space authorized for their mission, as specified by Air National Guard (ANG) Handbook 32-1084, *ANG Facility Requirements*. The 189 AW currently maintains 264,081 gross square feet (gsf); while ANG facility requirements authorize 332,143 gsf for the category codes supporting their current mission. This represents a space deficiency of 69,062 gsf. The purpose of the Proposed Action is to provide the 189 AW with properly sized and configured facilities that are required to accomplish their mission. The action is necessary to replace outdated facilities in one case, and non-existent facilities in other cases. To accomplish these construction activities, the 189 AW proposes to amend their current real estate license with the Little Rock AFB host organization, the 314th Airlift Wing, to add two parcels of land that are adjacent to the existing ANG facilities. Parcel A is 13.38 acres and would support the Maintenance Hangar and the Refueler Vehicle Parking. Parcel B is 1.88 acres and would support the Fuel Cell Hangar. Under the No Action alternative, the 189 AW would not implement any construction projects in support of their Master Plan update. Resources considered in the impact analysis were: earth resources; water resources; biological resources, air quality; noise; land use and visual resources; socioeconomics and environmental justice; cultural resources; safety; infrastructure; and solid and hazardous materials and waste.

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FINDING OF NO SIGNIFICANT IMPACT AND FINDING OF NO PRACTICABLE ALTERNATIVE FOR CONSTRUCTION PROJECTS FOR THE 189TH AIRLIFT WING, ARKANSAS AIR NATIONAL GUARD LITTLE ROCK AIR FORCE BASE, ARKANSAS

AGENCY: United States Air Force, Air Education and Training Command.

PURPOSE: The United States Air Force (USAF) prepared an Environmental Assessment (EA) of the potential environmental consequences of proposed construction projects for the 189th Airlift Wing (189 AW). The EA was completed pursuant to the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 Code of Federal Regulations [CFR] Sections 1500-1508), Department of Defense (DoD) Directive 6050.1, 32 CFR Part 989, and Air Force Instruction (AFI) 32-7061.

PROPOSED ACTION: The 189 AW, a tenant of the host 314 AW at Little Rock Air Force Base (AFB), Arkansas, proposes to implement construction projects associated with their Master Plan update to include construction of a Maintenance Hangar and supporting taxiway extension; Fuel Cell Hangar; Refueler Vehicle Parking facility; personnel parking for those facilities; as well as demolition of four buildings that are obsolete, and/or in the footprint of the new facilities. Facility space currently assigned to the 189 AW is substantially less than authorized for their mission, as specified by ANG Handbook 32-1084, *ANG Facility Requirements* (supplements AFI 32-1024, *Standard Facility Requirements*). The purpose of the Proposed Action is to provide the 189 AW with properly sized and configured facilities that are required to accomplish their mission.

To accomplish these projects, the 189 AW proposes to amend their existing real estate license with the 314 AW to add two parcels of land that are adjacent to the existing Air National Guard (ANG) facilities. Two facilities will unavoidably be sited over wetlands and floodplains. The Maintenance Hangar and airfield pavements must be sited as an extension of the existing flight line. The required width and length of the Maintenance Hangar preclude avoidance of a small portion of the facility extending into a wetland and floodplain. No other functional sites are available. The Refueler Vehicle Parking facility will also impact wetlands and floodplains. Within the new proposed ANG parcels, the safety arc requirements from refueler vehicles to other facilities preclude avoidance of wetlands and floodplains. Additionally, other vacant parcels within the current ANG area are not suitable for the refueler vehicles because of similar encumbrances.

NO ACTION ALTERNATIVE: Under the No Action alternative, the 189 AW would maintain their existing facilities and would not build the new facilities proposed. The 189 AW would continue to use an outdated, inefficient Aircraft Maintenance Hangar, with its various deficiencies. Corrosion control and fuel cell maintenance functions would continue to be accomplished outdoors on the ramp or in joint-use facilities, as available. The 189 AW would also continue to use refueler vehicle parking at a temporary location, as long as it is available. Under the No Action alternative, these deficiencies would continue to impair the 189 AW's ability to successfully conduct their mission.

SUMMARY OF FINDINGS:

Earth Resources. It is estimated that approximately 5 acres will become impervious as a result of the Proposed Action. Sedimentation ponds and well-maintained silt fences will be used to limit or eliminate soil movement, stabilize runoff, and control sedimentation during construction. Other construction Best Management Practices (BMPs) will be employed to minimize the potential for erosion and, therefore, impacts to earth resources will not be significant.

Water Resources. An additional 5 acres of impervious cover will result in a minor increase in storm water runoff. A portion (0.75 acre) of the refueler vehicle parking area will be located within the 100-year floodplain. The refueler vehicle parking area will be equipped with subterranean vaults at the exit points with a check gate that will ensure containment of any potential spill. This spill containment system will meet all safety and environmental regulations as dictated by the State of Arkansas, United States Environmental Protection Agency (USEPA) and USAF requirements. Any potential impacts to storm water associated with the Proposed Action will be managed through the implementation of a storm water pollution prevention plan as part of the construction permit requirements enforced by USEPA and the State of Arkansas, which will include the use of appropriate construction BMPs as described above. There are no other practicable alternatives for the location of the ANG facilities that meet all the selection criteria. There will be no significant impacts to water resources or water quality as a result of this action.

Biological Resources. An estimated 1.7 acres of forest and 1.1 acres of grassland will become impervious surface due to construction of facilities. Activities will result in a slight increase in habitat fragmentation; however, this will not likely impact the fauna that currently use this already highly fragmented habitat. The proposal is not expected to have an impact on threatened or endangered flora or fauna because there are none known to occur on Little Rock AFB. A survey of the site conducted in April of 2003 has indicated that there are four potentially jurisdictional wetlands that occur in the project area that total 0.36 acres, as well as a small creek that is considered a Water of the United States (U.S.). The USACE has indicated that they have no objections to this proposal. They have recommended that the 189 AW continue to coordinate with their office to obtain the Section 404 permit and to work with them in development of the mitigation requirements. In coordination with the U.S. Army Corps of Engineers (USACE), base personnel will survey the entire project area for wetlands prior to construction activities. Coordination with USACE will continue to occur and a Section 404 permit will be obtained for impacts to the wetlands (should they prove to be jurisdictional) and the Water of the U.S. Any mitigation required under the permit will be accomplished by the 189 AW in cooperation with the 314 AW. Impacts to biological resources are not expected to be significant.

Air Quality. As a result of construction activities under the proposal, annual emissions will increase during the duration of the construction as follows: 1.7 tons of carbon monoxide (CO), 22.6 tons of volatile organic compounds (VOCs), 5.4 tons of nitrogen dioxide (NO_2), and 2.1 tons of particulate matter less than or equal to 10 micrometers in diameter (PM_{10}), and less than 0.1 ton of sulfur dioxide (SO_2). It is expected that these additional emissions will not result in any long-term impacts on the air quality of Pulaski County or of Air Quality Control Region (AQCR) 016. Post-

construction impacts to air quality will be reduced from the current situation as a result of installation of more modern equipment. There will not be significant impacts to air quality.

Noise. Noise associated with construction sites will be expected to be intermittent and of limited duration. Construction noise emanating off-site will probably be noticeable in the immediate site vicinity, but is not expected to create adverse impacts. The acoustic environment off Little Rock AFB property is expected to remain unchanged. Impacts are not expected to be significant.

Land Use/Visual Resources. Activities proposed are unlikely to affect land use patterns on base, which could cause a change in the governing land use plan. Activities proposed will not affect land use patterns or visual resources on base and significant impacts are not expected.

Socioeconomics/Environmental Justice. There will be no population changes, substantial expenditures, or infrastructure changes as a result of the construction activities proposed by the 189 AW. Consequently, no socioeconomic impacts are associated with implementation of the Proposed Action. Because there are no impacts anticipated as a result of this alternative, there is no potential to disproportionately impact low-income or minority populations.

Cultural Resources. The State Historic Preservation Office has indicated that the proposal will not affect any properties that are eligible for the National Register of Historic Places. There are no known federally-recognized Native American lands or resources within the location of the proposal, and the action is not considered to have the potential to affect Native American lands, treaty rights, or other tribal interests. Impacts are not expected to be significant.

Safety. During normal construction activities, catastrophic accidents are rare. Strict adherence to all applicable occupational safety requirements will minimize the relatively low risk associated with these activities. No significant impacts to safety are expected as a result of the proposal.

Infrastructure. Minor short-term disruptions in utility services, associated with construction of the 189 AW facilities may occur. Upon completion of construction, utilities will return to baseline conditions. No significant long-term changes or impacts to transportation or utility system components are anticipated as a result of this proposal.

Solid and Hazardous Materials and Waste. These new buildings will be designed to contain all spills of hazardous materials and petroleum products or direct releases from the floor drains into an oil/water separator to prevent contaminants from entering the sanitary sewer system. Compared to the corrosion control and fuel cell maintenance activities currently performed on the apron, the Proposed Action is expected to substantially reduce the risk of hazardous material and petroleum product releases. Due to the spill containment capacity of the proposed refueler vehicle parking area, the Proposed Action reduces the possibility of petroleum, oil, and lubricant (POL) releases. Construction activities will require disturbance of potentially contaminated soil from the Former Missile Maintenance Complex (ST-43) and storm water drainage ditch (Area of Concern [AOC] No. 8) during construction of the apron access extension and the hangar complex. Elevated concentrations of petroleum contaminants and Trichloroethylene (TCE) may be present above risk-based action levels in the drainage ditch and former missile complex. If vapors or stained soils are

detected during excavation, work will stop until the soils are characterized and remediated. There will be no significant impacts as a result of this proposal.

PUBLIC INVOLVEMENT: On August 4, 2003, a notice in the *Arkansas Democrat Gazette* invited comment on the draft EA for a period of 30 days. Two of four regulatory agencies responding had recommendations. The Arkansas State Historic Preservation Office recommended that appropriate federally recognized Native American tribes be consulted, which has been accomplished. The Arkansas Soil and Water Conservation Commission recommended that impacted wetlands be replaced per terms of the Section 404 permit issued by the USACE and that new wetlands be located to reduce the overall habitat fragmentation on base. The 189 AW and 314 AW will comply with regulatory agency requirements. No comments were received from the general public.

FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA): Pursuant to Executive Order (EO) 11988, *Floodplain Management*; EO 11990, *Protection of Wetlands*, the authority delegated in HQ USAF/IL memorandum of 6 March, 2002; and taking the above information into consideration, I find that there is no practicable alternative to this action and that the action includes all practicable measures to minimize harm to the existing environment.

FINDING OF NO SIGNIFICANT IMPACT (FONSI): Based on my review of the facts and analysis in the EA, I conclude that the Proposed Action will not have a significant impact either by itself or considering cumulative impacts. Accordingly, the requirements of NEPA, the CEQ Regulations, and AFI 32-7061 have been fulfilled, and an environmental impact statement is not required and will not be prepared.

_____ _____

JOHN D. HOPPER, JR Date
Lieutenant General, USAF
Vice Commander

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ENVIRONMENTAL ASSESSMENT

CONSTRUCTION PROJECTS AT THE 189TH AIRLIFT WING ARKANSAS AIR NATIONAL GUARD

LITTLE ROCK AIR FORCE BASE LITTLE ROCK, ARKANSAS

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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CHAPTER 1.0
PURPOSE AND NEED

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

The 189th Airlift Wing (189 AW), Arkansas Air National Guard (ARANG), is a tenant located on Little Rock Air Force Base (AFB), Arkansas. The host unit at Little Rock AFB is the 314th Airlift Wing (314 AW). The 189 AW is comprised of three major units including Operations, Logistics, and Support along with 18 subordinate units.

The mission of the 189 AW is to train and qualify United States (U.S.) and allied forces aircrews in the C-130 aircraft weapons system. The unit operates the C-130 Tactical Airlift Instructor School at Little Rock AFB, and also provides initial qualification and upgrade training for pilots, navigators, flight engineers, and loadmasters.

The 189 AW at Little Rock AFB, Arkansas proposes to implement construction projects associated with their Master Plan update that would include new construction of a Maintenance Hangar and supporting taxiway extension; a Fuel Cell Hangar; Refueler Vehicle Parking facility; personnel parking for those facilities; as well as demolition of four buildings that are obsolete, and/or in the footprint of the new facilities. To accomplish these construction activities, the 189 AW proposes to amend their existing real estate license with the 314 AW to add two parcels of land that are adjacent to the existing Air National Guard (ANG) facilities.

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989, et seq., *Environmental Impact Analysis Process* (formerly known as Air Force Instruction [AFI] 32-7061), the 189 AW has prepared this Environmental Assessment (EA) that considers the potential consequences to the human and natural environment that may result from implementing these construction projects.

Facility space currently assigned to the 189 AW is substantially less than the space authorized for their mission, as specified by ANG Handbook 32-1084, *ANG Facility Requirements* (supplements AFI 32-1024, *Standard Facility Requirements*). The purpose of the Proposed Action is to provide the 189 AW with properly sized and configured facilities that are required to accomplish their mission. The Proposed Action is needed to replace outdated facilities in one case, and non-existent facilities in other cases.

The 189 AW Aircraft Maintenance Hangar was constructed in 1963.

The 189 AW currently has a maintenance hangar complex that was constructed in 1963 and has been modified numerous times to accommodate various missions. The utility systems in the hangar are outdated, inefficient and sometimes ineffective. The existing hangar (76,856 square feet [SF]) represents a large portion of the existing ANG allocated space. Over 45 percent of the authorized hangar space is either substandard or non-existent. The aircraft maintenance hangar is presently rated as a *Condition Code 3 facility*, exacerbating the space deficiency. A facility Condition Code is a code that describes the physical capability of a facility to accommodate the currently approved activity or function. There are six condition codes. Condition Code 3 is "Force Use," or "substandard." This describes a facility that cannot practicably be raised to meet the standards for the function for which the facility is designed, but which, because of necessity, must continue to be used for a short duration or until a suitable facility can be obtained. A new facility is necessary to satisfy mission requirements.

Corrosion control and fuel cell maintenance functions are currently being accomplished outdoors on the ramp or in joint use facilities scheduled and controlled by the 314 AW. Conflicts with availability are problematic. The joint use facilities are becoming increasingly crowded and the ramp is a poor location to conduct these functions, particularly during inclement weather. A corrosion control/fuel cell maintenance facility is necessary for the 189 AW to satisfy mission requirements.

189 AW Aircraft Refueler Truck.

The 189 AW currently does not have a dedicated refueler vehicle parking area, and space is not available in the newly constructed 314 AW refueler vehicle parking area. The 189 AW refueler vehicle parking area is sited at a temporary area next to the Squadron Operations facility and does not have the appropriate safety clearances. A refueler vehicle parking area dedicated to the 189 AW is necessary to fulfill mission requirements.

1.2 LOCATION OF THE PROPOSED ACTION

Little Rock AFB is a United States Air Force (USAF) training installation assigned to the Air Education and Training Command (AETC). The installation comprises 6,128 acres and is located approximately 15 miles north of the city of Little Rock in central Arkansas (Figure 1.3-1). The base lies in Pulaski County, in the town of Jacksonville. Figure 1.3-2 shows the general layout of Little Rock AFB and the location of the ARANG at the base. U.S. Route 67/167 borders Little Rock AFB on the eastern boundary and State Route (SR) 107 borders the base on the western boundary. Vandenberg Boulevard is the main access to Little Rock AFB.

The main runway at Little Rock AFB (07/25) is 12,000 feet long and is classified as a Class B runway, based on the type of aircraft that use it (primarily C-130s). Class B runways are primarily intended for high performance and large, heavy aircraft. Class A runways are primarily intended for small, light aircraft, are ordinarily less than 8,000 feet long, and less than 10 percent of their operations involve aircraft in the type B category (Unified Facilities Criteria [UFC] 3-260-01 2001).

Little Rock AFB was designed and constructed as a medium jet bomber base in 1953, and the base was officially dedicated and opened to air traffic on 1 August 1955. Originally operated under the Strategic Air Command (SAC), the base served as a facility for reconnaissance aircraft, medium jet bombers, and aerial refueling aircraft. The base has since been operated under the Tactical Air Command (TAC) (1970-1974), the Military Airlift Command (MAC) (1974-1992), the Air Mobility Command (AMC) (1992-1993), the Air Combat Command (ACC) (October 1993-April 1997), and the AETC from April 1997 to the present (USAF 2001a).

The current Little Rock AFB dual military mission consists of C-130 aircrew training and operational airlift units. Base units involved in these missions include the 314 AW, the 189 AW, the 463rd Airlift Group (463 AG), and the Air Mobility Warfare Center Combat Aerial Delivery School.

The mission of the 189 AW is to provide aircrew training and initial qualification and upgrade training for pilots, navigators, flight engineers and loadmasters. Additionally, since 1988, the wing has operated the ANG Basic Academic School. The school provides flight engineer and loadmaster entry-level training for all branches of the armed services including the active Air Force, Air Force Reserve, ANG, Marine Corps, Navy Reserve and Coast Guard. In times of emergency, as declared by the governor of Arkansas, the 189 AW operates at the direction of the state Adjutant General.

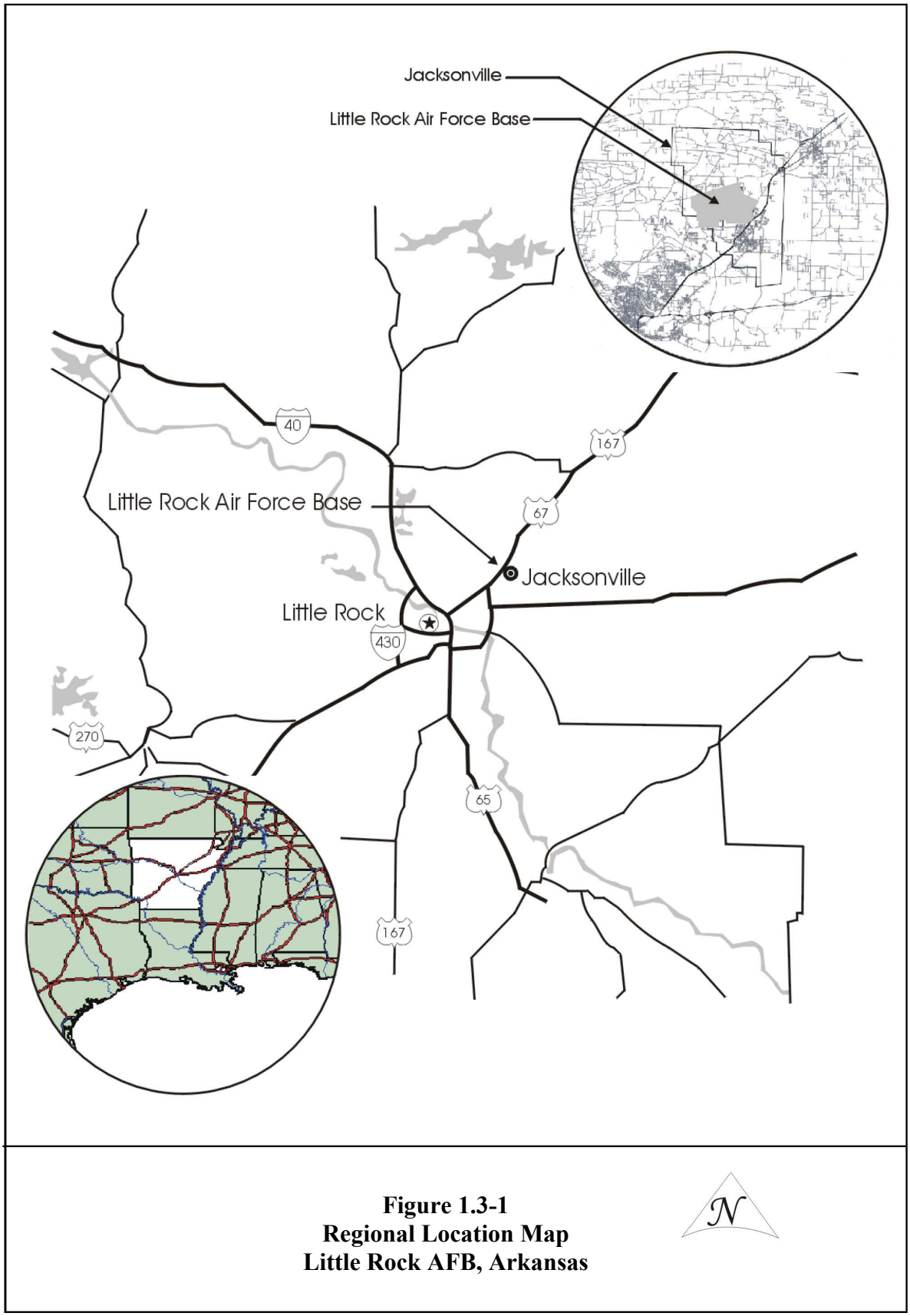

Figure 1.3-1
Regional Location Map
Little Rock AFB, Arkansas

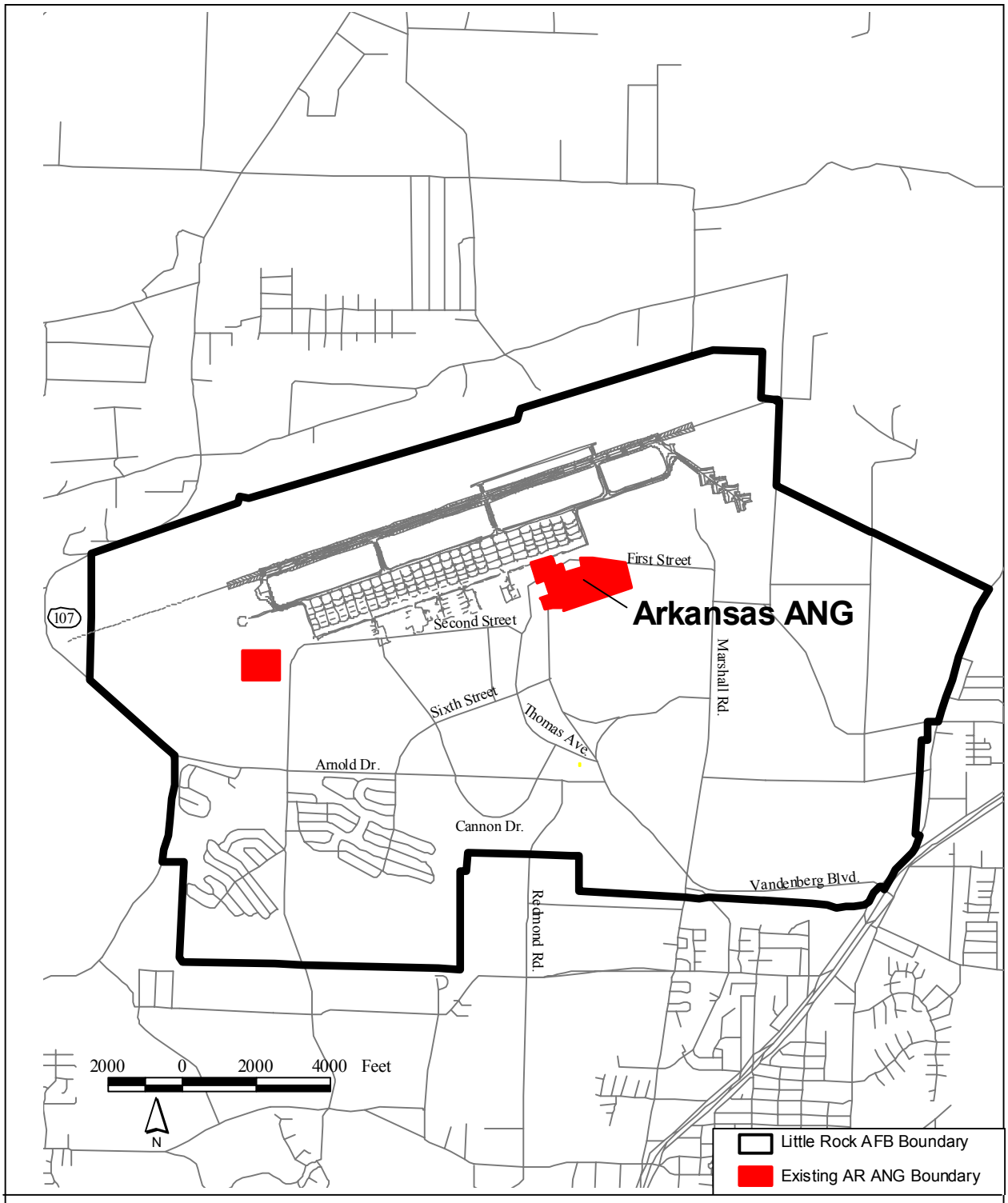

Figure 1.3-2
Arkansas Air National Guard
Little Rock AFB, Arkansas

1.3 DECISION TO BE MADE

The decision to be made by the USAF is whether to accomplish construction activities that would provide the 189 AW with the necessary facilities required to accomplish their mission. There are two alternatives for this action:

- Conduct all proposed construction as described in Section 1.1, including the new aircraft maintenance hangar, the fuel cell/corrosion control hangar and the refueler truck parking area.

- Continue to operate under the current conditions and conduct none of the construction proposed.

1.4 SCOPE OF THE ENVIRONMENTAL REVIEW

This EA identified, describes, and evaluates the potential environmental impacts that may result from implementation of the proposed construction projects in support of the ANG mission. As appropriate, the affected environment and environmental consequences of the Proposed Action may be described in terms of site-specific descriptions of regional overview. Finally, the EA identifies best management practices (BMPs), as appropriate, to prevent or minimize environmental impacts.

The resources that could be impacted and are thereby analyzed in this EA include: earth resources, water resources, biological resources, air quality, noise, land use and visual resources, socioeconomics and environmental justice, cultural resources, safety, infrastructure, and solid and hazardous materials and waste.

1.5 APPLICABLE REGULATORY REQUIREMENTS

1.5.1 NATIONAL ENVIRONMENTAL POLICY ACT

NEPA requires federal agencies to take into consideration the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions. The CEQ was established under NEPA to implement and oversee federal policy in this process. The CEQ subsequently issued the Regulations for Implementing the Procedural Provisions of the NEPA (40 CFR Sections 1500–1508) (CEQ 1978). These requirements specify that an EA be prepared to:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

- Aid in an agency's compliance with NEPA when an EIS is not necessary.
- Facilitate preparation of an EIS when one is necessary.

The activities addressed within this document constitute a federal action and therefore must be assessed in accordance with NEPA. To comply with NEPA, as well as other pertinent environmental requirements, the decision-making process for the Proposed Action includes the development of this EA to address the environmental issues related to the proposed activities. The USAF implementing procedures for NEPA are contained in 32 CFR 989 et seq., *Environmental Impact Analysis Process.*

1.5.2 ENDANGERED SPECIES ACT

The Endangered Species Act (ESA) of 1973 (16 USC §§ 1531–1544, as amended) established measures for the protection of plant and animal species that are federally listed as threatened and endangered, and for the conservation of habitats that are critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions through a set of defined procedures, which can include the preparation of a Biological Assessment and can require formal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Act.

1.5.3 CLEAN AIR ACT

The Clean Air Act (CAA) (42 USC §§ 7401–7671, as amended) provided the authority for the U.S. Environmental Protection Agency (USEPA) to establish nationwide air quality standards to protect public health and welfare. Federal standards, known as the National Ambient Air Quality Standards (NAAQS), were developed for six criteria pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter, and lead (Pb). The Act also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS. Under the CAA Amendments of 1990, federal agencies are required to determine whether their undertakings are in conformance with the applicable SIP and demonstrate that their actions will not cause or contribute to a new violation of the NAAQS; increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP.

1.5.4 WATER RESOURCES REGULATORY REQUIREMENTS

The Clean Water Act (CWA) of 1977 (33 USC § 1251 *et seq*.) regulates pollutant discharges that could affect aquatic life forms or human health and safety. Section 404 of the CWA, and

Executive Order (EO) 11990, *Protection of Wetlands*, regulate development activities in or near streams or wetlands. Section 404 regulates development in streams and wetlands and requires a permit from the U.S. Army Corps of Engineers (USACE) for dredging and filling in wetlands. EO 11988, *Floodplain Management*, requires federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains.

1.5.5 CULTURAL RESOURCES REGULATORY REQUIREMENTS

The National Historic Preservation Act (NHPA) of 1966 (16 USC § 470) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation (ACHP), outlining procedures for the management of cultural resources on federal property. Cultural resources can include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where significant historic events occurred. The Act requires federal agencies to consider potential impacts to cultural resources that are listed, nominated to, or eligible for listing on the NRHP; designated a National Historic Landmark; or valued by modern Native Americans for maintaining their traditional culture. Section 106 of the act requires federal agencies to consult with State Historic Preservation Officers (SHPO) if their undertakings might affect such resources. *Protection of Historic and Cultural Properties* (36 CFR 800 [1986]) provided an explicit set of procedures for federal agencies to meet their obligations under the NHPA, which includes inventorying of resources and consultation with SHPO.

The American Indian Religious Freedom Act (AIRFA) (42 USC § 1996) established federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC §§ 3001–3013) requires consultation with Native American tribes prior to excavation or removal of human remains and certain objects of cultural importance.

1.5.6 OTHER REGULATORY LEGISLATION REQUIREMENTS

Additional regulatory legislation that potentially applies to the implementation of this proposal includes guidelines promulgated by EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, to ensure that citizens in either of these categories are not disproportionately affected. Additionally, potential health and safety impacts that could disproportionately affect children will be considered under the guidelines established by EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires

federal agencies to evaluate the effects of their actions on migratory birds with an emphasis on species of concern.

1.5.7 ENVIRONMENTAL COORDINATION

EO 12372, *Intergovernmental Review of Federal Programs*, requires intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the proponent must notify concerned federal, state, and local agencies and allow them sufficient time to evaluate potential environmental impacts of a Proposed Action. Comments from these agencies are subsequently incorporated into the Environmental Impact Analysis Process (EIAP).

In a recently formulated policy to address EO 13084, *Consultation and Coordination with Indian Tribal Governments*, the Department of Defense (DoD) has clarified its policy for interacting and working with federally recognized Native American and Alaska Native governments. Under this policy guidance, proponents must provide timely notice to, and consult with, tribal governments prior to taking any actions that have the potential to affect protected tribal resources, tribal rights, or Indian lands. Tribal input must be solicited early enough in the planning process that it may influence the decision to be made.

1.6 INTRODUCTION TO THE ORGANIZATION OF THE DOCUMENT

This EA is organized into seven chapters. Chapter 1.0 contains a statement of the purpose and need for the action, the location of the Proposed Action, a statement of the decision to be made, a summary of the scope of the environmental review, identification of applicable regulatory requirements, and a description of the organization of the EA.

Chapter 2.0 contains a brief introduction; describes the history of the formulation of alternatives; describes the alternatives eliminated from further consideration; provides a detailed description of the Proposed Action; describes the No Action and other action alternatives; summarizes other actions likely to occur in the region of influence; provides a comparison matrix of environmental effects for all alternatives; identifies the preferred alternative, and discusses mitigation or BMPs, as required.

Chapter 3.0 contains a general description of the current conditions of the resources that potentially could be affected by the Proposed Action. Chapter 4.0 is an analysis of the environmental consequences of the Proposed Action and the No Action alternative. Chapter 5.0 lists the preparers of this document. Chapter 6.0 lists persons and agencies consulted in the preparation of this EA. Chapter 7.0 is a list of source documents relevant to the preparation of this EA. Appendix A contains all interagency correspondence regarding the Proposed Action.

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CHAPTER 2.0
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The 189 AW currently maintains 33 facilities at Little Rock AFB (Figure 2.1-1). Facility space currently assigned to the 189 AW is substantially less than the amount of space authorized for their mission. The 189 AW currently maintains 264,081 gross square feet (gsf); while ANG facility requirements authorize 332,143 gsf for the category codes supporting their current mission. This represents a space deficiency of 69,062 gsf.

The Proposed Action is to implement the 189 AW Master Plan that would include construction of a Maintenance Hangar (93,775 SF) and supporting taxiway extension, a Fuel Cell Hangar (25,500 SF), Refueler Vehicle Parking facility (23,100 SF), and personnel parking for those facilities.

To accomplish these construction activities, the 189 AW proposes to amend their current real estate license with the 314 AW to add two parcels of land that are adjacent to the existing ANG facilities. Parcel A is 13.38 acres and would support the Maintenance Hangar and the Refueler Vehicle Parking. Parcel B is 1.88 acres and would support the Fuel Cell Hangar (Figure 2.1-2).

2.2 HISTORY OF THE FORMULATION OF ALTERNATIVES

During the process of proposal development, potential sites for each component of the proposal were considered that could potentially accommodate the project requirements. There were no other sites identified that could meet all the selection criteria for the Proposed Action. Criteria for the selection of the site were identified and are described below.

Selection criteria for the site include the following considerations:

- The site would be large enough to accommodate all components of the proposal.
- The site must be in such a location as to be easily accessible by ANG personnel (adjacent to existing facilities is optimal). It is inefficient to build new facilities remote from existing ANG facilities.
- The site must be adjacent to the airfield apron.
- The site must not interfere with apron expansion to the east of the existing apron.
- The site should conform to the Installation Master Plan.

