

**Final**

**ENVIRONMENTAL ASSESSMENT  
REALIGNMENT OF  
JENKINS ARMED FORCES RESERVE CENTER (AFRC)  
KIRTLAND AIR FORCE BASE, NEW MEXICO  
BRAC 2005**



**U.S. Department of the Army  
Washington, D.C.**

**U.S. Department of Air Force,  
Air Force Materiel Command,  
Wright-Patterson AFB, Ohio**

**May 2007**



## **FINDING OF NO SIGNIFICANT IMPACT**

### **BRAC 2005 RELOCATION OF JENKINS ARMED FORCES RESERVE CENTER KIRTLAND AIR FORCE BASE, NEW MEXICO**

This Finding is based on an Environmental Assessment (EA) prepared by the U.S. Army Corps of Engineers, Mobile District ("Environmental Assessment, Realignment of Jenkins Armed Forces Reserve Center, Kirtland Air Force Base, New Mexico, BRAC 2005" dated May 2007). That EA analyzed the anticipated environmental impacts of the construction and operation of an Armed Forces Reserve Center (AFRC) on Kirtland AFB (KAFB). In accordance with the U.S. Air Force's (USAF) Environmental Impact Analysis Process (EIAP) rules, the Army EA was circulated for review at both KAFB and Air Force Materiel Command and it was determined that the EA satisfies USAF EIAP requirements for adoption.

#### **PURPOSE AND NEED FOR THE PROPOSED ACTION**

The 2005 amendments to the Defense Base Closure and Realignment (BRAC) Act of 1990 (BRAC 05) called for closure of the existing Jenkins AFRC compound in Albuquerque NM and relocation of the AFRC onto KAFB. Jenkins AFRC is currently located approximately one mile north of KAFB. Relocation is to be completed no later than September 2011. In addition to complying with BRAC, the new AFRC facilities will satisfy the following needs not being met at the existing site: compliance with current Anti-Terrorism and Force Protection standards, a facility layout that supports recent force structure and unit organizational changes, and adequate space for future expansion or consolidation.

---

BRAC closure and realignment decisions are exempt by law from the environmental impact analysis provisions of the National Environmental Policy Act (NEPA), but the process of relocating functions from one installation to another is not. Closure and disposal of the existing Jenkins AFRC is also subject to NEPA, but that is a future action not sufficiently defined for analysis at this time. Furthermore, none of the three other BRAC 05 relocations affecting KAFB could be analyzed in the same EA with Jenkins AFRC. Two of them are small enough to be covered by NEPA Categorical Exclusions and the third, another large organizational move involving major new construction on KAFB, was significantly behind the AFRC schedule with regard to defining project scope and identifying alternative sites. Accordingly, these other BRAC actions are only addressed under Cumulative Impacts.

#### **DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

The Jenkins AFRC currently provides training, administrative and maintenance services to 8 Army, 12 Navy, and 1 Marine Corps Reserve units. These include military vehicle and

**FONSI: BRAC 05 Relocation of Jenkins Armed Forces Reserve Center to Kirtland AFB, NM**

equipment storage and maintenance facilities. Most of the training occurs on weekends and in classrooms; field training exercises occur at various locations both on and off KAFB. Training requirements will not change as a result of the relocation. There are no flying missions or airspace requirements. The AFRC has a staff of less than 50 full-time personnel, although on weekends there would be up to 800 reservists using the facilities.

The new AFRC compound requires three buildings:

- An approximately 95,000 square foot (SF) Center containing administrative, classroom, library, and educational/training areas including a 7,300 SF multi-use classroom/barracks
- An approximately 17,000 SF vehicle maintenance shop containing work bays and maintenance/administrative support facilities
- An approximately 2,100 SF Organizational Unit Storage facility

Parking areas, sidewalks and landscaping will be provided for each building. An on-site storm water detention basin will be constructed to reduce the rate of storm water runoff from the total AFRC complex which will cover approximately 14 acres. Utilities (electrical, communications, water, sewer, and natural gas) are all available at or near the alternative construction sites. These utilities will be extended or upgraded as needed to supply the AFRC.

Four potential sites, Options 1 through 4, were initially identified as meeting the general site selection criteria of compatible land use, adequacy for the function, proximity to related activities, separation from incompatible activities, capacity of roads, efficient use of property, and development density. All four sites are southeast of KAFB's cantonment area and well away from off-base activities. Two of the sites were subsequently eliminated from further analysis: Option 2 because it contains potentially significant cultural resources and Option 4 primarily because its terrain and rock outcrops would require extensive grading.

The remaining two sites were analyzed in detail for environmental impacts resulting from the construction and operation of the relocated AFRC. Option 1 is an approximately 35 acre parcel northeast of the intersection of Pennsylvania Avenue and Wyoming Boulevard and is the Preferred Alternative. This site has been previously disturbed by construction of a former railroad spur and pipeline. Option 3 is approximately 38 acres and is also on Pennsylvania Avenue, about two miles southeast of Option 1, between the Tijeras Arroyo Golf Course and the base horse stables. The No Action alternative, although not actionable, was also analyzed.

## **ANTICIPATED ENVIRONMENTAL CONSEQUENCES**

KAFB is located in Bernalillo County, New Mexico, southeast of the City of Albuquerque. It encompasses over 51,000 acres, including a cantonment area in the northwest corner adjacent to Albuquerque and the Albuquerque International Sunport (airport), the Department of Energy's (DoE) Sandia National Laboratories and other facilities belonging to DoE, and a vast area of generally open space where training, research, test and

evaluation, storage, and recreational activities are located. Lands to the north and west of KAFB are primarily urban while to the south is the Isleta Indian Reservation and to the east Cibola National Forest. The natural environment varies from relatively flat desert grasslands in the west to mountain forests of pine and juniper in the east and the climate is very dry. The Army EA identified the following environmental consequences resulting from construction and operation of a new AFRC at either of the alternative sites. Unless stated otherwise, the impacts would be the same at each site.

Land Use: The preferred site (Option 1) has AF and DoE facilities to the north and east and a former skeet range to the south and is identified in the KAFB 2002 General Plan as an area for future development. The alternative site (Option 3) lies between two recreational facilities, the base golf course and horse stables. There would be no impact to land use at the preferred site and only a minor adverse impact at the alternative site.

Aesthetics and Visual Resources: Outside of the cantonment area, much of the land on KAFB remains undeveloped providing aesthetic resources to base personnel and their families. The Sandia Mountains to the east provide a particularly pleasant view. Visual impacts would be greater at Option 3 as the AFRC would contrast somewhat with the adjacent recreational facilities. However, since both sites are partially surrounded by existing development the proposed action would not significantly degrade the area's visual or aesthetic resources.

Air Quality: Local air quality is good, meeting all federal and local Ambient Air Quality Standards. Prior to 1992, however, the area was in non-attainment for carbon monoxide (CO). In 1996 the US Environmental Protection Agency (EPA) re-designated Bernalillo County to attainment for CO based on significant improvements in air quality. However, the county is still subject to an EPA-approved Limited Maintenance Plan. Under that plan all federal actions are considered to have met the general conformity provisions of the Clean Air Act. Therefore, a conformity determination is not needed. Because of the proximity of the existing and proposed sites (less than six miles), local air quality would not be adversely impacted except for minor increases in particulate matter and combustion emissions from gas and diesel-powered equipment and vehicles during the construction period.

Noise: The primary sources of noise at KAFB are military and civilian aircraft at Albuquerque International Sunport and vehicle traffic on and around KAFB. Minor short term increases in noise would result from construction activities and in the long term from the increased weekend traffic associated with the AFRC. Neither would be significant.

Soils: Soils at both sites generally have good permeability and low to moderate risk of erosion, with the greater erosion risk being at the Option 3 site. However, since the project requires a Construction General Permit and associated Storm Water Pollution Prevention Plan prior to beginning construction, erosion losses and sedimentation of surface waters will be minimal.

Water Resources: Neither site contains any surface water resources or floodplains. The Tijeras Arroyo (0.5 miles south-south east of Option 1) and its tributary Arroyo del Coyote (0.25 miles west of Option 3) are the primary surface water drainages on KAFB. Both are ephemeral streams which contain water only during and shortly after precipitation events. Compared to the preferred site, construction at the alternative site would have greater

potential to degrade the arroyo channels since Arroyo del Coyote parallels Wyoming Blvd where trenching would be performed to extend/upgrade utilities and because a necessary water main upgrade would cross the Tijeras Arroyo. Nevertheless, the controls required by the Construction General Permit, plus the additional controls required by the Clean Water Act Section 404 permit required to construct across the arroyo, would reduce the potential for soil erosion and sedimentation of the arroyo channels to minimal levels during construction. Although impacts would be greater at the alternative site, they would still be insignificant. After construction there will be an on-site storm water detention pond to control the rate of storm water runoff and reduce suspended solids. In addition, local groundwater is relatively deep. Both Albuquerque and KAFB draw their water supplies from the same regional aquifer. Therefore, there will be no increased demand on the regional drinking water source. A former soil-vapor monitoring well at Option 1 has been closed and sealed so that it cannot become a conduit for transporting any surface contamination into the groundwater. Consequently, the Proposed Action will have minimal adverse impacts to any water resources.

***Biological Resources:*** Both sites are desert grassland with scattered shrubs, cacti and thistles providing 75-85 percent ground coverage. They have reduced quality as wildlife habitat because of current and former development on or adjacent to the sites. Wildlife observed on or near these sites includes a few reptile species, several species of birds and a few mammals. The US Fish & Wildlife Service and New Mexico Department of Game and Fish have concurred that the proposed action would have no effect on state or federally-listed threatened or endangered species. Gunnison's prairie dog, a species proposed for listing under the Endangered Species Act, and burrowing owls, a species protected by the Migratory Bird Treaty Act, are of concern because of their presence across the base. Although not observed on either site, the construction site will be surveyed for these two species and any other nesting birds prior to the start of construction. If present, prairie dogs and burrowing owls will be relocated in accordance with existing KAFB state-approved procedures. Nests will be protected as long as eggs or fledglings are present. Consequently, there will be minimal impact to biological resources.

***Cultural Resources:*** A cultural resource survey conducted in 2002 did not identify any archaeological or historic artifacts on either site. Informal consultation with the State Historic Preservation Office on the preferred site for the AFRC confirmed that no "historic properties" would be affected.

***Transportation:*** Access to KAFB from surrounding communities occurs via two interstate highways (north-south and east-west), each located within 4 miles of the base. The 23,000 employees of KAFB enter through seven gates on the north side of the cantonment area. A 1999 study identified certain gates and major intersections within the cantonment that were unacceptably congested during rush hours, and KAFB has subsequently undertaken multiple improvement projects to alleviate the congestion. Construction crews and, after construction, the 50-person AFRC workforce will add to on-base traffic congestion, but not significantly. Since reservists will only utilize the AFRC on weekends when the traffic volume is much lower, their presence will not adversely affect traffic.