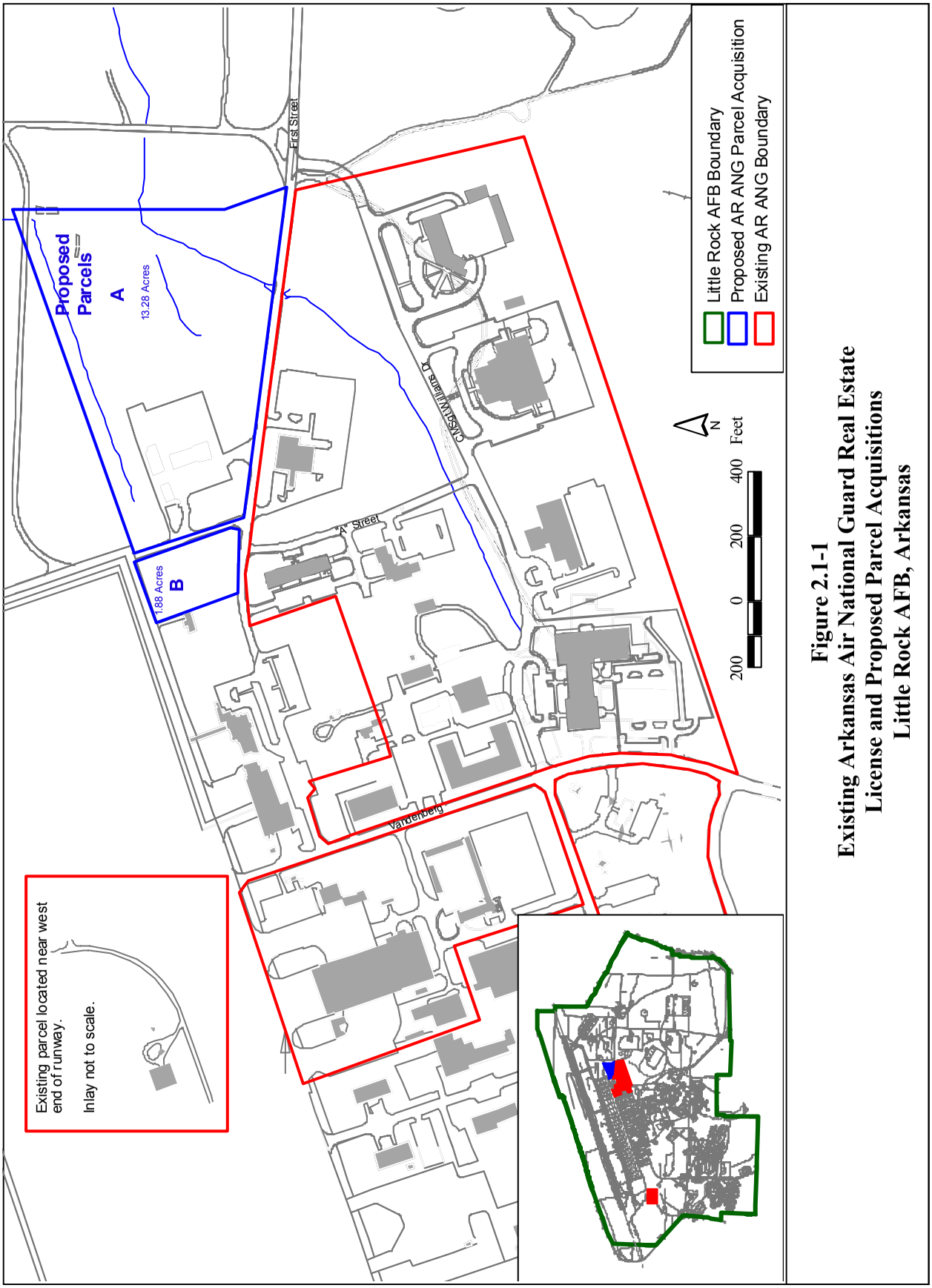

Figure 2.1-1
Existing Arkansas Air National Guard Real Estate
License and Proposed Parcel Acquisitions
Little Rock AFB, Arkansas

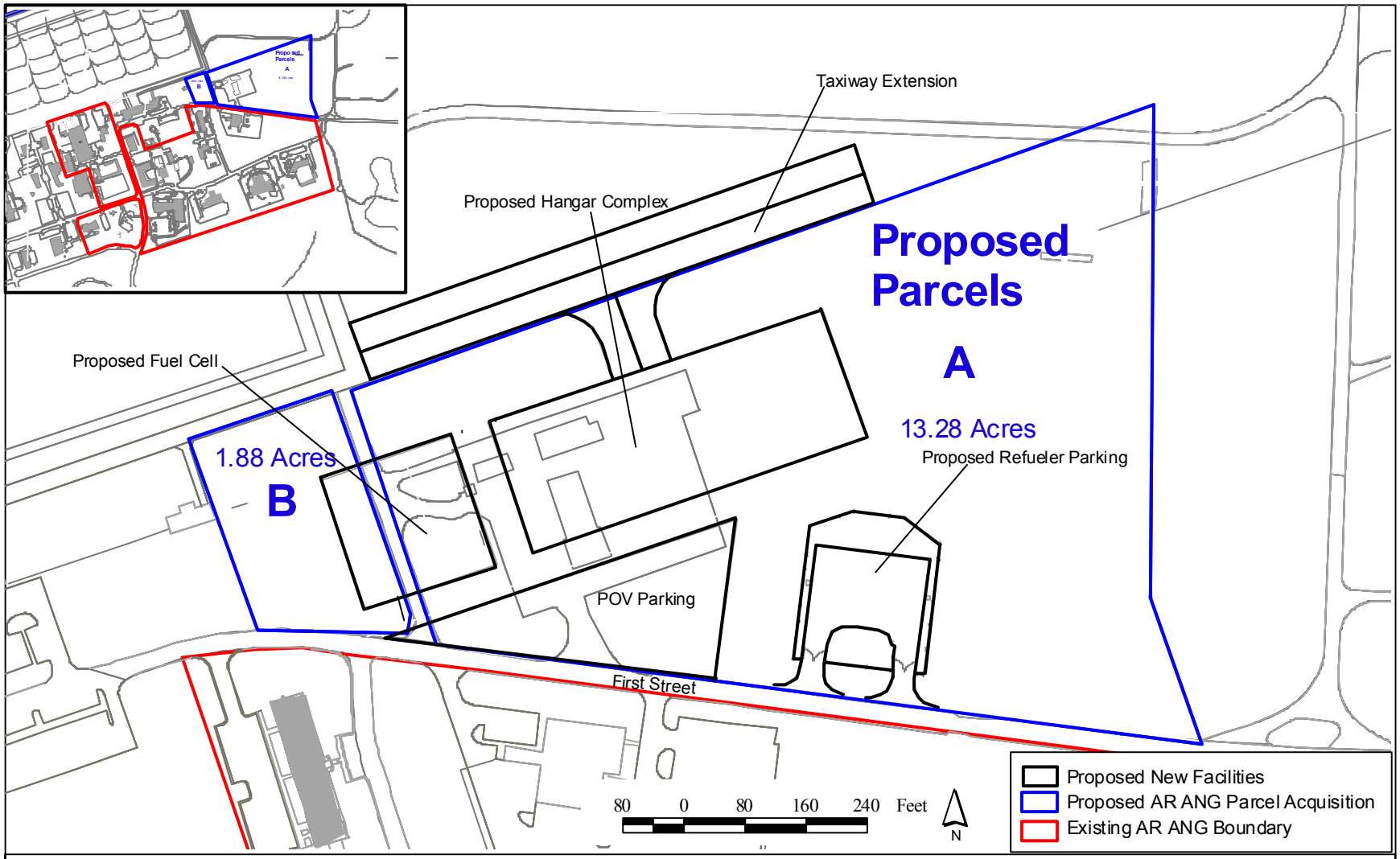

Figure 2.1-2
Proposed Facilities on Amended ANG Real Estate License
Little Rock AFB, Arkansas

2.3 IDENTIFICATION OF ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Alternative locations to the Proposed Action were considered during the process of proposal development; however, none of the alternative locations met all the selection criteria. Alternative locations and their reason for dismissal are described in Table 2.3-1 below.

Table 2.3-1. Alternative Locations

Location	*Insufficiency*
North of proposed site	Expansion of airfield apron anticipated and the new facilities require an offset of 125 feet.
West of proposed site	Parcel size is inadequate to accommodate all proposed facilities with required offsets.
East of proposed site	Is not adjacent to the apron and would therefore be a non-functional site for facilities.
South of proposed site	There are already functional facilities in this location, and vacant portions of this area are within the 100-year floodplain and contain documented and potential wetland sites.

Due to safety and operational requirements, there is no alternative layout of the proposed facilities on parcels A and B as shown in Figure 2.3-1. To accommodate operational and logistics expediencies, the 189 AW must locate the refueler vehicle parking area within the ANG cantonment area, rather than on 314 AW property where it currently does not comply with the safety arc or environmental requirements. The current safety arc requirements indicate that the refueler vehicle parking area must be offset at least 100 feet from any structure or parking area per AFOSH STD 91-38 paragraph 3.5.2.2. The Fuel Cell/Corrosion Control Facility must have a 33-foot clearance to the adjacent roadway to the south per UFC 4-010-01, *DoD Antiterrorism Standards for Buildings*, and maintain a minimum building separation of 33 feet per UFC-4-010-01, and 50 feet for fire protection requirements. Therefore, the facility cannot be moved further to the west without violating one of these clearance requirements. The required offset from the two proposed hangars to the flightline/parking apron is 125 feet, per UFC 3-260-01, *Airfield and Heliport Planning and Design.* Planning for these facilities locates them as close as possible to the flightline for functional reasons and therefore these facilities cannot be located any further north than proposed. All areas not shown specifically for proposed facilities would be used as required for privately owned vehicle (POV) parking areas while maintaining standoff distances referenced above for safety and antiterrorism.

There are two vacant sites on existing ANG property that are large enough to accommodate the refueler vehicle parking area. These sites are just south of the proposed site and south of First

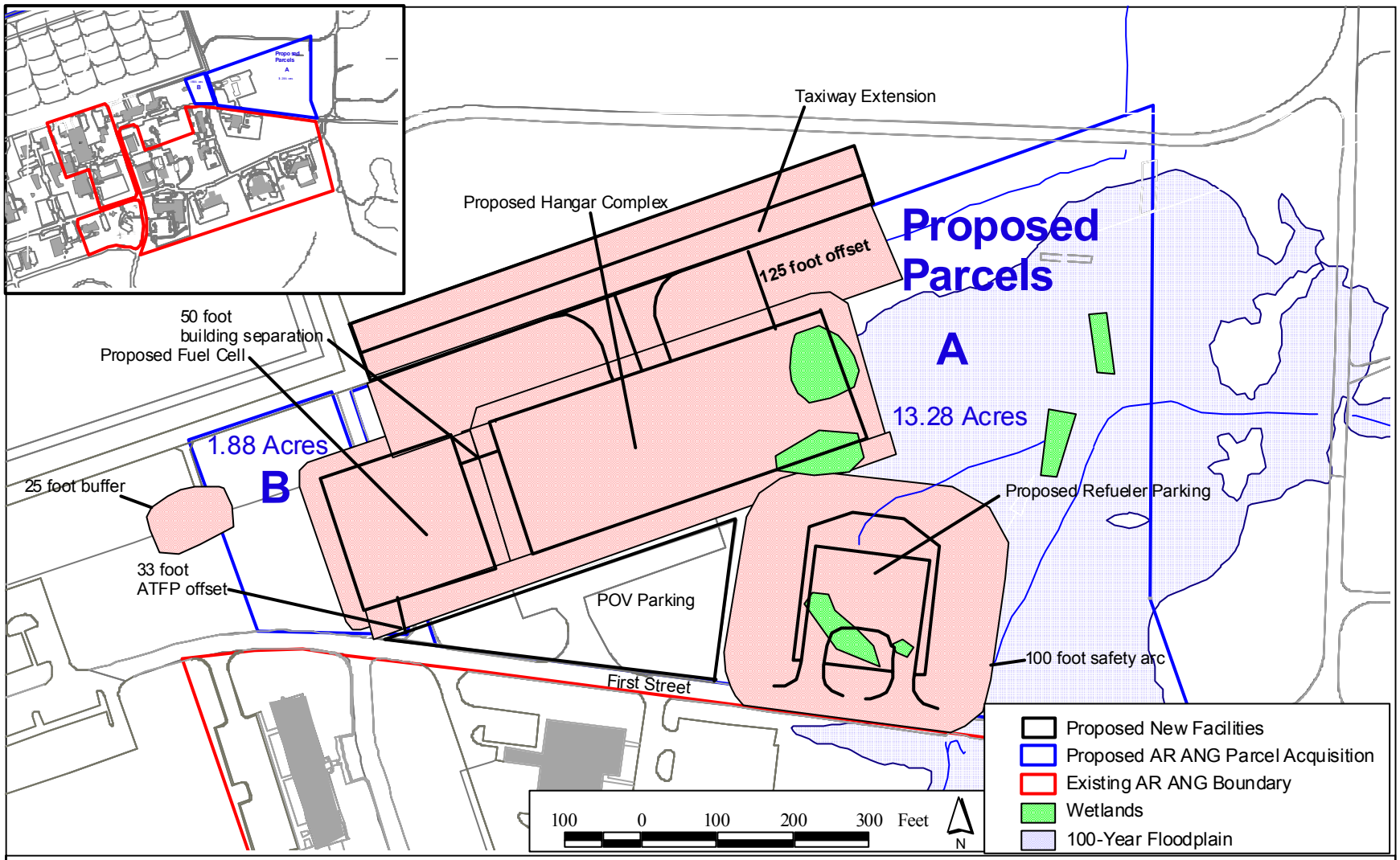

Figure 2.3-1
Proposed ANG Facilities with Safety and Security Offsets
Little Rock AFB, Arkansas

Street. Both sites lie within the 100-year floodplain and contain documented and potential wetland sites as well (Figure 3.2-2). The site at the intersection of "A" Street and CMS Williams Drive is heavily wooded and has two open drainage ditches converging in a stream site that drains toward Outfall 4. Given the Base guidance to eliminate construction within 50 feet of streams, there is not enough property at this site to accommodate the safety and security offsets.

2.4 PROPOSED ACTION

Under the Proposed Action, the 189 AW would implement the Installation Master Plan that would include construction of a Maintenance Hangar and supporting taxiway extension, a Fuel Cell Hangar, a Refueler Vehicle Parking facility, and personnel parking for those facilities (Table 2.4–1). These facilities would be sited as shown in Figure 2.1-2. In support of these projects, the Arkansas ANG would amend their real estate license to acquire the two parcels of property shown in Figure 2.1-1.

Table 2.4-1. Summary of Area to be Affected Under Proposed Action

Construction Activity	***Project Identification Number***	***Acres***
Aircraft Maintenance Hangar	NKAK029137	2.16 acres (maximum)
Parking at Hangar		1.24 acres
Taxiway Extension		0.52 acres
Fuel Cell/Corrosion Control Hangar	NKAK909718	0.59 acres
Refueler Vehicle Parking Area	NKAK982118	0.53 acres
Total Area Affected		**5.04 acres**

2.4.1 AMENDMENT OF REAL ESTATE LICENSE

In support of the proposed construction projects, the 189 AW proposes to amend its existing real estate license with Little Rock AFB to add the two parcels described in Figure 2.2-1 to the 189 AW license. Parcel A is 13.38 acres and Parcel B is 1.88 acres, which would add 15.26 acres to their existing real estate license of 73 acres.

2.4.2 AIRCRAFT MAINTENANCE HANGAR

The proposed Composite Aircraft Maintenance Hangar would be located on parcel A (Figure 2.1-1) and would provide an estimated 93,775 SF, which would accommodate a single C-130 aircraft and all support space for the aircraft maintenance functions required for it. The new hangar would contain all existing functions presently located in the substandard Building 207,

which would subsequently be demolished. These functions include: aircraft maintenance, general purpose aircraft shops, weapons systems management, weather/flight data systems, and the Logistics Group Commander and staff. The hangar would be constructed with a concrete foundation and floor slab with steel framed brick veneer/metal siding and a standing seam metal roof structure. The design would include all supporting utilities and subsystems, access pavements, site improvements, and fire protection and suppression capabilities. The exterior would be consistent with the existing base architectural design. There would also be a new parking area associated with this hangar that would accommodate approximately 150 personal vehicles. This parking area is expected to be approximately 54,000 SF.

In support of this building, the existing taxiway would be extended to the east. The extension would be approximately 300 linear feet long and 75 feet wide.

2.4.3 FUEL CELL/CORROSION CONTROL HANGAR

The proposed Fuel Cell/Corrosion Control Hangar would be located on parcel B (Figure 2.1-1) and would provide an estimated 25,500 SF, which would support the safe repair of aircraft fuel cells and bladders and for the performance of corrosion control on aircraft parts both on and off the aircraft. The facility would provide for control of fugitive emissions, volatile organic compounds (VOCs), and paint and abrasive particulates. The design and construction would be completed in accordance with 40 CFR 63, CAA Amendments of 1990, which enforce the practice of controlling hazardous air pollutant emissions associated with the maintenance of military aircraft. Functional components of the hangar would include a fuel cell and corrosion control hangar bay, a bladder repair shop, support shop space, a paint spray booth for painting large and small aircraft parts, and a training and administration area. Due to the nature of activities that would occur in this hangar, it is imperative that there be apron access to the bays. An environmentally approved exhaust/control system to contain air pollutants and an oil/water separator to prevent corrosion contaminants or fuel spills from entering the soil or surface water system would also be incorporated into the building design. The hangar would be constructed with a concrete foundation and floor slab. It would be steel-framed with metal panel walls and masonry walls and roof structure. The design would include all supporting utilities and subsystems, access pavements, site improvements, oil/water separators, and fire protection and suppression capabilities. The exterior would be consistent with the existing base architectural design.

2.4.4 REFUELER VEHICLE PARKING AREA

The proposed Refueler Vehicle Parking Area would be located on parcel A (Figure 2.1-1). It would be approximately 23,100 SF in size and would support refueler vehicle parking for the 189 AW. The parking area would be an environmentally approved petroleum, oil, and lubricant

(POL) refueler truck parking area and would be designed to provide for containment capacity of the volume of the largest refueler truck (6,000 gallons) in addition to runoff from a rainfall event with an intensity equal to a five year expectancy and one-hour duration. The entire parking area would be surrounded with a concrete berm to contain any potential liquid spill. There would be grates in the pavement at each exit point from the parking area that would be equipped with a check gate to contain any spill. It would also meet safety and environmental regulations as dictated by the State of Arkansas (Arkansas Department of Pollution Control and Ecology Commission Regulation 19, Section 19.10), 40 CFR 110 and 112, and applicable USAF requirements. Within the parking area, a 10-foot by 10-foot metal shed would be constructed to provide a covered area for administrative activities associated with refueling. There would be no POV parking at this facility.

As a part of the Proposed Action, disturbed areas would be reseeded with native grasses and would be maintained by mowing, as appropriate. During the construction phase, BMPs would be utilized to minimize erosion. BMPs would include the use of well-maintained silt fences. Permanently hardened areas resulting from the Proposed Action would increase as a result of construction of the new facilities and from the taxiway extension. Total increased hardened area under the proposal would be 5.04 acres.

2.4.5 Demolition Projects Associated with Construction Activities

As a component of constructing new facilities for the ARANG, existing facilities would be demolished that are obsolete or deteriorated and/or in the footprint of the new facilities. It is expected that four buildings on the ANG real estate license would be demolished under this proposal (Table 2.4-2).

Table 2.4-2. Proposed Demolition Projects for the 189 AW at Little Rock AFB

Building Number	*Facility*	*Approximate Area*
204	Hazardous Storage	630 SF
207	Aircraft Maintenance Hangar	76,856 SF
209	Aircraft Maintenance Shop	2,170 SF
213	Jet Engine Shop	10,400 SF
Total		**90,056 SF**

2.5 NO ACTION ALTERNATIVE

Under the No Action alternative, the 189 AW would maintain their existing facilities and would not build the new facilities proposed. The 189 AW would continue to use an outdated, and

inefficient aircraft maintenance hangar, with its various deficiencies. Corrosion control and fuel cell maintenance functions would continue to be accomplished outdoors on the ramp or in joint-use facilities scheduled and controlled by the 314 AW. The 189 AW would also continue to use refueler vehicle parking at the temporary area next to the Squadron Operations facility that does not have the appropriate safety clearances.

Under the No Action alternative, these deficiencies would continue to impair the 189 AW's ability to successfully conduct their mission.

2.6 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS IN THE REGION OF INFLUENCE

Cumulative impacts to environmental resources result from incremental effects of proposed actions when combined with other past, present, and reasonably foreseeable future projects in the region of influence (ROI). Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated in the near future is required.

Short and long-term planning efforts at Little Rock AFB and the ROI include this action as well as several others. Future-planning efforts will include the following major projects:

- Correction of several airfield clear zone violations
- Expansion of the Existing Heritage Park static display of aircraft
- C-130J beddown
- Fire Station construction
- Military Family Housing Replacement/Renovation

On-going projects include:

- Construction of a new Squad Operations facility
- Development of Oakridge Ranch Subdivision (northeast of Little Rock AFB)
- Development of Crooked Creek Subdivision (south of Little Rock AFB)

Little Rock AFB updates facilities on a continual basis, as necessary. These planned activities have the potential to generate environmental impacts that could exacerbate impacts associated with the proposal described in this EA unless projects are planned and implemented with consideration for this potential. Each of the federal actions listed above either have been or will be the subject of subsequent NEPA analysis, which will evaluate the existing environment at the time of each proposal. The existing environment described in each of those subsequent NEPA documents will include the actions of this proposal. There are no other known projects planned for the ROI. Cumulative Impacts related to these activities are discussed in Chapter 4.0 of this EA.

2.7 SUMMARY OF IMPACTS

Potential impacts resulting from the Proposed Action and No Action alternatives are summarized in Table 2.7-1.

Table 2.7-1. Summary of Potential Impacts
(Page 1 of 5)

Resource Area	*Proposed Action*	*No Action*
Earth Resources	It is estimated that approximately 5 acres would become impervious as a result of the Proposed Action. Sedimentation ponds and well maintained silt fences would be used to limit or eliminate soil movement, stabilize runoff, and control sedimentation during construction. Other construction BMPs would be employed to minimize the potential for erosion and therefore impacts to earth resources should be negligible. Other proposed activities at Little Rock AFB include temporary disturbance of approximately 400 acres during construction activities. Appropriate BMPs, as described above, would be employed during all activities to ensure that erosion is minimized. Cumulative impacts to earth resources are expected to be minor.	Under the No Action alternative, the 189 AW would maintain their existing facilities and would not build new facilities. No impacts to earth resources would occur.
Water Resources	As described above, an additional 5.04 acres would be hardened as a result of the proposal. This would result in a minor increase in storm water runoff. A very small portion (0.75 acre) of the refueler vehicle parking area is proposed to be located within the 100-year floodplain. The refueler vehicle parking area would be equipped with subterranean vaults at the exit points with a check gate that would ensure containment of any potential spill. This spill containment system would meet all safety and environmental regulations as dictated by the State of Arkansas, USEPA and USAF requirements. Any potential impacts to storm water associated with the Proposed Action would be managed through the implementation of a Storm Water Pollution Prevention Plan (SWPPP) as part of the construction permit requirements enforced by USEPA and the State of Arkansas, which would include the use of appropriate construction BMPs as described above. Other proposed activities at Little Rock AFB include the disturbance of approximately 400 acres and the permanent hardening of approximately 13 acres. Storm water would be managed as discussed above and cumulative impacts are expected to be minor.	Under the No Action alternative, no construction would occur and no impacts to water resources would occur.

Table 2.7-1. Summary of Potential Impacts
(Page 2 of 5)

Resource Area	*Proposed Action*	*No Action*
Biological Resources	An estimated 1.7 acres of forest and 1.1 acres of grassland would become impervious surface due to construction of facilities. Activities would result in a slight increase in habitat fragmentation; however, this would likely not impact the fauna that currently use this already highly fragmented habitat. The proposal should have no impact on threatened or endangered flora or fauna because there are none known to occur on Little Rock AFB. A survey of the site conducted in April of 2003 has indicated that there are four potentially jurisdictional wetlands that occur in the project area as well as a small creek that is considered a Water of the United States. The four wetlands that would be impacted by the proposal total approximately 0.36 acres in total size. In coordination with USACE, base personnel would survey the entire project area for wetlands prior to construction activities. This would include the previously unsurveyed area north of the fence line in the area of the proposed taxiway extension. Coordination with USACE would continue to occur and a Section 404 permit would be obtained for impacts to the wetlands (should they prove to be jurisdictional) and the Water of the U.S. There are no substantial impacts to biological resources expected as a result of the Proposed Action. Other proposed activities at Little Rock AFB include primarily construction within the cantonment area. There are no impacts to biological resources anticipated as a result of these activities. The project in which violations to the UFC are being corrected would include potential impacts to approximately 70 acres of wetlands. Coordination with the USACE is in process and a Section 404 permit is underway. Cumulative impacts associated with all these projects are expected to be minor.	Under the No Action alternative, the construction projects proposed would not occur. No impacts to biological resources would be expected under this alternative.
Air Quality	Although construction activities are expected to occur over several years, emissions were calculated based on a one-year construction period so as to develop a conservative estimate of emissions. As a result of construction activities under the proposal, annual emissions would increase during the duration of the construction period as follows: 1.7 tons of CO, 22.6 tons of VOCs, 5.4 tons of NO_2, and 2.1 tons of particulate matter less than 10 micrometers in diameter (PM_{10}), and less than 0.1 tons of SO_2. It is expected that these additional emissions would not result in any long-term impacts on the air quality of Pulaski County of Air Quality Control Region (AQCR) 016. Post-construction impacts to air quality would be reduced from current conditions as a result of more modern equipment. Other proposed activities at Little Rock AFB are expected to generate increased emissions over the short term. Impacts would be temporary in nature, and no long-term impacts are expected.	Under the No Action alternative, proposed construction activities would not occur. There would be no impacts to air quality.

Table 2.7-1. Summary of Potential Impacts
(Page 3 of 5)

Resource Area	*Proposed Action*	*No Action*
Noise	Noise associated with construction sites would be expected to be intermittent and of limited duration. Calculations based on a conservative (worst-case) scenario indicate a 24-hour equivalent sound level ($L_{eq(24)}$) of 61 A-weighted decibels (dBA) at distance of 500 feet. Due to the conservative nature of the estimate, actual levels emanating off-site would be expected to be lower. Most, if not all of the areas involving construction are situated within areas already exposed to elevated noise from airfield operations, and the ARANG installation on Little Rock AFB is generally within the Day-Night Average Sound Level (L_{dn}) 65 contour. Construction noise emanating off-site would probably be noticeable in the immediate site vicinity, but would not be expected to create adverse impacts. The acoustic environment off Little Rock AFB property would be expected to remain unchanged. Other proposed and/or ongoing construction activities at Little Rock AFB are expected to generate construction noise over the short term at Little Rock AFB. These activities would be similar in nature to those described here, and are a common and expected component of military activities. All other construction activities would be expected to have similar noise impacts to the surrounding environment, with similar results as described above. Cumulative impacts with respect to noise are expected to be negligible.	Under the No Action alternative, there would be no impacts to the acoustic environment of Little Rock AFB.
Land Use/Visual Resources	Activities proposed are unlikely to affect land use patterns on base, which could cause a change in the governing land use plan. Landscaping improvements would follow the Architectural Compatibility Guide as described in the General Plan. All other planned projects are also consistent with the Installation Master Plan as well as existing land uses. The result of these projects would be an improved layout of the installation. Cumulative impacts are expected to be positive.	Under the No Action alternative, the existing ARANG installation would remain as it is today. There would be no new construction and there would be no impacts as a result of this alternative.
Socioeconomics and Environmental Justice	There would be no population changes, substantial expenditures, or infrastructure changes as a result of the construction activities proposed by the 189 AW. Consequently, no socioeconomic impacts are associated with implementation of the Proposed Action. Because there are no impacts anticipated as a result of this alternative, there is no potential to disproportionately impact low-income or minority populations. Similarly, there would be no impacts to children. All planned future projects are likely to have a short-term positive impact on the local economy due to construction activities. Cumulative impacts are expected to be positive.	Under the No Action alternative, there would be no impacts to socioeconomics or environmental justice.

Table 2.7-1. Summary of Potential Impacts
(Page 4 of 5)

Resource Area	*Proposed Action*	*No Action*
Cultural Resources	Facility 207, a maintenance hangar constructed in 1963, is proposed for demolition. Although it was recorded as part of a Cold War inventory of the base, it has not yet been evaluated for NRHP-eligibility. NRHP eligibility evaluation of this property, in compliance with Section 106 of the NHPA, would be completed prior to initiation of the Proposed Action. If the facility is found to be eligible for the NRHP, adverse effects would be mitigated in consultation with the Arkansas SHPO. Archaeological inventory of all accessible parts of Little Rock AFB did not locate any resources in the area of potential effect for the Proposed Action. There are no known federally-recognized Indian lands or resources within the location of the proposal, and the action is not considered to have the potential to affect Indian lands, treaty rights, or other tribal interests. There are seven ineligible archaeological sites associated with the Clear Zone project. Inasmuch as possible, these sites will be avoided to protect the resources. No cumulative impacts are expected.	Under the No Action alternative, proposed construction would not occur. There would be no impacts to cultural resources as a result of this alternative.
Safety	During normal construction activities, catastrophic accidents are rare. Strict adherence to all applicable occupational safety requirements would minimize the relatively low risk associated with these activities. The Proposed Action would include the permanent closure of the road between parcels A and B that connects 1st Street to the parking apron to the north. This would not create any delays in terms of emergency vehicle access to the apron since this road is currently blocked from apron access. No impacts to safety are expected. All planned future projects could result in a short-term increase in construction accidents; however, adherence to all applicable safety requirements would minimize these occurrences. The result of implementation of the correction of UFC violations would result in a long-term positive impact to safety at the base. Cumulative impacts are expected to be positive.	Under the No Action alternative, the 189 AW would not build any new maintenance support facilities. They would continue operations and maintenance activities using inadequate or nonexistent facilities. The safety enhancements to maintenance operations that would be expected to result from the construction of the proposed new facilities would not be realized.
Infrastructure	Minor short-term disruptions in utility services associated with construction of the 189 AW facilities may occur. Upon completion of construction, utilities would return to baseline conditions. No long-term adverse impacts are anticipated. The Proposed Action would include the permanent closure of the road between parcels A and B that connects 1st Street to the parking apron to the north. The flightline is normally accessed via Vandenberg Boulevard and is therefore not expected to cause serious impacts to transportation. No other long-term changes or impacts to transportation system components are anticipated as a result of this proposal with the exception of a minor decrease in refueler truck traffic in the vicinity of the Squadron Operations facility. There could be minor, short-term disruptions in transportation or utility supply as a result of all planned projects at Little Rock AFB, however these are expected to be minor. The long-term cumulative impacts are expected to be positive in that the projects will result in a more efficient base layout.	No impacts are anticipated to utilities or transportation facilities under the No Action alternative. No changes to the utility systems or transportation facility usage would occur.

Table 2.7-1. Summary of Potential Impacts
(Page 5 of 5)

Resource Area	*Proposed Action*	*No Action*
Solid and Hazardous Materials and Waste	The volume of hazardous materials and petroleum products used and stored would be expected to remain approximately the same in the new hangar complex and the new fuel cell hangar. These new buildings would be designed to contain all spills of hazardous materials and petroleum products or direct releases from the floor drains into an oil/water separator to prevent contaminants from entering the sanitary sewer system. Compared to the corrosion control and fuel cell maintenance activities currently performed on the apron, the Proposed Action would be expected to substantially reduce the risk of hazardous material and petroleum product releases. Due to the spill containment capacity of the proposed refueler vehicle parking area, the Proposed Action may reduce the possibility of POL releases. Construction activities would require disturbance of potentially contaminated soil from the Former Missile Maintenance Complex (ST-43) and storm water drainage ditch (Area of Concern [AOC] No. 8) during construction of the apron access extension and the hangar complex. Elevated concentrations of petroleum contaminants and Trichloroethylene (TCE) may be present above risk-based action levels in the drainage ditch and former missile complex. If vapors of stained soils were detected during excavation, work would stop until the soils were characterized and remediated. All additional proposed construction activities would result in a short-term increase in solid waste, which would be disposed of in accordance with applicable regulations. Cumulative impacts are expected to be minor.	Under the No Action alternative, construction activities would not occur. Improvements to the containment of potential spills related to the refueler vehicle parking would not occur. Similarly, improvements related to the corrosion control and fuel cell maintenance activities would not occur. Operations and conditions would remain as they currently are.

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CHAPTER 3.0
EXISTING CONDITIONS

Chapter 3.0 describes the existing environmental and socioeconomic conditions likely to be affected by the Proposed Action. This chapter provides information to serve as a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the proposal. The potential environmental and socioeconomic impacts of implementing the Proposed Action or its alternative are described in Chapter 4.0.

In compliance with NEPA, CEQ guidelines, and 32 CFR 989 et seq., the description of the affected environment focuses on those resources and conditions potentially subject to impacts. These resources and conditions include: earth resources, water resources, biological resources, air quality, noise, land use and visual resources, socioeconomics and environmental justice, cultural resources, safety, infrastructure, and solid and hazardous materials and wastes.

3.1 EARTH RESOURCES

3.1.1 DEFINITION OF THE RESOURCE

Earth resources include topography, geology, and soils. Geologic resources of an area typically consist of surface and subsurface materials and their inherent properties. The term soils refers to unconsolidated materials formed from the underlying bedrock or other parent material. Soils play a critical role in both the natural and human environment. Soil drainage, texture, strength, shrink-swell potential, and erodibility all determine the suitability of the ground to support man-made structures and facilities.

These resources may have scientific, historical, economic, and recreational value. The ROI for geology and soils includes the area immediately underlying the proposed Construction Projects at the 189 AW ARANG at Little Rock AFB, Arkansas.

3.1.2 EXISTING CONDITIONS

3.1.2.1 Geology

The state of Arkansas is divided into several very distinct physiographic regions. A southwest to northeast diagonal line divides the state into the Ozark/Ouachita highlands and the Mississippi Alluvial Plain/Gulf Coastal Plain. The highland regions are further divided by the Arkansas River Valley, which follows the flow of the Arkansas River through the highland regions.

Little Rock AFB lies on the diagonal transition between the Ouachita highlands and the lowlands. The rock formations in the highland area are dominated by well-lithified sandstones,

shales, limestones, and dolostones of Paleozoic age. A thin drape of younger unconsolidated clays, sands, and gravel (alluvium), is often found in valley floors and associated with the streams and rivers. The sedimentary deposits of the lowlands are mainly unconsolidated clay, sand, and gravel of Quaternary age, poorly consolidated deposits of clay, sand, silt, limestone, and lignite of Tertiary age, and consolidated deposits of Cretaceous marl, chalk, limestone, sand, and gravel (United States Department of Agriculture [USDA] 1975, Natural Resources Conservation Service 2002).

3.1.2.2 Soils

Soils in the Little Rock AFB area of Pulaski County are generally formed in weathered material from acid sandstone and shale, and in valley fill from local highlands. Two soil associations are identified on the base. The northern half of the base is predominantly the Leadvale-Guthrie-Linker association; the Linker-Mountainburg association occurs in the southern half of the base. Most of the improved and some of the semi-improved portions of the base are classified as Urban Land or Urban Land complexes of several soil series. Urban Land is either significantly covered by works and structures or has been so altered during construction that separate classification is impractical.

There are seven major soil series identified as originally occurring on Little Rock AFB. In general, these soils are acidic and over much of the base are shallow and well drained (USDA 1975).

The *Amy* soil series is comprised of silt loam and is located in broad upland flats and on flood plains of local drainage ways. This soil series is deep, poorly drained with a high seasonal water table, and generally presents severe limitations for construction. *Amy* soils are present in the eastern portions of the base.

The *Guthrie* soil series is comprised of level, poorly drained silt loam on stream terraces and in depressions on the top of mountains. This soil series is deep and poorly drained, with a high seasonal water table and severe construction limitations. The *Guthrie* series is present in northern and eastern portions of the base.

The *Leadvale* series is comprised of nearly level and gently sloping silt loam in valleys and on the top of low mountains. This series is suitable for most uses and occurs in the northern and southeastern portions of the base.

The *Linker* soil series consists of well-drained, gently sloping to moderately steep soils on the top and sides of mountains, on benches and on low ridges in valleys. The series is composed of fine sandy loam in the upper layers and clay loam in the deeper layers. The depth to bedrock is

about 30 inches. The shallow depth to bedrock of this series presents a moderate construction constraint. *Linker* soils are present over a large portion of the base.

The *Mountainburg* soil series consists of well-drained fine sandy loam on gently to moderately steep slopes on the top and sides of mountains, on benches, and on low ridges in valleys. This series is very shallow, with an average depth to bedrock of 15 inches, presenting severe limitations to excavation. *Mountainburg* complexes are present over large portions of the base.

The *Smithdale* soil series is comprised of fine sandy loam, clay loam and sandy loam. It is present in gently to moderately sloping upland areas. The soil is deep, well-drained and generally occurs in the eastern portions of the base.

The *Tiak* soil series is comprised of a fine sandy loam surface layer over a deep layer of silty clay. The soil is moderately well drained and nearly level to gently sloping. *Tiak* soils are present in the southern portions of the base and present moderate to severe construction limitations due to their high clay content.

The proposed Construction Projects at the 189 AW ARANG area of the base is classified as the Linker-Mountainburg soil association and Urban Land, with origins in the *Mountainburg* and *Linker* soil series (USDA 1975).

3.1.2.3 Topography

Most of Little Rock AFB has rolling topography with gentle slopes. Steeper slopes occur in the stream valleys in the northwest and southwest corners of the base. Long, narrow ridges, oriented from East to West, typify the region to the north of the base. The southernmost of these ridges lies just north of the airfield (Parsons Engineering Science 1998).

The elevations on the base range from the highest point of 421 feet above mean sea level (msl) to a low of 258 feet above msl along the eastern perimeter.

3.2 WATER RESOURCES

3.2.1 DEFINITION OF THE RESOURCE

Water resources analyzed in this EA include surface water and groundwater quantity and quality. Surface water resources comprise lakes, rivers, and streams and are important for a variety of reasons, including economic, ecological, recreational, and human health. Groundwater comprises the subsurface hydrologic resources of the physical environment and is an essential resource. Groundwater properties are often described in terms of depth to aquifer or water table, water quality, and surrounding geologic composition.

Other issues relevant to water resources include the downstream water and watershed areas affected by existing and potential runoff, and hazards associated with 100-year floodplains. Floodplains are defined by EO 11988, *Floodplain Management*, as "the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year" (that area inundated by a 100-year flood). The values served by floodplains include natural moderation of floods, water quality maintenance, groundwater recharge, as well as habitat for many plant and animal species.

3.2.2 EXISTING CONDITIONS

3.2.2.1 Surface Water

Little Rock AFB lies within the Arkansas River Basin of central Arkansas and is located within the Bayou Meto drainage area. This area receives a mean annual precipitation of 48 inches per year (National Oceanic and Atmospheric Administration 2002). Drainage on Little Rock AFB is controlled by open drainage courses and underground storm drains, and joins the area-wide drainage flowing into three secondary streams: Cypress Branch on the west, Rocky Branch on the south, and Jacks Bayou on the east. Additional unnamed secondary streams are located southwest, southeast, and northeast of the base. All streams from the base eventually flow into Bayou Meto, which flows southeast and joins the Arkansas River approximately 100 miles downstream from the base (USAF 1993). The ANG compound on Little Rock AFB drains to the northeast toward the southeast corner of the runway and eventually to Jack Bayou via Outfall 004.

There are a number of impoundments and open water bodies at Little Rock AFB including, Base Lake (a 37 acre lake in the southwest corner of the base), three golf course ponds used for irrigation water (ranging from 1.1 to 2.3 acres in area), seven small ponds on the east side of the base (ranging from 0.2 to 1.2 acres), and a number of small "borrow" ponds apparently created by excavations for fill material. There are no notable ponds within the vicinity of the ANG compound area.