***Utilities:*** Utilities on KAFB have adequate capacity to absorb the additional demands from the AFRC. Construction at the preferred site would require a 0.6-mile water main extension, a 300-foot sewer main extension, an additional substation transformer and

upgraded communications lines. Ground disturbance for these utility extensions and upgrades would follow previously disturbed corridors (primarily Wyoming Blvd) and would not have significant environmental effects. Providing utilities to the alternative site would involve more ground disturbance because that site is further from KAFB's cantonment, however, ground disturbance would still follow previously disturbed corridors and the impacts would not be significant.

*Hazardous and Toxic Substances:* Reservist activities at AFRC would generate small quantities of hazardous waste, bio-medical waste, and petroleum, oil, and lubricant (POL) wastes. In addition, on-site storage of POL products would be needed during construction and afterwards for operation of AFRC's vehicle maintenance facility. However, regulatory requirements for storage of these substances would minimize environmental risks to insignificant.

*Socioeconomics:* The need to construct a new AFRC compound would provide a short-term boost to the local construction industry, but there would be no effect on AFRC employment and no significant regional socioeconomic impacts.

*Environmental Justice:* The proposed action would have no disproportionately high or adverse impacts to children, minorities or low-income populations.

*Cumulative Impacts:* In the near future there will likely be more than the usual amount of demolition and construction on KAFB because of BRAC 05-mandated organizational moves, an on-going program to replace aging military family housing, and the development of Kirtland Technology Park. The other BRAC 05 actions at KAFB are the addition of three aircraft to the 150th Fighter Wing, relocation (departure) of a small correctional function (loss of 22 jobs), and bed-down of a large USAF Research Lab Directorate moving from an East Coast location. Other anticipated actions on KAFB include aircraft upgrades for existing KAFB tenant organizations along with associated facility reconstruction plus construction of new bulk fuel storage facilities. Off base to the west of KAFB, a huge (25 square mile) planned community development is under construction and the City of Albuquerque has plans for several airport construction and renovation projects. Cumulative impacts from these various actions include increased development density on KAFB (new construction would primarily occur in previously developed areas), a continuing loss of open space and growth of urban areas (primarily off base), creation of new air pollution sources which may or may not be offset by pollution reduction at existing sources, a probable increase in storm water runoff and with it a potential increase in surface water pollution, increased demand on area water resources possibly requiring water conservation efforts, increased traffic congestion which could be offset by transportation improvement projects, and loss of wildlife habitat (primarily off base). These impacts are typical of urban growth and would not be locally or regionally significant.

*No Action Alternative:* Under the No Action Alternative, Jenkins AFRC would remain at its current location for the foreseeable future. Consequently, none of the adverse impacts discussed above would occur, at least not in the near future. In the longer term, however, other development is likely to occur and could have similar impacts.

**PERMITS:**

The following permits are required prior to commencement of construction:

- National Pollutant Discharge Elimination System Construction General Permit (coverage under New Mexico Environment Dept's General Permit #NMR150000)
- Fugitive Dust Control Permit from Albuquerque Environmental Health Dept

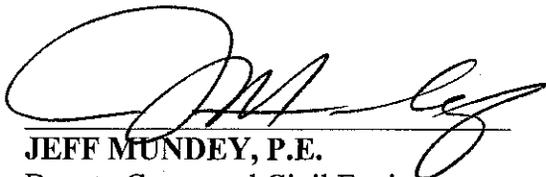
Construction at the alternative site (Option 3) would also require an Army Corps of Engineers Section 404 permit for utility construction across the Tijeras Arroyo.

**PUBLIC REVIEW**

The Army's draft EA and Finding of No Significant Impact were released for a 30-day public review period on 18 March 2007. A notice was published in *The [Albuquerque] Sunday Journal* advising the public where to review the EA, where and when to submit comments and how to obtain further information. The comment period closed on 17 April 2007. A total of six comments were received from two individuals. Both were contacted by the USAF to discuss their comments. Four of the comments identified factual errors in the EA (aircraft type, possible future use of the current AFRC, BRAC closures, and additional area development) resulting in corrections to the document. The remaining two comments raised questions (location of the preferred AFRC site relative to a possible interstate bypass and the appropriate air quality regulatory authority) which did not result in changes.

**FINDING OF NO SIGNIFICANT IMPACT**

After careful review of the Army EA and the above summary, we have concluded that undertaking the Proposed Action at either site would not significantly impact the quality of the human or natural environment. Therefore, adoption of the Army's Jenkins AFRC EA and issuance of this USAF Finding of No Significant Impact is warranted, and an Environmental Impact Statement is not required. This analysis fulfills the requirements of the National Environmental Policy Act, the implementing regulations promulgated by the Council on Environmental Quality, and the USAF Environmental Impact Analysis Process rules.



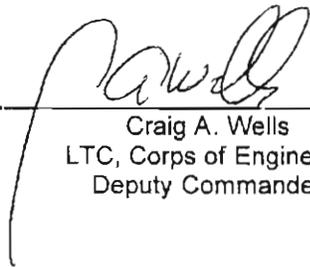
**JEFF MUNDEY, P.E.**  
Deputy Command Civil Engineer  
Directorate of Installations and Mission Support  
Headquarters Air Force Materiel Command

1 Jun 2007  
Date

**FINAL  
ENVIRONMENTAL ASSESSMENT  
REALIGNMENT OF  
JENKINS ARMED FORCES RESERVE CENTER (AFRC)  
KIRTLAND AIR FORCE BASE, NEW MEXICO  
BRAC 2005**

*Prepared by:*

U.S. ARMY CORPS OF ENGINEERS  
MOBILE DISTRICT



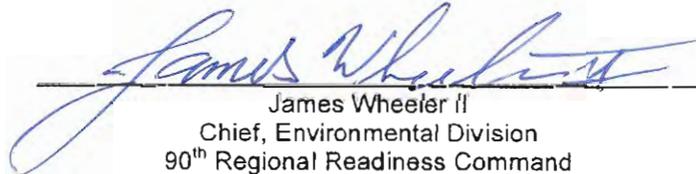
---

Craig A. Wells  
LTC, Corps of Engineers  
Deputy Commander

*Prepared for:*

U.S. DEPARTMENT OF AIR FORCE,  
AIR FORCE MATERIEL COMMAND,  
WRIGHT-PATTERSON AFB, OHIO  
and  
U.S. ARMY RESERVE  
90<sup>th</sup> REGIONAL READINESS COMMAND

*Reviewed by:*



---

James Wheeler II  
Chief, Environmental Division  
90<sup>th</sup> Regional Readiness Command



---



---

## TABLE OF CONTENTS

---



---

<b>1.0</b>	<b>PURPOSE, NEED, AND SCOPE .....</b>	<b>1-1</b>
1.1	INTRODUCTION.....	1-1
1.2	PURPOSE AND NEED .....	1-1
	1.2.1 Purpose for the Action .....	1-1
	1.2.2 Need for the Action.....	1-1
1.3	SCOPE.....	1-2
1.4	PUBLIC INVOLVEMENT .....	1-2
1.5	REGULATORY FRAMEWORK.....	1-2
<b>2.0</b>	<b>PROPOSED ACTION .....</b>	<b>2-1</b>
2.1	PROPOSED FACILITIES.....	2-1
2.2	FORCE STRUCTURE .....	2-2
2.3	TRAINING ACTIVITIES AND AIRSPACE.....	2-2
2.4	WEAPON SYSTEMS .....	2-2
2.5	SCHEDULE.....	2-2
<b>3.0</b>	<b>ALTERNATIVES.....</b>	<b>3-1</b>
3.1	INTRODUCTION.....	3-1
3.2	SITING ALTERNATIVES .....	3-1
3.3	ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION .....	3-5
	3.3.1 Leasing Off-Base Space .....	3-5
	3.3.2 Other New Construction Sites .....	3-5
	3.3.3 Schedule .....	3-5
3.4	NO ACTION ALTERNATIVE.....	3-5
<b>4.0</b>	<b>AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....</b>	<b>4-1</b>
4.1	INTRODUCTION.....	4-1
4.2	LAND USE .....	4-2
	4.2.1 Affected Environment .....	4-2
	4.2.1.1 Regional Setting .....	4-2
	4.2.1.2 Installation Land Use .....	4-2
	4.2.1.3 Current and Planned Development .....	4-2
	4.2.1.4 Preferred Alternative (Option Site 1).....	4-3
	4.2.1.5 Alternative 2 (Option Site 3).....	4-4
	4.2.2 Environmental Consequences.....	4-4
	4.2.2.1 Preferred Alternative (Option Site 1).....	4-4
	4.2.2.2 Alternative 2 (Option Site 3).....	4-4
	4.2.2.3 No Action Alternative .....	4-4
4.3	AESTHETICS AND VISUAL RESOURCES.....	4-5
	4.3.1 Affected Environment .....	4-5
	4.3.1.1 Preferred Alternative (Option Site 1).....	4-5
	4.3.1.2 Alternative 2 (Option Site 3).....	4-5
	4.3.2 Environmental Consequences.....	4-5
	4.3.2.1 Preferred Alternative (Option Site 1).....	4-5
	4.3.2.2 Alternative 2 (Option Site 3).....	4-6
	4.3.2.3 No Action Alternative .....	4-6
4.4	AIR QUALITY.....	4-6
	4.4.1 Ambient Air Quality Conditions.....	4-6
	4.4.1.1 Installation Air Pollutant Emissions.....	4-7
	4.4.2 Environmental Consequences.....	4-7