Little Rock AFB is permitted to discharge storm water runoff via four discharge points into tributaries to Bayou Meto. Storm water discharges are permitted in accordance with Little Rock AFB's National Pollutant Discharge Elimination System (NPDES) permit and are regulated by USEPA. Water quality is monitored at these four locations (Figure 3.2-1) and may also be monitored at three inactive, alternate sites. Testing of the effluent is conducted on a monthly basis and the system is in compliance with all NPDES and Arkansas Department of Environmental Quality (ADEQ) standards (USAF 2001b). According to the Arkansas Department of Pollution Control and Ecology Commission (name has since changed to Arkansas

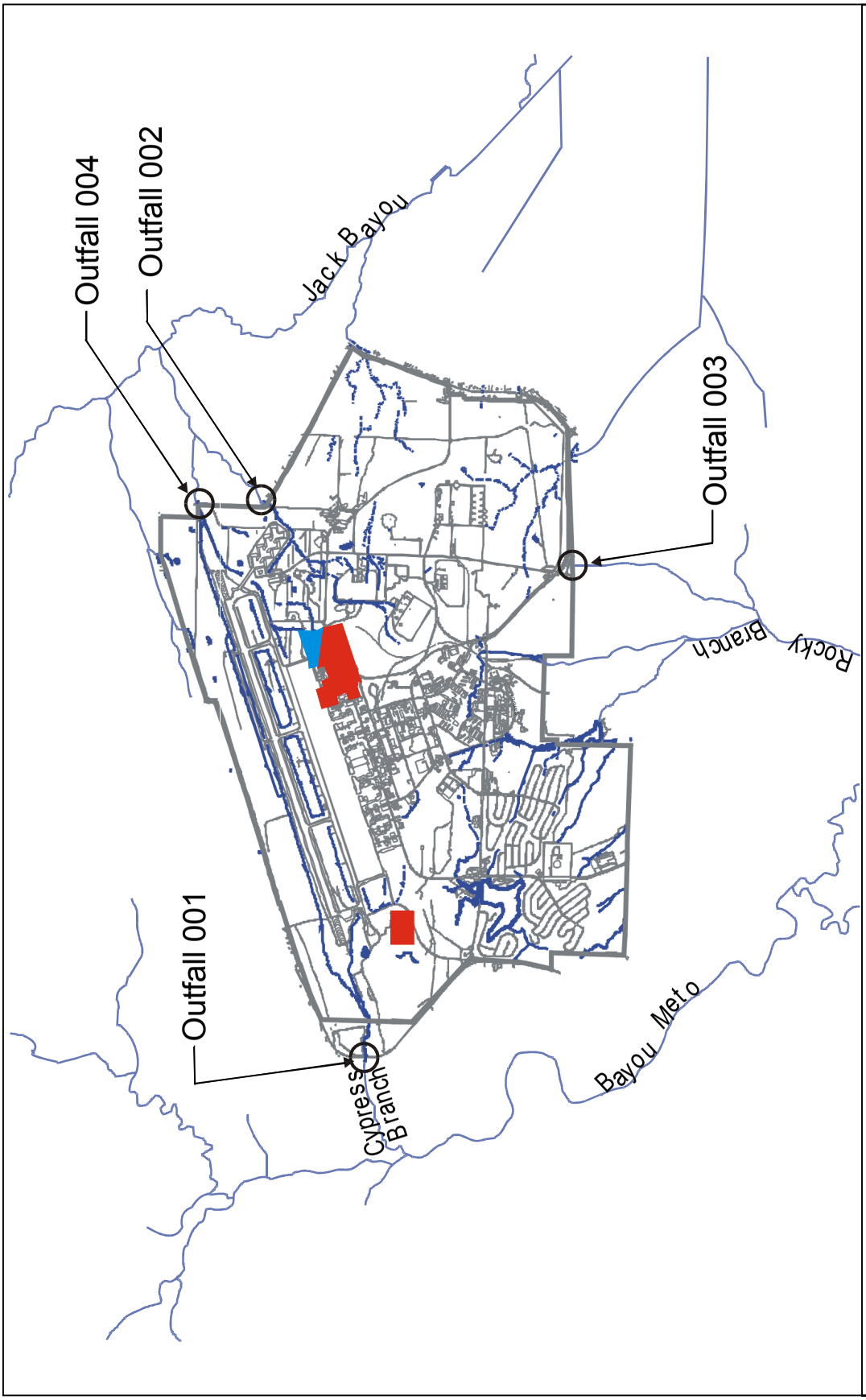

Figure 3.2-1
Water Resources and Outfalls
Little Rock AFB, Arkansas

Department of Environmental Quality), the nearest surface water quality stations within the drainage basin are on Bayou Meto and Bayou Two Prairie at distances of 50 to 75 miles downstream (USAF 1996).

3.2.2.2 Groundwater

The base obtains all its water supply from surface water reservoirs in Little Rock. There are no water production wells on the base. Groundwater is not used for drinking, irrigating, or industrial purposes. Municipal wells for the city of Jacksonville are located approximately 4.5 miles southeast of Little Rock AFB and reportedly take water from a deep alluvial aquifer approximately 104 to 129 feet below the surface.

The limited available information about groundwater at Little Rock AFB is from Installation Restoration Program (IRP) monitoring wells. Generally, these wells are shallow and have low yield. Depth to the groundwater table varies across the base with depth to bedrock and season. In some locations, the bedrock is very shallow and the groundwater table occurs near the surface. At other locations, the water table is as much as 30 feet (9 meters) below the surface.

3.2.2.3 Floodplain

There is the potential for several areas of Little Rock AFB to be impacted by a 100-year flood. The areas subject to flooding are primarily along the natural and man-made impoundments and drainage channels that control storm water flow on the base. A floodplain study using two-foot contours was recently completed to provide a more precise depiction of the 100-year floodplain (URS, Inc. 2001). Figure 3.2-2 delineates the 100-year floodplain based on existing maps and information. The existing ANG compound (as well as portions of Parcel A proposed for acquisition) contains lands that lie within a 100-year flood plain that extends toward the northeast, following the drainage channel that leads to Outfall 004.

3.3 BIOLOGICAL RESOURCES

3.3.1 DEFINITION OF THE RESOURCE

Biological resources include native or naturalized plants and animals and the habitats, including wetlands, in which they occur. Although the existence and preservation of biological resources are intrinsically valuable, these resources also provide essential aesthetic, recreational, and socioeconomic values to society. This section focuses on plant and animal species and vegetation types that typify or are important to the function of the ecosystem, are of special societal importance, or are protected under federal or state law or statute. For purposes of this assessment, sensitive biological resources are defined as those plant and animal species listed as

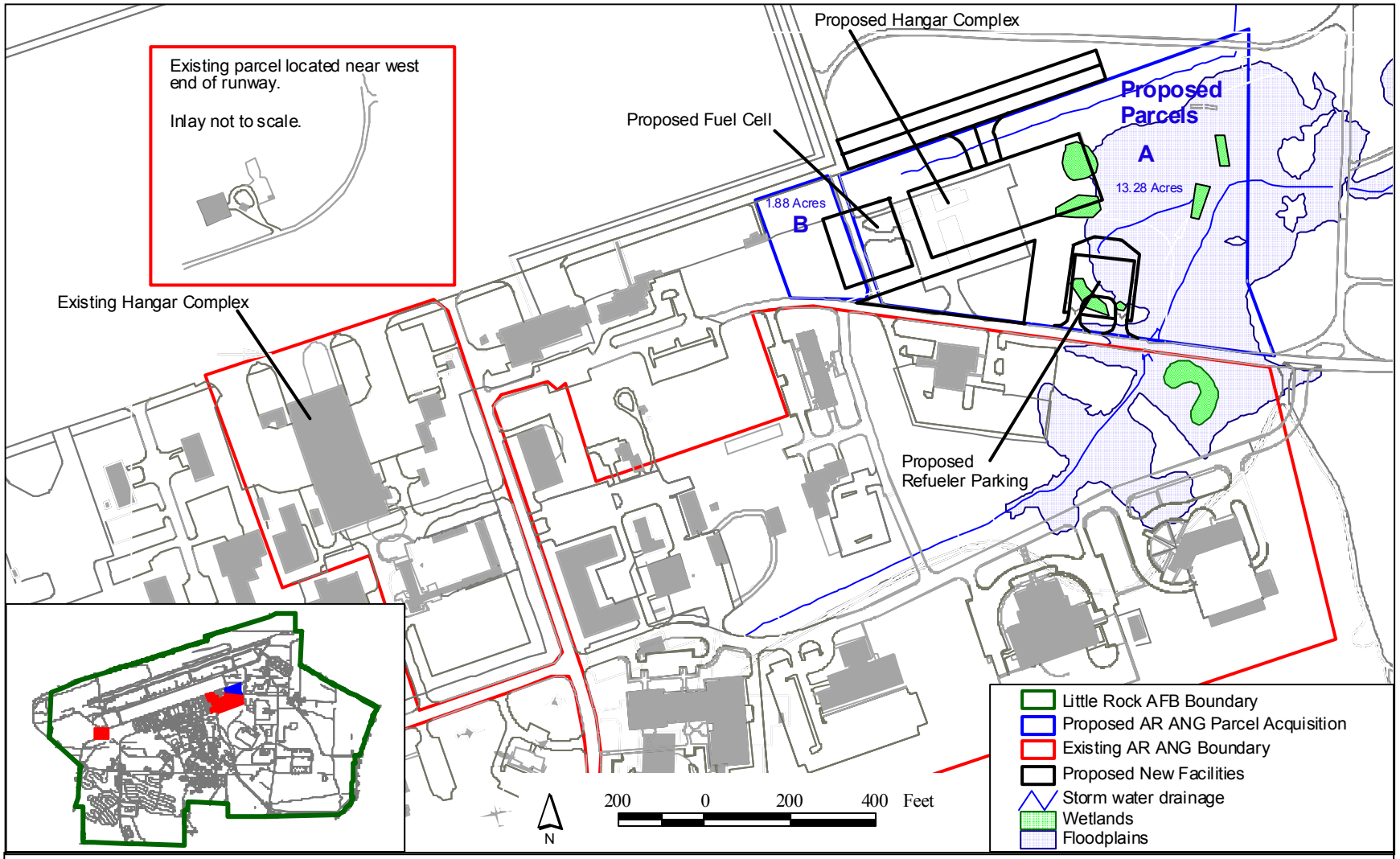

Figure 3.2-2
100-Year Floodplain and Wetlands
Existing and Amended ANG Real Estate License
Little Rock AFB, Arkansas

threatened or endangered by the USFWS and species that are considered sensitive by the state or other entities. Three categories of protection status are included in this section including 1) federal listed threatened and endangered species, 2) state listed species, and 3) other sensitive species.

Federal Listed Threatened and Endangered Species. The ESA of 1973 provides protection to species listed under this category. Endangered species are those species that are at risk for extinction in all or a large portion of their range. Threatened species are those that could be listed as endangered in the near future.

State Listed Threatened and Endangered Species. The state-threatened and endangered species list in Arkansas is identical to the federal list for Arkansas.

Other Sensitive Species. Includes federal species of concern and species listed by other agencies such as the state Natural Heritage Programs. These are usually species of regional concern that are likely on the decline. These species receive no legal protection under the ESA or other statutes.

3.3.2 EXISTING CONDITIONS

Little Rock AFB is near the eastern edge of the Ouachita Mountains above the Mississippi Alluvial Plain and within the Arkansas Valley and Ridges Land resources area. The area is dominated by pines and upland hardwood forests that support a diverse flora and fauna (USAF 2002). The Proposed Action area on Little Rock AFB contains hardwood forests, grassland plant communities, and a stream that all provide habitat for a variety of wildlife species.

3.3.2.1 Vegetation

The general vegetative cover in the area is the Southern Division of the Oak-hickory Region and more specifically, the Ouachita Mountains portion of the Interior Highlands. Historically, the pine-oak forest type was the most widespread in the uplands and common tree species were shortleaf pine (*Pinus echinata*), post oak (*Quercus stellata*), blackjack oak (*Q. marilandica*), black oak (*Q. velutina*), and white oak (*Q. alba*). Common understory species were sassafras (*Sassafras albidum*), persimmon (*Diospyros virginiana*), and flowering dogwood (*Cornus florida*). More mesic areas contained mostly hardwood species including water oak (*Q. nigra*), willow oak (*Q. phellos*), black gum (*Nyssa slyvatica*), sycamore (*Platanus occidentalis*), and sweet gum (*Liquidamber styraciflua*) (USAF 2002).

Prior to the establishment of Little Rock AFB in 1953, much of the land that historically supported the above forest types had been cleared for agricultural purposes. As a result of the

base being located at this site, forest and woodland types have become reestablished. There is currently an estimated 2,820 acres of forest and woodlands on the base and the remaining land is covered with open fields and base facilities as well as a small amount of wetlands and aquatic habitat. The largest forest community is the post oak/blackjack oak type (1,686 acres), followed by loblolly pine (*Pinus taeda*)/shortleaf pine forest (540 acres), and bottomland hardwood forest where pin oak (*Quercus palustris*), sweet gum, and willow oak are common (590 acres). The pine stands are areas that were formerly cleared and then planted to pine while most of the remaining forest became established naturally (USAF 2002).

The two parcels of land, which would support the proposed facilities, cover about 15 acres (see Figure 2.2-1, 2.2-2). There are currently structures (which are scheduled for demolition), parking areas, and roads on this land covering about three acres. The remaining land is wooded (approximately 7 acres) or open fields (approximately 5 acres) and there is also a small stream flowing through the property. The open fields occur at the east end of the property as well as along an electrical transmission corridor. This vegetation is mowed periodically and is generally only 6 to 10 inches high. The field supports various species of grasses and forbs and some scattered trees such as sweet gum, eastern red cedar (*Juniperus virginiana*), and hickory (*Carya* sp.).

The wooded portion of the property is covered with a fairly mature floodplain deciduous forest dominated by lowland tree species. The canopy and understory trees and shrub layer create dense vegetation in many areas. Mature tree species include sweet gum, red maple (*Acer rubrum*), willow oak, oak sp, and ash sp (*Fraxinus* sp.). Some of these trees are approximately 55 to 65 feet tall and 18 to 30 inches diameter at breast height. There is a dense groundcover in some places which includes greenbrier (*Smilax* sp.) and poison oak (*Rhus toxicodendron*).

Proposed location for aircraft maintenance hangar. Buildings are scheduled for demolition.

Area east of proposed refueler vehicle parking area. Trees would remain.

Stream that runs east of proposed refueler vehicle parking area.

3.3.2.2 Wildlife

Invertebrates

Seven species of crayfish are found on Little Rock AFB. *Procambarus acutus* is the most abundant and widespread species, and is found in all habitat types including man made drainages. A total of 451 insect taxa have been recorded on Little Rock AFB (USAF 2002). Aquatic macroinvertebrates and algae have been sampled from six locations on base including the stream that flows through the project area. Eight alga taxa and six aquatic macroinvertebrate taxa were sampled from this stream (USAF 2002).

Amphibians and Reptiles

Thirty-eight species of amphibians and reptiles are documented from Little Rock AFB. This relatively large number of species in a small geographic area represents favorable diversity (USAF 2002). Thirteen species have been recorded from the mesic forests of Little Rock AFB, including the spotted salamander (*Ambystoma maculatum*), cricket frog (*Acris crepitans*), southern leopard frog (*Rana utricularia*), fence lizard (*Sceloporus undulatrus*), and hognose snake (*Heterodon platirhinos*). Species found in the grassy areas on base were limited to the three-toed box turtle (*Terrapene carolina triunguis*) and Fowler's toad (*Bufo woodhousei fowleri*) (USAF 2002).

Birds and Neotropical Migrants

A total of 122 species of birds were detected on base during recent surveys and 37 of these have been detected in the wooded and grassland habitat in the project area. Base wide, 77 species were detected in the deciduous forest/woodland/oak savannah. Of these, 54 are considered breeding species with 33 being permanent residents and 21 migrating to the base to breed. Common to fairly common forest breeding permanent residents include the Red-bellied Woodpecker (*Melanerpes carolinus*), Downy Woodpecker (*Picoides pudescens*), Blue Jay (*Cyanocitta cristata*), Carolina Chickadee (*Parus carolinensis*), Tufted Titmouse (*Parus bicolor*), and Carolina Wren (*Thryothorus ludovicianus*). Common to fairly common forest and woodland breeding species that migrate to the base include the Yellow-billed Cuckoo (*Coccyzus americanus*), Great Crested Flycatcher (*Myiarchus tyrannulus*), Eastern Wood Pewee (*Contopus sordidulus*), Acadian Flycatcher (*Empidonax occidentalis*), Red-eyed Vireo (*Vireo olivaceus*), Kentucky Warbler (*Oporornis formosus*), and Summer Tanager (*Piranga rubra*) (USAF 2002). Species heard singing in the forest at the study site during a brief reconnaissance survey in August 2002 were the Eastern Towhee (*Pipilo erythrophthalmus*), Carolina Wren, and Blue Jay. Twenty-four species were recorded in grassland habitats on Little Rock AFB and fairly common to common breeding species included the Eastern Kingbird (*Tyrannus tyrannus*), Field Sparrow (*Spizella pusilla*), and Eastern Meadowlark (*Sturnella magna*) (USAF 2002).

The primary game bird species on base are the Wild Turkey (*Meleagris gallopavo*) and Bobwhite Quail (*Colinus virginianus*). There are no density estimates although both are considered uncommon on the base and both could occur in the project area. There are about 5,000 acres of Wild Turkey and 500 acres of Bobwhite Quail habitat on base (USAF 2002).

Bird species that breed in temperate North America and winter in the tropics are referred to as neotropical migrants and have become the focal point of much ornithological research, management, and conservation concern (Hagan and Johnston 1992; Finch and Stangel 1993). Forest fragmentation on the breeding grounds and the elimination of optimum wintering habitat in the tropics are likely the two major reasons for these declines (Flather and Sauer 1996; Sheery and Holmes 1996). In addition, the loss of important stopover habitat used during migration may affect the survival of neotropical migrants (Moore et al. 1993).

An estimated 110 neotropical migrant land birds occur in the midwestern United States and 48 (44 percent) of these species have been report from Little Rock AFB (Thompson et al. 1993; USAF 2002). A total of 28 neotropical migrants on base inhabit the forested and woodland plant communities and of these, 20 are nesting species and eight are only seen during migration. The status of neotropical migrant land birds was determined by physiographic regions in the southeastern United States. Little Rock AFB occurs in the Ozark-Ouachita Highlands Region and an analysis of population trends of forest birds in this region showed that four species of neotropical land birds were declining and seven were possibly declining (Hunter et al. 1993). The Acadian flycatcher was the only declining species reported from Little Rock AFB and this species is considered fairly common on base. The Eastern Wood Pewee, Great Crested Flycatcher, Louisiana Waterthrush (*Seiurus motacilla*), and Scarlet Tanager (*Piranga olivacea*) were species that may be on the decline that were reported from Little Rock AFB. The Eastern Wood Pewee and Great Crested Flycatcher are considered fairly common on base while the Louisiana Waterthrush is uncommon and the Scarlet Tanager is occasional (USAF 2002). Another species that has been declining but not included in the above study is the Kentucky Warbler (Partners in Flight [PIF] 2002; National Audubon Society [NAS] 2002). Data from the Breeding Bird Survey indicates that all six of these species have declined in Arkansas for the period 1966 to 2000 (Table 3.3-1). From this information it can be seen that the Eastern Wood Pewee, Acadian Flycatcher, and Great Crested Flycatcher showed the greatest percent decline during the first 23 years of the survey period but have declined less during the last 20 years. Conversely, the Louisiana Waterthrush and Scarlet Tanager increased during the first 23 years but have shown a marked decline in the last 20 years (Sauer et al. 2001). The Kentucky Warbler decreased at a rate of 1.4 percent per year from 1966 to 1979 and this rate of decline showed a marked increase for the period 1980 to 2000 (4.0 percent per year) in Arkansas (Table 3.3-1). Some or all of these species have the potential to occur in the forested floodplain habitat in the project area.

Table 3.3-1. Population Trends for Arkansas (recent change per year) for Six Neotropical Migrant Land Birds that Breed in the Forest Habitat on Little Rock AFB

Species	*Relative abundance on Little Rock AFB*[1]	TRENDS (% CHANGE/YEAR)		
		1966-2000	*1966-1979*	*1980-2000*
Eastern Wood Pewee	F	-2.3	-6.8	-0.1
Acadian Flycatcher	F	-2.3	-4.2	-1.2
Great Crested Flycatcher	F	-2.0	-3.1	-0.1
Kentucky Warbler	F	-2.8	-1.4	-4.0
Louisiana Waterthrush	U	-2.5	+1.5	-3.7
Scarlet Tanager	O	-0.4	+2.6	-1.6

Note: Relative abundance categories from breeding bird surveys on Little Rock AFB are based on the frequency and number seen during each survey. F = fairly common (usually found every visit and generally in low numbers), U =uncommon (usually present in suitable habitat and season but not likely detected on every visit, O = occasional (not always present, likely detected 2 to 5 times per year in suitable habitat).
Sources: Sauer et al. 2001, USAF 2002

Mammals

Fifty-three species of mammals occur in Pulaski County and many of these occur on Little Rock AFB. Nine species of small mammals were identified during sampling in various habitats on base and the cotton mouse (*Peromyscus gossypinus*) and deer mouse (*P. maniculatus*) were the two most common species. The cutover woods had the greatest diversity of species while the greatest densities of mammals were found in the young pine plantations (USAF 2002). Five species of bats were observed and the red bat (*Lasiurus borealis*) and evening bat (*Nycticeius humeralis*) were the most commonly encountered species. Most of the bat species use a variety of habitats from grasslands to forests for foraging (USAF 2002).

The white-tailed deer (*Odocoileus virginianus*) is the principal game species on the base. Other less important mammal game species include the eastern cottontail rabbit (*Syvilagus floridanus*), fox squirrel (*Sciurus niger*), and gray squirrel (*S. carolinensis*). There are an estimated 5,000 acres of white-tailed deer habitat on the base. This habitat is rated as good for deer. Deer density ranged from one deer per 10 acres in 1995 to one deer per 23 acres in 2000 (USAF 2002).

3.3.2.3 Threatened, Endangered and Other Sensitive Species

A list of federally threatened and endangered species that have the potential to occur in Pulaski County is shown in Table 3.3-2. Most of these species are not known to occur on Little Rock

AFB. The Bald Eagle (*Haliaeetus leucocephalus*) is the only species on this list observed on base when an immature was seen to fly over in the fall of 1998. Future occurrences of this species in the area of Little Rock AFB will likely be limited to very sporadic flyovers such as occurred in 1998 (USAF 2002).

Table 3.3-2. Federally Listed Species That Have the Potential to Occur in the Area of Little Rock AFB

Species	***Status[1]***	***Comments***
Fish		
Leopard darter *Percina pantheria*	T	Not found in any aquatic habitat on base (USAF 2002).
Birds		
Bachman's Warbler *Vermivora bachmanii*	E	Not detected on the base during bird surveys (USAF 2002) and would not occur on base.
Bald Eagle *Haliaeetus leucocephalus*	T	An immature bald eagle observed flying over the base in the fall of 1998 (USAF 2002). May occur very sporadically flying over the base.
Ivory-billed Woodpecker *Campephilus principalis*	E	Likely extinct.
Red-cockaded Woodpecker *Picoides borealis*	E	Not detected on the base and very unlikely to occur because habitat was judged to be unsuitable due the forest composition (mostly oak), its age structure (too few old pines), and physical structure (too much undergrowth) (USAF 1995).
Mammals		
Indiana bat *Myotis sodalis*	E	Not detected on base during bat surveys. Should not occur on base due to the lack of suitable habitat (USAF 2002).

Note: 1. T = threatened, E = endangered
Source: USAF 2002

Ten non-federally listed sensitive species have been detected on Little Rock AFB. Two sensitive species of invertebrates were detected during insect sampling on Little Rock AFB including the Eryngium borer moth (*Papaipema eryngii*) found only in the mesic prairie on base and the Diana fritillary butterfly (*Speyeria diana*) also found in this prairie as well as mesic oak/hickory forest.

The alligator snapping turtle (*Macroclemys temminckii*) was found in one stream on base and may occur in other aquatic habitats on base (USAF 2002).

The remaining eight sensitive species are birds and are being monitored by the Arkansas Natural Heritage Commission, PIF, or are on the NAS Watchlist (NAS 2002, PIF 2002). The Grasshopper Sparrow (*Ammodramus savannarum*) has been observed only during migration while the Red-shouldered Hawk (*Buteo linaetus*) has been observed in the forest habitat on base but is not believed to be a breeding species. The Field Sparrow is considered a fairly common permanent resident at Little Rock AFB and is undergoing declines in the Ozark and Ouachitas physiographic region (PIF 2002). This species could occur in the grassland habitat in the project area. The Dickcissel (*Spiza americana*) is an uncommon migrant and breeding species in grassland habitat on base and could occur in the project area. The Prairie Warbler (*Dendroica discolor*) and Painted Bunting (*Passerina versicolor*) are occasional migrant and breeding species in shrub habitat on base and are not likely to occur in the project area due to the lack of suitable habitat. The Kentucky Warbler and Louisiana Waterthrush occur primarily in wet woods and are considered fairly common and uncommon, respectively, on base and could occur in the floodplain woods in the project area (USAF 2002).

3.3.2.4 Wetlands and Aquatic Habitat

Wetlands were described and mapped on Little Rock AFB during a 1996-97 wetlands study (USAF 1997). Wetland delineations followed the USACE 1987 wetlands delineation manual (Environmental Laboratory 1987). This study expanded on a wetlands study conducted on Little Rock AFB in 1993 (Woolpert Consultants 1993). According to these data, there are a total of approximately 51 wetland sites, covering 145 acres, that have the potential to be considered USACE jurisdictional wetlands on Little Rock AFB (USAF 1997; USAF 2002; personal communication, Popham 2002-03). The previous wetland surveys did not indicate there were any wetlands in the project area; however a survey of the site conducted in April of 2003 has indicated that there are four potentially jurisdictional wetlands that occur in the project area (Figure 3.2-2), as well as a small creek that is considered a Water of the United States (personal communication, Jasper 2003). The four wetlands that would be impacted by the proposal total approximately 0.36 acres in total size.

A stream runs through the project area. Water was flowing during observation in August 2002 and water striders (*Gerris remigis*) were observed on the surface. The water was clear and the stream was 3 to 4 1/2 feet wide and the water depth was typically 8 inches or less. It is bordered by a dense growth of woody vegetation such as smooth sumac (*Rhus glabra*) and honeysuckle (*Lonicera* sp.) along the north end of the project site. The vegetation was mowed along the stream as it flowed NE through the project site and a dense growth of grass, other herbaceous species, and small woody plants were observed. Aquatic insects and crayfish, as discussed

above, likely occur in this stream as well as the leopard frog and water snake (*Natrix* sp.). Although eight species of waterfowl have been recorded from Little Rock AFB, their use of this stream would be very sporadic given the small nature of this body of water. An occasional Great Egret (*Ardea alba*), Green Heron (*Butorides virescens*), and Killdeer (*Charadrius vociferus*) may be observed. The muskrat (*Ondatra zibethicus*) could occur; other mammals such as the Virginia opossum (*Didelphis virginiana*), white-tailed deer, and raccoon (*Procyon lotor*) also likely use this stream.

3.4 AIR QUALITY

This section discusses air quality considerations and conditions in the area around ARANG in Pulaski County, Arkansas. It addresses air quality standards and describes current air quality conditions in the region.

3.4.1 DEFINITION OF THE RESOURCE

Federal Air Quality Standards. Air quality is determined by the type and concentration of pollutants in the atmosphere, the size and topography of the air basin, and local and regional meteorological influences. The significance of a pollutant concentration in a region or geographical area is determined by comparing it to federal and/or state ambient air quality standards. Under the authority of the CAA, the USEPA has established nationwide air quality standards to protect public health and welfare, with an adequate margin of safety. These federal standards, known as the NAAQS, represent the maximum allowable atmospheric concentrations and were developed for six "criteria" pollutants: O_3, NO_2, CO, PM_{10}, SO_2, and Pb. Table 3.4-1 summarizes the federal standards associated with criteria pollutants.

The USEPA designates areas of the U.S. as having air quality equal to or better than the NAAQS (attainment) or worse than the NAAQS (nonattainment). Nonattainment areas that achieve attainment are redesignated as maintenance areas for a period of 10 or more years. Areas are designated as unclassifiable for a pollutant when there is insufficient ambient air quality data for the USEPA to form a basis of attainment status. For the purpose of applying air quality regulations, unclassifiable areas are treated similar to areas that are in attainment of the NAAQS.

The NAAQS are defined in terms of concentration (e.g., parts per million [ppm] or micrograms per cubic meter [$\mu g/m^3$]) determined over various periods of time (averaging periods). Short-term standards (1-hour, 8-hour, or 24-hour periods) were established by the USEPA for pollutants with acute health effects and may not be exceeded more than once a year. Long-term standards (annual periods) were established by the USEPA for pollutants with chronic health effects and may never be exceeded.

In 1997, the USEPA promulgated two new standards: a new 8-hour O_3 standard (which will eventually replace the existing 1-hour O_3 standard) and a new standard for particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$), which are fine particulates that have not been previously regulated. In addition, the USEPA revised the existing PM_{10} standard. The two new standards are scheduled for implementation over the next few years, as monitoring data becomes available to determine the attainment status of areas in the U.S. Meanwhile, the USEPA will enforce the existing 1-hour O_3 standard for areas that are still in nonattainment of the standard.

State Air Quality Standards. Under the CAA, state and local agencies may establish ambient air quality standards and regulations of their own, provided these are at least as stringent as the federal requirements. The Proposed Action would involve construction, renovation, and demolition projects within Pulaski County, Arkansas. For the criteria pollutants of concern, Arkansas' standards are the same as the federal standards.

State Implementation Plan. The CAA of 1977 set provisions for the attainment and maintenance of the NAAQS. For non-attainment regions, the states are required to establish a SIP designed to eliminate or reduce the severity and number of NAAQS violations, with an underlying goal to bring state air quality conditions into (and maintain) compliance with the NAAQS by specific deadlines. This plan is to be prepared by local agencies and incorporated into the overall SIP of each state.

The Clean Air Act Amendments (CAAA) of 1990 established new federal nonattainment classifications, new emission control requirements, and new compliance dates for nonattainment areas. The requirements and compliance dates are based on the severity of nonattainment classification.

Prevention of Significant Deterioration. Section 162 of the CAA further established the goal of prevention of significant deterioration (PSD) of air quality in all international parks; national parks which exceeded 6,000 acres; and national wilderness areas which exceeded 5,000 acres if these areas were in existence on August 7, 1977. These areas were defined as mandatory Class I areas, while all other attainment or unclassifiable areas were defined as Class II areas. Under CAA Section 164, states or tribal nations, in addition to the federal government, have the authority to redesignate certain areas as (non-mandatory) PSD Class I areas, i.e., a National Park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres. PSD Class I areas are areas where any appreciable deterioration of air quality is considered significant. Class II areas are those where moderate, well-controlled growth could be permitted.

Table 3.4-1. National Ambient Air Quality Standards

Air Pollutant	*Averaging Time*	*Federal NAAQS*	
		Primary	***Secondary***
Carbon Monoxide (CO)	8-Hour 1-Hour	9 ppm 35 ppm	-- --
Nitrogen Dioxide (NO_2)	AAM 24-Hour	0.053 ppm --	0.053 ppm --
Sulfur Dioxide (SO_2)	AAM 24-Hour 3-Hour	0.03 ppm 0.14 ppm --	-- -- 0.5 ppm
Particulate Matter (PM_{10})	AAM 24-Hour	50 $\mu g/m^3$ 150 $\mu g/m^3$	50 $\mu g/m^3$ 150 $\mu g/m^3$
Particulate Matter ($PM_{2.5}$) [(a)]	AAM 24-Hour	15 $\mu g/m^3$ 65 $\mu g/m^3$	15 $\mu g/m^3$ 65 $\mu g/m^3$
Ozone (O_3) [(b)]	1-Hour 8-Hour	0.12 ppm 0.08 ppm	0.12 ppm --
Lead (Pb) and Lead Compounds	Calendar Quarter	1.5 $\mu g/m^3$	1.5 $\mu g/m^3$

Notes: AAM = Annual Arithmetic Mean
ppm = Parts per Million
$\mu g/m^3$ = micrograms per cubic meter

(a) The $PM_{2.5}$ standard (particulate matter with a 2.5 micron diameter) was promulgated in 1997, and will be implemented over an extended time frame. Areas will not be designated as in attainment or nonattainment of the PM 2.5 standard until the 2002 – 2005 timeframe.

(b) The 8-hour Ozone standard was promulgated in 1997, and will eventually replace the 1-hour standard. The USEPA plans to implement this standard beginning in 2004. During the interim, the 1-hour ozone standard will continue to apply to areas not attaining it.

Source: 40 CFR Part 50; ADEQ Regulation 19, Chapter 3

Class III areas are those designated by the governor of a state as requiring less protection than Class II areas. No Class III areas have yet been so designated. The PSD requirements affect construction of new major stationary sources in the PSD Class I, II, and III areas and are a pre-construction permitting system.

Visibility. CAA Section 169A established the additional goal of prevention of further visibility impairment in the PSD Class I areas. Visibility impairment is defined as a reduction in the visual range and atmospheric discoloration. Determination of the significance of an activity on visibility in a PSD Class I area is typically associated with evaluation of stationary source contributions. The USEPA is implementing a Regional Haze rule for PSD Class I areas that will address contributions from mobile sources and pollution transported from other states or regions. Emission levels are used to qualitatively assess potential impairment to visibility in PSD Class I areas. Decreased visibility may potentially result from elevated concentrations of PM_{10} and SO_2 in the lower atmosphere.

General Conformity. CAA Section 176(c), General Conformity, established certain statutory requirements for federal agencies with proposed federal activities to demonstrate conformity of the proposed activities with the state's SIP for attainment of the NAAQS. In 1993, the USEPA issued the final rules for determining air quality conformity. Federal activities must not:

a) cause or contribute to any new violation;

b) increase the frequency or severity of any existing violation; or

c) delay timely attainment of any standard, interim emission reductions, or milestones in conformity to a SIP's purpose of eliminating or reducing the severity and number of NAAQS violations or achieving attainment of NAAQS.

General conformity applies only to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment area exceed annual thresholds identified in the rule, a conformity determination is required of that action. Conformity does not apply to Little Rock AFB because it is in an attainment area. The thresholds become more restrictive as the severity of the nonattainment status of the region increases.

Stationary Sources Operating Permits. Title V of the CAAA of 1990 also requires states to issue Federal Operating Permits for major stationary sources. Under the Arkansas Air Pollution Control Code (Regulation #18) and the Arkansas Plan of Implementation of Air Pollution Control (Regulation #19), a major stationary source in Pulaski County is a source as defined in 40 CFR Part 70.2. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and to monitor their impact upon air quality.

3.4.2 EXISTING CONDITIONS

3.4.2.1 Climate

The ARANG installation is located on Little Rock AFB in central Arkansas, between the Ouachita Mountains to the west and the flat lowlands to the east. The climate in Pulaski County is described as subtropical humid continental, which is characterized by long, hot, and humid summers and mild winters. Factors influencing Pulaski County's weather patterns include moist air masses from the Gulf of Mexico and cool northern winds from the continental plains to the north.

The average summer temperature is 82º Fahrenheit (F) with average highs in the nineties and lows in the seventies. Daily high temperatures greater than 100º F occur frequently. Winters are generally mild with an average temperature of 40º F, average highs in the high forties and lows around freezing. Low temperatures of 10º F are not uncommon during arctic outbreaks in January. The average growing season, with temperatures above freezing, is about 233 days.

Precipitation is well distributed throughout the year, with average annual precipitation of 49.2 inches per year and an average of 104 days per year with some form of precipitation. April has the highest average precipitation at 5.3 inches per year; August has the lowest at 3.2 inches per year. Thunderstorms are common, occurring an average of eight days per month from April through August. Snow is rare, with an average amount of 5.4 inches per year.

3.4.2.2 Regional Air Quality

ARANG is located at Little Rock AFB, in the northeastern portion of Pulaski County, in central Arkansas. Pulaski County, according to 40 CFR 81.138, is part of the Central Arkansas Intrastate AQCR (AQCR Number 016). A review of Federally published attainment status for Arkansas in 40 CFR 81.304 indicated that this region is designated as attainment or meeting national standards for all criteria pollutants, including CO, NO_2, SO_2, PM_{10}, O_3, and Pb. Based on recent monitoring data, the ADEQ expects Pulaski County to be designated as a nonattainment area for the new 8-hour ozone standard when the USEPA makes its designations, which is expected to occur in 2004.

Mandatory PSD Class I areas established under the CAA Amendments of 1977 for the state of Arkansas are listed in 40 CFR 81.404. These are areas where visibility has been determined to be an important issue by the Administrator, in consultation with the Secretary of the Interior. According to the USEPA, sulfates and nitrates from utility and industrial boilers are the main pollutants of concern in Arkansas forests (USEPA 2002). The nearest mandatory PSD Class I areas to the region potentially affected by the action alternative are:

- Caney Creek Wilderness, located in Polk County, Arkansas. This 14,460-acre area is managed by the U.S. Forest Service and is located approximately 100 miles west of ARANG.

- Upper Buffalo Wilderness, located in Newton County, Arkansas. This 12,018-acre area is managed by the U.S. Forest Service and is located approximately 80 miles northwest of ARANG.

3.4.2.3 Current Air Emissions

Air emissions from the ARANG 189 AW are included in the total air emissions inventory for Little Rock AFB, and are from both mobile and stationary sources. The mobile sources include aircraft operations, ground support equipment, and motor vehicles. Stationary source include external combustion, fuel dispensing operations, internal combustion engines, jet engine testing, painting, and underground storage tanks. Storage tanks and fuel dispensing operations dominate air emissions from stationary sources at Little Rock AFB, which has a Title V Minor Source Air Permit from the ADEQ in accordance with the Regulations of the Arkansas Operating Air Permit Program (Regulation 26). Table 3.4-2 summarizes the results of a stationary source emissions inventory for calendar year 2001. No inventory of mobile source emissions is available at this time.