	4.4.2.1 Preferred Alternative (Option Site 1).....	4-7
	4.4.2.2 Alternative 2 (Option Site 3).....	4-8
	4.4.2.3 No Action Alternative .....	4-8
4.5	NOISE .....	4-8
	4.5.1 Affected Environment .....	4-8
	4.5.1.1 Preferred Alternative (Option Site 1).....	4-10
	4.5.1.2 Alternative 2 (Option Site 3).....	4-10
	4.5.2 Environmental Consequences.....	4-10
	4.5.2.1 Preferred Alternative (Option Site 1).....	4-10
	4.5.2.2 Alternative 2 (Option Site 3).....	4-12
	4.5.2.3 No Action Alternative .....	4-12
4.6	SOILS.....	4-12
	4.6.1 Affected Environment .....	4-12
	4.6.1.1 Preferred Alternative (Option Site 1).....	4-12
	4.6.1.2 Alternative 2 (Option Site 3).....	4-14
	4.6.1.3 Prime Farmland .....	4-14
	4.6.2 Environmental Consequences.....	4-14
	4.6.2.1 Preferred Alternative (Option Site 1).....	4-14
	4.6.2.2 Alternative 2 (Option Site 3).....	4-14
	4.6.2.3 No Action Alternative .....	4-15
4.7	WATER RESOURCES .....	4-15
	4.7.1 Affected Environment .....	4-15
	4.7.1.1 Surface Water.....	4-15
	4.7.1.2 Hydrogeology/Groundwater.....	4-15
	4.7.1.3 Floodplains .....	4-17
	4.7.1.4 Wetlands.....	4-17
	4.7.2 Environmental Consequences.....	4-17
	4.7.2.1 Preferred Alternative (Option Site 1).....	4-17
	4.7.2.2 Alternative 2 (Option Site 3).....	4-19
	4.7.2.3 No Action Alternative .....	4-19
4.8	BIOLOGICAL RESOURCES.....	4-19
	4.8.1 Affected Environment .....	4-19
	4.8.1.1 Vegetation.....	4-19
	4.8.1.1.1 Preferred Alternative (Option Site 1).....	4-21
	4.8.1.1.2 Alternative 2 (Option Site 3).....	4-21
	4.8.1.2 Wildlife .....	4-21
	4.8.1.3 Sensitive Species .....	4-22
	4.8.2 Environmental Consequences.....	4-24
	4.8.2.1 Preferred Alternative (Option Site 1).....	4-24
	4.8.2.2 Alternative 2 (Option Site 3).....	4-24
	4.8.2.3 No Action Alternative .....	4-25
4.9	CULTURAL RESOURCES .....	4-25
	4.9.1 Affected Environment .....	4-25
	4.9.2 Environmental Consequences.....	4-26
	4.9.2.1 Preferred Alternative (Option Site 1).....	4-26
	4.9.2.2 Alternative 2 (Option Site 3).....	4-26
	4.9.2.3 No Action Alternative .....	4-26
4.10	TRANSPORTATION .....	4-27
	4.10.1 Affected Environment .....	4-27
	4.10.2 Environmental Consequences.....	4-28
	4.10.2.1 Preferred Alternative (Option Site 1).....	4-28

	4.10.2.2	Alternative 2 (Option Site 3).....	4-31
	4.10.2.3	No Action Alternative .....	4-31
4.11		UTILITIES .....	4-31
	4.11.1	Affected Environment .....	4-31
	4.11.1.1	Potable Water Supply .....	4-31
	4.11.1.2	Wastewater System.....	4-32
	4.11.1.3	Storm Water System.....	4-32
	4.11.1.4	Solid Waste Disposal.....	4-32
	4.11.1.5	Electrical Power .....	4-32
	4.11.1.6	Communications .....	4-33
	4.11.2	Environmental Consequences.....	4-33
	4.11.2.1	Preferred Alternative (Option Site 1).....	4-33
	4.11.2.2	Alternative 2 (Option Site 3).....	4-34
	4.11.2.3	No Action Alternative .....	4-34
4.12		HAZARDOUS AND TOXIC SUBSTANCES.....	4-34
	4.12.1	Affected Environment .....	4-34
	4.12.1.1	Uses of Hazardous Materials.....	4-34
	4.12.1.2	Storage and Handling Areas and Disposal.....	4-35
	4.12.1.3	Site Contamination and Cleanup .....	4-35
	4.12.1.4	Special Hazards.....	4-36
	4.12.2	Environmental Consequences.....	4-36
	4.12.2.1	Preferred Alternative (Option Site 1).....	4-36
	4.12.2.2	Alternative 2 (Option Site 3).....	4-37
	4.12.2.3	No Action Alternative .....	4-37
4.13		SOCIOECONOMICS .....	4-37
	4.13.1	Affected Environment .....	4-37
	4.13.2	Environmental Consequences.....	4-38
	4.13.2.1	Preferred Alternative (Option Site 1).....	4-38
	4.13.2.2	Alternative 2 (Option Site 3).....	4-38
	4.13.2.3	No Action Alternative .....	4-38
4.14		ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN.....	4-38
	4.14.1	Affected Environment .....	4-38
	4.14.1.1	Environmental Justice.....	4-38
	4.14.1.2	Protection of Children .....	4-39
	4.14.2	Environmental Consequences.....	4-39
	4.14.2.1	Preferred Alternative (Option Site 1).....	4-39
	4.14.2.2	Alternative 2 (Option Site 3).....	4-39
	4.14.2.3	No Action Alternative .....	4-39
4.15		CUMULATIVE EFFECTS AND IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES .....	4-40
	4.15.1	Cumulative Effects .....	4-40
	4.15.1.1	Land Use .....	4-43
	4.15.1.2	Visual Resources .....	4-43
	4.15.1.3	Air Quality .....	4-44
	4.15.1.4	Noise .....	4-44
	4.15.1.5	Soils.....	4-45
	4.15.1.6	Water Resources.....	4-45
	4.15.1.7	Biological Resources.....	4-45
	4.15.1.8	Cultural Resources .....	4-46
	4.15.1.9	Socioeconomics .....	4-46
	4.15.1.10	Transportation .....	4-47

	4.15.1.11 Utilities .....	4-47
	4.15.1.12 Hazardous Material or Toxic Substances .....	4-47
	4.15.2 Irretrievable and Irreversible Commitment of Resources .....	4-48
4.16	<b>ENVIRONMENTAL PROTECTION MEASURES.....</b>	<b>4-48</b>
	4.16.1 Soil, Vegetation, and Wildlife.....	4-48
	4.16.2 Air Quality.....	4-49
	4.16.3 Water Resources.....	4-49
	4.16.4 Cultural Resources.....	4-49
	4.16.5 Hazardous and Toxic Substances.....	4-49
<b>5.0</b>	<b>PERSONS CONSULTED AND TECHNICAL REVIEWERS .....</b>	<b>5-1</b>
<b>6.0</b>	<b>LIST OF PREPARERS .....</b>	<b>6-1</b>
<b>7.0</b>	<b>REFERENCES.....</b>	<b>7-1</b>
<b>8.0</b>	<b>ACRONYMS AND ABBREVIATIONS.....</b>	<b>8-1</b>

**LIST OF TABLES**

Table 2-1. Proposed Construction Projects .....2-1  
Table 2-2. Tentative Dates for Completion of Major Items Associated with Realignment at Kirtland AFB .....2-3  
Table 4-1. Summary of Calendar Year 2004 Air Emissions from Non-exempt Sources at Kirtland Air Force Base and Within Bernalillo County .....4-7  
Table 4-2. A-Weighted (dBA) Sound Levels of Typical Noise Environments .....4-9  
Table 4-3. Federally and State Listed Species for Bernalillo County, New Mexico Potentially Occurring on Kirtland AFB.....4-23  
Table 4-4. Kirtland AFB Traffic Analysis Data.....4-28

**LIST OF FIGURES**

Figure 1-1. Kirtland AFB Vicinity Map .....1-3  
Figure 3-1. Preferred and Alternative Site Locations .....3-2  
Figure 3-2. Preferred Alternative Site .....3-3  
Figure 3-3. Option Site 3.....3-4  
Figure 4-1. Noise Contours near Preferred Alternative.....4-11  
Figure 4-2. Soils within the Preferred and Alternative Site Locations .....4-13  
Figure 4-3. Surface Water and 100 Year Floodplain near the Preferred and Alternative Site Locations .....4-16  
Figure 4-4. General Vegetation at the Preferred and Alternative Site Locations .....4-20  
Figure 4-5. Transportation Routes to/from Preferred and Alternative Site Locations .....4-29  
Figure 4-6. Major Intersections Near the Option Sites 1 and 3 .....4-30

**LIST OF PHOTOGRAPHS**

Photograph 1. Option Site 1 looking east/northeast .....4-3  
Photograph 2. Option Site 3 looking east/northeast .....4-4

**LIST OF APPENDICES**

Appendix A. EIFS  
Appendix B. Lists of Common Biological Resources on Kirtland AFB  
Appendix C. Correspondence

**THIS PAGE LEFT INTENTIONALLY BLANK**

**SECTION 1.0**  
***PURPOSE, NEED, AND SCOPE***





**ENVIRONMENTAL ASSESSMENT,  
REALIGNMENT OF  
JENKINS ARMED FORCES RESERVE CENTER (AFRC)  
KIRTLAND AIR FORCE BASE, NEW MEXICO  
BRAC 2005**

---

---

**1.0 PURPOSE, NEED, AND SCOPE**

---

---

**1.1 INTRODUCTION**

On 8 September 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended that certain realignment actions occur at Kirtland Air Force Base (AFB), New Mexico. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. On 9 November 2005, the recommendations became law and the BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

The BRAC Commission recommended the closure of the Jenkins Armed Forces Reserve Center (AFRC) in Albuquerque, New Mexico and construction of a new AFRC on Kirtland AFB. The new construction would consist of an 800-member training facility with administrative, educational, assembly, library learning center, vault, weapons simulator, and physical fitness areas for 8 Army, 12 Navy and 1 Marine Reserve units. Other Air Force BRAC actions are also recommended at Kirtland AFB, but these actions will be assessed in separate National Environmental Policy Act (NEPA) documents.

**1.2 PURPOSE AND NEED**

**1.2.1 Purpose for the Action**

The purpose of the proposed action is to implement the BRAC Commission's recommendation pertaining to the relocation of the Jenkins AFRC to lands managed and controlled by Kirtland AFB.

**1.2.2 Need for the Action**

The need for the proposed action is to achieve the objectives for which Congress established the BRAC process and to comply with the Secretary of the Army and the Chief of Staff's plan for Army transformation into a modular force. In addition, the current Jenkins AFRC does not

comply with the Anti-Terrorism and Force Protection (AT/FP) standards and does not provide opportunities for future expansion or consolidation. Furthermore, the current facility does not satisfy current force structure or unit design requirements.

### **1.3 SCOPE**

This Environmental Assessment (EA) identifies and evaluates potential environmental effects of the relocation of the AFRC to Kirtland AFB, New Mexico (Figure 1-1). It analyzes in detail two siting alternatives (Option Sites 1 and 3) for the new AFRC, and the No Action Alternative. The Jenkins AFRC is located on Wyoming Boulevard, approximately 1 mile north of Kirtland AFB. It currently occupies approximately 9 acres, which are completely developed. The future use of the existing Jenkins AFRC is currently unknown. However, closure and re-use of the current Jenkins AFRC is not within the scope of this EA.

The Defense Base Closure and Realignment Act of 1990 specified that the NEPA does not apply to actions of the President, the Commission, or the Department of Defense, except for select issues regarding closing and disposal of installations and property. The law further specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the Secretaries of the military departments concerned do not have to consider the need for closing or realigning a military installation. Accordingly, this EA does not address the need for closing the current Jenkins AFRC.

### **1.4 PUBLIC INVOLVEMENT**

The public will be afforded the opportunity to review and comment on the Draft EA. No other public involvement, including interagency coordination, is required for the proposed action. Throughout the NEPA process, the public may obtain information on the status and progress of the proposed action and the EA through the Kirtland AFB NEPA Program Manager by calling (505) 846-4377.

### **1.5 REGULATORY FRAMEWORK**

A decision on how to proceed with the proposed action rests on numerous factors such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, Kirtland AFB is guided by relevant statutes (and their

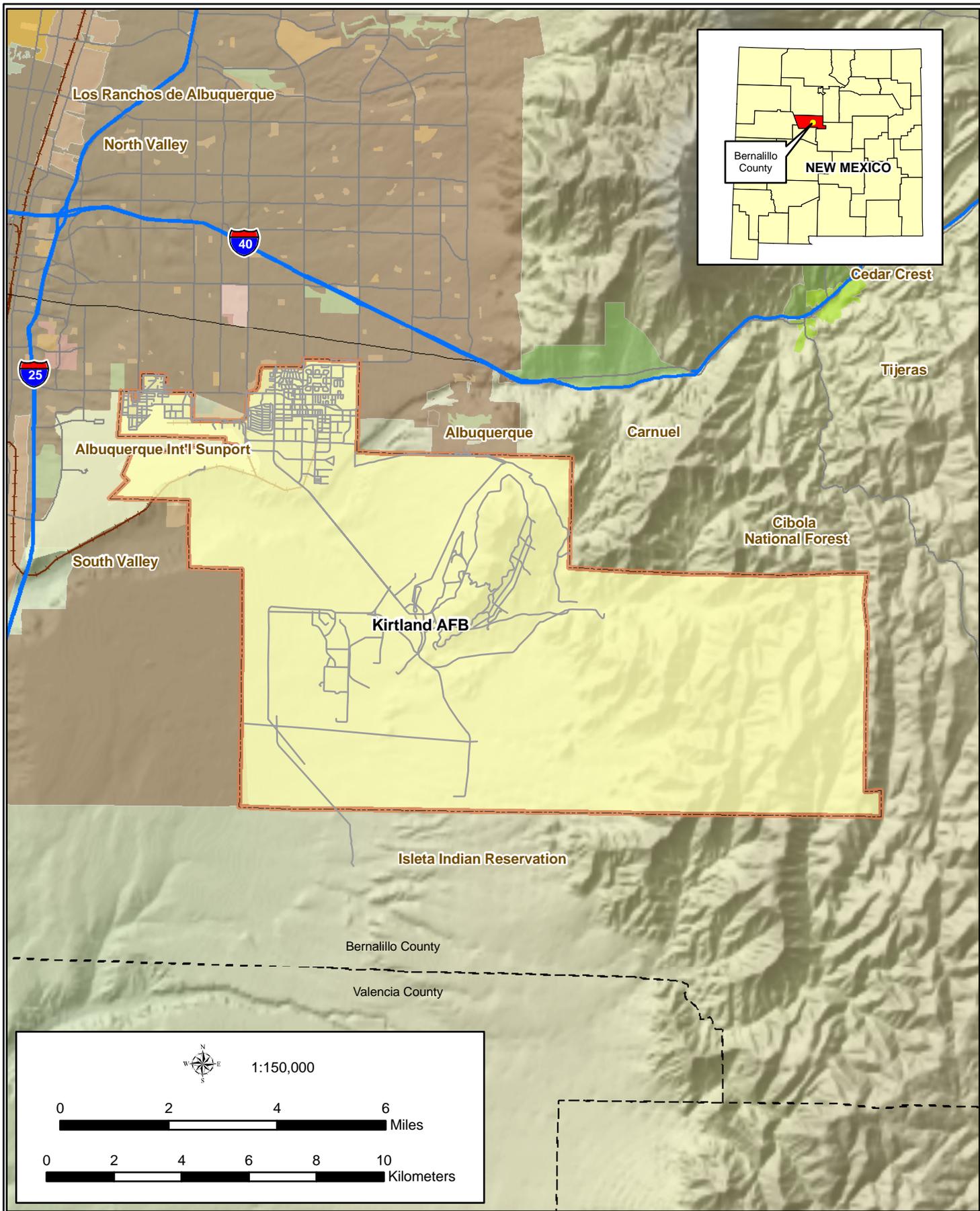


Figure 1-1: Kirtland AFB Vicinity Map



January 2007

implementing regulations) and Executive Orders (EO) that establish standards and provide guidance on environmental and natural resources management and planning. These include:

- Clean Air Act
- Clean Water Act
- Noise Control Act
- Endangered Species Act
- Migratory Bird Treaty Act
- National Historic Preservation Act
- Archaeological Resources Protection Act
- Resource Conservation and Recovery Act
- Toxic Substances Control Act
- EO 11988 (*Floodplain Management*)
- EO 11990 (*Protection of Wetlands*)
- EO 12088 (*Federal Compliance with Pollution Control Standards*)
- EO 12608 (*Elimination of Unnecessary Executive Orders and Technical Amendments*)
- EO 12580 (*Superfund Implementation*)
- EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*)
- EO 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*)
- EO 13101 (*Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*)
- EO 13123 (*Greening the Government Through Efficient Energy Management*)
- EO 13148 (*Greening the Government Through Leadership in Environmental Management*)
- EO 13175 (*Consultation and Coordination with Indian Tribal Governments*)
- EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*)

The proposed action would require permits from various regulatory agencies. Since the site is greater than 1 acre, a National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge permit would be required prior to construction. This permit would require that a SWPPP be prepared and a Notice of Intent (NOI) be filed with the Environmental Protection Agency (EPA). A NPDES multi-sector permit would also be required for discharges from the vehicle maintenance shops operated by the AFRC. These permits would be coordinated through the Kirtland AFB Environmental Management Branch, Compliance Section. Furthermore, compliance with the Occupational Safety and Health Administration (OSHA) guidelines (29 CFR 1910 for General Industry and 29 CFR 1926 for Construction) would be required during the construction and operation of the new facility.

The Migratory Bird Treaty Act (MBTA) protects against the ‘taking’ of migratory birds, their nests, and their eggs, except as permitted by the U.S. Fish and Wildlife Service (USFWS).

Active nests would need to be identified and avoided to the extent practicable. Another protection measure that would be considered is to schedule all construction activities outside the nesting season, which is typically April through August for this area.

The Albuquerque/Bernalillo County Air Quality Control Board has the federally delegated authority for air quality management in the country. The Board will require that a Fugitive Dust Control permit be filed at least 10 business days prior to the start of construction, since the site is greater than 0.75 acre. Any air emission sources will need to be evaluated under 20.11.40 New Mexico Administrative Code (NMAC), Source Registrations, and 20.11.41 NMAC, Authority-to-Construct, for registrations and permit requirements.

**THIS PAGE LEFT INTENTIONALLY BLANK**

***SECTION 2.0***  
***PROPOSED ACTION***

---

---



---

---

## 2.0 PROPOSED ACTION

---

---

### 2.1 PROPOSED FACILITIES

The new facility would provide administrative, training, educational, weapons simulator, assembly and library services for an 800-member AFRC unit. In addition, physical fitness areas would also be incorporated into the facility. A vehicle maintenance shop, with work bays and maintenance administrative support, would be constructed as well. The facility would provide for unit storage and parking for all military and privately owned vehicles (POVs).

The new 800-member AFRC would include administrative, assembly, educational, storage, and special training and support areas to accommodate up to 8 Army Reserve, 12 Navy Reserve and 1 Marine Reserve units. Buildings would be of permanent construction and provide all appurtenant infrastructure (e.g., plumbing; electrical systems; heating, ventilation and air conditioning [HVAC] systems, and AT/FP systems). The AFRC building would provide approximately 95,000 square feet (SF) of administrative, education, library, and educational/training areas. A vehicle maintenance shop (approximately 17,000 SF) would be constructed containing work bays and maintenance administrative support facilities to allow the AFRC to store and maintain their respective military vehicles and equipment. An Organization Unit Storage facility would be designed and constructed to provide approximately 2,100 SF of storage space. Associated parking areas, sidewalks and landscaping would be included in the design footprint for each building. To comply with Kirtland AFB's post-construction storm water controls, an on-site detention basin would also be constructed as part of the proposed action. The total area expected to be disturbed for the AFRC and all associated facilities is approximately 14 acres. Table 2-1 provides a summary of the proposed facility projects.

**Table 2-1. Proposed Construction Projects**

<b>Project No.</b>	<b>Facility</b>	<b>Square Feet (approximate)</b>
64636	Armed Forces Reserve Center	95,000
64636	Vehicle Maintenance Shop	17,000
64636	Organizational Unit Storage	2,100
	<b>Total</b>	<b>114,100</b>

Utilities (electrical, communications, water, sewer and natural gas) are all available at or near the proposed site. Transmission lines would need to be constructed for the utilities, the longest of which would be for potable water (see Section 4.12). Construction and operation of the AFRC would increase the demand of such resources on Kirtland AFB's existing systems; however, the local and regional demand would be expected to remain at the current levels.

## **2.2 FORCE STRUCTURE**

Since units would be located within the same city, there would be no change in force structure and no additional family housing would be required as a result of this action. Furthermore, no demolition would be required as a result of the proposed action.

## **2.3 TRAINING ACTIVITIES AND AIRSPACE**

There would be no change to range size or operations or airspace demands as a result of the proposed action. The new AFRC would provide weapons simulators and classroom facilities.

The Army Reserve units include vehicle maintenance, signal, medical, engineering, transportation and fuel and water distribution operations. The Marine Reserve unit of the AFRC conducts reconnaissance training primarily on lands withdrawn from the Cibola National Forest and other Federal lands. The Navy Reserve units are involved with training in command/control/communications/intelligence/reconnaissance systems that are conducted primarily in classrooms.

## **2.4 WEAPON SYSTEMS**

There would be no change to the type, number and frequency of weapon systems used at Kirtland AFB as a result of the proposed action.

## **2.5 SCHEDULE**

Under the BRAC law, the Army must initiate all realignments not later than 15 September 2007, and complete all realignments not later than 15 September 2011. Implementation of the proposed action would occur over a span of approximately 3 years. Table 2-2, below is a

tentative schedule for the design and construction activities and the proposed realignment actions.

**Table 2-2. Tentative Dates for Completion of Major Items Associated with Realignment at Kirtland AFB**

<b>Action</b>	<b>Tentative Start Date</b>	<b>Tentative Completion Date</b>
Design of New Facility	June 2006	October 2006
Construction of New Facility	March 2007	March 2009
Realignment of AFRC to Kirtland AFB		30 September 2009

**THIS PAGE LEFT INTENTIONALLY BLANK**

***SECTION 3.0***  
***ALTERNATIVES***

---

---



---

---

## **3.0 ALTERNATIVES**

---

---

### **3.1 INTRODUCTION**

Alternatives to the proposed action have been examined according to three variables: means to physically accommodate realigned units, siting of new construction, and schedule. As indicated previously, the current facility does not allow for any future expansion or consolidation; therefore, new construction is required. Several different sites have been considered and will be described below. The No Action Alternative is also described below.

### **3.2 SITING ALTERNATIVES**

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

Four potential sites were evaluated on Kirtland AFB for the proposed AFRC (Figure 3-1). The preferred site (Option Site 1) is located at the northeast corner of Pennsylvania Avenue and Wyoming Boulevard (Figure 3-2). Option Site 3 is open desert grassland located on Pennsylvania Avenue south of the base's golf course (Figure 3-3). Option Site 3 is still considered a viable site and will be carried forward for analysis. The other two have been eliminated from further consideration (see Section 3.3.2 below).