Table 3.4-2. Little Rock AFB Stationary Source Emissions CY 2001

Pollutants (In Tons per Year)				
CO	***SO_2***	***NO_2***	***PM_{10}***	***VOC***
6.1	0.3	14.3	1.2	40.6

Source: CY2001 Air Emissions Inventory, Little Rock AFB (Excel spreadsheet)

3.5 NOISE

3.5.1 DEFINITION OF THE RESOURCE

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses, e.g., housing tracts or industrial plants. Transient noise sources move through the environment, either along established paths (e.g., highways and railroads), or randomly (e.g., a road grader preparing a construction site). There is wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source, but also

according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal).

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound is created by acoustic energy, which produces minute pressure waves that travel through a medium, like air, and are sensed by the eardrum. This may be likened to the ripples in water that would be produced when a stone is dropped into it. As the acoustic energy increases, the intensity or amplitude of these pressure waves increase, and the ear senses louder noise. Sound intensity varies widely (from a soft whisper to a jack hammer) and is measured on a logarithmic scale to accommodate this wide range. The logarithm, and its use, is nothing more than a mathematical tool that simplifies dealing with very large and very small numbers. For example, the logarithm of the number 1,000,000 is 6, and the logarithm of the number 0.000001 is -6 (minus 6). Obviously, as more zeros are added before or after the decimal point, converting these numbers to their logarithms greatly simplifies calculations that use these numbers.

The frequency of sound is measured in cycles per second, or hertz (Hz). This measurement reflects the number of times per second the air vibrates from the acoustic energy. Low frequency sounds are heard as rumbles or roars, and high frequency sounds are heard as screeches. Sound measurement is further refined through the use of "A-weighting." The normal human ear can detect sounds that range in frequency from about 20 Hz to 15,000 Hz. However, all sounds throughout this range are not heard equally well. Therefore, through internal electronic circuitry, some sound meters are calibrated to emphasize frequencies in the 1,000 to 4,000 Hz range. The human ear is most sensitive to frequencies in this range, and sounds measured with these instruments are termed "A-weighted", and are shown in terms of dBA.

The duration of a noise event, and the number of times noise events occur are also important considerations in assessing noise impacts.

The word "metric" is used to describe a standard of measurement. As used in environmental noise analysis, there are many different types of noise metrics. Each metric has a different physical meaning or interpretation and each metric was developed by researchers attempting to represent the effects of environmental noise.

Noise associated with the proposals assessed in this EA is described in terms of single event and time-averaged metrics.

3.5.1.1 Single Event Noise Metrics

The highest sound level measured during a single noise event is the maximum sound level (L_{max}). This is the sound level actually sensed by the ear. Maximum sound level is important in judging how a noise event interferes with conversation, sleep, or other common activities.

However, L_{max} alone may not represent how intrusive a noise event is because it does not consider the length of time that the noise persists.

The Sound Exposure Level (SEL) metric combines both the intensity and duration of a noise event into a single measure. SEL does not directly represent the sound level heard at any given time. However, it does provide a measure of the total exposure of the entire event. Its value represents all of the acoustic energy associated with the event, as though it was present for one second. Therefore, for sound events that last longer than one second, the SEL value will be higher than the L_{max} value. The SEL value is important because it is the value used to calculate other time-averaged cumulative noise metrics.

3.5.1.2 Time-Averaged Cumulative Noise Metrics

The number of times noise events occur during given periods is also an important consideration in assessing noise impacts. "Cumulative" noise metrics support the analysis of multiple, time-varying noise events. The most common are the equivalent sound level (L_{eq}) and the L_{dn}.

The L_{eq} metric reflects average continuous sound. It considers variations in sound magnitude over periods of time, and reflects, in a single value, the acoustic energy present during the total time period. Common time periods for averaging are 8 and 24-hour periods.

The L_{dn} sums all individual noise events and averages the resulting level over a specified length of time. Normally, this is a 24-hour period. Thus, like L_{eq}, it is a composite metric representing the maximum noise levels, the duration of the events, and the number of events that occur. However, this metric also considers the time of day during which they occur. This metric adds 10 dB to those events that occur between 10:00 P.M. and 7:00 A.M to account for the increased intrusiveness of noise events that occur at night when ambient noise levels are normally lower than during the daytime. It should be noted that if no noise events occur between 10:00 P.M. and 7:00 A.M, the value calculated for L_{dn} would be identical to that calculated for a $L_{eq(24)}$. This cumulative metric does not represent the variations in the sound level heard. Nevertheless, it does provide an excellent measure for comparing environmental noise exposures when there are multiple noise events to be considered.

In this document, sound levels associated with aircraft operations are discussed in terms of L_{dn} and those calculated for construction activities are shown as 8- and 24-hour equivalent sound levels [$L_{eq(8)}$ and $L_{eq(24)}$]. Average Sound Level metrics are the preferred noise metrics of the Department of Housing and Urban Development, the Department of Transportation, the Federal Aviation Administration, the USEPA, and the Veteran's Administration. Scientific studies and social surveys have found that Average Sound Level metrics are the best measure to assess levels of community annoyance associated with all types of environmental noise. Therefore, their use

is endorsed by the scientific community and governmental agencies (American National Standards Institute 1980, 1988; USEPA 1974; Federal Interagency Committee on Urban Noise 1980; Federal Interagency Committee on Noise 1992).

Federal agencies suggest that land uses are unrestricted when exposed to noise levels below L_{dn} 65. Therefore, for noise considerations, the land areas exposed to that average noise level constitutes the ROI.

3.5.2 EXISTING CONDITIONS

Currently, noise exposure around Little Rock AFB results primarily from aviation activities. The ARANG complex is located within the L_{dn} 65 noise contour around the runway (ARANG 2002). Although some noise results from routine human presence and activities, as well as vehicular traffic, noise from aircraft operations and their associated activities dominates the acoustic environment on Little Rock AFB and the 189 AW compound.

3.6 LAND USE AND VISUAL RESOURCES

3.6.1 DEFINITION OF THE RESOURCE

Land use comprises natural conditions or human-modified activities occurring at a particular location. Human-modified land use categories include residential, commercial, industrial, transportation, communications and utilities, agricultural, institutional, recreational, and other developed use areas. Management plans and zoning regulations determine the type and extent of land use allowable in specific areas and are often intended to protect specially designated or environmentally sensitive areas.

Visual resources are the natural and manmade features that give a particular environment its aesthetic qualities. In undeveloped areas, landforms, water surfaces, and vegetation, are the primary components that characterize the landscape. Manmade elements such as buildings, fences, streets may also be visible. These may dominate the landscape or be relatively unnoticeable. In developed areas, the natural landscape is more likely to provide a background for more obvious manmade features. The size, forms, materials, and functions of buildings, structures, roadways, and infrastructure will generally define the visual character of the built environment. These features form the overall impression that an observer receives of an area or its landscape character. Attributes used to describe the visual resource value of an area include landscape character, perceived aesthetic value, and uniqueness.

The scenic quality of some special areas is protected by laws (such as the Wilderness Act or the National Wild and Scenic Rivers Act). Federal land managers also clarify the scenic value of

lands in accordance with federal land management regulations. In urban areas, there may be ordinances or zoning provisions that guide physical development.

3.6.2 EXISTING CONDITIONS

The 189 AW of the ARANG is located on a portion of the Little Rock AFB near the eastern end of the aircraft parking area (Figure 1.3-2). The 314 AW presently leases approximately 73 acres to the 189 AW for their continued use. Additionally, 42 acres of aircraft parking pavement has been made available to the 189 AW for their aircraft (ARANG 2002). Little Rock AFB encompasses 6,128 acres and is zoned as a planned community with various land uses such as industrial, administrative and training areas, housing areas and recreational areas. Approximately 1,182 buildings are currently located on the AFB.

The ARANG has developed a Master Plan Update (2002), which depicts installation growth for the next ten fiscal years, to include: 1) facility demolition, construction and renovation, and 2) vehicular circulation improvements. These activities are divided into short-range and long-range planning. The short-range plan provides siting and construction for all facilities to support the transition to the C-130J aircraft. The 314 AW has endorsed the ARANG Master Plan.

Land uses at the ARANG installation, and its associated visual character, is typical of a military airfield and is divided by function, as is normally the case. The airfield pavement, parking area and maintenance is located in the northern portion of the Little Rock AFB. The command and support operations are interspersed in the central and southern areas, and the industrial use areas are located primarily in the southern portion of the base. Much of the eastern and central portions of the base remains open space, either undeveloped or used for training.

The ARANG installation has a typical appearance of a military facility and is characterized by flat topography, long stretches of asphalt and military aircraft. Trees are used as landscaping associated with buildings. Vegetation is kept low in the open spaces for safety reasons. The view of the ARANG installation from most public roads is blocked due to the surrounding airfield and Little Rock AFB.

3.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.7.1 DEFINITION OF THE RESOURCE

Socioeconomic resources are defined as the basic attributes associated with the human environment, particularly population and economic activity. Population is described by the change in magnitude, characteristics, and distribution of people. Economic activity is typically composed of employment distribution, personal income, and business growth. Any impact on

these two fundamental socioeconomic indicators can have ramifications for secondary considerations, such as housing availability and public service provision.

To comply with NEPA, the planning and decision making process for actions proposed by federal agencies involves a study of other relevant environmental statutes and regulations, including EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, issued February 11, 1994. The essential purpose of EO 12898 is to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of federal laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative consequences resulting from the execution of federal programs and policies.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children under the age of 18. These risks are defined as 'risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest.'

3.7.2 EXISTING CONDITIONS

The ARANG installation and Little Rock AFB lie within the city limits of Jacksonville, Arkansas, a city of approximately 30,000 people. Jacksonville provides many services to the base, such as civilian police and ambulance support. Little Rock AFB is located in Pulaski County approximately 14 miles north of the City of Little Rock in Central Arkansas.

3.7.2.1 Population

The population in Pulaski County has grown in the last 10 years from 349,660 in 1990 to 361,967 in 2000. This represents a 3.4 increase overall, and an annual growth rate of 0.33 percent (U.S. Bureau of Census 2000). However, this is slower than the State of Arkansas, which experienced a 13.7 percent change in population and a 1.29 percent growth rate over the same 10-year period. Compared to the rest of the nation, Pulaski County experienced less than half the population increase. The U.S. had a 13 percent overall increase in population and a 1.2 annual rate of growth in the last 10 years (U.S. Bureau of the Census 2000).

In fiscal year (FY) 2001, the ARANG employed a total of 949 people. This included 157 active Guard/Reserve, 612 Traditional Guardsman, and 180 federal civilians (USAF 2001c).

3.7.2.2 Economic Activity

The total annual payroll of the ARANG in FY 01 was approximately $20 million. The ARANG spent about $7.3 million on construction, services, and procurement of materials, equipment and supplies. In addition to direct labor, the ARANG creates about 168 indirect jobs with an estimated annual dollar value of about $5 million. The total economic impact derived from the ARANG to the local economy was about $32 million in FY 01 (USAF 2001c).

The socioeconomic characteristics of Pulaski County, the state of Arkansas, and the U.S. as a whole are shown in Table 3.7-1.

Table 3.7-1. Socioeconomic Characteristics of the ARANG, Arkansas

	Pulaski County	***State of Arkansas***	***United States***
Total Population, 2000	361,474	2,673,400	281,421,906
Percent Non White Population	37.1%	21.4%	30.9%
Number of Households	137,210	1,042,696	105,480,101
Number of Housing Units	161,135	1,173,043	115,904,641
Median Value Owner Occupied	$85,300	$72,800	$119,600
Percent Persons Below Poverty Level	13.3%[1]	15.8%[1]	12.4%[1]
Median Household Income	$38,120	$32,182	$41,994

Note: 1. The average poverty threshold for a family of four in 1999 was $17,029 in annual income.
Source: U.S. Bureau of Census 2000

3.7.2.3 Environmental Justice and Protection of Children

The initial step in evaluating Environmental Justice compliance is the identification of minority and low-income populations that might be affected by implementation of the Proposed Action or the alternative. Low-income, or the poverty threshold, is defined as the aggregate annual mean income for a family of four, which in 1999 correlated to $17,029.

Low-income and minority population data was compared for the study area (Pulaski County) and the State of Arkansas (refer to Table 3.7-1). The percent of low-income persons is lower for Pulaski County (13.3 percent) than for the State of Arkansas (15.8 percent), while the percent minority population is higher for Pulaski county (37.1 percent) than for Arkansas (21.4 percent).

The youth population, which includes children under the age of 18, accounts for 25.2 percent of the ROI (Pulaski County) and 25.4 percent at the state level. Both of these percentages are similar to those found at the national level of 25.7 percent, indicating that a disproportionate number of children are not located in the ROI or the state (U.S. Bureau of Census 2000).

3.8 CULTURAL RESOURCES

3.8.1 DEFINITION OF THE RESOURCE

Cultural resources are any prehistoric or historic district, site, or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious or other purposes. They include archaeological resources, historic architectural and engineering resources, and traditional resources. Cultural resources are protected by federal law when they meet established criteria for listing on the NRHP. Such properties require consideration regarding adverse impacts from a proposed undertaking. Both archaeological and architectural resources must be evaluated in light of four NRHP eligibility criteria. The criteria that prehistoric or historic sites, districts, buildings or structures must meet are as follows (36 CFR 60.4)):

a. Properties are associated with events that have made a significant contribution to the broad patterns of our history.

b. Properties are associated with the lives of significant persons in our past.

c. Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

d. Properties that have yielded, or may be likely to yield, information important to prehistory or history.

On 21 November 1999, the DoD promulgated its Native American and Alaska Native Policy, which emphasizes the importance of respecting and consulting with tribal governments on a government-to-government basis. The Policy requires an assessment, through consultation, of the affect of proposed DoD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands before decisions are made by the services.

The area of potential effect for cultural resources consists of the existing ANG installation and the proposed parcel acquisitions.

3.8.2 EXISTING CONDITIONS

3.8.2.1 Historical Setting

The Little Rock AFB region has been inhabited for at least 12,000 years. It was first occupied by small nomadic bands that hunted large game and gathered wild plant foods. As the climate warmed, and large game animals declined, people became more dependent on deer and a variety of nuts and other plant foods. Eventually native seed plants were cultivated and settlement became more stationary, concentrating in the bottomlands and river valleys (Parsons Engineering Science 1998). Ceramics were introduced and long-distance trade of raw materials and artifacts increased, as did population. With the introduction of maize cultivation, larger villages, with mounds and other earthworks developed (Parsons Engineering Science 1998).

In the mid-1500s, Spanish explorers recorded complex societies in the region that were no longer present 130 years later (Parsons Engineering Science 1998). The French encountered the Quapaw people, a southeastern Siouan group who left the Ohio Valley in the early 1600s and moved down the Mississippi River into Arkansas where they were known to other tribes as "Ugaxpa," or "downstream people." They settled four villages at the mouth of the Arkansas River where they remained until they were displaced by Euroamericans (Quapaw Tribal Office 2002). The French remained allies with the Quapaw through the Seven Years' War (French-Indian War) when France ceded all land west of the Mississippi to the Spanish (1762). Spanish rule was marked by Spanish and English competition for the allegiance of the Quapaw (Quapaw Tribal Office 2002). In 1818, the U.S. government was granted a cession of land encompassing all of what is now southern Arkansas, Oklahoma, and part of Louisiana from the Quapaw. Land speculators petitioned the government to remove the Quapaw, and in 1824, the state terminated all Quapaw claims to Arkansas lands (Quapaw Tribal Office 2002). The Quapaw were removed from their homeland to the Red River in northwestern Louisiana where they joined the Caddo temporarily. In 1833, the Quapaw signed another treaty removing them from Arkansas for the last time to northeastern Indian Territory in Oklahoma (Quapaw Tribal Office 2002).

Active Euroamerican settlement in the Pulaski County area began after the Louisiana Purchase in 1803. The population grew slowly and the area remained primarily agricultural (Parsons Engineering Science 1998). The Jacksonville-Gray township area was established in 1820-21 (Jacksonville Chamber of Commerce 2000). After Arkansas became a state in 1836, the area continued to grow. During the Civil War, Union forces came through the area on the way to an assault on Little Rock in 1863 (Jacksonville Chamber of Commerce 2000). Jacksonville expanded during the 1870s after a right-of-way was granted to the Cairo and Fulton Railroad Company and lots were established along both sides of the railway. By 1892, Jacksonville had a population of 200, which was maintained for many years.

In the Depression of the 1930s, the Civilian Conservation Corps, Camp Jacksonville, provided construction employment for many area men. The Arkansas Ordnance Plant (AOP), a fuse and detonator manufacturing plant built in 1941, provided employment for thousands. At its peak, the plant employed 13,500 (Jacksonville Chamber of Commerce 2000). Pulaski County received a total of $137 million in war contracts between 1940 and 1945. The ordnance plant ceased operations at the close of the war in 1945 and the town was left without employment for much of its population (Jacksonville Chamber of Commerce 2000).

After the war, AOP land and facilities were sold to a number of parties. The Federal government retained the northern part of AOP land. This parcel later became part of Little Rock AFB (USAF 2001b). In 1952, the USAF announced plans to build a $31 million jet bomber base near Jacksonville and Little Rock AFB opened in 1955 (ARANG 2002). The base was assigned to the SAC with the 70th Reconnaissance Wing as the first assigned unit (USAF 2001b). In 1956, the first B-47 medium bombers arrived. The 308th Strategic Missile Wing assumed operational command of 18 Titan II missile sites located around central Arkansas in 1962. The 64th Tactical Airlift Wing took over the base and the first C-130 arrived in 1970. In 1971, the 314th Tactical Airlift Wing moved from a base in Taiwan to Little Rock (ARANG 2002).

The 189 AW of the ARANG was established in 1917 as the 154th Observation Squadron, and was federally recognized in 1925 at Little Rock Municipal Airport (ARANG 2002). The 154th was ordered to active duty in 1940 and saw action during World War II in North Africa, Sicily, Italy, France and England. It was re-designated the 154th Fighter Squadron on its return to inactive status after the war (ARANG 2002).

The squadron again was ordered to active duty in 1950 for the Korean conflict and returned to inactive status in 1952 when it was re-designated the 154th Tactical Reconnaissance Squadron. The squadron moved from Adams Field to Little Rock AFB in September 1962 and reorganized as the 189th Tactical Reconnaissance Group when elements of the 123rd Air Base Group were added (ARANG 2002).

In 1965, the group became the first ANG organization to be equipped with RF-101 aircraft. As a result of the Pueblo Crises, the 189th was recalled to active duty in early 1968. After release from active duty later that year, it assumed the RF-101 Replacement Training Unit mission from the active USAF. In 1976, the unit was designated as the 189th Air Refueling Group, ARANG, and converted to a KC-135 air-to-air refueling mission. It became one of the first ANG units to be assigned to the SAC as a gaining command (ARANG 2002). As a part of SAC under "Total Force," the 189th ARG maintained around-the-clock ALPHA Alert, participated in European, Alaskan, and Pacific Tanker Task Forces, and supported worldwide temporary tanker task forces performing in-flight refueling of all types of aircraft as assigned by SAC (ARANG 2002).

In 1986, the unit was re-designated as the 189th Tactical Airlift Group and converted to the C-130 aircraft. The mission squadron was re-designated as the 154th Tactical Airlift Training Squadron and assumed a proportionate share of initial aircrew qualification training, from the 314th Tactical Airlift Wing, Little Rock AFB. During Desert Shield/Desert Storm, 135 members were activated and aircrews flew 123 mission sorties in support of Desert Shield/Desert Storm (ARANG 2002).

In 1992, the 189th Tactical Airlift Group was re-designated as the 189th Airlift Group, and the 154th Tactical Airlift Training Squadron was re-designated as the 154th Training Squadron, ARANG. In 1995, the 189th Airlift Group was designated as the 189 AW. The 189 AW was the first ANG unit in the country to be located on an active duty USAF base flying the same type aircraft as its active duty counterpart, and performing the same day-to-day mission (ARANG 2002).

3.8.2.2 Cultural Resources

A survey of all accessible portions of the base recorded a total of 38 archaeological sites (Cliff et al. 1997). None of these sites is eligible for the NRHP (National Register Information Service 2002). No archaeological site is within or near the present project area. A building inventory identified more than 90 buildings with the potential to be historic resources. Of these, three buildings constructed before the Cold War are potentially eligible for the NRHP (Cliff et al. 1997). Inventory of 110 Cold War-era facilities (Lowe et al. 1997) identified one that is eligible for the NRHP, the SAC Bomber Alert Facility (Facility 160). The remaining facilities were not evaluated for NRHP eligibility (Lowe et al. 1997). No traditional resources have been identified at the base (Cliff et al. 1997). There are no known federally-recognized Native American lands or resources in the area of the proposed action. The Quapaw Indian Tribe, the Caddo Indian Tribe of Oklahoma, and the Tunica-Biloxi Indians of Louisiana, Inc., have been contacted regarding this action.

3.9 SAFETY

3.9.1 DEFINITION OF THE RESOURCE

This section addresses ground safety involving activities conducted by personnel assigned to the 189 AW, ARANG, Little Rock AFB, Arkansas. Ground safety considers issues involving day-to-day operations and maintenance activities that support unit operations. The ROI for safety in this EA includes Little Rock AFB.

3.9.2 EXISTING CONDITIONS

Day-to-day operations and maintenance activities conducted by 189 AW personnel in direct mission support, maintenance of unit aircraft and facilities, and in the use and operation of the airfield are performed in accordance with applicable USAF and Command safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health requirements.

Under current conditions, personnel assigned to the 189 AW perform many support functions using antiquated, sometimes inadequate, or nonexistent facilities and associated infrastructure. The age of many existing facilities, the lack of updated and modern supporting infrastructure, and space deficits all combine to create potential safety concerns. Overall, the unit uses outdated structures and experiences a space shortfall of approximately 69,000 square feet, a 21 percent deficit (ARANG 2002).

The aircraft maintenance hangar complex was built in 1963, and although it has been modified several times, the complex lacks adequate floor space to safely accommodate all required mission activities. Supporting utility systems are outdated, inefficient, and sometimes ineffective. Over 45 percent of the authorized hangar space is substandard, or does not exist (ARANG 2002).

The 189 AW does not currently have a facility to support corrosion control and fuel cell maintenance. While some joint use of such a facility that is scheduled and controlled by the 314 AW does occur, 189 AW technicians must often accomplish these functions in the open on the aircraft parking ramp due to scheduling conflicts. Considering the complexities of these operations, and the hazardous nature of components used in their performance, conducting them on the open ramp is unsuitable and creates some safety risks (personal communication, Stuff 2002).

The 189 AW does not have a dedicated aircraft refueler vehicle parking area, and there is insufficient space to support joint use with the 314 AW's parking area. The 189 AW's refueler vehicles are currently parked in a temporary location next to the Squadron Operations facility. The location lacks spill prevention and/or containment infrastructure, and does not meet safe-separation criteria. These conditions create safety concerns (personal communication, Stuff 2002).

3.10 INFRASTRUCTURE

3.10.1 DEFINITION OF THE RESOURCE

Resources discussed in this section include transportation facilities on Little Rock AFB and the local utility services. The ROI for these resources is limited to the immediate vicinity of the ANG installation, located south of the southeast quadrant of the airfield area surrounding and to the east of the intersection of Second Street and Vandenberg Boulevard and including the area to the northeast of First Street (Figure 3.10-1).

3.10.2 EXISTING CONDITIONS

3.10.2.1 Transportation

The primary entrance to Little Rock AFB is through the Vandenberg Boulevard Gate, which is accessed via U.S. Highway 67/167. Major functional areas within the base, such as aircraft support, administration, and residential areas are served by confined street systems linked by base arterials. Important cross-base roads that link these functional areas include Vandenberg Boulevard, Thomas Avenue, Texas Boulevard, McArthur Drive, Arkansas Boulevard, Arnold Drive, Sixth Street, and Harris Road (Figure 1.3-2). Circulation within the aircraft support and administrative areas flows along a gridded street system. Winding residential streets provide circulation within base military family housing.

The base transportation network consists of approximately 100 miles of roads and 687,000 square yards of paved parking lots and driveways. The majority of the roads are paved with asphalt, and most of the primary and secondary roads have curb and gutter. There is one primary runway and an assault strip to accommodate the C-130 training mission. The airfield is made up of over 1.5 million square yards (approximately 930 acres) of paved runways, taxiways, and aircraft parking aprons.

3.10.2.2 Utilities

Water Supply

Little Rock AFB is supplied with potable water by the City of Jacksonville, which obtains its water from the Central Arkansas Water Utility municipal system. Water is drawn primarily from Lake Maumelle, treated by the Central Arkansas Water Utility, distributed by the North Little Rock municipal system, and piped to Jacksonville and Little Rock AFB. Water is stored in one 1.3 million gallon (4.94 million liter) and two 30,000-gallon (114,000 liter) elevated tanks and supplied to base users by gravity flow. The base performs supplemental chlorination of water

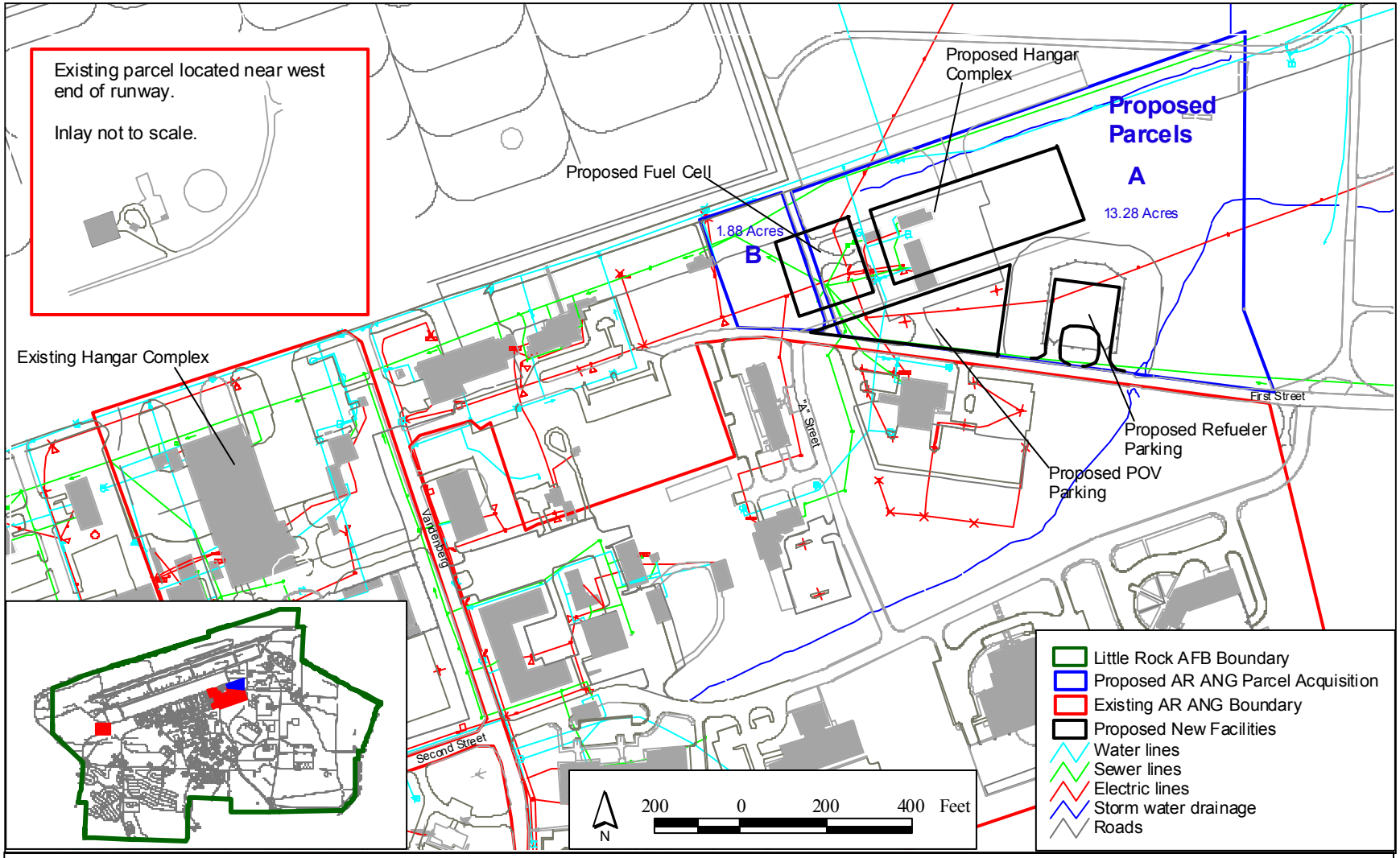

Figure 3.10-1
Infrastructure
Existing and Amended ANG Real Estate License
Little Rock AFB, Arkansas

prior to distribution. Areas of reduced flow along the flightline experience heavy iron deposits, which produce a reddish discoloration in the water. Twenty-three automatic pipe-flushing devices have been installed to alleviate the problem. These devices automatically flush the system in areas of reduced flow and dead end conditions to alleviate turbidity and low chlorine content caused by low usage. Base Civil Engineering maintains the water distribution system and 314th Medical Squadron periodically tests for chlorine, pH, pathogens, and contaminants such as lead, copper, and pesticides.

Sanitary Sewer System

The sanitary sewer system is comprised of approximately 55 miles of main and secondary lines, 645 manholes, and four major lift stations and force mains. There are ten smaller lift stations and force mains serving individual facilities. The majority of the system is concrete pipe, with some small sections of polyvinyl chloride (PVC), ductile iron, cast iron, vitrified clay, and transite. The effluent discharges through two miles of USAF-owned outfall pipeline into the city's sanitary sewer system, and is treated at the Jacksonville sewage treatment facility. The permit issued by the Jacksonville Wastewater Utility regulates the base's discharge to the utility.

Electrical Service

Power is delivered to Little Rock AFB at the main switching station, located on Marshall Road south of the intersection with Vandenberg Boulevard. Electrical service is provided to the base via four 13.8 kilovolt circuit switches. Circuits A and B provide service to the main cantonment area, flightline, and airfield, while C and D serve the family housing area. The system consists of approximately 328 miles of primary and secondary distribution lines with 80 percent overhead and 20 percent underground.

Natural Gas Distribution System

A contractor supplies natural gas to the base. An 8-inch steel main connects the base to the contractor's district regulator located just west of Redmond Avenue at the southern boundary. The cantonment area of the base is served by a looped system. Several non-looped lines provide service to individual facilities or areas, such as the Defense Reutilization and Marketing Office and recycling area, the AMC Combat Aerial Delivery School facilities at the east end of the flightline, the fuel farm, and the Munitions Storage Area. The gas service system, which is predominately steel pipe, is protected by a cathodic protection system, to prevent corrosion. Recent service lines have been installed using polyethylene pipe. While more likely to be damaged by digging, this piping is not susceptible to corrosion and does not require cathodic protection.

Fuel Distribution Lines

A contractor delivers aviation fuel to the base fuel farm through a pipeline installed in 1996. The line is contractor-owned and maintained up to the filter and metering station located at the fuel farm. Fuel can be delivered at up to 1,000 gallons per minute, with an essentially unlimited supply.

The fuel farm contains two active aboveground storage tanks (ASTs) and one reserve AST, which have a combined capacity of 100,000 barrels (4.20 million gallons). The tanks are equipped with auto tank gauging, leak detection with tracer detection, cathodic protection, high level alarms, and automatic shut-off valves. The fuel farm has a truck unloading point with seven headers having a delivery volume of 600 gallons per minute (gpm), and it is protected by in-place spill containment. There are also two truck-filling stands with a delivery volume of 300 to 500 gpm. Two 10-inch lines supply fuel from the fuel farm ASTs to the aircraft fueling hydrant system located along the north side of the parking ramp.

Storm Drainage System

The storm drainage system is made up of about 32 miles of underground piping, drop inlets, and manholes. In addition to the underground drainage network, portions of the base are drained by overland surface flow to man-made and natural drainage courses that carry the storm water to one of the discharge points.

3.11 SOLID AND HAZARDOUS MATERIALS AND WASTE

3.11.1 DEFINITION OF THE RESOURCE

This section describes the affected environment associated with hazardous materials and petroleum products, hazardous and petroleum wastes, IRP sites, and solid waste at the construction and demolition areas.

The terms “hazardous materials” and “hazardous waste” refer to substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA). In general, hazardous materials include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released into the environment. Hazardous wastes that are regulated under RCRA are defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that either exhibit one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity, or are listed as a hazardous waste under 40 CFR Part 261. Petroleum products include petroleum-based fuels,

oils, and their wastes. The IRP is a USAF program to identify, characterize, and remediate environmental contamination from past activities at Air Force installations.

Issues associated with hazardous material and waste typically center around waste streams, underground storage tanks (USTs), ASTs, and the storage, transport, use, and disposal of pesticides, fuels, lubricants, and other industrial substances. When such materials are improperly used in any way, they can threaten the health and well being of wildlife species, habitats, and soil and water systems, as well as humans. This section also considers solid waste.

The management of hazardous materials and hazardous waste is governed by specific environmental statutes. The key regulatory requirements include:

CERCLA of 1980 (42 USC 9601–9675) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. CERCLA/SARA regulates the prevention, control, and compensation of environmental pollution.

Community Environmental Response Facilitation Act of 1992 (CERFA) (42 USC 9620). This act amended CERCLA to require that, prior to termination of federal activities on any real property owned by the federal government, agencies must identify real property where hazardous substances were stored, released, or disposed of.

Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (42 USC 11001–11050). EPCRA requires emergency planning for areas where hazardous materials are manufactured, handled, or stored and provides citizens and local governments with information regarding potential hazards to their community.

RCRA of 1976 (42 USC 6901–6992). RCRA established standards and procedures for handling, storage, treatment, and disposal of hazardous waste.

Federal Facility Compliance Act (FFCA) of 1992 (Public Law 102-426). This act provides for a waiver of sovereign immunity on the part of federal agencies with respect to federal, state, and local requirements relating to RCRA solid and hazardous waste laws and regulations.

Pollution Prevention Act of 1990 (42 USC 13101–13109). This act encourages minimization of pollutants and waste through changes in production processes.

USEPA Regulation on Identification and Listing of Hazardous Waste (40 CFR Part 261). This regulation identifies solid wastes subject to regulation as hazardous and to notification requirements under RCRA.

USEPA Regulation on Standards for the Management of Used Oil (40 CFR Part 279). This regulation delineates requirements for storage, processing, transport, and disposal of oil that has been contaminated by physical or chemical impurities during use.

USEPA Regulation on Designation, Reportable Quantities, and Notification (40 CFR Part 302). This regulation identifies reportable quantities of substances listed in CERCLA and sets forth notification requirements for releases of those substances. It also identifies reportable quantities for hazardous substances designated in the CWA.

The ROI for hazardous materials, hazardous waste, and petroleum products encompasses areas that could be exposed to an accidental release of hazardous substances from the construction or demolition activities. Therefore, the ROI for this section is defined as the boundary of Parcels A and B as well as the area in which demolitions would occur (in the vicinity of the existing Aircraft Maintenance Hangar).

3.11.2 EXISTING CONDITIONS

This section describes the management of hazardous materials and petroleum products, hazardous and petroleum wastes, IRP sites, and solid wastes within the ROI.

3.11.2.1 Hazardous Materials and Petroleum Products

A HAZMART tracking system has been implemented at Little Rock AFB to manage documentation and handling of hazardous materials at the current Aircraft Maintenance Hangar complex (Building 207) and the 314 AW corrosion control/fuel cell maintenance facility (Building 282). This is a single source, pharmaceutical approach to inventory, monitor, and reduce the quantities of stored materials (USAF 2001b).

Currently, hazardous materials and petroleum products (including transformers containing polychlorinated biphenyls [PCBs]) are not used or stored at the proposed Parcels A or B. However, hazardous materials and petroleum products were used within the former missile maintenance complex (Buildings 147, 148, 159, and 150) from the 1960s to the 1980s. These buildings are scheduled for demolition over the short-term. No specific information on the type of operations, processes, or chemicals used at these buildings is available (USAF 2000).

In the past, Little Rock AFB engaged in a variety of activities that may have resulted in the release of hazardous materials. The activities at the current Aircraft Maintenance Hangar complex (Building 207) and former missile maintenance complex (Buildings 147 to 150) may have released POLs and paint products. Currently, the corrosion control/fuel cell maintenance activities performed on the apron and transport of refueling tankers from the temporary facility

increase the chance for a release of hazardous materials or petroleum products to the environment.

3.11.2.2 Hazardous and Petroleum Wastes

Hazardous waste management at Little Rock AFB adheres to RCRA regulations and is guided by the March 2001 *Hazardous Waste Management Plan* (USAF 2001d). Typical hazardous wastes generated at the current maintenance hangar complex (Building 207) and 314 AW corrosion control/fuel cell maintenance facility (Building 282) include waste paint, paint stripper, paint-contaminated rags, and degreasers. Little Rock AFB is a large quantity generator of hazardous waste and, therefore these wastes are managed in accordance with large quantity generator regulations (USAF 2001d).

One RCRA site (Solid Waste Management Unit [SWMU] 32 – Oil and Water Separators) is located within the current Aircraft Maintenance Hangar (Building 207). Little Rock AFB operates 22 oil and water separators as pretreatment units of which one oil/water separator is located in the northern portion of the current Aircraft Maintenance Hangar (Building 207). This oil/water separator receives effluent from the industrial shops and floor drains. Primary waste streams included waste oils, jet propulsion-4 (JP-4) fuel, solvents, hydraulic fluid, lubricants, and antifreeze. Although no documented releases from the Building 207 oil/water separator were identified during the site investigation, an evaluation of the integrity of each oil/water separator on Little Rock AFB will be accomplished during the removal phase in order to achieve closure of these sites. Therefore, the 22 oil/water separators were included in the Stage 1 RCRA Facility Investigation.

Currently, hazardous and petroleum wastes are not being generated or stored within Parcel A or B. However, hazardous and petroleum wastes were generated within the former missile maintenance complex (Buildings 147, 148, 159, and 150) from the 1960s to the 1980s. No specific information on the type of operations, processes, or chemicals used at these buildings is available.

3.11.2.3 Installation Restoration Program Sites

The IRP established a process to evaluate past disposal sites, control the migration of contaminants, assess potential hazards to human health and the environment, and conduct environmental restoration activities. The IRP is conducted in accordance with Section 211 of SARA and the Defense Environmental Restoration Program. The USAF coordinates IRP activities with the USEPA and the State of Arkansas.

According to the current IRP Management Action Plan, Little Rock AFB has the responsibility for 36 active IRP sites and 38 active AOCs (USAF 2001e). Little Rock AFB is actively pursuing cleanup at all sites, consistent with federal and state regulations and guidance.

The IRP currently includes preliminary assessment and remedial investigation/feasibility studies to determine the disposition of hazardous waste sites identified at the base. The program is administered through the 314 CES/CEV, and is supported by the Public Affairs Office and the Staff Judge Advocate Office. In February 2000, Little Rock AFB signed a Consent Order with ADEQ to direct future remediation actions in accordance with RCRA provisions.

According to the *Description of Current Conditions Report* (USAF 2000), portions of five IRP sites are located within Parcel A and B: FT-01 – Fire Protection Training Area, AOC No. 7 – Sanitary Sewer System, AOC No. 8 – Storm Drainage System, SS-18 – Jet Fuel Release Near First Street, and ST-43 – Former Missile Maintenance Complex. These five IRP sites are shown in Figure 3.11-1 and described as follows:

- **FT-01 – Fire Protection Training Area—**A small portion (approximately 10,000 SF) of the Fire Protection Training Area is located within Parcel A. FT-01 contains two areas that were used for fire training exercises from 1955 to approximately 1970. During this time, flammable liquid wastes (up to 2,000 gallons per exercise) from Little Rock AFB shops were poured on mock airplanes and burned. Following training exercises, unburned wastes were allowed to evaporate, infiltrate, and discharge into adjacent ditches. Based on the site investigation, capping and excavation of contaminated soils and sediments was conducted to reduce exposure to petroleum contaminants. A bioventing system is currently in operation to remediate remaining contaminated soils. Due to low levels of petroleum contamination remaining in the groundwater, long-term groundwater monitoring is being performed at this site. According to the site investigation, groundwater moves northeast and away from Parcel A.
- **AOC No. 7 – Sanitary Sewer System—**AOC No. 7 was identified during the RCRA Facility Assessment in 1990. A Stage 1 RCRA Facility Investigation was conducted to assess whether potential releases from the sewer system have affected area soils. Wastes that have been discharged through the sanitary sewer included neutralized battery acid, spent photographic processing solutions, pesticide wastes, and POL wastes. Results from this investigation support a recommendation for No Further Action (NFA) (USAF 2000). Approximately 2,000 linear feet of sanitary sewers are present within Parcels A and B.

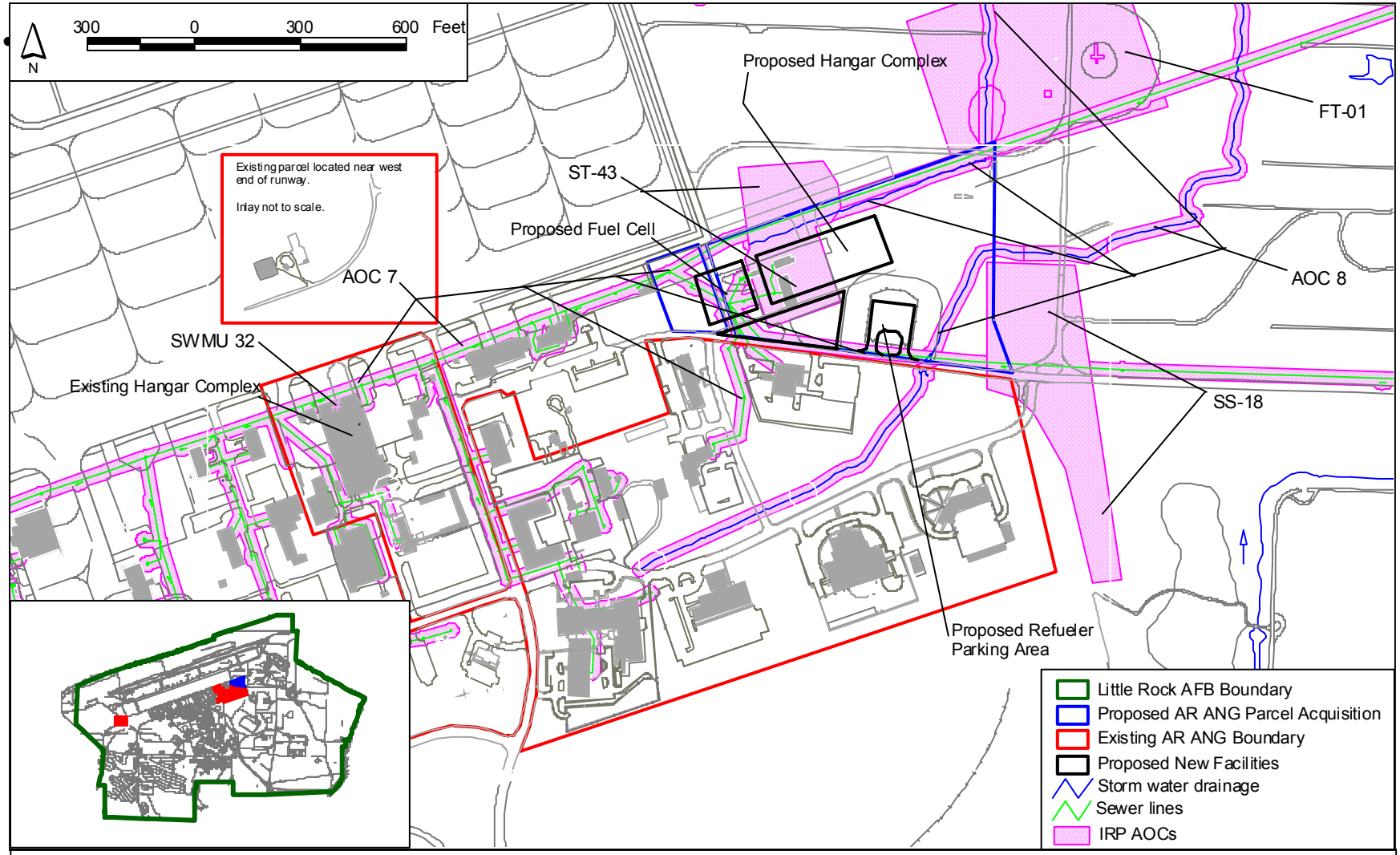

Figure 3.11-1
Location of IRP Sites
Existing and Amended ANG Real Estate License
Little Rock AFB, Arkansas

- **AOC No. 8 – Basewide Storm Drainage System**—AOC No. 8 was identified during the RCRA Facility Assessment in 1990. A RCRA Facility Investigation will be conducted to evaluate whether contaminants have affected area soils. If this area is found to have contaminants above applicable screening levels, additional field investigations will be recommended and will include all industrial-related storm drainage systems. Based on Little Rock AFB activities, the storm water discharges may be contaminated with waste oil, fuel, solvents, hydraulic fluid, cleaning solutions, and heavy metals. Approximately 1,200 linear feet of subsurface storm water pipelines and drainage ditches are within Parcels A and B.

- **SS-18 – Jet Fuel Release Near First Street**—A small portion (approximately 1 acre) of the jet fuel release near First Street is located within Parcel A. This site is associated with two 10-inch underground pipelines that transferred JP-4 jet fuel from the bulk fuel storage tanks to the flightline hydrant system. In 1987, large pools of JP-4 were identified in low-lying areas to the north and south of the valve vaults. A RCRA Facility Investigation (RFI) was conducted at SS-18 to determine whether site activities have resulted in environmental contamination, and to define the nature and extent of any identified contamination. Results from this investigation supported a recommendation for plugging and abandoning all monitoring wells followed by NFA.

- **ST-43 – Former Missile Maintenance Complex—**This site includes the location of the former missile maintenance facility and a drainage ditch that is part of the base wide storm drainage System (AOC No. 8). The ditch begins at a storm water discharge culvert located at the southeast corner of the East Taxiway apron and runs east-northeast south of the runways to the installation boundary. The storm water system has the potential to accept spills or releases from facilities south of the taxiway apron. At one time, some facility interior drains were connected to the storm water system. The primary contaminants identified at this site appear to be total petroleum hydrocarbon-diesel range organics and polycyclic aromatic hydrocarbons (PAHs) in surface soil and sediment samples, and isolated detections of TCE in surface soil, surface water, and groundwater. The source of the contamination appears to be related to the storm water system that feeds the drainage ditch rather than site activities at the Former Missile Maintenance Complex. The preliminary results of the human health risk assessment performed during the RI indicated that several PAHs in the ditch do present a risk to current and future onsite workers. The recommendation for this site is to resolve the ditch issues under AOC No. 8 and to plug and abandon all monitoring wells followed by an NFA for the former missile maintenance complex.

3.11.2.4 Solid Waste

Municipal solid waste management and compliance at USAF installations is established in AFI 32-7042, *Solid and Hazardous Waste Compliance*. In general, AFI 32-7042 establishes the requirements for installations to have a solid waste management program to incorporate the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; record-keeping and reporting; and pollution prevention. Source reduction, resource recovery, and recycling of solid waste are addressed in AFI 32-7080, *Pollution Prevention Program*.

A private contractor accomplishes the collection of municipal solid waste at Little Rock AFB. This contract includes collection of municipal waste from base office facilities and curbsite collection of solid waste. Little Rock AFB utilizes a contractor that operates a base-wide recycling program as part of their facilities (USAF 2001e).

Currently, municipal solid waste from Little Rock AFB is transported and disposed of at Two Pines Landfill, located in the city of Jacksonville. This is a Subtitle D Landfill permitted to accept municipal waste. The currently permitted and operating disposal cells have an expected operating period of approximately 4 years before reaching capacity (USAF 2001e).

CHAPTER 4.0
ENVIRONMENTAL CONSEQUENCES

This chapter of the EA assesses potential environmental consequences associated with the Proposed Action and its alternative. Potential impacts are addressed in the context of the scope of the Proposed Action and the alternative as described in Chapter 2.0 and in consideration of the potentially affected environment as characterized in Chapter 3.0.

4.1 EARTH RESOURCES

4.1.1 METHODOLOGY

Protection of unique geologic features, minimization of soil erosion, and siting facilities in relation to potential geologic hazards and soil limitations are considered when evaluating impacts to earth resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering designs are incorporated into project development.

Analysis of potential impacts to geologic resources typically includes identification and description of resources that could potentially be affected, examination of the potential effects that an action may have on the resource, and provision of mitigation measures, if necessary. Analysis of impacts to soil resources resulting from proposed activities examines the suitability of locations for proposed operations and activities. Impacts to soil resources can result from earth disturbance that would expose soil to wind or water erosion.

4.1.2 IMPACTS

4.1.2.1 Proposed Action

Under the Proposed Action, the physiography, underlying geology, and topography of the area would not change, however, the soil would be disturbed by construction activities. Under this alternative, approximately 5 acres of land would be disturbed resulting in new impervious surfaces.

The area where soil would be disturbed due to the Proposed Action is classified as the Linker-Mountainburg association and Urban Land. Linker-Mountainburg soils are moderately sloped, highly erodible, and are better suited for woodlands than for cultivation. Urban Land soils have been significantly disturbed by past activities and can no longer be classified as the original soil or any other native soil. Further disturbance of Urban Land soils would have no impact in terms of preserving unique soils; however, the more germane issue is related to erosion of whatever

soil exists on the site. Under the Proposed Action, it is estimated that a total of approximately 5 acres could be disturbed during the course of the construction activities. Well maintained silt fences and other BMPs would be used to limit or eliminate soil movement, stabilize runoff, and control sedimentation. Following construction, disturbed areas not covered with impervious surfaces would be reestablished with appropriate vegetation and managed for future erosion. Given the relatively small area potentially disturbed and the employment of engineering practices that would minimize potential erosion, impacts to earth resources are expected to be minimal.

4.1.2.2 No Action Alternative

Under the No Action alternative, the 189 AW would maintain their existing facilities and would not build new facilities. No impacts to earth resources would occur. Conditions would remain as described in Section 3.1.

4.1.2.3 Cumulative Impacts

There are several other ground-disturbing activities either currently underway, or planned over the short-term in the ROI (Section 2.6). Approximately 400 acres of soil could be disturbed as a result of these projects over the next several years. Appropriate BMPs as described above would be employed to minimize potential erosion during construction activities and appropriate vegetation would be re-established on the sites to ensure rapid soil stabilization. Cumulative impacts to earth resources are expected to be minor.

4.2 WATER RESOURCES

4.2.1 METHODOLOGY

Criteria for evaluating impacts related to water resources associated with the proposal are water availability, water quality, and adherence to applicable regulations. Impacts are measured by the potential to reduce water availability to existing users; endanger public health or safety by creating or worsening health hazards or safety conditions; or violate laws or regulations adopted to protect or manage water resources.

The NPDES Branch of the Water Division of ADEQ and the USACE are the regulatory agencies that govern water resources in the state of Arkansas and at Little Rock AFB. These agencies have adopted the USEPA's applicable environmental rules and regulations. The CWA of 1977 regulates pollutant discharges and development activities that could affect aquatic life forms or human health and safety.

4.2.2 IMPACTS

4.2.2.1 Proposed Action

The proposed 15-acre parcel acquisition includes 5.4 acres that are located within the 100-year floodplain. Under this alternative, approximately 5 acres of land would be disturbed resulting in new impervious surfaces. This includes approximately 0.73 acres in the 100-year floodplain, and just under 1.1 acres of forested lands (approximately 0.6 acres associated with the aircraft hangar and 0.5 acres associated with the refueler vehicle parking area). In compliance with EO 11988, Floodplain Management, the aircraft refueler vehicle parking area would be designed to provide for containment capacity of the volume of the largest refueler truck (6,000 gallons) in addition to runoff from a rainfall event with an intensity equal to a five year expectancy and one-hour duration. The entire parking area would be surrounded with a concrete berm to contain any potential liquid spill. There would be grates in the pavement at each exit point from the parking area that would be equipped with a check gate to contain any spill. It would also meet safety and environmental regulations as dictated by the State of Arkansas (Arkansas Department of Pollution Control and Ecology Commission Regulation 19, Section 19.10), 40 CFR 110 and 112, and applicable USAF requirements. A Phase I NPDES General Construction Permit and associated SWPPP with associated BMPs would be required, including structural and programmatic controls for eliminating pollution from construction related runoff.

Storm water runoff from the refueler vehicle parking area would be directed through the check gates described above and eventually to the small creek running northeast along the eastern side of the site. Storm water runoff from the other two facilities would be directed north to the storm drain system along the northern portion of the site. Recent base policy has moved away from developing small, individualized retention structures for individual projects and therefore it is likely that any potential off base impacts due to the additional 5 acres of impervious surface would be managed by installation of a large detention pond planned for outfall 004. This pond would hold water to be released at appropriate times.

A portion of the site is located within the 100-year floodplain, which would be a concern for the design post-construction controls and potential pollution prevention training associated with the proposed refueler vehicle parking area. The controls and training would be addressed by the SWPPP associated with the General Storm Water Permit for the industrial activities (Phase I permit) at the base. The refueler vehicle parking area would be equipped with subterranean vaults at the exit points with a check gate that would ensure containment of any potential spill. This spill containment system would meet all safety and environmental regulations as dictated by the State of Arkansas, USEPA and USAF requirements. Additionally, the area would be surrounded by a concrete berm to contain and direct potential spills toward the check gates.

During the clearing, grading, and construction of facilities, erosion control BMPs would be employed to minimize erosion into the nearby waterways on the site. These measures would include installation of silt fences or a berm between these streams and the ongoing construction processes.

4.2.2.2 No Action Alternative

Under the No Action alternative, no construction would occur and no impacts to water resources would occur. Conditions would remain as described in Section 3.2.2.

4.2.2.3 Cumulative Impacts

There are several other ground-disturbing activities either currently underway, or planned over the short-term in the ROI (Section 2.6). Under the planned construction activities, there would be an addition of approximately 18 acres of impervious surface added at Little Rock AFB. This would include approximately 160 acres in the 100-year floodplain temporarily disturbed as a result of vegetation removal in the Clear Zone surrounding the airfield as a result of gaining compliance with UFC safety criteria. Appropriate construction BMPs as described above would be employed to minimize potential runoff and sedimentation during construction activities and appropriate vegetation would be re-established on the sites to ensure rapid soil stabilization. The slight increase in impervious surface would require that the storm water management system is monitored and updated, as necessary to accommodate increased runoff. Permanent retention basins may be required depending on the increase in runoff. Cumulative impacts to water resources are expected to be minor given BMPs employed.

4.3 BIOLOGICAL RESOURCES

4.3.1 METHODOLOGY

Evaluation of impacts is based upon (1) the importance (legal, commercial, recreational, ecological, or scientific) of the resource, (2) the rarity of a species or habitat regionally, (3) the sensitivity of the resource to proposed activities, and (4) the duration and magnitude of ecological ramifications. Impacts to biological resources are considered to be greater if priority species or habitats are adversely affected over relatively large areas and/or disturbances cause reductions in population size or distribution of a priority species.

4.3.2 IMPACTS

4.3.2.1 Proposed Action

Upland Vegetation

Of the approximately 15-acre project area, an estimated 7.6 acres would be disturbed including an estimated 5 acres for permanent structures and parking and 1.6 acres of temporarily disturbed land. This includes 3.4 acres of existing buildings and parking lots, 2.5 acres of forest, and 1.7 acres of grasslands. It is estimated that 1.7 forested acres would be permanently lost due to building and parking lot construction and 0.8 acres would revegetated with native species once construction was complete. This would result in the long-term loss of forest habitat because it would take a number of years for the forest to regenerate. An estimated 1.1 acres of grasslands would be permanently lost due to building and parking lot construction. An additional 0.6 acre would be revegetated with native species once construction was completed and this would represent a short term loss of grassland habitat.

Wildlife

The permanent and long-term loss of 2.5 acres of forest and the permanent loss of 1.1 acres of grasslands could eliminate habitat for species as discussed in Section 3.4. The forested habitat in the project area currently occurs in three fragments. The largest fragment is in the northern part of the project area and would be reduced by about 1 acre; this construction would create some additional edge but no additional fragments. The forest fragment on the west side of the stream would be cut in two with the refueler vehicle parking lot creating two small fragments of about 0.30 acres each. The forest fragment on the east side of the stream would be unaffected. The increase in fragmentation of this already fragmented forest would likely not impact the fauna that currently use this already highly-fragmented habitat. In addition, there would be much more human activity in the project area than currently exists which would also discourage the use of the remaining forested habitat by some species.

Most of the grassland habitat is currently mowed in association with the existing buildings and parking lots, which renders the habitat less preferable; therefore, it is doubtful that impacts to grassland species would be substantial.

Threatened, Endangered and Other Sensitive Species

The implementation of the Proposed Action would have no impact on federal and state listed species because these species do not occur on Little Rock AFB. However, this action could affect other sensitive species that dwell in the forest and grasslands in the project area. The Diana fritillary butterfly has the potential to occur in the mesic woods in the floodplain along the

stream in the project area. The alligator snapping turtle would not be expected in the stream because of the shallow nature of the stream.

The remaining sensitive species that could occur in the project area are birds. The grasshopper sparrow could occur in the affected grasslands but this species is not known to breed on the base at this time. Other sensitive grassland species that do breed on base and could be affected are the field sparrow and dickcissel. The potential for negative impacts on these species is slight, given the small amount and highly fragmented nature of the habitat that would be permanently affected and the current high level of human activity near most of the grassland habitat in the project area. The six forest dwelling bird species that are of concern due to population declines (see Table 3.4-1) could occur in the forest habitat in the project area. This includes species such as the Kentucky warbler and Louisiana waterthrush, which occur in mesic forests on the base. Due to the highly fragmented nature of the site, as well as the level of human activity in the area, it is likely that these sensitive species would opt for larger areas of preferred habitat with less fragmentation that occur throughout Pulaski County.

Wetlands and Other Aquatic Habitat

Previous wetland surveys did not indicate there were any wetlands in the project area; however a survey of the site conducted in April of 2003 has indicated that there are four potentially jurisdictional wetlands that occur in the project area (Figure 3.2-2), as well as a small creek that is considered a Water of the U.S. (personal communication, Jasper 2003). The four wetlands that would be impacted by the proposal total approximately 0.36 acres in total size (Figure 3.2-1). In coordination with USACE, base personnel would survey the entire project area for wetlands prior to construction activities. This would include the previously unsurveyed area north of the fence line in the area of the proposed taxiway extension. Coordination with USACE would continue to occur and a Section 404 permit would be obtained for impacts to the wetlands (should they prove to be jurisdictional) and the Water of the U.S.

Construction and operation of the facilities is not expected to affect the stream that runs northeasterly through the project area. To the extent possible, all construction activities would be conducted at least 50 feet from the stream and BMPs would be in employed to minimize any erosion into this stream, as described in Section 4.2.2.

4.3.2.2 No Action Alternative

Under the No Action alternative, none of the activities described under the Proposed Action (see Table 2.4-1) would take place. The forest and grassland plant communities would be unaffected and current wildlife use of the area would be expected to continue. This alternative would not

result in impacts to biological resources over and above those that have already occurred due to habitat fragmentation and the construction of buildings and parking lots.

4.3.2.3 Cumulative Impacts

There are several other activities either currently underway, or planned over the short-term in the ROI (Section 2.6). All construction projects are sited within the existing cantonment area, and because this area is previously disturbed and there are no threatened or endangered species known to occur at these sites, impacts to biological resources are not expected as a result of the construction plans. There are several wetlands, consisting of approximately 70 acres that may be filled or otherwise impacted as a result of the UFC compliance projects. Coordination with the USACE is underway and the Section 404 permit is in process. Any potential impacts as a result of this particular project will be managed in close coordination with the agency and through the permit process. Cumulative impacts to biological resources as a result of these projects are expected to be minor.

4.4 AIR QUALITY

4.4.1 METHODOLOGY

Air emissions resulting from the Proposed Action were evaluated in accordance with federal, state, and local air pollution standards and regulations to determine if they:

- increase ambient air pollution concentrations above any NAAQS;
- contribute to an existing violation of any NAAQS;
- interfere with or delay timely attainment of NAAQS; or
- impair visibility within any federally mandated PSD Class I area.

The approach to the air quality analysis was to estimate the increase in emission levels due to the proposal. A conformity analysis is not required in an attainment area. Since Pulaski County is an attainment area for all criteria air pollutants, a conformity analysis is not required. There are two PSD Class I areas in Arkansas: the Upper Buffalo Wilderness and the Caney Creek Wilderness. None are located within 100 kilometers of Little Rock AFB. Therefore, the Proposed Action would be unlikely to have a substantial impact on these areas.

4.4.2 IMPACTS

4.4.2.1 Proposed Action

The Proposed Action involves the addition of three new facilities: an aircraft maintenance hangar, a fuel cell/corrosion control hangar, and a refueler vehicle parking area. The aircraft maintenance hangar would replace an older aircraft maintenance hangar, which would be demolished following construction of the new hangar. The fuel cell hangar would replace corrosion control and fuel cell maintenance operations currently being conducted outdoors on the ramp or in joint use facilities scheduled and controlled by the 314 AW. The refueler vehicle parking area would provide onsite parking for refueler vehicles that currently park at a temporary area near the Squadron Operations facility.

Construction Emissions. Emissions during the construction period were quantified to determine the potential impacts on regional air quality. Calculations of VOC, nitrogen oxide (NO_x), CO, and PM_{10} emissions from construction, grading, and paving activities were performed using emission factors from the *California Environmental Quality Air Quality Handbook* (South Coast Air Quality Management District 1993). The emission factors for building construction included contributions from engine exhaust emissions (i.e., on-site construction equipment, material handling, and workers' travel) and fugitive dust emissions (e.g., from grading activities). Paving emissions were calculated based on the assumption that two bulldozers and two asphalt pavers would be operating eight hours per day for approximately 20 working days. Emissions generated by construction projects are temporary in nature and would end when construction is complete. The emissions from fugitive dust (PM_{10}) could be substantially less than those calculated due to the implementation of control measures in accordance with standard construction practices. For instance, frequent spraying of water on exposed soil during construction, proper soil stockpiling methods, and prompt replacement of ground cover or pavement are standard landscaping procedures that could be used to minimize the amount of dust generated during construction. Using efficient grading practices and avoiding long periods where engines are running at idle may reduce combustion emissions from construction equipment beyond those calculated here. Vehicular combustion emissions from construction worker commuting may also be reduced by carpooling. Emissions from these construction activities are summarized in Table 4.4-1.

Table 4.4-1. Construction Emissions – Proposed Action

Source	*Pollutants (In Tons per Year)*				
	CO	***VOC***	***NO_2***	***SO_2***	***PM_{10}***
Building Construction	1.5	22.6	4.9	-	1.6
Grading	-	-	-	-	0.4
Paving	0.2	< 0.1	0.5	< 0.1	< 0.1
Proposed Action TOTAL	**1.7**	**22.6**	**5.4**	**< 0.1**	**2.1**

Combustive and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations, which would not be expected to result in any long-term impacts on the air quality of Pulaski County or AQCR 016.

Operational Emissions. Aircraft maintenance and refueling operations under the Proposed Action would be virtually identical to current operations, with the following exceptions:

- Corrosion control operations would be conducted in a spray booth designed to control particulate emissions, instead of the current practice of conducting corrosion control activities outdoors on the ramp, without emission controls, or in joint use facilities. Emissions from corrosion control activities are expected to decrease as a result of the Proposed Action.

- Fuel cell maintenance activities would be conducted in a facility designed to control emissions of VOC from fuel cell purging, instead of the current practice of conducting fuel cell maintenance activities outdoors on the ramp, without emission controls, or in joint use facilities. Emissions from fuel cell maintenance activities are expected to decrease as a result of the Proposed Action.

- The refueler vehicles would be located near the point of use, rather than a temporary parking area. The net effect of the relocation would be expected to slightly decrease the annual mileage of the refueler vehicles, thus decreasing combustion emissions from refueler vehicle travel.

Based on the assumptions that the level of operations, amounts of corrosion control materials used, number of fuel cells maintained, and throughput of fuel dispensed from the refuelers would not change as a result of the Proposed Action, and the expectations listed above regarding the

addition of emission controls and the reduction in annual mileage for refueler trucks, there are no expected increases in operational emissions as a result of the Proposed Action.

4.4.2.2 No Action Alternative

Under the No Action alternative, construction emissions would be nonexistent and the 189 AW would continue current operations. No emissions increase or decrease from the operational emissions associated with the current activities would result from the No Action alternative.

4.4.2.3 Cumulative Impacts

Other proposed and/or ongoing activities within the ROI are expected to generate increased emissions over the short term and decreased emissions in one case, over the long-term. It is expected that emissions would decrease over the long-term as a result of the C-130J beddown, which has a more efficient engine with reduced emissions. Under the other construction activities, typical short-term construction emissions would be expected over the next several years. These emissions are typical for an active USAF base and are not atypical for Little Rock AFB. Impacts would be temporary in nature, and would not result in any long-term impacts to the air quality of Pulaski County or AQCR 016.

4.5 NOISE

Noise, often defined as unwanted sound, is one of the most common environmental issues associated with human activities, especially around airports. Concerns regarding noise relate to certain potential impacts such as hearing loss, non-auditory health effects, annoyance, speech interference, sleep interference, and effects on domestic animals, wildlife, structures, terrain, and historic and archaeological sites.

4.5.1 METHODOLOGY

In this section of the EA, noise associated with aircraft operations at the airport and construction activities associated with the Proposed Action and its alternative are considered and compared with current conditions to assess impacts.

Based on numerous sociological surveys and recommendations of federal interagency councils, the most common benchmark referred to is a L_{dn} of 65 dBA. This threshold is often used to determine residential land use compatibility around airports or highways. Two other average noise levels are also useful:

- A L_{dn} of 55 dBA was identified by the USEPA as a level ". . . requisite to protect the public health and welfare with an adequate margin of safety" (USEPA 1974). Noise may be heard, but there is no risk to public health or welfare.

- A L_{dn} of 75 dBA is a threshold above which effects other than annoyance may occur. It is 10 to 15 dBA below levels at which hearing damage is a known risk (Occupational Safety and Health Administration 1983). However, it is also a level above which some adverse health effects cannot be categorically discounted.

Public annoyance is the most common impact associated with exposure to elevated noise levels. When subjected to L_{dn} of 65 dBA, approximately 12 percent of persons so exposed will be "highly annoyed" by the noise. At levels below 55 dBA, the percentage of annoyance is correspondingly lower (less than three percent). The percentage of people annoyed by noise never drops to zero (some people are always annoyed), but at levels below 55 dBA it is reduced enough to be considered essentially negligible.

4.5.2 IMPACTS

4.5.2.1 Proposed Action

Under the Proposed Action, the 189 AW would build new facilities as described in Section 2.4. There are several aspects of this proposal that have the potential to create noise impacts in the region of influence.

Construction would be expected to occur over a two-year period, and at any one time, only a small number of projects would be expected to be ongoing simultaneously. Therefore, noise associated with active construction sites would be expected to be intermittent and of limited duration. A hypothetical scenario was developed to assess potential noise from the area of expected construction. Primary noise sources during such activity would be expected to be heavy vehicles and earth moving equipment. Table 4.5-1 shows sound levels associated with typical heavy equipment under varying modes of operation.

Table 4.5-1. Typical Equipment Sound Levels

Equipment	SOUND LEVEL (IN dBA) UNDER INDICATED OPERATIONAL MODE[1]		
	Idle Power	*Full Power*	*Moving Under Load*
Forklift	63	69	91
Backhoe	62	71	77
Dozer	63	74	81
Front-End Loader	60	62	68
Dump Truck	70	71	74

Note: 1. Measured at 125 Feet
Source: USAF 1998.

For the assessment of construction noise, a 1,170,000 square foot "construction area" was designated (in which construction equipment might be parked, or running). This is the approximate area that would be involved in the construction of the three proposed facilities in the ARANG area.

The first step in the analysis was to calculate the total acoustic energy that would be generated on the site. These data also provided information on individual equipment item's relative contribution to the total amount of acoustic energy generated on the site. Next, individual equipment was spatially distributed throughout the construction zone considering "most likely" areas of operation. This yielded an equipment-weighted contribution to total site acoustic energy at different points throughout the site. With this spatial distribution, it was then possible to calculate a mean and standard deviation for the distribution along an axis running through the site.

These data were then used to normally distribute the total site energy throughout the site. Finally, the normally distributed energy from multiple source points throughout the site was aggregated at a range of points at varying distances from the site edge. This allowed a determination at those points of the total acoustic energy that had emanated off-site.

Calculations based on this conservative scenario indicate an $L_{eq(8)}$ of 66 dBA at distance of 500 feet. This is then normalized to an $L_{eq(24)}$ of 61 dBA. Since no construction activity would be expected to occur at night, this would be equivalent to L_{dn} 61. Due to the conservative nature of the scenario, actual levels emanating off-site would be expected to be lower.

It should be noted that most, if not all of the areas involving construction are situated within areas already exposed to elevated noise from airfield operations. As previously stated, the ARANG installation on Little Rock AFB is generally within the L_{dn} 65 contour. Construction noise emanating off-site would probably be noticeable in the immediate site vicinity, but would not be expected to create adverse impacts. The acoustic environment off Little Rock AFB property would be expected to remain unchanged.

Since the Proposed Action involves no projects that would change aviation activities at Little Rock AFB, noise associated with aircraft operations would not change from current conditions.

Overall, noise impacts associated with the Proposed Action are expected to be minimal.

4.5.2.2 No-Action Alternative

Under this alternative, no proposed construction activities would occur. Since no construction would occur, the noise associated with such activities would not occur. Since no changes to aircraft operations at Little Rock AFB would result from this alternative, noise levels from aviation operations would remain as described in Section 3.5.

4.5.3.4 Cumulative Impacts

Other proposed and/or ongoing construction activities within the ROI are expected to generate construction noise over the short term. These activities would be similar in nature to those described here, and are a common and expected component of construction activities. All other construction activities would be expected to have similar noise impacts to the surrounding environment, with similar results as described above. Cumulative impacts with respect to noise are expected to be negligible.

4.6 LAND USE AND VISUAL RESOURCES

4.6.1 METHODOLOGY

Land use impacts can result if an action displaces an existing use or reduces the suitability of an area for its current, designated or formally planned use. In addition, a proposed activity may be incompatible with local plans and regulations that provide for orderly development to protect the general welfare of the public, or conflict with management objectives of a federal or state agency of an affected area. Compatible land use development would need to comply with federal and state environmental laws and regulations.

Federal land custodians and states often adopt regulations and procedures to protect visual resources within their jurisdiction. In urban areas, local agencies may enforce standards to

control the appearance of development. To assess impacts to visual resources, areas that have high visual value or low tolerance for visible modification or have prescribed guidelines are identified. The degree to which an action would modify the existing surroundings is used to assess the level of impact.

4.6.2 IMPACTS

4.6.2.1 Proposed Action

Under the Proposed Action, the 189 AW would acquire two parcels of land totaling 15.26 acres to support the C-130 aircraft. Parcel A is 13.38 acres and would support the Maintenance Hangar and the Refueler Vehicle Parking. Parcel B is 1.88 acres and would support the Fuel Cell Hangar (refer to Figure 2.1-1). As the proposed buildings conform to the ARANG Master Plan Update, no change is expected to the land use plan for the ARANG installation or Little Rock AFB.

The proposed buildings meet airfield clearance criteria as specified in AFI 32-1026, *Planning and Design of Airfields*, and UFC 3-260-01, *Airfield and Heliport Planning and Design*. In addition, the locations of these buildings are compatible with the surrounding area. Therefore, no impact is expected to other buildings or land uses in the surrounding area from the construction of these buildings.

The proposed Composite Aircraft Maintenance Hangar (approximately 93,775 SF) would be located on parcel A (refer to Figure 2.1-2) and represent the largest building on the ANG installation. While it could become a focal point due to it's size, aircraft hangars are common in the area and would be congruent with the existing visual setting. Building 207, the existing hangar would either be retained for an expanded mission capability of returned to the 314 AW. The exterior of the proposed hangar would be consistent with the existing base architectural design. A new parking area associated with this hangar would also be constructed and also be congruent with the existing visual setting.

Both the proposed Fuel Cell/Corrosion Control Hangar (25,500 SF), located on parcel B, and the Refueler Vehicle Parking Area, located on Parcel A (refer to Figure 2.1-2) would represent structures similar to others in the surrounding area. Within the Refueler Vehicle Parking area, a 10-foot by 10-foot permanent, metal shed would also be constructed to provide a covered area for administrative activities associated with refueling. The shed would have an electric heater and light, but no plumbing. The exteriors of both these buildings would be consistent with the existing base architectural design. Landscaping consistent with the existing base would also be installed and maintained. Any disturbed areas would be reseeded with native grasses and would be maintained by mowing, as appropriate.

4.6.2.2 No Action Alternative

Under the No Action alternative, the existing ARANG installation would remain as it is today. There would be no new construction to support the C-130 aircraft, and conditions would remain as described in Section 3.6.2.

4.6.2.3 Cumulative Impacts

There are numerous other projects either on-going or planned within the ROI, as described in Section 2.6. All projects listed are consistent with the Installation Master Plan and existing surrounding land uses. The long-term objective at Little Rock AFB is to combine like activities spatially, and these projects work toward that end. There would be a general overall positive result from implementation of these projects.