Both the proposed site (Option Site 1) and Option Site 3 would provide land for potential future expansion and meet all the remaining selection criteria. The exact footprint of the facility has not been developed as yet; however, it is expected that no more than 14 acres would be required for construction of the AFRC, regardless of the site selected. This project has been coordinated with the installation's physical security plan and all required AT/FP measures would be included.

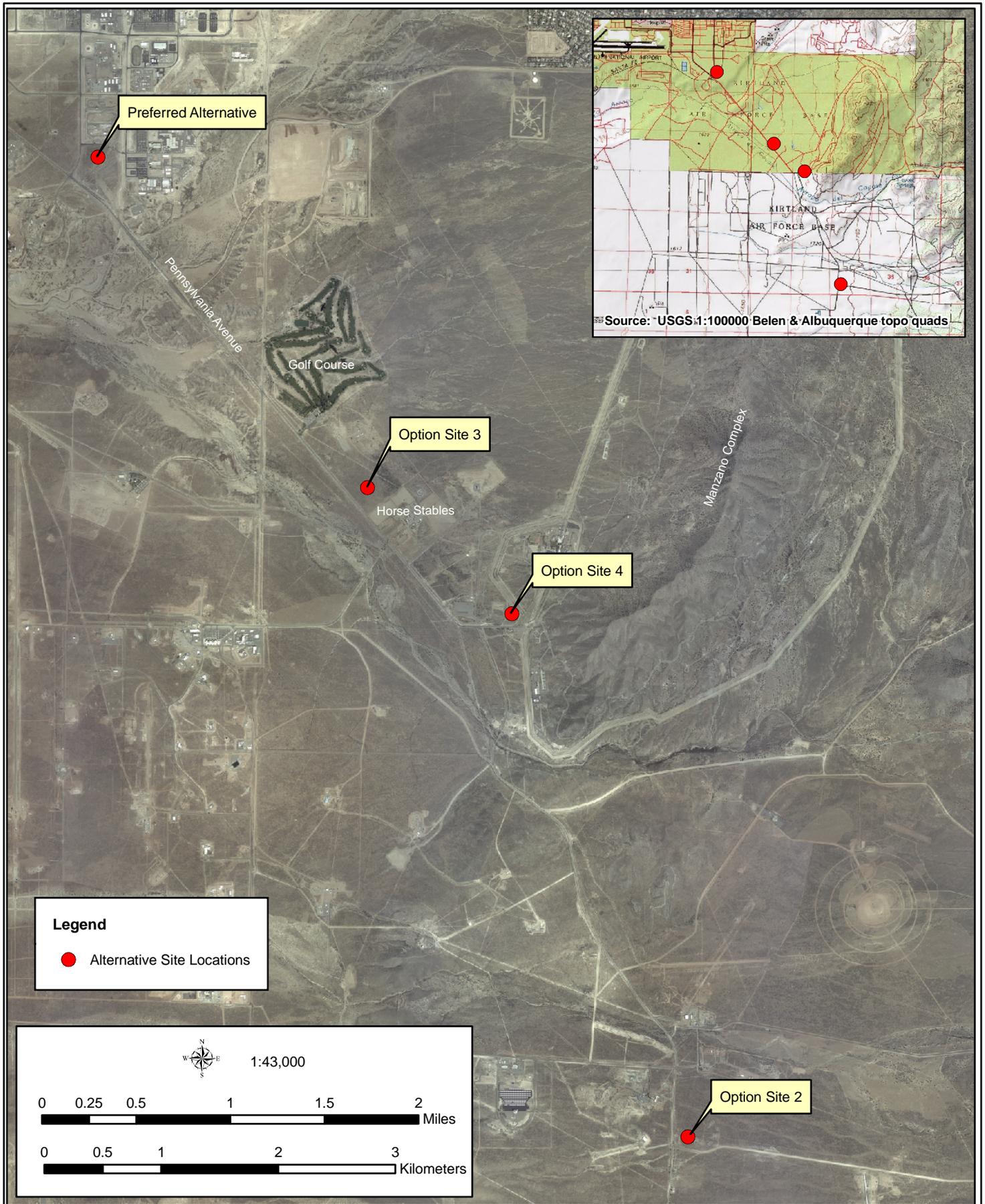


Figure 3-1: Preferred and Alternative Site Locations

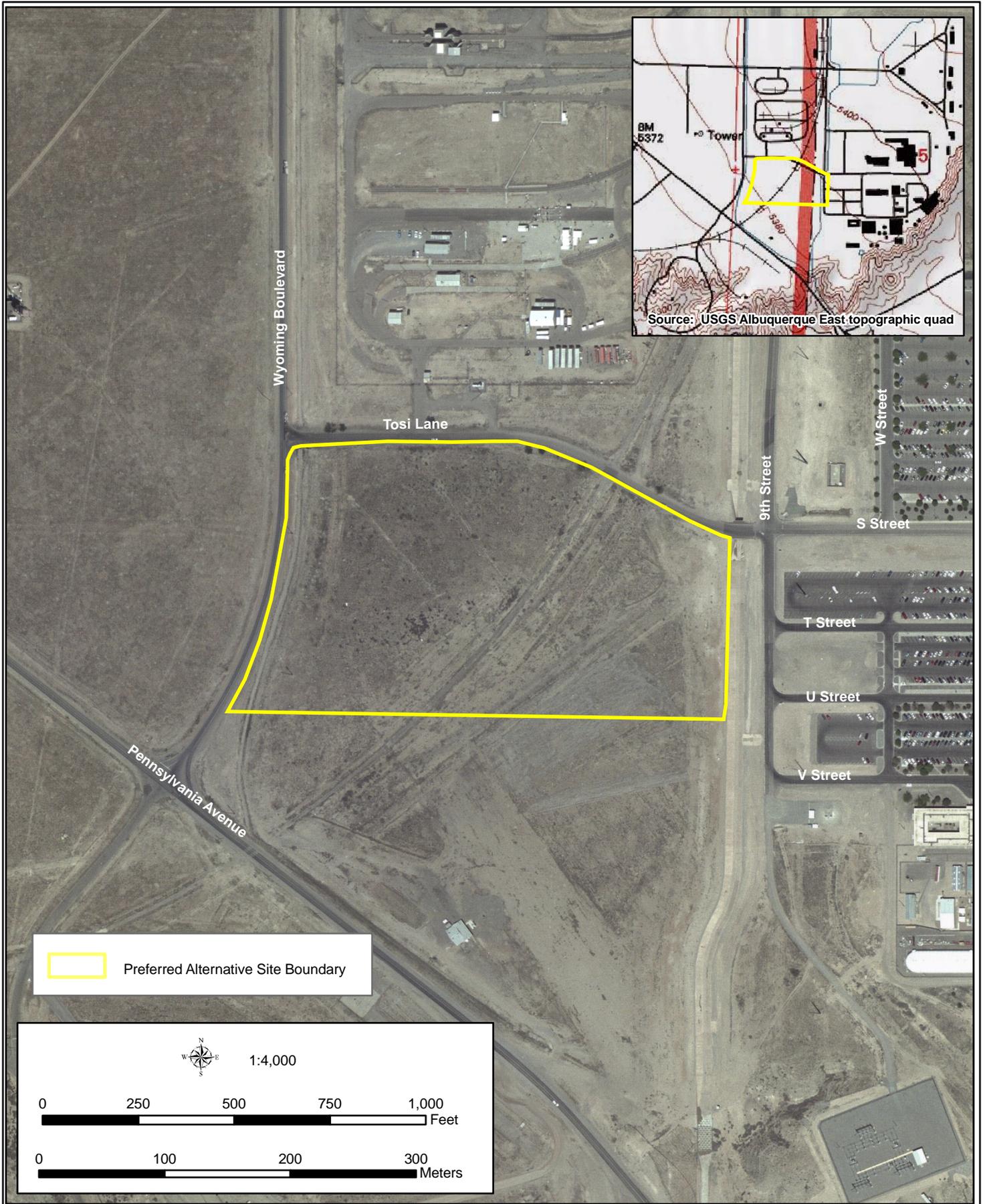


Figure 3-2: Preferred Alternative Site



January 2007

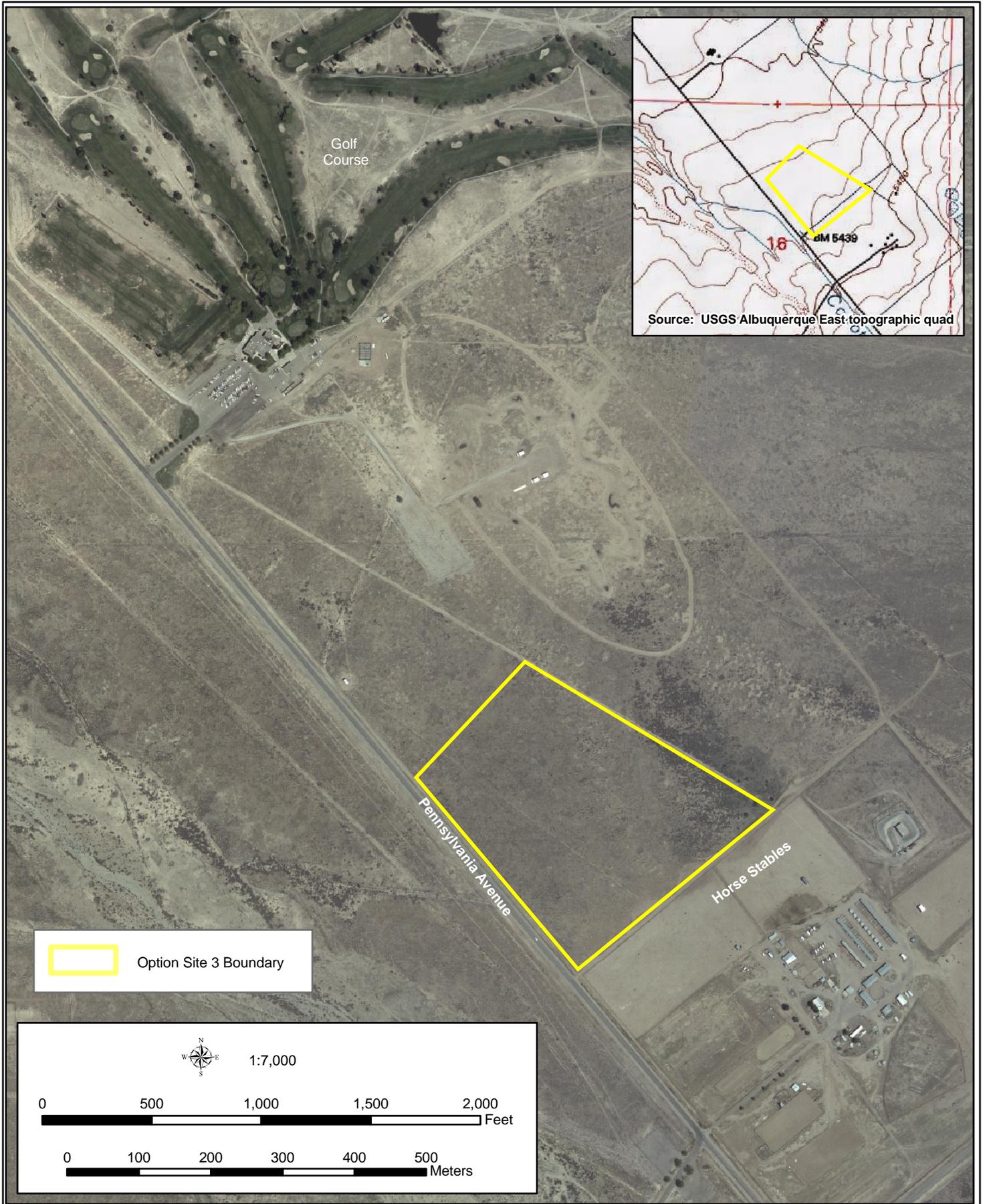


Figure 3-3: Option Site 3



January 2007

### **3.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION**

#### **3.3.1 Leasing Off-Base Space**

Use of off-base leased space to meet the AFRC's needs would be essentially the same as the No Action Alternative (i.e., having personnel and equipment off-base) and would adversely affect command and control functions, result in higher operational costs, be in non-compliance with AT/FP standards and would not comply with the BRAC mandates. For these reasons, use of leased space is not a viable alternative and is not further evaluated in this EA.