4.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.7.1 METHODOLOGY

The socioeconomic analysis addresses the social and economic resources of the region and how they may be affected by project-related actions. A general, and primarily qualitative assessment was made of socioeconomic resources as they currently exist in the area (see Section 3.8). Potential socioeconomic impacts are typically driven by proposed changes in personnel levels and/or project-related expenditures that affect local employment, population, and community resources. In the event that population or expenditure levels would be expected to change, economic multipliers would be used to determine the total economic effect of such changes. The total economic effect is then compared to the existing socioeconomic conditions in the ROI to determine the potential impacts.

4.7.2 IMPACTS

4.7.2.1 Proposed Action

Under the Proposed Action, it is anticipated that staffing would remain unchanged. Only construction as described in Section 2.4 would be associated with the Proposed Action, and it would be accomplished primarily with existing ARANG resources. There would be no population changes, or substantial expenditures, or infrastructure changes as a result of the Proposed Action. Consequently, no socioeconomic impacts are associated with implementation of the Proposed Action.

In order to comply with EO 12898, ethnicity and poverty status in Pulaski County were examined and compared to regional, state, and national data to determine if any minority or low-

income communities could potentially be disproportionately affected by implementation of the Proposed Action. Because there are no anticipated impacts to land use or land users, there is no potential to disproportionately affect low-income or minority populations.

The Proposed Action is not expected to produce noise or other health and safety impacts; consequently, the action would not pose any adverse or disproportionate environmental health or safety risks to children living in the vicinity of the ARANG installation.

4.7.2.2 No Action Alternative

Under the No Action alternative, no construction would occur. No socioeconomic impacts would be expected under this alternative. Conditions would remain as described under Section 3.7.2.

4.7.2.3 Cumulative Impacts

There are several other on-going and/or proposed activities in the ROI, as described in Section 2.6. The net result of these activities would be a minor short-term benefit to the local economy from construction-related purchases and other activities. These would be minor and short-term. No long-term cumulative impacts are expected.

4.8 CULTURAL RESOURCES

4.8.1 METHODOLOGY

Cultural resources are subject to review under both Federal and state laws and regulations. Section 106 of the NHPA of 1966 empowers the ACHP to comment on federally initiated, licensed, or permitted projects affecting cultural sites listed or eligible for inclusion in the NRHP. Eligibility evaluation is the process by which resources are assessed relative to NRHP eligibility criteria. Those cultural resources determined to be eligible for the NRHP are protected under the NHPA.

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may occur by physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's eligibility; introducing visual or audible elements that are out of character with the property or alter its setting; or neglecting the resource to the extent that it deteriorates or is destroyed. Direct impacts can be assessed by identifying the types and locations of proposed activities and determining the exact location of cultural resources that could be affected. Indirect impacts result primarily from the effects of project-induced population increases.

4.8.2 IMPACTS

4.8.2.1 Proposed Action

There are four structures present in the area of Proposed Action. Buildings 147 and 149 are ineligible for inclusion in the National Register of Historic Places. Buildings 148 and 150 are potentially eligible in a group setting; however, neither has yet reached the 50-year age threshold for individual inclusion in the National Register. It is the opinion of the SHPO that the existing documentation is sufficient to avoid any adverse impact that may result from their demolition and that no further work is required. Correspondence with the SHPO regarding this action is included in Appendix A.

Impacts to archaeological resources are not expected under the Proposed Action. Archaeological inventory of all year age threshold for individual inclusion in the National Register. accessible parts of Little Rock AFB did not locate any resources in the area of potential effect for the Proposed Action (Cliff et al. 1997). Although a portion of the area considered under the Proposed Action lies within a high security area that was not surveyed for archaeological resources, investigations indicate that the area is heavily developed (95 percent) and disturbed by past development and use (Cliff et al. 1997). In the unlikely event that archaeological resources were encountered during earthmoving, work would stop at that location and the resources would be managed in compliance with Section 106 of the NHPA (per Section 2.1 of AFI 32-7065, *Cultural Resources Managemen*t).

Impacts to traditional resources are not expected under the Proposed Action. There are no federally-recognized Indian lands or resources at the location of the action, and the action is not considered to have "the potential to significantly affect Indian lands, treaty rights, or other tribal interests" as identified in DoD Native American and Alaska Native Policy (1999). The tribal contact letter is contained in Appendix A.

4.8.2.2 No Action Alternative

No impacts to cultural resources are expected under the No Action alternative. The resources would continue to be managed in compliance with Federal law and USAF regulation. Cultural resources would remain as described in Section 3.8.1.

4.8.2.3 Cumulative Impacts

There are several other activities either currently underway, or planned over the short-term at within the ROI. There are seven archaeological resources associated with the Little Rock AFB Clear Zone project, which have all been determined to be ineligible for the NRHP. Nevertheless, these resources will be avoided to the extent possible. In the unlikely event that archaeological

resources were encountered during earthmoving associated with any of these activities, per Section 2.1 of AFI 32-7065, *Cultural Resources Management*, work would stop at that location and the resources would be managed in compliance with Section 106 of the NHPA. Cumulative impacts to cultural resources are not expected.

4.9 SAFETY

This section discusses potential ground safety effects resulting from the Proposed Action and its alternative.

4.9.1 METHODOLOGY

Impacts are assessed according to the potential to increase or decrease safety risks to ground personnel, the public, and property. Proposal-related activities are considered to determine if additional or unique ground safety risks are associated with their undertaking. If any proposal-related activity indicated a major variance from existing conditions, it would be considered a substantial safety impact.

4.9.2 IMPACTS

4.9.2.1 Proposed Action

The Proposed Action is to construct three new facilities in the ARANG installation on Little Rock AFB. These new facilities would replace the outdated and sometimes inadequate aircraft maintenance hangar complex, and provide a corrosion control/fuel cell maintenance facility and a refueler vehicle parking area. Providing new facilities with adequate space and a modernized supporting infrastructure would enhance safety during the aircraft maintenance and support procedures. The corrosion control and fuel cell maintenance facility would eliminate the need to perform these functions on the open aircraft parking ramp. The facility would provide the proper supporting infrastructure to more effectively manage the use of the many hazardous substances required to perform these maintenance functions. The refueler vehicle parking area would provide safeguards and containment for fuel spills, should one occur. Additionally, it would be designed to effectively and safely manage retention, recovery, and subsequent clean-up if required.

Activities involved in the construction of these facilities are not unique. Standard building and construction procedures and BMPs would be followed by the construction contractor(s).

The Proposed Action would include the permanent closure of the road between parcels A and B that connects 1st Street to the parking apron to the north. This would not create any delays in

terms of emergency vehicle access to the apron since this road is currently blocked from apron access. Safety vehicles normally access the apron and flightline using Vandenberg Boulevard.

Implementation of this alternative would involve ground activities that could expose workers performing the required site preparation, grading, and building construction to some risk. The U.S. Department of Labor, Bureau of Labor Statistics maintains data analyzing fatal and non-fatal occupational injuries based on occupation. Due to the varying range of events classified as non-fatal injuries, the considerations described below focus on fatal injuries since they are the most catastrophic. Data are categorized as incidence rates per 100,000 workers employed (on an annual average) in a specific industry [Standard Industrial Code (SIC)].

Based on conservative estimates, it was assumed that the overall effort required for this alternative would extend over approximately 24 months, and involve 20 to 25 full-time equivalent workers (personal communication, Howard 2002). To assess relative risk associated with this proposal, it was assumed that the industrial classifications of workers involved are the Construction Trades (SIC-15, 16, and 17). Based on U.S. Department of Labor data and considerations of worker exposure, a fatal injury would be statistically predicted to occur over the range of once every 70 to 190 years, depending on the specific labor classification. This equates to a probability of a fatal injury of from 1.2 to 3.1 out of 10,000 (U.S. Department of Labor 2001). Although DoD guidelines for assessing risk hazards would categorize the hazard category as "catastrophic" (since a fatality would be involved), the expected frequency of the occurrence would be considered "remote" (Military Standard System Safety Program Requirements 1993). While the potential result must be considered undesirable, risk is very low. Strict adherence to all applicable occupational safety requirements would further minimize the relatively low risk associated with these construction activities.

4.9.2.2 No Action Alternative

Under the No-Action alternative, the 189 AW would not build any new maintenance support facilities. They would continue operations and maintenance activities using inadequate or nonexistent facilities. The safety enhancements to maintenance operations that would be expected to result from the construction of the proposed new facilities would not be realized.

4.9.2.3 Cumulative Impacts

There are a number of other on-going and/or proposed projects in the ROI, as described in Section 2.6. All these projects contain a short-term construction component in which a similar accident rate as described above would be expected. There is always a possibility of construction-related accidents; however, as described above, the probability of a very serious accident occurring is considered to be remote. The long-term effect of the several projects that

are planned however would have the net effect of improving the overall safety of Little Rock AFB. The project to gain compliance with the UFC would likely improve the long-term flying safety record at Little Rock AFB. Additionally, the construction of the Fire Station along the flightline should similarly improve overall flightline safety at Little Rock AFB.

4.10 INFRASTRUCTURE

4.10.1 METHODOLOGY

Level of service is the primary transportation and utility service issue. Criteria for evaluating impacts to transportation and utility service include potential for disruption and/or permanent degradation of the resource.

4.10.2 IMPACTS

4.10.2.1 Proposed Action

Minor short-term disruptions in utility services, associated with construction in the vicinity of the proposed ANG parcel acquisition may occur. Upon completion of construction, utilities would return to baseline conditions or better, depending upon the status of utility system upgrades in the area. No long-term adverse impacts are anticipated. The utility systems in this area would be upgraded as part of existing projects listed in the General Plan to accommodate the increases in usage that would occur. The Proposed Action would include the permanent closure of the road between parcels A and B that connects 1st Street to the parking apron to the north. Access to the parking apron and flightline is normally done using Vandenberg Boulevard, approximately 1,000 feet to the west, or by the road on the east side of parcel A. No other long-term changes or impacts to transportation system components are anticipated as a result of these actions with the exception of decreasing refueler truck traffic near the Squadron Operations facility.

4.10.2.2 No Action Alternative

No impacts are anticipated to utilities or transportation facilities under this alternative. No changes to the utility systems or transportation facility usage would occur. Conditions would remain as described in Section 3.10.2.

4.10.2.3 Cumulative Impacts

There are other on-going and/or proposed activities in the ROI, as described in Section 2.6. The net result of these activities could be a minor short-term disruption in terms of transportation and circulation given that construction activities could temporarily alter traffic flow. However, long-term impacts should result in improved transportation and circulation throughout the base

because all on-going and/or proposed projects are components of the Installation Master Plan. There could be a similar brief disruption to utility services over the short-term, but long-term impacts would be expected to be similarly positive.

4.11 SOLID AND HAZARDOUS MATERIALS AND WASTE

This section addresses the potential impacts caused by hazardous materials and waste management practices and the impacts of existing contaminated sites on reuse options. Hazardous materials and petroleum products, hazardous and petroleum wastes, IRP sites, and solid wastes will be discussed in this section.

4.11.1 METHODOLOGY

The qualitative and quantitative assessment of impacts from hazardous materials and solid waste management focuses on how and to what degree the alternatives affect hazardous materials usage and management, hazardous waste generation and management, and waste disposal. Impacts would result if a substantial human health risk or environmental exposure was generated at a level that could not be mitigated to acceptable standards due to increases in quantity or toxicity of hazardous substances used or generated.

Regulatory standards and guidelines have been applied in evaluating the potential impacts that may be caused by hazardous materials and wastes. The following criteria were used to identify potential impacts:

- Generation of 100 kilograms (or more) of hazardous waste or 1 kilogram (or more) of an acutely hazardous waste in a calendar month, resulting in increased regulatory requirements.

- A spill or release of a reportable quantity of a hazardous substance as defined by the USEPA in 40 CFR Part 302.

- Manufacturing, use, or storage of a compound that requires notifying the pertinent regulatory agency according to EPCRA.

- Exposure of the environment or public to any hazardous material and/or waste through release or disposal practices.

4.11.2 IMPACTS

4.11.2.1 Proposed Action

Hazardous Materials and Petroleum Products

The volume of hazardous materials and petroleum products used and stored in the current maintenance hangar complex (Building 207) and 314 AW corrosion control/fuel cell maintenance facility (Building 282) would be expected to remain approximately the same in the new hangar complex within Parcel A and the new fuel cell hangar within Parcel B. These new buildings would be designed to contain all spills of hazardous materials and petroleum products or direct releases from the floor drains into an oil/water separator to prevent contaminants from entering the sanitary sewer system. Compared to the corrosion control and fuel cell maintenance activities currently performed on the apron, the Proposed Action would be expected to substantially reduce the risk of hazardous material and petroleum product releases.

The new refueler vehicle parking area in Parcel A would be designed to contain a potential fuel spill from one entire refueler truck (up to 6,000 gallons), in addition to the runoff from a rainfall event with an intensity equal to a five year expectancy and one hour duration. Due to the spill containment capacity of the new parking area and its close proximity to the apron, the Proposed Action reduces the possibility of POL releases.

Hazardous and Petroleum Wastes

The volume of hazardous and petroleum wastes generated and stored in the current maintenance hangar complex (Building 207) and 314 AW corrosion control/fuel cell maintenance facility (Building 282) would remain approximately the same in the new hangar complex within Parcel A, and the new fuel cell hangar within Parcel B. Therefore, the Proposed Action would not affect the large quantity generator status of Little Rock AFB.

The oil/water separator in Building 207 (SWMU 32) is still under investigation to determine if soil contaminants beneath the oil/water separator are above risk-based action levels. If so, the Proposed Action could create a volume of hazardous or petroleum waste (depending on the contaminant concentrations). Mitigation measures could include delaying the demolition of Building 207 until remedial actions are completed. This oil/water separator is scheduled to be removed in the near future as part of a base wide compliance project (personal communication, Benson 2002).

Installation Restoration Program Sites

Based on existing utility drawings, construction activities on Parcels A and B would not disturb the subsurface sanitary sewer lines (AOC No. 7). Additionally, construction is not planned within the northeast corner of Parcel A that includes the boundary of the Fire Protection Training Area (FT-01), or the southeast corner of Parcel A that includes the boundary of the Jet Fuel Release Near First Street (SS-18). Therefore, the Proposed Action would not affect these three IRP sites. However, continued access may be required in the future at FT-01 for groundwater sampling.

Construction activities could require disturbance of potentially contaminated soil from the Former Missile Maintenance Complex (ST-43) and storm water drainage ditch (AOC No. 8) during construction of the apron access extension and the hangar complex if the contamination has not already been remediated by the IRP. Elevated concentrations of petroleum contaminants and TCE may be present above risk-based action levels in the drainage ditch and former missile complex. If vapors or stained soils were detected during excavation for the taxiway extension or maintenance hangar, work would stop until the soils were characterized and remediated. Therefore, the Proposed Action could generate a volume of petroleum-contaminated soil (although at low concentrations). Preliminary concurrence with the State for the NFA recommendation for ST-43 is expected by April 2003; however, final resolution is not expected until 2004-2005 (personal communication, Benson 2003).

Solid Waste

The demolition of Buildings 204, 207, 209, and 213 would generate construction debris over a short period of time (i.e., approximately 3,000 cubic yards of debris). In addition, based on the age of the buildings (i.e., 1960s), asbestos and lead-based paint may be present. Base personnel would recycle construction debris through the base recycling center to the extent possible; remaining solid waste would be disposed of in accordance with applicable federal, state, and USAF regulations. Based on the available capacity of the Two Pines Landfill, the landfill has sufficient capacity to dispose of the construction debris.

4.11.2.2 No Action Alternative

Under this alternative, there would be no change to the current operations of Little Rock AFB. Therefore, conditions within the ROI would continue as described in Section 3.11.

4.11.2.3 Cumulative Impacts

There are several other on-going and/or planned projects in the ROI, as described in Section 2.6. While ground-disturbing activities always present the potential for disturbance of previously

contaminated soil, there are no known IRP sites involved in any of the other planned construction sites. Should contaminated soil be encountered during these activities, the soil would be tested and properly treated in accordance with applicable laws and regulations. Demolition activities associated with the planned projects could encounter asbestos-containing material and/or lead paint. These materials would be managed in compliance with applicable laws and USAF regulations. Cumulative impacts associated with these projects are expected to be minor.

CHAPTER 5.0
LIST OF PREPARERS

Kate Bartz, Project Manager, SAIC
M.S., Landscape Architecture & Environmental Planning, 1994
B.S., Environmental Studies, 1987
Years of Experience: 16

Chuck Burt, Sr. Ecologist/Biologist, SAIC
M.S. Forest Zoology, 1973
B.S. Biology, 1968
Years of Experience: 30

Claudia Druss, RPA, Senior Archaeologist, SAIC
M.A., Anthropology, 1980
B.A., 1977
Years of Experience: 21

Benjamin Elliott, P.E., Environmental Engineer, SAIC
M.S., Petroleum Engineering, 1999
B.S., Civil Engineering, 1995
B.A., Physical Sciences, 1995
Years of Experience: 7

Michele A. Fikel, Sr. Environmental Scientist, SAIC
B.A., Geography, 1985
Years of Experience: 13

Kimberly Freeman, Document Production, SAIC
Years of Experience: 18

Shawn Guyer, Jr. Civil Engineer, SAIC
B.S., Biological Systems Engineering, 1998
Years of Experience: 2

Carol Johnson, Graphics, SAIC
B.S., Secondary Education, 1989
Years of Experience:

David Lingner, Air Quality, SAIC
Ph.D., Chemistry, 1985
B.S., Chemistry and Mathematics, 1978
Years of Experience: 21

John Whelpley, P.E., Environmental Engineer, SAIC
M.S., Environmental Engineering, 1997
B.S., Mechanical Engineering, 1990
Years of Experience: 11

William Wuest, Senior Environmental Scientist, SAIC
M.P.A., Public Administration, 1974
B.S., Political Science, 1963
Years of Experience: 39

CHAPTER 6.0
PERSONS AND AGENCIES CONTACTED

Arkansas Department of Parks and Tourism, Little Rock, Arkansas. 2002.

Arkansas Game & Fish Commission, Little Rock, Arkansas. 2002.

Arkansas Soil and Water Conservation Commission, Little Rock, Arkansas. 2002.

Arkansas State Historic Preservation Office, Little Rock, Arkansas. 2002.

Arkansas State Plant Board, Little Rock, Arkansas. 2002.

Ballard, Fred. 314 OSS OSA, Little Rock AFB, Arkansas. 2002.

Benson, James E. 314 CES/CEVR, Little Rock Air Force Base, Arkansas. 2002-2003.

Bush, William V. Director and State Geologist, Arkansas Geological Commission, Little Rock, Arkansas. 2002.

Copeland, Tracy. Manager, Arkansas Department of Finance and Administration; Office of Intergovernmental Services; State Clearinghouse Section, Little Rock, Arkansas. 2002.

Creasy, Major Brian. Airfield Operations, Little Rock AFB, Arkansas. 2002.

Devine, Marcus C. Director, State of Arkansas Department of Environmental Quality, Little Rock, Arkansas. 2002.

EPA Region 6; Compliance Assurance and Enforcement Division; Office of Planning and Coordination (6EN-XP); Dallas, Texas. 2002.

Gillham, Lucien. 314 CES/CE2, Little Rock AFB, Arkansas. 2002.

Ham, Maj Rich. Airfield Operations, Little Rock AFB, Arkansas. 2002.

Howard, Lt. E. Claude. Civil Engineering Squadron. 189th Airlift Wing, ARANG, Little Rock AFB, Arkansas. 2002.

Hughes, Kris. Civil Engineer, Little Rock AFB, Arkansas. 2002.

Jasper, Brent. U.S. Army Corps of Engineers, Little Rock District, Little Rock, Arkansas. 2003.

Lanier, Ron. 314 CES/CEVA, Little Rock AFB, Arkansas. 2002.

Lawson, Capt Marci. JA, Little Rock AFB, Arkansas. 2002.

Lawson, Jim. Director, Department of Planning and Development, Little Rock, Arkansas. 2002.

Love, Ron. 314 CES/CEVA, Little Rock AFB, Arkansas. 2002.

Martin, MSgt Scott. NCOIC, Public Affairs, Little Rock AFB, Arkansas. 2002.

Metroplan, Little Rock, Arkansas. 2002.

Mitchell, Lisa. Real Property, 189th Airlift Wing, ARANG, Little Rock AFB, Arkansas. 2003.

Mueller, Allan J. Field Supervisor, U.S. Fish and Wildlife Service; Southeast Region 4; Ecological Services Field Office, Conway, AR. 2002.

Oldham, Sgt. Bob. Public Affairs Officer, 189th Airlift Wing, ARANG, Little Rock AFB, Arkansas. 2002-03.

Oxner, Maj. Richard. Base Civil Engineer, 189th Airlift Wing, ARANG, Little Rock AFB, Arkansas. 2002-03.

Popham, James T. 314 CES/CEVA, Little Rock AFB, Arkansas. 2002.

Pulaski County, Arkansas; Planning and Development, Little Rock, Arkansas. 2002.

Regional Director, Southeast Region; National Park Service, Atlanta, GA. 2002.

Shaw Jr., Ronnie L. 314 CES/CEVA, Little Rock AFB, Arkansas. 2002.

State Conservationist's Office; Natural Resources Conservation Service, Little Rock, Arkansas. 2002.

Stocker, Kenneth. Community Planner, Little Rock AFB, Arkansas. 2002.

Stuff, Capt. Todd. Environmental Manager, 189th Airlift Wing, ARANG, Little Rock AFB, Arkansas. 2002-03.

The Department of Arkansas Heritage, Little Rock, Arkansas. 2002.

Tribal Headquarters: Quapaw Tribe of Oklahoma, Quapaw, OK. 2002

U.S. Army Corps of Engineers; Little Rock District; Planning, Environmental and Regulatory Division, Little Rock, Arkansas. 2002.

Williams, Clarence. Airfield Manager, Little Rock AFB, Arkansas. 2002.

CHAPTER 7.0
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FINAL

APPENDIX A
INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP)

INTERAGENCY, INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP)
AGENCIES FOR ARKANSAS AIR NATIONAL GUARD ENVIRONMENTAL ASSESSMENT
LITTLE ROCK, AFB

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Southeast Region 4
Ecological Services Field Office
Allan J. Mueller
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State of Arkansas Department of Environmental Quality
Marcus C. Devine, Director
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Natural Resources Conservation Service
State Conservationist's Office
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Little Rock, AR 72201-3225
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Fax: (501) 301 3194
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Arkansas Geological Commission
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Vardelle Parham Geology Center
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Arkansas Game & Fish Commission
AGFC Headquarters
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Little Rock, AR 72205
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http://www.agfc.state.ar.us/

Arkansas State Plant Board
1 Natural Resource Drive
Little Rock, AR 72205
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INTERAGENCY, INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP)
AGENCIES FOR ARKANSAS AIR NATIONAL GUARD ENVIRONMENTAL ASSESSMENT
LITTLE ROCK, AFB

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Jim Lawson - Director
Department of Planning and Development
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http://www.accesslittlerock.org/departments/planning_development_p1.html

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Planning and Development
501 S. Broadway, Suite A
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Arkansas Department of Finance and
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State Clearinghouse Section
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Little Rock, Arkansas 72203
Manager: Tracy Copeland
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The Department of Arkansas Heritage
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Little Rock, Arkansas 722201
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http://www.arkansasheritage.com/

Quapaw Tribe of Oklahoma
Tamara Martin, Chairman
P.O. Box 765
Quapaw, OK 74363
Phone: (918) 542-1853
Fax: (918) 542-4694
E-mail: quapaw@eighttribes.org
http://www.geocities.com/Athens/Aegean/1388/

Tribal Council
Caddo Nation of Oklahoma
P.O. Box 487
Binger, OK 73009

Chairman Earl Barbry, Sr.
Tunica-Biloxi Indians of Louisiana, Inc.
P.O. Box 1589
Marksville, LA 71351

DEPARTMENT OF THE AIR FORCE
AIR NATIONAL GUARD

ANG/CEVP
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

JUL 2 4 2003

Earl Barbry, Sr.
Chairman
Tunica-Biloxi Indians of Louisiana, Inc.
P.O. Box 1589
Marksville, LA 71351

Dear Mr. Barbry

The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) has prepared a draft Environmental Assessment (DEA) for a proposal to implement construction projects associated with their Base Master Plan. We previously provided your agency with a detailed description of the proposal and a request for initial comments and concerns. We appreciate your participation in this process and request that you now review the DEA, which can be found as an attachment to this memorandum.

The environmental analysis for the Proposed Action has been conducted by LRAFB in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your participation by reviewing the DEA, and solicit your comments concerning the proposal and any potential environmental consequences of the action. A listing of Federal and state agencies that have been contacted is also attached.

Any questions concerning the proposal should be directed to our consultant, Science Applications International Corporation (SAIC). The point of contact at SAIC is Ms. Kate L. Bartz. She can be reached at either (520) 570-7665. Please forward your written comments to Ms. Bartz, in care of SAIC, 101 N. Wilmot Rd., Suite 400, Tucson, Arizona 85711-3336. Thank you for your assistance.

Sincerely

HARRY A. KNUDSEN, JR
Chief, Environmental Planning Branch

Attachments:
1. Draft Environmental Assessment for Proposed Construction Projects for the 189th AW ARANG
2. Distribution list

Note: Please submit your comments within 30 days of receipt of this letter.

DEPARTMENT OF THE AIR FORCE
AIR NATIONAL GUARD

ANG/CEVP
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

05 SEP 03

Anthony Whitehorn
Osage Nation
P.O. Box 779
Pawhuska, OK 74056

Dear Mr. Whitehorn

The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) has prepared a draft Environmental Assessment (DEA) for a proposal to implement construction projects associated with their Base Master Plan. We previously provided your agency with a detailed description of the proposal and a request for initial comments and concerns. We appreciate your participation in this process and request that you now review the DEA, which can be found as an attachment to this memorandum.

The environmental analysis for the Proposed Action has been conducted by LRAFB in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your participation by reviewing the DEA, and solicit your comments concerning the proposal and any potential environmental consequences of the action. A listing of Federal and state agencies that have been contacted is also attached.

Any questions concerning the proposal should be directed to our consultant, Science Applications International Corporation (SAIC). The point of contact at SAIC is Ms. Kate L. Bartz. She can be reached at either (520) 570-7665. Please forward your written comments within 30 days of receipt of this correspondence to Ms. Bartz, in care of SAIC, 101 N. Wilmot Rd., Suite 400, Tucson, Arizona 85711-3336. Thank you for your assistance.

Sincerely

HARRY A. KNUDSEN, JR
Chief, Environmental Planning Branch

Attachments:
1. Draft Environmental Assessment for Proposed Construction Projects for the 189th AW ARANG
2. Distribution list

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1500 Museum Road, Suite 105
Conway, Arkansas 72032
Tel.: 501 513-4470 Fax: 501 513-4480

IN REPLY REFER TO

September 2, 2003

Ms. Kate L. Bartz
c/oSAIC
101 N. Wilmont Rd., Suite 400
Tucson, Arizona 85711-3336

Dear Ms. Bartz:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Assessment (DEA) for a proposal to implement construction of a Maintenance Hanger and supporting taxiway extension; Fuel Cell Hangar; Refueler Vehicle Parking facility; personnel parking; and the demolition of four buildings that are obsolete, and/or within the footprint of the proposed facilities associated with the Base Master Plan for Little Rock Air Force Base (LRAFB) in Jacksonville, Arkansas. Our comments and recommendations are submitted in accordance with the Endangered Species Act of 1973 (Public Law 93-205, as amended) and the Fish and Wildlife Coordination Act (Public Law 85-624; 16 U.S.C. 661-666e.).

There are no federally listed or proposed threatened and endangered species occurring in the impact area of the project. Therefore, the requirements of Section 7 of the Endangered Species Act have been fulfilled.

On review of the proposed alternatives, the Service prefers the Proposed Action for meeting the bases requirements and minimizing environmental impacts. Furthermore, the Service concurs with the LRAFB assessment that the project will have minimal environmental impact. Therefore, the Service has no objection to the proposed issuance of a finding of no significant impact for the proposed action. If you have any questions, please contact Lindsey Lewis in our office at (501) 513-4489.

Sincerely,

Allan J. Mueller
Field Supervisor

c: Mr. Harry A. Knudsen,Jr., Andrews Air Force Base

ADEQ

A R K A N S A S
Department of Environmental Quality

September 3, 2003

Ms. Kate L. Bartz
SAIC
101 N. Wilmot Rd., Suite 400
Tucson, Arizona 85711-3336

RE: 189th Airlift Wing, Ark. Air National Guard, LRAFB, Draft Environmental Assessment

Dear Ms. Bartz:

A review of the information provided in the referenced Draft Environmental Assessment was made by Environmental Preservation Division staff and other Division personnel of the Arkansas Department of Environmental Quality (ADEQ).

None of the Divisions at ADEQ have any comments on your project.

If you have any questions or concerns, please contact Audree Miller at 501-682-0015.

Sincerely,

Sandi Formica
Chief, Environmental Preservation Division

SF:ED:AM:am

cc: Mary Leath, Chief Deputy Director
Martin Maner, Water Division
Dennis Green, Hazardous Waste Division
Jim Shell, Regulated Storage Tank Division

The Department of
Arkansas
Heritage

Mike Huckabee, Governor
Cathie Matthews, Director

Arkansas Arts Council

Arkansas Natural Heritage Commission

Historic Arkansas Museum

Delta Cultural Center

Old State House Museum

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www.arkansaspreservation.org

August 28, 2003

Mr. Harry A. Knudsen Jr.
Chief, Environmental Planning Branch
Department of the Air Force, Air National Guard
ANG/CEVP
3500 Fetchet Avenue
Andrews AFB, Maryland 20762-5157

RE: Pulaski County - Little Rock AFB
Section 106 Review - USAF
Draft Environmental Assessment Construction Project at the 189th Airlift Wing Arkansas Air National Guard
AHPP Tracking No: 50521

Dear Mr. Knudsen:

My staff has reviewed the above-referenced environmental assessment. Our records show that one archeological site (3PU456) and four structures (PU9806 - Building 147, PU9807 - Building 148, PU9808 - Building 149 and PU9809 - Building 150) are present in the area of undertaking. The archeological site is considered ineligible for inclusion in the National Register of Historic Places, as are two of the standing structures (PU9806 and PU9808). The remaining two structures (PU9807 and PU9809) are potentially eligible in a group setting, however, neither has yet reached the 50 year age threshold for individual inclusion in the National Register. It is our opinion that the existing documentation is sufficient to mitigate any adverse effect that may result from their demolition and that no further work is necessary. In addition, The area of undertaking exhibits a low probability for the occurrence of undiscovered archeological sites due to the low-lying nature of the topography and past impacts from construction. Therefore we do not recommend further archeological work prior to project implementation.

Pursuant to Advisory Council on Historic Preservation regulations (36 CFR 800.4(a)(4)), your agency is required to consult with the appropriate federally recognized Indian tribe(s) to determine if any properties of religious or cultural significance to them are present. The standard NEPA scoping process is inadequate to accomplish this requirement, as this consultation must be on a government-to-government basis. If consultation has not yet be initiated, it should begin without delay.

We also refer you to 36 CFR Part 800.8, which details the requirements for completing Section 106 review as part of the NEPA process.

Thank you for your interest and concern for the cultural heritage of Arkansas. If you have any questions, please contact Steve Imhoff of my staff at (501) 324-9880.

Sincerely,

Ken Grunewald
Deputy State Historic Preservation Officer

cc: Mr. Earl J. Barbry, Tunica-Biloxi Tribe of Louisiana, Inc.
Mr. Robert Cast, Caddo Tribe of Oklahoma
Dr. Ann M. Early, Arkansas Archeological Survey
Mr. Anthony Whitehorn, Osage Nation
Ms. Carrie V. Wilson, Quapaw Tribe of Oklahoma

Arkansas Soil & Water Conservation Commission

J. Randy Young, PE
Executive Director

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
www.accessarkansas.org/aswcc

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: aswcc@mail.state.ar.us

Mike Huckabee
Governor

August 4, 2003

Ms. Kate L. Bartz
Science Applications International Corporation
101 North Wilmot Road, Suite 400
Tucson, Arizona 85711-3336

Re: Draft Finding of No Significant Impact (FONSI) and Draft Finding of No Practicable Alternative (FONPA) for Construction Projects for the 189th Airlift Wing, Arkansas Air National Guard (ANG), Little Rock Air Force Base (LRAFB), Arkansas

Draft Environmental Assessment (EA) at the 189th Airlift Wing Arkansas ANG, LRAFB, Arkansas

Dear Ms. Bartz:

Thank you for the opportunity to review and comment on Drafts of the FONSI, FONPA, and EA regarding the proposed construction projects for the 189th Airlift Wing, Arkansas ANG stationed at the LRAFB, Arkansas.

After review of the documents by Arkansas Soil and Water Conservation Commission staff, I concur with the findings presented in the Draft FONPA and the Draft EA. In regards to the findings presented in the Draft FONSI concerning the Biological Resources, it states, "Activities will result in a slight increase in habitat fragmentation; however, this will not likely impact the fauna that currently use this already highly fragmented habitat." The FONSI goes on to state that, "Impacts to biological resources are not expected to be significant."

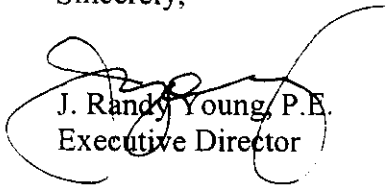
Based on the above findings, if a highly fragmented and unstable system receives additional negative impacts, the system degrades at a much more rapid rate. In other words, cumulative impacts can increase exponentially.

I recommend that all adverse impacts to wetlands and streams in the area be mitigated for at a ratio appropriate for the site and impact type, as approved by the Little Rock District Corps of Engineers. I also recommend that all practicable measures be taken to place the compensatory mitigation in areas that will not only offset expected fragmentation to the system, but reduce existing fragmentation in the system.

If you need further assistance, please contact Kenneth Colbert of my staff at 501-682-1608.

Again, thank you for the opportunity to review and comment on the above referenced project.

Sincerely,



J. Randy Young, P.E.
Executive Director

JRY/kc

ARKANSAS AIR NATIONAL GUARD
HEADQUARTERS 189TH AIRLIFT WING (ANG)
LITTLE ROCK AFB, ARKANSAS

27 December 2002

The Department of Arkansas Heritage
1500 Tower Building
323 Center Street
Little Rock, AR 72201

Dear Sir/Madam,

The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan. Attachment A to this memorandum describes the proposal and the alternatives being analyzed, including the No Action Alternative. We will forward the Draft EA in its entirety for your review within the next couple of months; however, we are soliciting any comments or concerns regarding the proposal you may have at this time so that we might incorporate them into our analysis in a proactive manner. Understanding your comments and concerns at this time will help us to make this analysis a comprehensive one.

The environmental analysis for the Proposed Action is being conducted by LRAFB in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your participation by reviewing this memo describing the proposed action and alternatives, and solicit your comments concerning the proposal and any potential environmental consequences of the action. A listing of Federal and state agencies that have been contacted is attached (Attachment B). If there are any additional agencies that you feel should review and comment on the proposal or the Draft EA, please let us know.

Any questions concerning the proposal should be directed to our consultant, Science Applications International Corporation (SAIC). The point of contact at SAIC is Ms. Kate L. Bartz. She can be reached at either (520) 570-7665 or (301) 523-4995. Please forward your written comments to Ms. Bartz, in care of SAIC, 101 N. Wilmot Rd., Suite 400, Tucson, Arizona 85711-3336. Thank you for your assistance.

Sincerely,

TODD C. STUFF, Capt, AR ANG
Environmental Manager
189th Airlift Wing

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

April 9, 2003

Capt. Todd C. Stuff, AR ANG
Environmental Manager 189th Airlift Wing
Arkansas Air National Guard
Headquarters 189th Airlift Wing (ANG)
Little Rock AFB, Arkansas

RE: The Air National Guard at Little Rock Air Force Base is Preparing an Environmental Assessment for a Proposal to Implement Construction Projects Associated with their Base Master Plan

Dear Capt. Stuff:

The State Clearinghouse has received the above document pursuant to the Arkansas Project Notification and Review System.

To carry out the review and comment process, this document was forwarded to members of the Arkansas Technical Review Committee. Resulting comments received from the Technical Review Committee which represents the position of the State of Arkansas are attached.

The State Clearinghouse wishes to thank you for your cooperation with the Arkansas Project Notification and Review System.

Sincerely,

Tracy L. Copeland, Manager
State Clearinghouse

TLC/lr
Enclosure
CC: Randy Young, AS&WCC

Arkansas Soil & Water Conservation Commission

J.Randy Young, PE
Executive Director

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
www.accessarkansas.org/aswcc

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: aswcc@mail.state.ar.us

Mike Huckabee
Governor

MEMORANDUM

TO: Mr. Tracy Copeland, Manager
State Clearinghouse

FROM: Mr. J. Randy Young, P.E., Chairman
Technical Review Committee

SUBJECT: The Air National Guard at Little Rock Air Force Base is Preparing an Environmental Assessment for a Proposal to Implement Construction Projects Associated with their Base Master Plan

DATE: March 31, 2003

Members of the Technical Review Committee have reviewed the above referenced project; the proposed of the Proposed Action is to provide the 189 AW with properly sized and configured facilities that are required to accomplish their mission. The Proposed Action is needed to replace outdated and/or non-existent facilities. The Committee supports this project. Agency comments are included for your review.

The opportunity to comment is appreciated.

JRY/ddavis

STATE OF ARKANSAS
Department of Finance and Administration

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Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

RECEIVED
03 JAN 13 PM 12:23
SOIL & WATER COMM.

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

#1493

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Feb. 3, 2003 to –Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

NOTE: It is Imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501)682-1611 or the State Clearinghouse Office.

_____Support _____ Do Not Support (Comments Attached)

_____Comments Attached _____Support with Following Conditions

__✓__No Comments _____Non-Degradation Certification Issues (Applies to PC&E Only)

Signature K Collett Agency ASWCC Date 2-14-03

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

RECEIVED 03 JAN 28 AM 11:20

SOIL & WATER COMM.

RECEIVED JAN 17 2003

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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_____ Support
X Comments Attached
_____ No Comments
_____ Do Not Support (Comments Attached)
_____ Support with Following Conditions
_____ Non-Degradation Certification Issues (Applies to PC&E Only)

SUPPORT THE PROPOSED ACTION. RECOMMEND LRAFB COORDINATE WITH STORM WATER SECTION OF ADEQ

Signature Steve Brown Agency ADEQ Date 21 JAN 03

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

RECEIVED 03 JAN 17 PM 12:45 SOIL & WATER COMM.

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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✓ Support ______ Do Not Support (Comments Attached)

______ Comments Attached ______ Support with Following Conditions

______ No Comments ______ Non-Degradation Certification Issues (Applies to PC&E Only)

Signature [signature] Agency Ark. For. Comm. Date 16 Jan 03

B03

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

MEMORANDUM

Received
JAN 14 2003
River Basins

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

RECEIVED
03 FEB -5 PM 2:
OIL & WATER COMM

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Yours Comments should be returned by Feb. 3, 2003 to –Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

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_____Support _____ Do Not Support (Comments Attached)

_____Comments Attached _____Support with Following Conditions

__✓__No Comments _____Non-Degradation Certification Issues (Applies to PC&E Only)

Signature Robert K. Leonard Agency AGFC Date 2-3-03

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

3-7

MEMORANDUM OUTDOOR RECREATION GRANTS

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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_____Support _____ Do Not Support (Comments Attached)

_____Comments Attached _____Support with Following Conditions

__✓__No Comments _____Non-Degradation Certification Issues (Applies to PC&E Only)

Signature A. Chaminard Agency Parks + Tourism Date Jan 16, 2003

Harold Holcomb

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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_____ Support

_____ Do Not Support (Comments Attached)

_____ Comments Attached

_____ Support with Following Conditions

__X__ No Comments

_____ Non-Degradation Certification Issues (Applies to PC&E Only)

Signature _____ Agency 1/27/03 Date 1-27-03

Division of Engineering
Arkansas Department of Health
4815 West Markham
Little Rock, AR 72205-3867

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
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http://www.state.ar.us/dfa

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

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_____Support _____ Do Not Support (Comments Attached)

_____Comments Attached _____Support with Following Conditions

__✓__No Comments _____Non-Degradation Certification Issues (Applies to PC&E Only)

Signature [signature] Agency Arkansas Geological Comm Date 1-14-03

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
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http://www.state.ar.us/dfa

RECEIVED
03 JAN 16 PM 1:27
SOIL & WATER COMM.

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

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_____Support _____ Do Not Support (Comments Attached)

_____Comments Attached _____Support with Following Conditions

__✓__No Comments _____Non-Degradation Certification Issues (Applies to PC&E Only)

Signature Jay O Bradshaw Agency Comm. of State Lands Date 1/14/03

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
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Fax: (501) 682-5206
http://www.state.ar.us/dfa

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

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_____Support _____ Do Not Support (Comments Attached)

_____Comments Attached _____Support with Following Conditions

__✓__No Comments _____Non-Degradation Certification Issues (Applies to PC&E Only)

Signature _____ Agency ADEQ Date 1-3-03

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
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Little Rock, Arkansas 72203-8031
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http://www.state.ar.us/dfa

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: January 10, 2003

SUBJECT: The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan.

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Yours Comments should be returned by Feb. 3, 2003 to --Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

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_____Support _____ Do Not Support (Comments Attached)

_____Comments Attached _____Support with Following Conditions

__✓__No Comments _____Non-Degradation Certification Issues (Applies to PC&E Only)

Signature John L. Harris Agency AHTD Date 1/16/03

DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867

REPLY TO
ATTENTION OF

February 7, 2003

Planning, Environmental, and Regulatory Division
Planning Branch

Captain Todd C. Stuff
Environmental Manager
Arkansas Air National Guard
Headquarters 189th Airlift Wing (ANG)
Little Rock, AFB, Arkansas

Dear Captain Stuff:

The Little Rock District Corps of Engineers, Planning, Environmental and Regulatory Division has reviewed your enclosed referenced project involving the preparation of an Environmental Assessment (EA) by the Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) for a proposal to implement construction projects associated with their Base Master Plan. We have no objections to your proposed plans. However, a cultural resources survey needs to be conducted with particular emphasis on historic architecture. A Section 404 permit of the Clean Water Act is required for this project. Please continue to work with Mr. Brent Jasper, Little Rock District Regulatory Branch, at 501-324-5296 to complete the permit process.

Please review the enclosed documents for more detailed information. If you have any questions, please call the undersigned at 501-324-5032.

Sincerely,

Patricia M. Anslow
Chief, Environmental Section

Enclosure

Brent
16

CESWL-PR-P

Date: **10 January 2003**

MEMORANDUM FOR RECORD

THRU:	Suspense:
Flood Plain Management 13 JAN 03	**17 January 2003**
District Archeologist CD 16 JAN 03	**24 January 2003**
Chief, Regulatory Branch JCP 1/31/03	**10 February 2003**

SUBJECT: **Environmental assessment preparation by the AR Air National Guard for construction project purposes.**

Please review the enclosed document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969, and the Regulations of the US Army Corps of Engineers.

All comments should be returned by **10 February 2003** to Ms. Patricia Anslow, Chief, Environmental Section.

A. Cultural Resources

____ Project is in Little Rock District ____ Project is adjacent to Corps Property

_X_ Project will likely impact Historic Properties ____ Project will likely NOT impact historic Properties

Comments Cultural resource survey, with particular attention to historic architecture, needs to be conducted

Signature [signature] Date 1/16/03

B. Flood Plain Management

_____ Project is within the Floodway _____ Project is within the 100 yr Flood Zone

_____ Project is within 500 yr Flood Zone

Comments THE LRAFB HAS ~~FLOOD PLAIN~~ MAPS. THEY SHOULD FOLLOW E.O. 11988 IN THE LOCATION AND CONSTRUCTION OF ANY FACILITY.

Signature [signature] Date 13 JAN 03

C. Regulatory

✓ Section 404 permit required _____ Section 404 permit Not Required

Comments No wetlands identified within either parcel. Two unnamed tributaries of Jacks Bayou flow through the larger (eastern) parcel. These would be considered waters of the U.S. within Corps of Engineers jurisdiction.

Signature [signature] Date 31 Jan 03

Little Rock District Corps of Engineers has reviewed the enclosed project and provides the following comments:

_____ Support _____ Do not support (Comments Attached)

_____ Comments Attached ___X___ Support with conditions

_____ No Comments ___X___ Permits Required (see above)

[signature]

PATRICIA M. ANSLOW
Chief, Environmental Section

ARKANSAS AIR NATIONAL GUARD
HEADQUARTERS 189TH AIRLIFT WING (ANG)
LITTLE ROCK AFB, ARKANSAS

27 December 2002

U.S. Army Corps of Engineers
Little Rock District
Planning, Environmental and Regulatory Division
700 W. Capitol Ave., P.O. Box 867
Little Rock, AR 72203-0867

Dear Sir/Madam,

The Air National Guard (ANG) at Little Rock Air Force Base (LRAFB) is preparing an Environmental Assessment (EA) for a proposal to implement construction projects associated with their Base Master Plan. Attachment A to this memorandum describes the proposal and the alternatives being analyzed, including the No Action Alternative. We will forward the Draft EA in its entirety for your review within the next couple of months; however, we are soliciting any comments or concerns regarding the proposal you may have at this time so that we might incorporate them into our analysis in a proactive manner. Understanding your comments and concerns at this time will help us to make this analysis a comprehensive one.

The environmental analysis for the Proposed Action is being conducted by LRAFB in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your participation by reviewing this memo describing the proposed action and alternatives, and solicit your comments concerning the proposal and any potential environmental consequences of the action. A listing of Federal and state agencies that have been contacted is attached (Attachment B). If there are any additional agencies that you feel should review and comment on the proposal or the Draft EA, please let us know.

Any questions concerning the proposal should be directed to our consultant, Science Applications International Corporation (SAIC). The point of contact at SAIC is Ms. Kate L. Bartz. She can be reached at either (520) 570-7665 or (301) 523-4995. Please forward your written comments to Ms. Bartz, in care of SAIC, 101 N. Wilmot Rd., Suite 400, Tucson, Arizona 85711-3336. Thank you for your assistance.

Sincerely,

TODD C. STUFF, Capt, AR ANG
Environmental Manager
189th Airlift Wing

The Department of
Arkansas
Heritage

Mike Huckabee, Governor
Cathie Matthews, Director

Arkansas Arts Council
•
Arkansas Natural Heritage Commission
•
Historic Arkansas Museum
•
Delta Cultural Center
•
Old State House Museum

Arkansas Historic Preservation Program

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

February 14, 2003

Ms. Kate L. Bartz
Science Applications International Corporation
101 North Wilmot Road, Suite 400
Tucson, Arizona 85711-3336

RE: Pulaski County - Little Rock AFB
Section 106 Review - USAF
Environmental Assessment for a proposal to implement construction projects at Little Rock AFB
AHPP Tracking No: 47958

Dear Ms. Bartz:

My staff has reviewed the preliminary documentation submitted regarding the above-referenced undertaking. Our records show that one archeological site (3PU456) and four structures (PU9806 - Building 147, PU9807 - Building 148, PU9808 - Building 149, and PU9809 - Building 150) are situated on the subject property. None of these resources has been the subject of formal National Register assessment and this may be necessary before this undertaking can proceed.

We look forward to reviewing the draft Environmental Assessment and can provide formal comments at that time.

Thank you for your interest and concern for the cultural heritage of Arkansas. If you have any questions, please contact Steve Imhoff of my staff at (501) 324-9880.

Sincerely,

Ken Grunewald
Deputy State Historic Preservation Officer

cc: Dr. Ann M. Early, Arkansas Archeological Survey
Mr. Jim Roan Gray, Osage Nation
Capt. Todd C. Stuff, Arkansas Air National Guard
Ms. Carrie V. Wilson, Quapaw Tribe of Oklahoma

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3225

February 14, 2003

Ms. Kate L. Bartz
SAIC
101 North Wilmot Road, Suite 400
Tucson, Arizona 85711-3336

Dear Ms. Bartz:

This letter is in response to your request for the proposed construction of a maintenance hanger, supporting taxiway extension, fuel cell hanger, refueler vehicle parking facility and personnel parking spaces in Pulaski County, Arkansas. Based on the project location stated in your letter, the proposed site is located within an area zoned for urban/residential use. Since this area is zoned as urban/residential use, there will be no impact on Important Farmland.

Should you have any questions or need additional information, please call me at (501) 301-3178.

Sincerely,

JEANETTE J. BRADLEY
Soil Scientist

The Department of
Arkansas
Heritage

Mike Huckabee, Governor
Cathie Matthews, Director

Arkansas Arts Council
•
Arkansas Natural Heritage Commission
•
Historic Arkansas Museum
•
Delta Cultural Center
•
Old State House Museum

Arkansas Historic Preservation Program

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February 14, 2003

Ms. Kate L. Bartz
Science Applications International Corporation
101 North Wilmot Road, Suite 400
Tucson, Arizona 85711-3336

RE: Pulaski County - Little Rock AFB
Section 106 Review - USAF
Environmental Assessment for a proposal to implement construction projects at Little Rock AFB
AHPP Tracking No: 47958

Dear Ms. Bartz:

My staff has reviewed the preliminary documentation submitted regarding the above-referenced undertaking. Our records show that one archeological site (3PU456) and four structures (PU9806 - Building 147, PU9807 - Building 148, PU9808 - Building 149, and PU9809 - Building 150) are situated on the subject property. None of these resources has been the subject of formal National Register assessment and this may be necessary before this undertaking can proceed.

We look forward to reviewing the draft Environmental Assessment and can provide formal comments at that time.

Thank you for your interest and concern for the cultural heritage of Arkansas. If you have any questions, please contact Steve Imhoff of my staff at (501) 324-9880.

Sincerely,

Ken Grunewald
Deputy State Historic Preservation Officer

cc: Dr. Ann M. Early, Arkansas Archeological Survey
Mr. Jim Roan Gray, Osage Nation
Capt. Todd C. Stuff, Arkansas Air National Guard
Ms. Carrie V. Wilson, Quapaw Tribe of Oklahoma

ADEQ

A R K A N S A S
Department of Environmental Quality

March 10, 2003

Mrs. Kate L. Bartz
Science Applications International Corporation
101 North Wilmot Road, Suite 400
Tucson, Arizona 85711-3336

Dear Mrs. Bartz:

I have reviewed the information and project maps submitted by the Arkansas Air National Guard regarding the implementation of construction projects associated with their Base Master Plan.

I have attached information that the ADEQ's Hazardous Waste Division provided to us concerning your project. If you have any questions, or if the status of the project changes, please do not hesitate to contact me. On behalf of the ADEQ, I thank you for your consideration to the agency on this matter.

Sincerely,

Sandi Formica
Chief, Environmental Preservation Division

Cc: Mary Leath, Chief Deputy Director

ADEQ HAZ WASTE DIV

extensive comments attached

Memo

To: Environmental Preservation Division, attn: Bill Dickerson

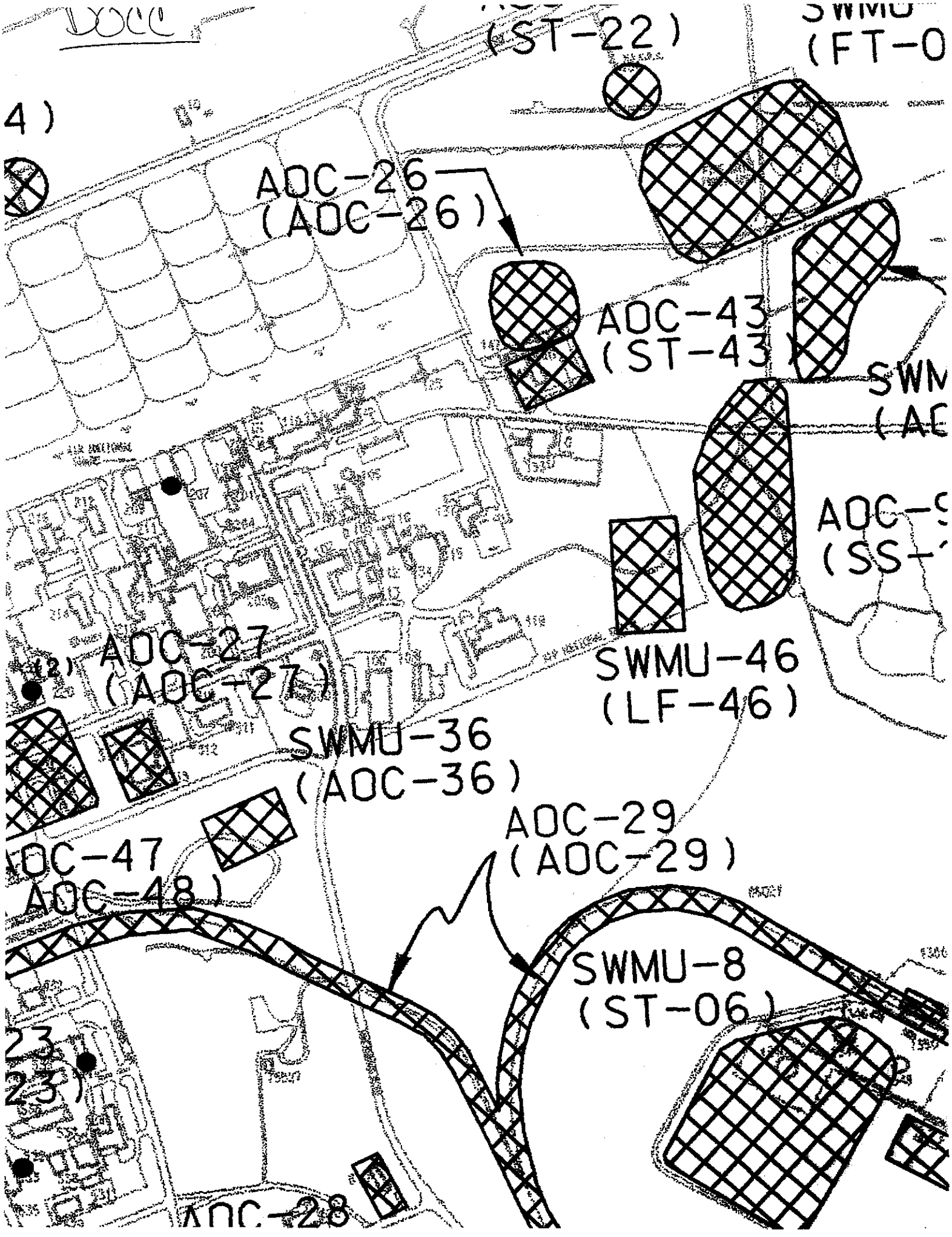
From: Linda A. Hanson

CC: Jim Rigg

Date: February 27, 2003

Re: Environmental Clearance/Review/Information Request for the 189th Airlift Wing of the Arkansas Air National Guard located at Little Rock Air Force Base dated Jan. 14, 2003

Attached please find information pertaining to the above-referenced request. This is composed of copies of data from the Little Rock Air Force Base Document of Current Conditions, Phase 1 RCRA Facility Investigation Report, Facility Investigation Work Plan, and Phase 2 Facility Investigation Report. Please note that for the sake of simplicity, I have separated the data according to the area of concern (AOC) or solid waste management unit (SWMU), as indicated in the enclosed map. This response includes information submitted as recently as February 14, 2003, so it is as up to date as possible. Let me know if you have any questions pertaining to this matter.


DOCC
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SWMU
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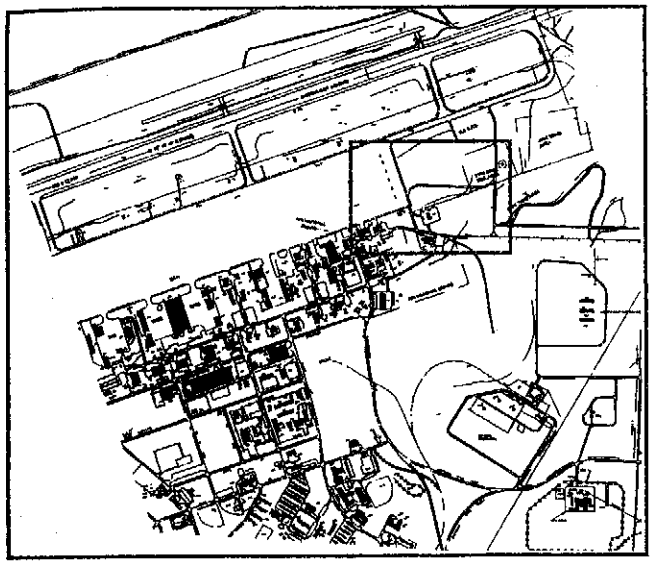
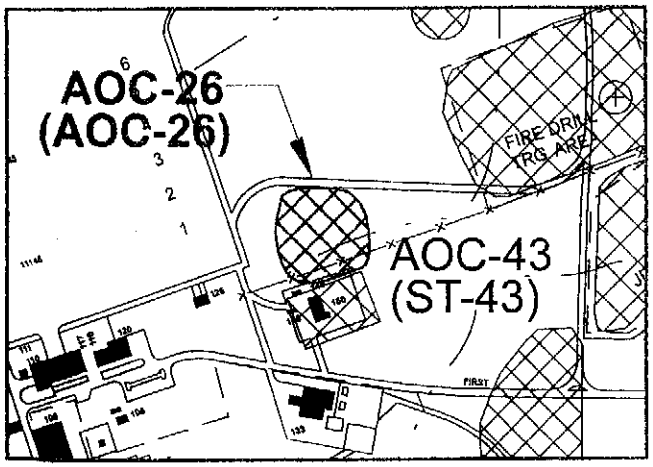
AOC-28



Vicinity Map (NC)



Plan View

AOC No. 26

Site Location: AOC No. 26 (AOC-26), the East Taxiway Drainage, is a drainage ditch located approximately 1,200 feet southeast of the taxiway. The drainage ditch begins at a storm water discharge culvert located at the southeast corner of the East Taxiway apron and proceeds in an east-northeast direction, south of the runways, toward the installation boundary. The drainage ditch accepts storm water runoff from the installation and has the potential to accept any spills or releases from facilities south of the taxiway apron.

Site Description: AOC No. 26 (AOC-26) has been part of the installation storm water management system since construction. A review of installation facility drawings within the drainage area showed that at one time some facility interior drains were connected to the storm water system. In addition to taxiway facilities that have potentially discharged contaminants to the drainage ditch, a former missile maintenance facility (Building 150) lies adjacent and upgradient of the culvert and drainage ditch. Activities related to maintenance at this facility would have had the potential for release through surface runoff or subsurface migration to the taxiway drainage ditch immediately below the storm water culvert.

Site Investigations: One environmental investigation, a Preliminary Assessment/Site Inspection performed by the USACE in 1994 and 1995, was identified during the DOCC literature review.

Recommendation: Based upon the results of their investigation, the USACE recommended that a Remedial Investigation/Feasibility Study be pursued to determine the extent of contamination around the former missile vehicle maintenance facility (Building 150) and in the drainage ditch (USACE, 1995). Subsequent investigations at Building 150, which has been identified as AOC No. 43 (ST-43), are described in another section of this report.

Since the environmental investigations have shifted to AOC No. 43 (ST-43), LRAFB proposes no further action for AOC No. 26 (AOC-26).

LRAFB Recommendation

No Further Action

Phase I
RCRA Facility Investigation[a]

RCRA Facility Investigation[b]

Corrective Measures Study/
Corrective Measures
Implementation

Long-Term Monitoring

[a] *Includes document review, visual inspection, and limited environmental sampling to determine the presence or absence of contamination*

[b] *More detailed investigation to determine the nature and extent of contamination*

6. Conditionally Approved Sites

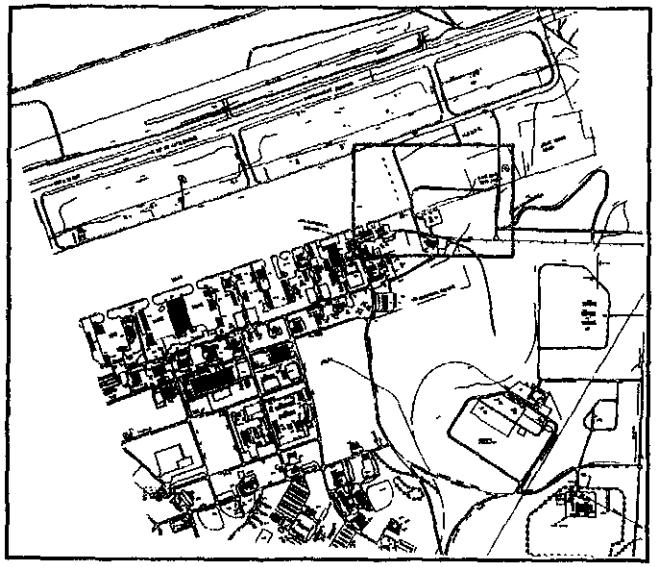
The Description of Current Conditions Report (DOCC; CH2M HILL, 2000c) identified sites recommended for no further action (NFA) and other regulatory actions based on several criteria, included previous closure actions, decision documents, and letters from the ADEQ. The ADEQ reviewed the DOCC and issued a conditional approval (ADEQ, 2001). In a meeting with the ADEQ on April 12, 2001 to discuss comments on the DOCC. ADEQ recommended that approved NFA sites be listed in the RFI Workplan (see Table 6-1 below), and that sites pending NFA approval be listed with a brief summary of proposed activities (see Table 6-2). Additionally, ADEQ recommended that sites approved for other activities (e.g., LTM, CMS) be listed in the RFI Workplan (see Table 6-3). Lastly, those sites that are currently under an RFI are included in Section 6.4.

6.1 Approved No Further Action (NFA) Sites

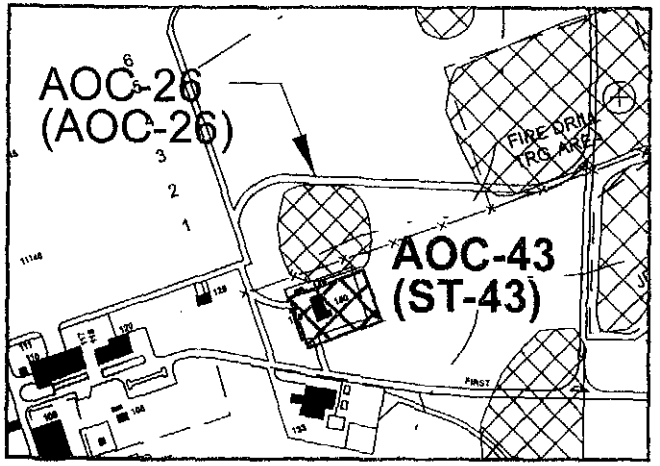
The sites listed on Table 6-1 have been conditionally approved by the ADEQ for NFA (ADEQ, 2001).

Table 6-1
Approved NFA Sites
RFI Workplan
Little Rock AFB, Arkansas

SWMU/AOC Number	Other Previous SWMU/AOC Number	Site Name	Basis for NFA Designation
SWMU No. 5	SWMU No. 5	DRMO Waste Oil UST (SS-03)	Letter from ADEQ - DOCC Approval
SWMU No. 31	SWMU No. 31	Entomology Shop (SWMU-101)	DOCC Approval
SWMU No. 33	SWMU No. 33	Silver Recovery Units (SWMU-103)	DOCC Approval
SWMU No. 34	SWMU No. 34	Battery Maintenance Shop (SWMU-104)	DOCC Approval
AOC No. 38	SWMU No. 38	Landfill FTA	DOCC Approval
AOC No. 1	AOC No. 1	NPDES Outfalls 001, 002, and 004 (AOC-105)	DOCC Approval
AOC No. 11	AOC No. 11	Washrack at Building 550 (AOC-107)	DOCC Approval
ST-23	AOC No. 23	Building 552	Letter from ADEQ - DOCC Approval
AOC No. 26	AOC No. 26	East Taxiway Drainage	DOCC Approval
AOC No. 37	AOC No. 37	Air Compressor	Memo for record - DOCC Approval



Vicinity Map (NC)



Plan View

AOC No. 43

Site Location: AOC No. 43 (ST-43) is located adjacent to the southeast corner of the East Taxiway apron, in the location presently utilized as the Explosive Ordnance Disposal (EOD) facility. The location of the former maintenance complex is situated on a generally level area on a gently northeasterly-sloping hillside. The area immediately adjacent to the complex is mostly asphalt-paved, and is surrounded by a chain-link fence. Three buildings (Nos. 148, 149, and 150) are present within the fenced area. A large drainage ditch is located north of the site.

Site Description: AOC No. 43 (ST-43) includes the location of a former missile maintenance facility and a drainage ditch which is part of the East Taxiway Drainage. The ditch begins at a stormwater discharge culvert located at the southeast corner of the East Taxiway apron and runs east-northeast south of the runways to the installation boundary. The stormwater system has the potential to accept spills or releases from facilities south of the taxiway apron. At one time, some facility interior drains were connected to the stormwater system.

Site Investigations: The Preliminary Assessment/Site Inspection for an adjacent site, AOC No. 26 (AOC-26), was performed by the USACE in 1994 and 1995. Based upon the results of that investigation, the USACE recommended that a Remedial Investigation/Feasibility Study be pursued to determine the extent of contamination around the former missile vehicle maintenance facility (Building 150) and in the drainage ditch (USACE, 1995).

In addition to the USACE report for AOC No. 26 (AOC-26), three investigations were identified for AOC No. 43 (ST-43) during the DOCC literature review: (1) confirmation sampling performed by CH2M HILL in May 1998; (2) a remedial investigation (RI) performed by CH2M HILL in 1998 through 2000; and (3) the Long-Term Monitoring Study currently being performed by the USACE.

Recommendation: The human health risk assessment performed by CH2M HILL indicates that several polyaromatic hydrocarbons (PAHs) in the ditch do present a risk to future adult and child residents and current and future onsite workers (CH2M HILL, 2000). Based on these results, the development of a remedial action through a Corrective Measures Study is recommended.

LRAFB Recommendation

- No Further Action
- Phase I RCRA Facility Investigation[a]
- RCRA Facility Investigation[b]
- **Corrective Measures Study/ Corrective Measures Implementation**
- Long-Term Monitoring

[a] *Includes document review, visual inspection, and limited environmental sampling to determine the presence or absence of contamination*

[b] *More detailed investigation to determine the nature and extent of contamination*

AOC No. 43 (ST-43)
Former Missile Maintenance
Little Rock AFB • July 2000

Table 6-4
Sites Approved for RI/RFI Investigations
RFI Workplan
Little Rock AFB, Arkansas

RFI AOC or Number	Workplan SWMU/AOC Number	Site Name	Regulatory Status
SS-17	SWMU No. 17	Hydraulic Fluid Storage Area (SS-17)	RFI
ST-43	AOC No. 43	Former Missile Maintenance Complex (ST-43)	RFI
AOC No. 47	AOC No. 47	PETN Sump Pits (AOC-48)	Stage 1 RFI

Based on historical site investigations, an RFI was performed at the site from 1998 through 2000. The results of the RFI will be used to determine the need for further action.

6.4.1.2 Planned Technical Approach

The RFI consisted of the installation and sampling of soil borings and monitoring wells, and collection and analysis of sediment samples from the drainage swale that carries stormwater northward from the site area. Figure 6.4-1 depicts RFI planned sampling locations. An RFI Report has been generated based on results of the investigation conducted at the site in 1998 through 2000, and will be included as a section of the RFI Report to be submitted as a result of investigations conducted at all sites included in this Workplan.

6.4.2 AOC No. 43 – Former Missile Maintenance Complex (ST-43)

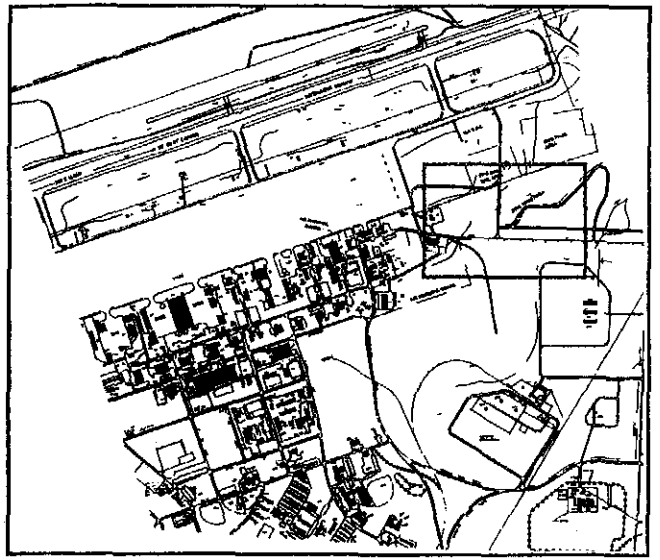
6.4.2.1 Introduction

AOC No. 43, the Former Missile Maintenance Complex, is located adjacent to the southeast corner of the East Taxiway Apron in the location presently utilized by the 96th Aerial Port Squadron. AOC 43 includes the location of a former missile maintenance facility and a drainage ditch that is part of the East Taxiway Drainage.

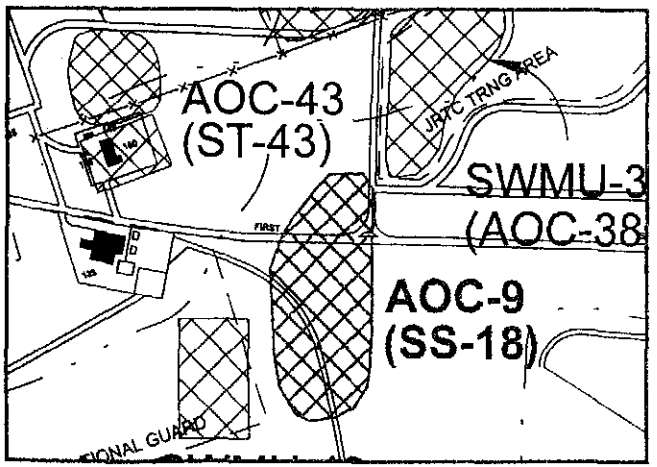
Based on historical site investigations, an RFI was performed at the site from 1998 through 2000. Planned sampling locations for this investigation are included in Figure 6.4-2. The results of the RFI will be used to determine the need for further action.

6.4.2.2 Planned Technical Approach

The RFI consisted of the installation and sampling of soil borings and monitoring wells, and collection and analysis of sediment and surface water samples from the drainage swale that passes along the northern side of the site. An RFI Report has been generated based on results of the investigation conducted at the site in 1998 through 2000. This RFI Report will be included as a section of the RFI Report to be submitted as a result of investigations conducted at all sites included in this Workplan.



Vicinity Map (NC)



Plan View

AOC No. 9

Site Location: AOC No. 9 (SS-18), the Jet Fuel Release Near First Street, is located approximately 200 feet south of First Street near the Fire Protection Training Area. The leak area is located near the top of a northeasterly trending ridge (USGS, 1991).

Site Description: AOC No. 9 (SS-18) is associated with two 10-inch underground pipelines that transfer JP-4 jet fuel from the bulk fuel storage tanks to the flight line hydrant system (CDM Federal, 1995). In 1987, large pools of JP-4 were simultaneously identified in low-lying areas to the north and south of the valve vaults. The most significant quantities of fuel were found in a drainage ditch running along the south side of First Street and in a borrow pond located south of the two valve vaults. An estimated 2,000 gallons of JP-4 were recovered from these areas. In an attempt to locate a leak in the system, several hundred feet of pipeline were uncovered and extensive pressure testing was conducted. However, no leaks were detected.

During site investigation activities in October 1991, a LRAFB Petroleum, Oil, and Lubricant (POL) representative indicated that the spill was identified within 48 hours after a routine pipeline cleaning exercise. During this exercise, the valves in the main vaults were opened to allow the lines to drain, and may not have been closed properly prior to restarting the fuel pumping operation.

Site Investigations: Two investigations at AOC No. 9 (SS-18) were identified during the DOCC literature review: (1) an IRP Stage I investigation performed by the USGS in 1988 and 1989; and (2) a site investigation performed by CDM Federal in 1991 through 1993.

Interim Remedial Action: AOC No. 9 (SS-18) was included in a bioventing evaluation project sponsored by the Air Force Center for Environmental Excellence (AFCEE). An air injection vent well, four vapor monitoring points (including a background monitoring point located approximately 170 feet north-northwest of the vent well), and a blower unit were installed at the site in July 1993. Based on the initial tests, which indicated that oxygen had been depleted in the contaminated soils and that air injection was an effective method of increasing aerobic fuel biodegradation, AFCEE recommended continued bioventing at the site (Engineering-Science, 1993).

Low concentrations of TRPH, ethylbenzene, and xylenes were detected in the initial soil samples. However, after one year of bioventing, neither TRPH nor BTEX were detected in any of the soil samples. Similarly, soil gas sampling results indicated greatly decreased concentrations of TVHC and BTEX at all sampling locations.

Recommendation: The interim remedial action (IRA) performed at this site reduced BTEX and TRPH concentrations to below detection limits. However, the IRA only addressed a portion of the site. Therefore, LRAFB recommends that AOC No. 9 (SS-18) be included in the RCRA Facility Investigation.

LRAFB Recommendation

- No Further Action
- Phase I RCRA Facility Investigation[a]
- **RCRA Facility Investigation[b]**
- Corrective Measures Study/ Corrective Measures Implementation
- Long-Term Monitoring

[a] *Includes document review, visual inspection, and limited environmental sampling to determine the presence or absence of contamination*

[b] *More detailed investigation to determine the nature and extent of contamination*

AOC No. 9 (SS-18)
Jet Fuel Release Near First Street

5.14 AOC No. 9 – Jet Fuel Release Near First Street

SS-18

5.14.1 Site Background

5.14.1.1 Introduction

AOC No. 9 (Jet Fuel Release Near First Street) consists of an area impacted by a jet fuel spill from the base fuel distribution system pipeline. AOC No. 9 was officially identified during the preliminary document review and visual site inspection conducted as part of the RFA (PRC Environmental Management, 1990). An RFI will be conducted at AOC No. 9 to further characterize site conditions, based on historical site-specific investigations.