#### **3.3.2 Other New Construction Sites**

Option Site 2 was eliminated from further consideration because it contained potentially significant cultural resources, would require relocation of power lines, and was not in close proximity to other functions on the base. Option Site 4 was eliminated because it would require extensive grading and leveling due to varying terrain and rock outcrops, its proximity to the Manzano complex (an underground munitions storage facility), and it would limit future potential mission requirements relative to expansion.

#### **3.3.3 Schedule**

The proposed schedule is the best fit to ensure a smooth transfer of units and their operations. Shifting of schedules to accomplish realignment at a later date would unnecessarily delay realization of benefits to be gained and could conflict with the BRAC mandate. Since earlier implementation is not possible, and since delay is avoidable and unnecessary, alternative schedules are not further evaluated in this EA.

### **3.4 NO ACTION ALTERNATIVE**

The Council on Environmental Quality's (CEQ) regulations require inclusion of a no action alternative. Under the No Action Alternative, the Jenkins AFRC would operate at its current location. However, since the relocation of Jenkins AFRC has been mandated by Congress and the President, the No Action Alternative is not a viable alternative, but will serve as a baseline against which the impacts of the proposed action and alternatives can be evaluated.

**THIS PAGE LEFT INTENTIONALLY BLANK**

**SECTION 4.0**  
***AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES***

---

---



---

---

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

---

---

### **4.1 INTRODUCTION**

This section of the EA describes the natural and human environment that exists at and surrounding Kirtland AFB, and the potential effects to those resources as a result of the proposed action and alternatives. Impacts from the No Action Alternative are restricted to the conditions relative to Kirtland AFB. Only those parameters that have the potential to be affected by the proposed action and alternatives are described, as per CEQ guidance (40 CFR 1501.7 (a)[3]). Therefore, resources and items, such as climate, air space, and geology are not assessed for the following reasons:

- Climate—The proposed project would not affect, nor be affected by, climate.
- Air space—The proposed project does not involve any additional aircraft training and thus air space would not be affected.
- Geology—The project would not affect regional geological features nor cause an existing geologic feature to become unstable.

An impact (consequence or effect) is defined as a modification to the human or natural environment that would result from the implementation of an action. The impacts can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action (secondary, indirect, or synergistic effects). The effects can be temporary (short-term), long-lasting (long-term), or permanent. For purposes of this EA, temporary effects are defined as those that would last less than 3 years after completion of the action. Long-term impacts are defined as those that would last 3 to 20 years. Permanent impacts would require an irretrievable commitment of resources.

Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. The significance of the impacts presented in this EA is based upon existing regulatory standards, scientific and environmental knowledge, and/or best professional opinions of the authors of the EA. The significance of the impacts on each resource will be described as significant, moderate, minimal, insignificant (or negligible), or no impact. Significant impacts are those effects that would result in substantial changes to the environment (as defined by 40 CFR 1508.27) and should receive the greatest attention in the decision-making process.

## **4.2 LAND USE**

### **4.2.1 Affected Environment**

#### ***4.2.1.1 Regional Setting***

Kirtland AFB encompasses over 51,000 acres in Bernalillo County and is the third largest base within the United States (U.S.) Air Force Materiel Command (AFMC). The base employs over 23,000 people and is home to the 377<sup>th</sup> Air Base Wing, which is Kirtland AFB's host organization. The mission of the Wing is to provide world-class munitions maintenance, readiness and training, and base operating support to approximately 76 Federal government and 384 private sector tenants and associate units. Accordingly, Kirtland AFB contains various training areas, helicopter landing zones, recreation/open areas, maintenance facilities, classroom and administrative facilities, housing and other cantonment structures. The lands surrounding Kirtland AFB are used for a variety of purposes, including urban development to the north and west and Cibola National Forest to the east. Lands to the south of Kirtland AFB are used primarily for ranching and farming. The Albuquerque International Sunport (airport) is located immediately adjacent to Kirtland AFB's western boundary and shares airspace and runways with the base.

#### ***4.2.1.2 Installation Land Use***

Kirtland AFB is used primarily for military training and operational facilities, including, but not limited to helicopter landing zones, ordnance impact areas, and logistics. Sandia National Laboratories, which is part of the Department of Energy (DOE), also operates and maintains several facilities on base for research, testing and evaluation of various weapons, communication and energy systems.

#### ***4.2.1.3 Current and Planned Development***

Currently, there are plans to realign Air Force units to or from Kirtland AFB under BRAC. Specifically, Kirtland AFB will receive a portion of the 27<sup>th</sup> Fighter Wing from Cannon AFB, New Mexico and a component (BattleSpace Environment Division) of the Space Vehicles Directorate of the Air Force Research Laboratory (AFRL) from Hanscom AFB, Massachusetts. Military confinement functions at Kirtland AFB will be realigned to Miramar Marine Corps Air Station in California. Only the realignment of the AFRL Battlespace Environment Division will require additional construction on Kirtland AFB. This construction must be completed by September 15, 2011.

Phase I of the AFRL/ Kirtland Technology Park was initiated in 2005. Subsequent phases to support the base missions are expected to be developed primarily under a lease with a private developer. The National Defense Technical Auditorium will be constructed in the near future at Kirtland Technology Park as well as a sub-campus of New Mexico Institute of Mining and Technology (NM Tech) and the AFRL/VS Battlespace Environment Laboratory. Other construction in progress or planned on Kirtland includes corrosion control facilities, flight simulators, a Pararescue/Combat Rescue Officer (PJ-CRO) campus, expansion of the 150th New Mexico Air National Guard, AFRL Fixed Panel Array, Military Working Dog facility, Fuel Upload Facility replacement, and Trestle Road extension. A C-130 drop zone/helicopter landing zone has been proposed for development, but this site is located southwest of the base in Valencia County.

#### ***4.2.1.4 Preferred Alternative (Option Site 1)***

The preferred site is a 35-acre parcel that is considered open space (see Figure 3-2). It is vegetated with desert grassland with a few scattered shrubs (Photograph 1). The site is surrounded by other Air Force and DOE office buildings and facilities. The area south of this site was used previously as a skeet range; the range has been closed for years and in the late 1990s lead shot and lead-contaminated soil were removed from the area. This area has also been identified as a potential site for an administration or research facility in Kirtland AFB's 2002 General Plan.



**Photograph 1. Option Site 1 looking east/northeast**

This is south of the flight path for the Albuquerque International Sunport and beyond the accident potential zones (APZ) for the airport. This site is also outside clear or safety zones for potential explosive sites and electromagnetic radiation sources.

#### **4.2.1.5 Alternative 2 (Option Site 3)**

The Option Site 3 is currently open desert grassland and mixed scrub situated between the base's golf course and horse stables (Photograph 2). This site contains 38 acres of usable space (see Figure 3-3). Open grassland/mixed scrub occurs on either side to the west and east of this site. This site is also outside the APZ of the Albuquerque International Sunport and beyond the safety zones for potential explosive sites and electrographic radiation sources.



**Photograph 2. Option Site 3 looking east/northeast**

### **4.2.2 Environmental Consequences**

#### **4.2.2.1 Preferred Alternative (Option Site 1)**

Implementation of the preferred alternative at the proposed location would permanently convert approximately 14 acres of open grassland to non-pervious pavement and buildings. Training and administrative uses at Kirtland AFB would not change as a result of the proposed action. The use of the preferred site location is consistent with the base's mission, policies and plans and, thus, is considered an insignificant impact to land use.

#### **4.2.2.2 Alternative 2 (Option Site 3)**

Impacts to land use at this site would be similar as the Preferred Alternative, in that approximately 14 acres of open rangeland would be converted to hard structures. However, this site is adjacent to the Tijeras Arroyo Golf Course and the horse stables, both of which are heavily used during the weekends. Operations at the AFRC would adversely impact the quality of the uses due to increased traffic and noises.

#### **4.2.2.3 No Action Alternative**

No direct short-term changes in land use to either of the proposed sites would occur under the No Action Alternative. There is a potential that both of the sites would be developed in the long-term.

## **4.3 AESTHETICS AND VISUAL RESOURCES**

### **4.3.1 Affected Environment**

As indicated in the land use section, the areas to the north and west of Kirtland AFB are developed urban lands. As such, much of the aesthetic quality surrounding Kirtland AFB has been degraded. The backdrop of the Sandia Mountains to the east provides a pleasing visual perspective, however. Outside of the cantonment area, much of the land on base is still undeveloped, which contributes to the aesthetic resources while on base. Specific areas that contribute to the base's aesthetic quality include the Sandia Ranger District of the Cibola National Forest located along the base's eastern boundary and the rolling, open hills located in the southern portion of the installation.

#### ***4.3.1.1 Preferred Alternative (Option Site 1)***

Option Site 1 is located immediately south of the main cantonment area. The area south of this site was used previously as a skeet range. A railroad spur right-of-way and pipeline right-of-way transects the site as well. As such, the aesthetic quality of the site has been degraded.

#### ***4.3.1.2 Alternative 2 (Option Site 3)***

Option Site 3 is located approximately 2 miles southeast of Option Site 1, away from the main cantonment area. The Tijeras Arroyo Golf Course and horse stables are located to the north and south of the site, respectively, and other facilities can be seen in almost any direction. Although the area surrounding this site is less developed than the Option Site 1, and the site appears to have been undisturbed, the visual qualities are still somewhat degraded.