5.14.1.2 Site Location

AOC No. 9 is located approximately 200 feet south of First Street near the Fire Protection Training Area (Figure 5-1). Figure 5.14-1 illustrates the location and features AOC No. 9. The buried pipeline associated with the spill is located at a depth of 5 feet.

5.14.1.3 Site History

AOC No. 9 is associated with two 10-inch underground pipelines that transferred JP-4 jet fuel from the bulk fuel storage tanks to the flight line hydrant system (CDM Federal, 1995b). In 1987, large pools of JP-4 were identified in low-lying areas to the north and south of the valve vaults. The most significant quantities of fuel were found in a drainage ditch running along the south side of First Street and in a borrow pond located south of the two valve vaults (Figure 5.14-2). An estimated 2,000 gallons of JP-4 were recovered from these areas. In an attempt to locate a leak in the system, several hundred feet of pipeline were uncovered and extensive pressure testing was conducted. No leaks were detected.

During site investigation activities in October 1991, a LRAFB POL representative indicated that the spill was identified within 48 hours after a routine pipeline cleaning exercise. During this exercise, the valves in the main vaults were opened to allow the lines to drain, and may not have been closed properly prior to restarting the fuel pumping operation.

5.14.2 Previous Site Investigation Results

Two site investigations have been conducted at AOC No. 9. An IRP Stage I investigation was performed in 1988 and 1989, and a site investigation was performed from 1991 through 1993.

The purpose of the first investigation was to determine if a suspected JP-4 pipeline leak had contaminated site soils or groundwater (USGS, 1991). The investigation included a soil gas survey, the installation of six groundwater monitoring wells, and the collection of soil and groundwater samples for chemical analysis (Figure 5.14-2). The soil gas survey was intended to determine the areal extent of jet fuel contamination and to assist in the placement of soil borings

5.14.7.2 Soil Gas Surveys

No additional soil gas surveys are required at AOC No. 9.

5.14.7.3 Surface Soil Sampling

A surface soil sample will be collected from each of 10 soil borings SB - 16 through SB - 25(see Figure 5.14-6). Surface samples will be collected from the upper 6 inches and will be analyzed for BTEX and TPH.

Soil borings will be drilled and surface soil samples collected in accordance with the general DCQAP (Appendix A) and DCQAP Addendum (Appendix A in this section). Surface soil will be submitted for laboratory analysis of the contaminants of concern identified in Table 5.14-10.

5.14.7.4 Subsurface Soil Sampling

Subsurface soil samples will be collected from each of the soil borings listed above. Soil borings will be advanced until groundwater is encountered, or to a maximum depth of 20 feet bgs. The subsurface soil samples will be collected from depths of 1 to 3 foot, 5 to 7 foot, 10 to 12 foot, 15 to 17 foot, and 20 ft bgs, as applicable, depending upon the total depth of the boring. The subsurface soil samples will be analyzed for BTEX and TPH.

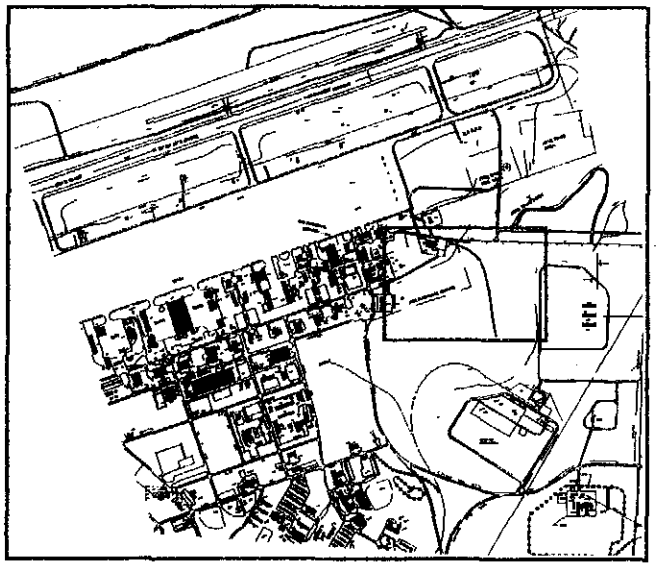
Four soil samples will also be analyzed for geotechnical parameters. The geotechnical samples will be analyzed for bulk density, porosity, permeability, cation exchange capacity, Atterberg Limits, and grain size distribution.

Subsurface soil samples will be collected in accordance with the general DCQAP and DCQAP Addendum (Appendix A). Samples will be submitted for laboratory analysis of the contaminants of concern as shown on Table 5.14-5.

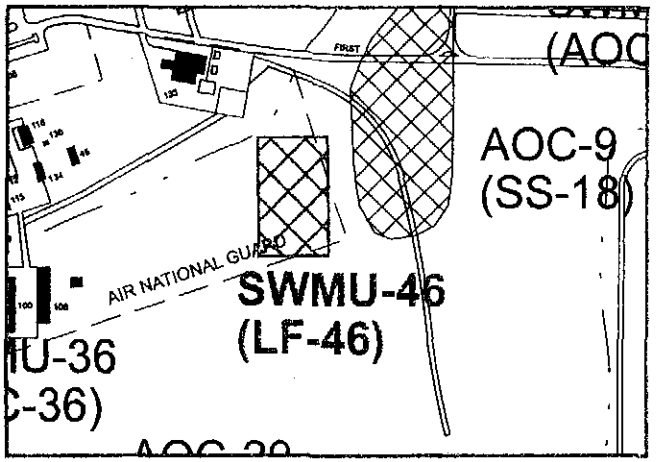
5.14.7.5 Groundwater Sampling

Groundwater from the six existing monitoring wells (SD1, SD2, SD3, SD4, SU1, SU2) and from the proposed monitoring well (SD5) will be sampled and analyzed for BTEX and TPH. The borehole for the proposed monitoring well (SD5) will be drilled to 30 feet or refusal, and screen length will be 10 feet, or long enough to allow for seasonal water table fluctuations. Samples will be collected and analyzed in accordance with the general DCQAP (Appendix A) and the DCQAP Addendum (Appendix A in this section). Slug tests will be conducted at all monitoring wells after groundwater samples have been collected. Groundwater samples will be submitted for laboratory analysis of the contaminants of concern identified on Table 5.14-5. The results of groundwater sampling will lead to a secondary investigation, including the downgradient groundwater flow direction of the pipeline leakage area, if contamination is detected in the seven wells.

If groundwater is encountered during the drilling of borings, a groundwater grab sample will be collected and analyzed for BTEX and TPH.



Vicinity Map (NC)



Plan View

SWMU No. 46

Site Location: SWMU No. 46 (LF-46) is located in a wooded area south of First Street and east of Building 122. The topography is generally flat with a grade of approximately 7 percent sloping to the south (USACE, 2000). However, there are areas of steep relief with up to 30 percent grade on the west/southwest side of the site. The elevation across the site varies from about 311 to 341 feet above mean sea level (MSL).

A deep ravine, which appears to follow the old railroad track bed, bisects approximately 400 feet of the site in a north-south direction. In certain sections of this ravine, the relief is 20 to 25 feet on the west side due to continual filling and grading of the area over the years. The original terrain slopes downward toward the bottom of the old debris-filled track bed. Based on the topographic map elevations, approximately 15 to 20 feet of overburden was placed on top of the original land surface.

Site Description: SWMU No. 46 (LF-46) was identified as a potentially contaminated site after 55-gallon drums were found in the bottom of the ravine during an environmental inspection in 1997. Accessible drums were removed and tested to determine the proper method of disposal. The material in the drums could not be sent to a regular landfill due to its high pH and flash point.

Further investigation indicated that the ditch where the drums were found may have been a trench and that there may be several other trenches, indicating a possible landfill. Based on the types of drums and other dated debris observed, the landfill was probably used for the disposal of various LRAFB refuse, demolition rubble, and industrial waste in the early 1950s to the late 1970s.

Site Investigations: One investigation, a Preliminary Assessment/Site Inspection performed by the USACE in 1999, was identified for SWMU No. 46 (LF-46) during the DOCC literature review.

Recommendation: Based on the results of the USACE investigation, additional investigation was recommended for this site. Therefore, LRAFB proposes that a RCRA Facility Investigation be performed at SWMU No. 46 (LF-46).

LRAFB Recommendation

- No Further Action
- Phase I RCRA Facility Investigation[a]
- **RCRA Facility Investigation[b]**
- Corrective Measures Study/ Corrective Measures Implementation
- Long-Term Monitoring

[a] *Includes document review, visual inspection, and limited environmental sampling to determine the presence or absence of contamination*

[b] *More detailed investigation to determine the nature and extent of contamination*

SWMU No. 46 (LF-46)
Drum Burial Area

5.5 SWMU No. 46 – Drum Burial Area

LF-46

5.5.1 Site Background

5.5.1.1 Introduction

SWMU No. 46 (Drum Burial Area) was identified by LRAFB personnel in 1997 when partially buried drums were observed in a ravine. The contents of one of the exposed drums were analyzed and results indicated a low flash point and high pH. A review of LRAFB records suggested that the site may have received a variety of materials from the early 1950s to the late 1970s. An RFI is proposed to further characterize site conditions at SWMU No. 46 based in part upon the results of a Preliminary Assessment/Site Investigation (PA/SI) performed in 1999.

5.5.1.2 Site Location

SWMU No. 46 is located in the north central portion of the Base, south of First Street in a wooded area east of Building 122 (Figure 5-1). SWMU No. 46 is west of and adjacent to AOC No. 9 (Jet Fuel Release area). Figure 5.5-1 illustrates the location and features of SWMU No. 46.

5.5.1.3 Site History

A review of historical aerial photographs shows evidence of earth-moving and demolition activities, and possibly landfilling of debris, during the 1950s through the late 1970s. Trenches created by the removal of railroad tracks between 1955 and 1960 appear to have been filled with demolition debris concurrent with the construction of a parking apron during the early 1960s. Earth-moving, filling, and leveling activities are evident in the area from later aerial photographs. The disturbed area appears to have become overgrown with vegetation as early as 1970.

5.5.2 Previous Site Investigation Results

A PA/SI was performed at SWMU No. 46 in 1999 (USACE-Tulsa District, 2000c). The PA/SI included a geophysical survey, soil boring and test pit programs for surface and subsurface soils, and collection of a surface water sample from a pond in the southern portion of the area. Figure 5.5-2 illustrates the locations of historical sampling points.

5.5.3 Environmental Setting

5.5.3.1 Geology/Hydrogeology

Unconsolidated soil materials at SWMU No. 46 appear to be a combination of fill materials and weathered shale. Approximately 15-20 feet of fill was placed on top of the original land surface. Boring logs from the PA/SI reveal overburden thickness ranges from less than 1 foot to approximately 20 feet.

5.5.7.1 Non-Intrusive Investigations

Since an EM survey was already performed at SWMU No. 46, there is no need to conduct additional non-intrusive investigations (USACE-Tulsa District, 2000c).

5.5.7.2 Soil Gas Sampling

A soil gas survey is not required because the source areas and soil conditions (from boreholes and test pits) were investigated during the PA/SI.

5.5.7.3 Surface Soil Sampling

Figure 5.5-3 illustrates the locations of seven soil borings (SB-14 through SB-20) that are proposed to characterize the nature and extent of contamination at SWMU No. 46. The proposed soil borings are located to just outside the limits of the fill to identify potential contamination that may have migrated from the suspected fill area. Four soil borings (SB-14, SB-15, SB-16, and SB-17) will be drilled along the west side of the site. Soil boring SB-18 will be drilled approximately in the center of the site and SB-19 and SB-20 will be drilled toward the east edge of the site.

Surface soil samples will be collected from the upper 6 inches to evaluate concentrations of surface soil contaminants. Soil borings will be drilled and surface soil samples collected in accordance with the general DCQAP (Appendix A) and DCQAP Addendum (Appendix A in this section). Surface soil will be submitted for laboratory analysis of the contaminants of concern identified in Table 5.5-4.

5.5.7.4 Subsurface Soil Sampling

Subsurface soil samples will be collected from each of the proposed boring locations discussed above. Subsurface soil samples will be collected from 1 to 3 foot, 6 to 8 foot, 14 to 16 foot, and 28 to 30 foot intervals. No soil samples will be collected below the water table. The depth of the last sample will be adjusted so that it is collected just above the water table.

Subsurface soil samples will be collected in accordance with the general DCQAP and DCQAP Addendum (Appendix A). Samples will be submitted for laboratory analysis of the contaminants of concern as shown on Table 5.6-4.

5.5.7.5 Groundwater Sampling

Four monitoring wells (SD-3 through SD-6) will be installed as shown on Figure 5.5-3. Although groundwater was not encountered during the PA/SI, groundwater exists in the area at depths less than 25 feet bgs, and could be as shallow as 2 to 12 feet bgs based on the groundwater assessment at AOC No. 9. Boreholes for the monitoring wells will be drilled to 30 feet or refusal, and screen lengths will be 10 feet, or long enough to allow for seasonal water table fluctuations.

If water is encountered during drilling of a borehole, a groundwater grab sample will be collected from the borehole and submitted for laboratory analysis of chemicals of concern (except metals) identified on Table 5.5-4.

Monitoring wells will be constructed and groundwater samples collected and analyzed in accordance with the general DCQAP (Appendix A) and the DCQAP Addendum (Appendix A in this section). Slug tests will be conducted at all monitoring wells after groundwater samples have been collected. Groundwater samples will be submitted for laboratory analysis of the contaminants of concern identified on Table 5.5-4.

5.5.7.6 Surface Water and Sediment Sampling

Most runoff from the Drum Burial Area drains toward a pond located in the southern portion of the area. Surface water and sediment samples will be collected from the pond and its outlet as shown on Figure 5.5-3.

Groundwater

In groundwater, bis(2-ethylhexyl)phthalate is the only identified human health COPC. It was detected in four groundwater samples at concentrations that exceed the drinking water MCL (6 µg/L). The maximum detected concentration (112 µg/L) also exceeds the Region 6 Tap Water Residential MSSL (4.8 µg/L), which is based on a target risk of 10^{-6}. However, it does not exceed the MSSL adjusted to a target risk level of 10^{-4} (480 µg/L). Bis(2-ethylhexyl)phthalate was not detected within an order of magnitude of screening levels in any other media at AOC No. 46. Additionally, this constituent was not detected consistently in any well, and was not detected above screening levels in any well during the October 2002 sampling event. Given the low probability that the shallow groundwater will be used as drinking water in the future, there is no need to further evaluate bis(2-ethylhexyl)phthalate in groundwater at this site.

Surface water and Sediment

Arsenic is the only human health COPC in surface water and sediment. In sediment, the maximum detected concentration (23.9 JL mg/kg), is well within the range of background values for arsenic in soil (1.49 to 78.7 mg/kg), and does not exceed either the residential soil MSSL or the site-specific sediment screening value adjusted to a target risk of 10^{-4} (39 mg/kg and 202 mg/kg, respectively). Therefore, arsenic in sediment is eliminated from further evaluation.

In surface water, arsenic was detected in one of three samples at a concentration (4.0 µg/L), which exceeds the surface water screening value (0.140 µg/L). The screening value is the federal ambient water quality criteria for fish ingestion and is based on a target risk of 10^{-6}. The single detected concentration does not exceed the screening value adjusted to a target risk of 10^{-4} (14.0 µg/L), indicating that the estimated risk associated with ingestion of fish that consume arsenic from the surface water is less than 10^{-4}. Moreover, the one concentration detected is less than the EPA Region 6 Tap Water Residential MSSL (50 µg/L). Therefore, arsenic in surface water is eliminated from further assessment.

5.6.7 Conclusions and Recommendations

Based on the evaluation of need for a quantitative risk assessment, the constituents identified at AOC No. 46 do not pose a risk to human health. The ecological checklist and screening level assessment indicate no risk to environmental receptors. Therefore, LRAFB recommends NFA for AOC No. 46.

Arkansas Soil & Water Conservation Commission

J. Randy Young, PE
Executive Director

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Little Rock, Arkansas 72201
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Mike Huckabee
Governor

January 14, 2003

Ms. Kate L. Bartz
Science Applications International Corporation
101 North Wilmot Road, Suite 400
Tucson, Arizona 85711-3336

Re: Environmental Assessment (EA) for Proposed Air National Guard (ANG) Parcel Acquisition and Construction at the Little Rock Air Force Base (LRAFB)

Dear Ms. Bartz:

Thank you for the opportunity to provide input to the EA regarding ANG parcel acquisition and construction at the LRAFB. My staff has reviewed the request, and identified no significant environmental impacts associated with the proposal. Consequently, I have no comments or additional information to provide at this time.

If you need further assistance, please contact Kenneth Colbert of my staff at 501-682-1608.

Again, thank you for the opportunity to review and comment on the above referenced project.

Sincerely,

J. Randy Young, P.E.
Executive Director

JRY/kc

Arkansas GEOLOGICAL COMMISSION

VARDELLE PARHAM GEOLOGY CENTER • 3815 WEST ROOSEVELT ROAD • LITTLE ROCK, ARKANSAS 72204

Mike Huckabee
Governor

Mac B. Woodward
Director and State Geologist

January 14, 2003

Ms. Kate L. Bartz
SAIC
101 N. Wilmot Road
Suite 400
Tucson, Arizona 85711-3336

Dear Ms. Barz,

Enclosed is geologic information for the Little Rock Air Force Base (LRAFB).I hope that this is useful for the Environmental Assessment Plan that must be done before improvements to the base can be made. If you have any questions please feel free to contact me.

Sincerely,

William Lee Prior
Geologist

PHONE: (501) 296-1877; FAX: (501) 663-7360
agc@mail.state.ar.us
www.state.ar.us/agc/agc.htm

	AGE	SYMBOL	MAP UNIT
QUATERNARY	Holocene	Qalr	Alluvial deposits, undiff.
	Pleistocene	Qtr	Alluvial deposits on one or more terrace levels
TERTIARY	Eocene	Tej Tec Ew, Tew	Jackson Group Claiborne Group Wilcox Group
	Paleocene	Tpm, Tem	Midway Group
CRETACEOUS	Late Cretaceous	Ig K (?) Kna Kbs	Igneous rock Deposits, Late Cretaceous Nacatoch Sand Brownstown Marl
	Early Cretaceous	Kdq Kds	DeQueen Limestone Dierks Limestone
PENNSYLVANIAN	Des Moinesian	Pi IPb IPs, Ps IPm, Pm, Pms IPh, Ph	Igneous rock Boggy Fm. Savanna Fm. McAlester Fm. Hartshorne Sandstone
	Atokan	Pu, Pa, Ca Pau Pam Pal	Atoka Fm., undivided Atoka Fm., upper part Atoka Fm., middle part Atoka Fm., lower part
	Morrowan	IPm, Pbh, Pbp IPbp, IPmm, IPmm, IPlm, Plm IPbpg, Pbpg IPch, Pch Pjv Pj, Cj	Bloyd Shale & Prairie Grove Member of Hale Fm. Cane Hill Member of Hale Fm. Johns Valley Shale Jackfork Sandstone
MISSISSIPPIAN		Mfb, Mf, Mfu Mbu-fu-p, Mbv Mwt, Mhvll Mbn	Pitkin Limestone, Fayetteville Shale, Wedington Sandstone, Batesville Sandstone, Hindsville Limestone Boone Fm.
MISS.-DEVONIAN		MDc, Dp	Chattanooga Shale & Penters Chert
SILURIAN		Sm Sl, Ss, Sls	Missouri Mountain Shale Lafferty, St. Clair, & Brassfield Limestones
SILURIAN-ORD.		Sm & Opc	Missouri Mountain & Polk Creek Shales
ORDOVICIAN		Obfp Obf Okpj, Oj, Op, Oc Opj Osp, Ospe, Oe	Bigfork Chert & Polk Creek Shale Bigfork Chert Cason Shale, Fernvale, Kimmswick, & Plattin Limestones & Joachim Dolomite Plattin Limestone & Joachim Dolomite St. Peter Sandstone & Everton Fm.
	Early	Oby Opw Oc Oejc	Blakely Sandstone Powell Dolomite Cotter Dolomite Cotter & Jefferson City Dolomites
		Palu, Pu	Paleozoic rocks, undivided

The large sheet attached is copied (in black/white) from the *Geologic Map of Arkansas*, 1976, by B. R. Haley and others. It shows the symbols used on that map. The tabulation below shows the additional symbols used on the compilation sheets prepared by the various workers who contributed to the state geologic map. Together these two sheets explain all the symbols used on the photocopied compilation sheets or "geologic worksheets".

MISSISSIPPI EMBAYMENT

Holocene
- Qcm — ALLUVIUM—*Both units are equivalent in age. Alluvial deposits in major stream channels or in mappable meanders of major streams—Includes alluvial deposits in natural levees in some areas*
- Qao — *Alluvial deposits of local streams or of overbank flow of major streams—In some areas includes deposits in abandoned meanders of major streams*

Pleistocene
- Qt — TERRACE DEPOSITS—*Alluvial deposits on one or more terrace levels*
- Qds — DUNE SAND—*Deposited mostly on terrace deposits of the second level. Younger than some terrace deposits, older than others*
- Qss — SILT AND SAND—*Contains lenses of gravel and clay*

Pleistocene, Eocene, Paleocene
- Ql — LOESS
- Qsg — SAND AND GRAVEL
- Tj — JACKSON GROUP
- Tc — CLAIBORNE GROUP
- Tw — WILCOX GROUP
- Tm — MIDWAY GROUP

GULF COASTAL PLAIN

Holocene, Pleistocene
- Qal — ALLUVIUM—*Alluvial deposits of present streams*
- Qt — TERRACE DEPOSITS—*Alluvial deposits on one or more terrace levels*

Eocene, Paleocene, Upper Cretaceous, Lower Cretaceous
- Tj — JACKSON GROUP
- Tc — CLAIBORNE GROUP
- Tw — WILCOX GROUP
- Tm — MIDWAY GROUP
- Kad — ARKADELPHIA MARL
- Kn — NACATOCH SAND
- Ks — SARATOGA CHALK
- Km — MARLBROOK MARL
- Ka — ANNONA CHALK
- Ko — OZAN FORMATION
- Kb — BROWNSTOWN MARL
- Kto — TOKIO FORMATION
- Kw — WOODBINE FORMATION
- Kkg — KIAMICHI FORMATION AND GOODLAND LIMESTONE
- Kt — TRINITY GROUP (Kt)
- Kde — Kde, *De Queen Limestone*
- Kdi — Kdi, *Dierks Limestone*

LF COASTAL PLAIN, OZARK REGION, AND ARKANSAS VALLEY AND OUACHITA MOUNTAINS REGIONS

- Ki — IGNEOUS ROCKS—*Includes undifferentiated rocks of Paleozoic age at Granite Mountain and Murfreesboro*
  Acid to intermediate—Nepheline syenite complexes at Magnet Cove and Potash Sulphur Springs, stocks at Granite Mountain and in Saline County, and dikes and sills (principally trachyte, tinguaite, phonolite, some ranging from quartz syenite to diabase)
  Basic to ultrabasic—Peridotite or kimberlite pipes (Murfreesboro) and breccias (Benton), and dikes and sills (principally fourchite, ouachitite, and monchiquite)

OUACHITA MOUNTAINS REGION

- PzI — SOAPSTONE-SERPENTINE—*Altered peridotite*

SYMBOLS

- CONTACT
- NORMAL FAULT
- THRUST FAULT—*Also cross fault in some areas, dashed under lake Ouachita to show continuity*

OZARK REGION

QUATERNARY — Pleistocene and Holocene
- Qat — ALLUVIUM AND TERRACE DEPOSITS—*Alluvial deposits of present streams and on one or more terrace levels*
- Tg — GRAVEL—*Gravel on isolated hills within 40 miles (64 km) of the Mississippi Embayment. Many small deposits to the west not shown*

CRETACEOUS(?) / TERTIARY — CRETACEOUS — Upper Cretaceous
- Ksc — SAND AND CLAY
- Kr — CRETACEOUS ROCKS

PENNSYLVANIAN — Atokan
- Pa — ATOKA FORMATION

PENNSYLVANIAN — Morrowan
- Pbh — BLOYD SHALE, AND PRAIRIE GROVE MEMBER OF THE HALE FORMATION
- Pbc — CANE HILL MEMBER OF THE HALE FORMATION

MISSISSIPPIAN — Chesterian
- Mpfb — PITKIN LIMESTONE, FAYETTEVILLE SHALE (INCLUDING THE WEDINGTON SANDSTONE MEMBER), AND BATESVILLE SANDSTONE (INCLUDING THE HINDSVILLE LIMESTONE MEMBER)

MISSISSIPPIAN — Osagean — Meramecian
- Mr — RUDDELL SHALE
- Mm — MOOREFIELD FORMATION
- Mb — BOONE FORMATION

DEVONIAN — MDcp — CHATTANOOGA SHALE (LOWER MISSISSIPPIAN AND UPPER DEVONIAN), CLIFTY LIMESTONE (MIDDLE DEVONIAN), AND PENTERS CHERT (LOWER DEVONIAN)

SILURIAN
- Slsb — LAFFERTY, ST. CLAIR, AND BRASSFIELD LIMESTONES

ORDOVICIAN
- Ocj — CASON SHALE AND FERNVALE LIMESTONE (UPPER ORDOVICIAN) AND KIMMSWICK LIMESTONE, PLATTIN LIMESTONE, AND JOACHIM DOLOMITE (MIDDLE ORDOVICIAN)
- Ose — ST. PETER SANDSTONE AND EVERTON FORMATION (MIDDLE ORDOVICIAN)

ORDOVICIAN — Lower Ordovician
- Op — POWELL DOLOMITE
- Ocjc — COTTER AND JEFFERSON CITY DOLOMITES

ARKANSAS VALLEY AND OUACHITA MOUNTAINS REGIONS

QUATERNARY — Pleistocene, Holocene
- Qal — ALLUVIUM—*Alluvial deposits of present streams*
- Qt — TERRACE DEPOSITS—*Alluvial deposits on one or more terrace levels*

PENNSYLVANIAN — Des Moinesian
- Pby — BOGGY FORMATION
- Psv — SAVANNA FORMATION
- Pms — McALESTER FORMATION
- Phs — HARTSHORNE SANDSTONE

PENNSYLVANIAN — Atokan
- Pa — ATOKA FORMATION UNDIVIDED
- Pau — *Upper part*
- Pam — *Middle part*
- Pal — *Lower part*

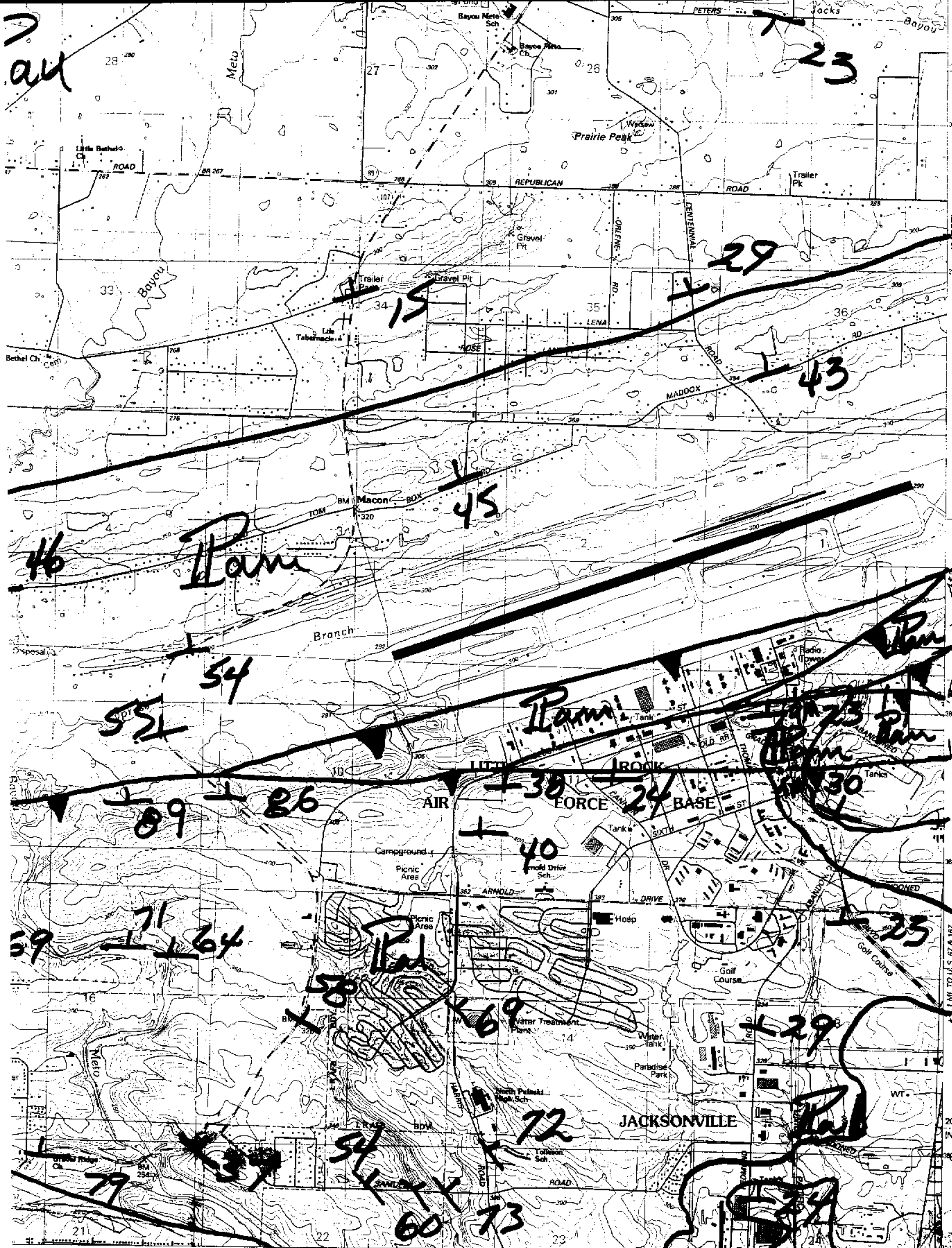
PENNSYLVANIAN — Morrowan
- Pjv — JOHNS VALLEY SHALE
- Pj — JACKFORK SANDSTONE
- Ms — STANLEY SHALE—*Includes Chickasaw Creek Chert equivalent of Harlton (1938) near top and Hatton Tuff Lentil and Hot Springs Sandstone Member near base*

DEVONIAN — MISSISSIPPIAN
- Mda — ARKANSAS NOVACULITE—*Includes upper division (Mississippian), middle division (Mississippian and Devonian), and lower division (Devonian)*

SILURIAN
- Smb — MISSOURI MOUNTAIN SHALE AND BLAYLOCK SANDSTONE—*The Blaylock Sandstone is present only in the Cross, Cossatot, and Trap Mountains. Missouri Mountain Shale is mapped with Polk Creek Shale and Bigfork Chert in the area between Paron, Saline County, and Little Rock*

ORDOVICIAN
- Opb — POLK CREEK SHALE (UPPER ORDOVICIAN) AND BIGFORK CHERT (MIDDLE ORDOVICIAN)

ORDOVICIAN — Lower Ordovician
- Ow — WOMBLE SHALE (MIDDLE AND LOWER ORDOVICIAN)
- Ob — BLAKELY SANDSTONE
- Om — MAZARN SHALE
- Ocm — CRYSTAL MOUNTAIN SANDSTONE
- Oc — COLLIER SHALE



INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1987

strike + dip

Haley + Stone
Geol Map
1995

SCALE 1:24 000

MILES

FEET

KILOMETERS

METERS

CONTOUR INTERVAL 10 FEET
GEODETIC VERTICAL DATUM OF 1929

S WITH NATIONAL MAP ACCURACY STANDARDS
RVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
ICAL COMMISSION, LITTLE ROCK, ARKANSAS 72204
GRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ARKANSAS

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Primary highway, hard surface	Light-duty road, hard or improved surface
Secondary highway, hard surface	Unimproved road

Interstate Route U. S. Route State Route

Arkansas Geological Commission
3815 West Roosevelt Road
Little Rock, AR 72204

OLMSTEAD, ARK.

34092-H2-TF-024

1987

DMA 7553 I NW-SERIES V884

STATE OF ARKANSAS

Arkansas Geological Commission
William V. Bush, State Geologist

INFORMATION CIRCULAR 36

STRATIGRAPHIC SUMMARY OF ARKANSAS

Compiled by

John David McFarland

Little Rock, Arkansas
1998

conformably on the Stanley. The formation is generally found to be between 3500 to 6000 feet thick.

Original reference: J. A. Taff, 1902, U. S. Geological Survey Geological Atlas, Folio 79

Type locality: Named for Jackfork Mountain, Pittsburg and Pushmataha Counties, Oklahoma.

JOHNS VALLEY SHALE/FORMATION

Age: Pennsylvanian Period, Morrowan Series

Distribution: west central Arkansas, Ouachita Mountains, southern Arkansas River Valley; southeastern Oklahoma.

Geology: The Johns Valley is generally gray black clay shale with numerous intervals of silty, thin to massive, brownish gray sandstone. Small amounts of gray-black siliceous shale and chert have also been noted. In the frontal Ouachita Mountains the unit contains large quantities of erratic rocks (limestones, dolostones, cherts, etc.) formed by submarine slumping of older stratigraphic units to the north. The Johns Valley is conformable with the underlying Jackfork. Due to the high degree of structural deformation the total thickness of the unit is difficult to estimate, but it likely exceeds 1500 feet.

Original reference: E. O. Ulrich, 1927, Oklahoma Geological Survey Bulletin 45, p. 6, 21-23, 30, 36-37.

Type locality: Named for Johns Valley, Pushmataha County, Oklahoma. Typically exposed in the center of the Tuskahoma syncline (N 1/2, T1S, R16E).

ATOKA FORMATION

Age: Pennsylvanian Period, Atokan Series

Distribution: in Arkansas the Boston Mountains, Arkansas River Valley, and Ouachita Mountains; eastern Oklahoma, eastern New Mexico, and central and western Texas.

Geology: The Atoka is a sequence of marine, mostly tan to gray silty sandstones and grayish-black shales. Some rare calcareous beds and siliceous shales are known. This unit has the largest areal extent of any of the Paleozoic formations in the state. It is the surface rock of the Boston Mountains and dominates the exposures in the Arkansas River Valley and the frontal Ouachita Mountains. It is also present in the southern part of the Ouachita Mountains. In the Arkansas River Valley and the frontal Ouachita Mountains the Atoka has been subdivided into upper, middle, and lower lithic members based on regionally mappable shale or sandstone intervals. The unit locally contains discontinuous streaks of coal and coaly shale in the Boston Mountains and Arkansas River Valley. Fossil plants are common throughout the section but are generally poorly preserved. Poorly preserved invertebrate fossils are much less common and are found at several

horizons. Trace fossils are relatively common in the Atoka. The Atoka is conformable with the Bloyd Shale in the Boston Mountains and the Johns Valley Shale in the Ouachita Mountains. The unit may reach up to 25,000 feet thick in the Ouachita Mountains although only large incomplete sections are known.

Original reference: J. A. Taff and G. I. Adams, 1900, U. S. Geol. Survey 21st Ann. Rept., pt. 2, p. 273.

Type locality: Named for Atoka, Atoka County, Oklahoma.

HARTSHORNE SANDSTONE/FORMATION

Age: Pennsylvanian Period, Desmoinesian Series

Distribution: west central Arkansas, Arkansas River Valley; eastern Oklahoma.

Geology: The Hartshorne is normally a brown to light gray, massive, frequently cross-bedded, medium-grained sandstone. It is the first continuous sandstone underlying the Lower Hartshorne coal. The formation is a prominent ledge-former under favorable structural conditions. A few fragmental plant fossils have been noted in the formation. The Hartshorne rests with minor unconformity on the Atoka Formation. The unit's thickness ranges from about 10 to 300 feet

Original reference: J. A. Taff, 1899, U. S. Geol. Survey 19th Ann. Rept., pt. 3, p. 436

Type locality: Named for exposures near Hartshorne, Pittsburg County, Oklahoma.

MCALESTER FORMATION

Age: Pennsylvanian Period, Desmoinesian Series

Distribution: western Arkansas River Valley, Arkansas coal fields; eastern Oklahoma.

Geology: The McAlester consists of (in ascending order): several hundred feet of shale with thin sandstone and coal (the Lower Hartshorne Coal is just above the base), several hundred feet of shale with a few sandstone beds and coal (Upper Hartshorne Coal), and capped by several hundred feet of shale with a few coal beds. Plant and a few invertebrate fossils have been reported from several horizons with in the formation. The McAlester rest conformably on the Hartshorne. The unit ranges from about 500 feet to 2300 feet thick.

Original reference: J. A. Taff, 1899, U. S. Geol. Survey 19th Ann. Rept., pt. 3, p. 437

Type locality: Named for exposures around McAlester, Pittsburg County, Oklahoma.

SAVANNA FORMATION

Age: Pennsylvanian Period, Desmoinesian Series

Distribution: western Arkansas River Valley; eastern and southern Oklahoma.

Geology: In Arkansas the Savanna consists mostly of dark gray shale and silty shale. It contains minor amounts of light gray siltstone and medium gray, very fine- to fine-grained sandstone. On rare occasions the sandstones may contain rounded,