### **4.3.2 Environmental Consequences**

#### ***4.3.2.1 Preferred Alternative (Option Site 1)***

Construction and operation of AFRC at the preferred site would eliminate some of the open grasslands that contribute to the visual quality of Kirtland AFB. This site is adjacent to other developed areas, however, which have degraded the visual aspects of this specific site. Approximately 14 acres of desert grassland would be permanently replaced with pavement and hard structures. Temporary construction areas would need to be immediately replanted with native vegetation to avoid additional long-term or permanent adverse effects to the area's aesthetic resources. Nonetheless, because of the small amount of acreage impacted relative to

that within and surrounding Kirtland AFB, the permanent and temporary effects would not be significant.

#### ***4.3.2.2 Alternative 2 (Option Site 3)***

As indicated previously, this site is open grassland and mixed desert scrub adjacent to other facilities on base. These disturbed and developed areas would minimize any perceived adverse impacts relative to the construction of the AFRC. However, this site is also adjacent to the base's golf course. The proposed facility would adversely impact the views from these areas and degrade any visitor's experience during their time in these areas. Because Option Site 3 and the golf course are already surrounded by other development, these effects would be considered minimal.

#### ***4.3.2.3 No Action Alternative***

Implementation of the No Action Alternative would allow both of the alternative sites to remain in the current conditions, at least for the short term. No visual impacts would occur to persons using the golf course. However, each of these sites is subject to future development given that they are contained within a military installation.

### **4.4 AIR QUALITY**

#### **4.4.1 Ambient Air Quality Conditions**

Bernalillo County, where Kirtland AFB is located, is in attainment for most of the Albuquerque - Bernalillo County Ambient Air Quality Standards (nitrogen dioxide, ozone, sulfur dioxide, particulate matter, lead, hydrogen sulfide, and total reduced sulfur). Bernalillo County has been designated as "in maintenance status" for carbon monoxide (Kirtland AFB 2006a). Kirtland AFB is currently subject to Federal conformity rule requirements because of the maintenance classification. However, Bernalillo County (including Kirtland AFB) has received approval from the Environmental Protection Agency (EPA) for its CO Limited Maintenance Plan, which eliminates the conformity requirements found in Title 20, Chapter 11 of the New Mexico Administrative Code (NMAC). This plan took effect in June 2006 and makes conformity analyses unnecessary. Ambient air quality would be the same at both sites.

#### 4.4.1.1 Installation Air Pollutant Emissions

Kirtland AFB is located within the jurisdiction of the Albuquerque-Bernalillo County Air Quality Control Board (Board) (City of Albuquerque 2005). The Board was granted authority and responsibility by the New Mexico State Legislature to prevent or abate pollution within the county. Kirtland AFB published an emissions inventory of pollutant emissions on the base in 2004 (Kirtland AFB 2005). Table 4-1 provides a summary of actual criteria and hazardous air pollutant emissions from base activities. Criteria air pollutants are six common air pollutants (CO, NO<sub>x</sub>, PM, SO<sub>x</sub>, VOC, and lead) regulated by the EPA based on impacts to health and/or the environment. Kirtland is a minor source of hazardous air pollutants and a major source of criteria pollutants (Kirtland AFB 2006a). Hazardous air pollutants are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.

**Table 4-1. Summary of Calendar Year 2004 Air Emissions from Non-exempt Sources at Kirtland Air Force Base and Within Bernalillo County**

POLLUTANT	EMISSIONS (tpy)	
	Kirtland AFB	Bernalillo County
Criteria Pollutant and Precursors		
Carbon monoxide	13.0	178,266
Nitrogen oxides	18.2	26,590
Particulate Matter	14.0	74,943
Sulfur dioxide	2.0	4,583
Volatile organic compounds	56.2	26,321
Hazardous Air Pollutants	3.4	NA

Source: Kirtland AFB 2005

Legend: tpy= tons per year

Kirtland AFB is a minor source of air pollutants in Bernalillo County (Kirtland AFB 2006a). From studies conducted in the past decade and operational permit applications, it has been reported that vehicle (military and privately owned) emissions contribute hydrocarbons (207 tpy), carbon monoxide (1921.5 tpy), nitrogen oxides (205.5 tpy), sulfur dioxide (8 tpy) and total suspended particulates (27.5 tpy) to the regional air quality (Kirtland AFB 2000).

#### 4.4.2 Environmental Consequences

##### 4.4.2.1 Preferred Alternative (Option Site 1)

Construction of the proposed facility would create minor increases in particulates by removing vegetation and disturbing soils. Application of water or other wetting solutions to construction sites would minimize fugitive dust. Similarly, operation of gasoline- or diesel-powered

construction equipment would result in temporary and minor increases in sulfur dioxides, nitrogen oxides, volatile organic compounds and carbon monoxide. These emissions would be insignificant regardless of the alternative site selected. Short-term emissions of air pollution are generally not considered to adversely affect air quality because the pollutants are typically dispersed to acceptable levels in a short period of time (minutes or hours). However, at no time is a proposed activity allowed to contribute to a violation of any National Ambient Air Quality Standards (NAAQS) or exceed worker exposure levels defined by the OSHA permissible exposure limits. The increased emissions associated with the construction would return to pre-project conditions within 1 month after cessation of the construction activities. Construction is expected to be completed in less than 2 years.

Operation of the facility would result in minor increases in emissions, particularly during weekend training periods when the majority of the Reserve units would be present. The primary source for the increased emissions during this time would be vehicles. Additional minor emission sources may include HVAC units and vehicle maintenance activities (e.g., touch-up painting and solvent degreasers). No stationary sources are anticipated to require an air emissions permit. Similar types and amounts of emissions are currently generated at the existing USARC. Therefore, long-term adverse impacts to air quality would be sporadic and occur for short periods of time.

#### ***4.4.2.2 Alternative 2 (Option Site 3)***

Impacts to air quality would be the same under Alternative 2 as the Preferred Action Alternative.

#### ***4.4.2.3 No Action Alternative***

No changes to ambient air quality would occur under the No Action Alternative.

## **4.5 NOISE**

### **4.5.1 Affected Environment**

Noise is generally described as unwanted sound, which is identified by either objective effects (hearing loss, damage to structures, etc.) or subjective judgments (community annoyance). Sound is represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as a sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Sound levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise measurement recommended by the EPA and has been adopted by most Federal agencies (EPA 1974). A-weighted decibels (dBA) are used to express the relative loudness of sounds in air as perceived by the human ear (Generac Power Systems, Inc. 2004). A-weighting is necessary to compare the range of noise humans can hear, since, the human ear is less sensitive at low frequencies than at high frequencies. Several examples of noise levels in dBA are listed in Table 4-2. A DNL of 65 dBA is most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction. Areas exposed to DNL above 65 dBA are generally not considered suitable for residential use. A DNL of 55 dBA was identified by EPA as a level below which there are effectively no adverse impacts (EPA 1974).

**Table 4-2. A-Weighted (dBA) Sound Levels of Typical Noise Environments**

dBA	Overall Level	Noise Environment
120	Uncomfortably Loud (32 times as loud as 70 dBA)	Military jet takeoff at 50 feet
100	Very loud (8 times as loud as 70 dBA)	Jet flyover at 1,000 feet
90	Very Loud	Heavy-duty truck, average traffic
80	Loud (2 times as loud as 70 dBA)	Propeller plane flyover at 1,000 feet Diesel truck 40 mph at 50 feet
70	Moderately loud	Freeway at 50 feet from pavement edge Vacuum cleaner (indoor)
65	Moderately loud	Gas powered generator
60	Relatively quiet (1/2 as loud as 70 dBA)	Air condition unit at 10 feet Dishwasher at 10 feet (in door)
50	Quiet (1/4 as loud as 70 dBA)	Large transformers Small private office (in door)
40	Very quiet (1/8 as loud as 70 dBA)	Bird calls Lowest limit of urban ambient sound
10	Extremely quiet (1/64 as loud as 70 dBA)	Just audible
0	Threshold of hearing	

Source: Wyle Research Corporation 1992.

The primary sources of noise at Kirtland AFB include military and civilian aircraft at the Albuquerque International Sunport and vehicle traffic. The Albuquerque International Sunport has implemented noise abatement procedures, including timing and runway restrictions to reduce the noise that affects Kirtland AFB and surrounding areas. Traffic in the cantonment areas of Kirtland AFB usually peaks in the morning (before 8:00 am) and between 4:00 pm and

5:30 pm. This level of traffic is expected to result in noise levels around 65 dBA DNL near the congested intersections (Kirtland AFB 2005b).

#### ***4.5.1.1 Preferred Alternative (Option Site 1)***

Noise levels surrounding the project site are variable depending on the time of day, season, and climatic conditions. The preferred site is located south of the main cantonment area and south of the flight line of the Albuquerque International Sunport. The noise contour provided by the Air Installation Compatibility Use Zone (AICUZ) modeling indicates that Option Site 1 is beyond the 65 dBA DNL contour (Figure 4-1). Therefore, noise produced by aircraft operation is attenuated to less than 65 dBA at Option Site 1. Although, the intersection of Gibson and Wyoming Boulevards is located north of the site, the distance between Option Site 1 and this intersection would be expected to attenuate the noise generated by traffic congestion.

#### ***4.5.1.2 Alternative 2 (Option Site 3)***

Option Site 3 is located approximately 2 miles south southeast of the cantonment area. Noise generated by aircraft at the Albuquerque International Sunport and base traffic is attenuated at this location. Ambient noise levels in this area are expected to be well below 65 dBA DNL.

### **4.5.2 Environmental Consequences**

#### ***4.5.2.1 Preferred Alternative (Option Site 1)***

Temporary and minimal increases in noise would occur during the construction of the AFRC. The construction activities potentially causing elevated noise levels within the project area would include diesel and gasoline powered generators, trucks, and construction equipment. As indicated in Table 4-2 above, heavy duty trucks generate a noise level of approximately 90 dBA at 50 feet. Attenuation to 65 dBA would occur at a distance of approximately 800 to 1,000 feet depending on climatic conditions, topography, vegetation, and man-made barriers (Generac Power Systems, Inc. 2004). Noise levels for other types of construction equipment range from the loudest, tractors and backhoes (70 to 95 dBA) to pumps and generators (65 to 85 dBA) (Bugliarello et al. 1976). No noise sensitive receptors (e.g., parks, schools, churches, hospitals) are located within 1,000 feet of the proposed site and, therefore, no significant impact would occur from the construction of the proposed AFRC at the Preferred Alternative Site.

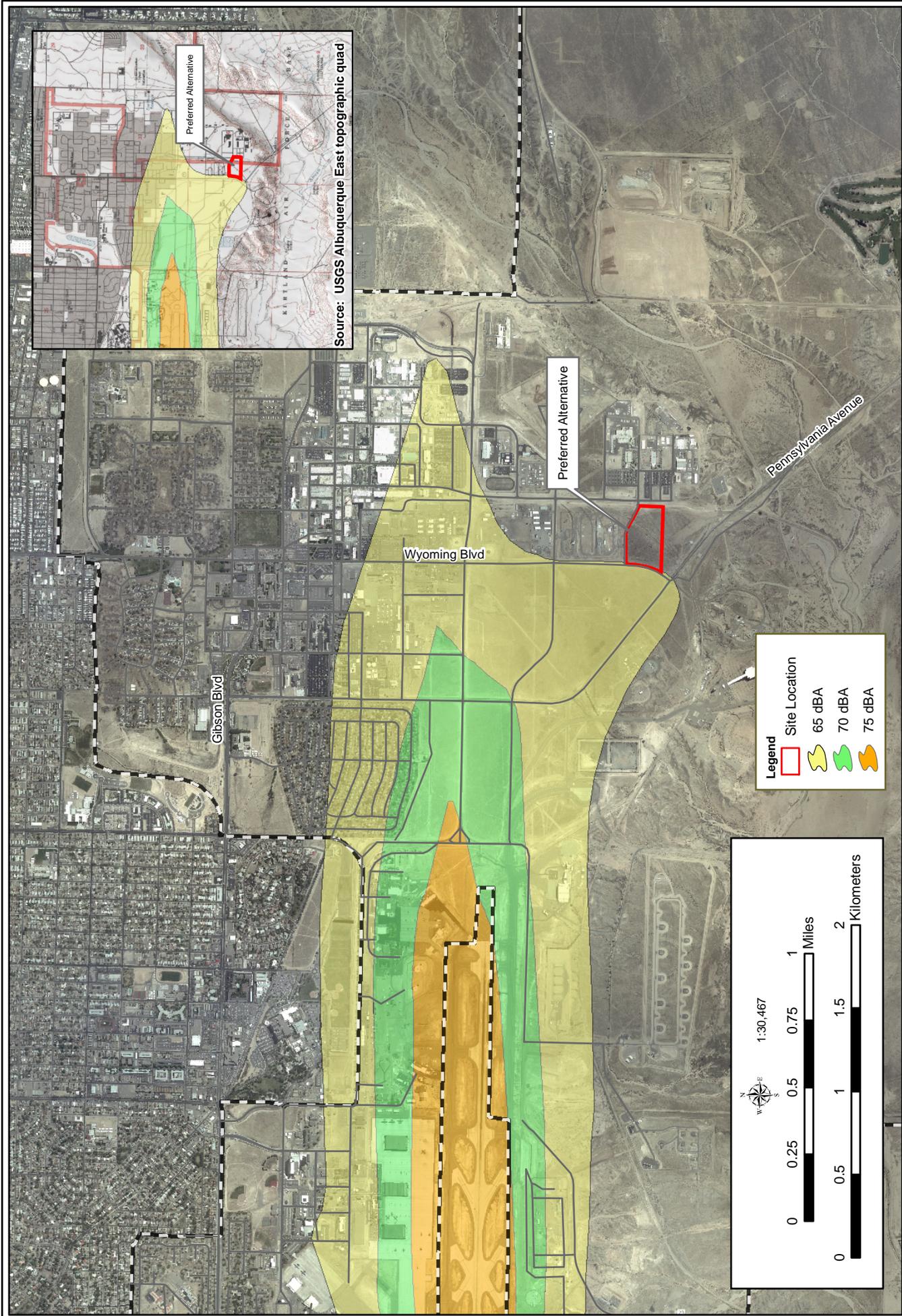


Figure 4-1: Noise Contours near Preferred Alternative

Operation of the AFRC at this site would also increase traffic noise, particularly at one of the base's more congested intersections. However, less than 50 full-time employees (military and civilian) would be expected to commute to the site on a given weekday. Most of the activity at the AFRC would occur during weekends, when other base traffic is substantially reduced.

Therefore, operation of the AFRC at this site would not be expected to significantly contribute to or increase the base's ambient noise.

#### ***4.5.2.2 Alternative 2 (Option Site 3)***

Noise impacts at Alternative Site 2 (Option Site 3) would be similar to those described for the Preferred Alternative Site. Construction noise would be more annoying at this site, however, due to the surrounding land uses (i.e., golf course and horse stable). These effects would be temporary and minor; ambient noise levels would return to pre-project conditions upon completion of the construction activities. Minimal increases in noise levels would occur as a result of the operation of the AFRC, in particular during the weekend use when up to 800 personnel could visit or use the AFRC. Because this site's ambient noise is generally less than that at the Preferred Alternative Site, the increase would be more noticeable. However, the increase would be sporadic, temporary and several hundred feet away from either the golf course or the horse stables; thus, the long-term impacts from the operation of the AFRC at this site would be considered insignificant.

#### ***4.5.2.3 No Action Alternative***

Ambient noise levels would remain as they currently exist under the No Action Alternative. Aircraft and vehicle traffic would continue to be the primary sources of noise at both sites.

## **4.6 SOILS**

### **4.6.1 Affected Environment**

#### ***4.6.1.1 Preferred Alternative (Option Site 1)***

The Preferred Alternative (Option Site 1) has Wink fine sandy loam and Wink-Embudo complex soils (Figure 4-2). The Wink series consists of very deep, well drained soils (Soil Survey Staff

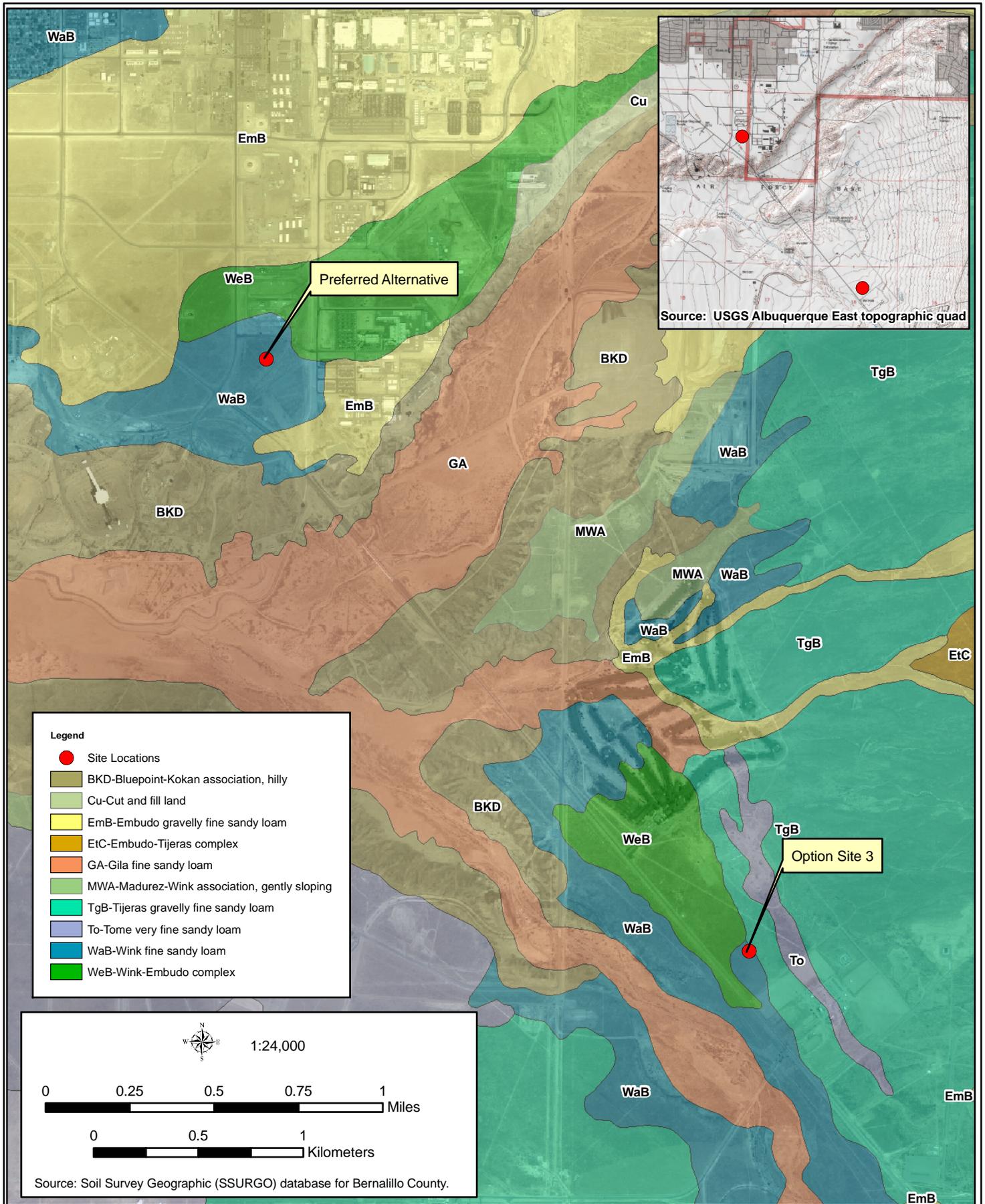


Figure 4-2: Soils within the Preferred and Alternative Site Locations

[SSS] 2006). These soils are on nearly level to moderately sloping uplands. Wink series soils are moderately rapid in permeability, have a low risk for water erosion, and are primarily suited to rangeland. Embudo series soils have moderate permeability in the upper part and very rapid permeability below 20 inches and a medium risk for water erosion (SSS 2006). The Wink series soil comprises 2 percent of Bernalillo County's soil makeup (National Resources Conservation Service [NRCS] 2006). The Wink-Embudo complex comprises 0.5 percent of Bernalillo County's soil makeup (NRCS 2006).

#### ***4.6.1.2 Alternative 2 (Option Site 3)***

The majority of Alternative 2 (Option Site 3) area contains Wink-Embudo complex soils. This soil is a complex of Wink and Embudo series soils; therefore, soils will show characteristics of both series as described above. The eastern portion of Option Site 3 also contains Tijeras gravelly fine sandy loam and Tome very fine sandy loam. Tijeras soils have a medium risk for water erosion; however, construction in areas with Tome series soils may require the use of environmental design measures and BMPs to reduce the risk of soil loss through water erosion.

#### ***4.6.1.3 Prime Farmland***

None of the soils that occur at either project site are classified as prime farmland (NRCS 2006).

### **4.6.2 Environmental Consequences**

#### ***4.6.2.1 Preferred Alternative (Option Site 1)***

Approximately 14 acres of Wink and Wink-Embudo soils would be permanently impacted. These soils would be removed from biological production by the Preferred Action Alternative. The preferred site is currently open space containing regionally common flora. The permanent impacts to these soils would not be significant.

#### ***4.6.2.2 Alternative 2 (Option Site 3)***

Approximately 14 acres of Wink, Wink-Embudo, Tijeras and Tome soils would be permanently impacted. The removal of these soils from biological production would be similar to those discussed for the Preferred Action Alternative. The permanent impacts to these soils would not be significant. The eastern portion of this parcel would not be expected to be used by the AFRC and, thus, the Tijeras and Tome soils would not be disturbed.

#### ***4.6.2.3 No Action Alternative***

No impacts to soils would occur from the implementation of the No Action Alternative because no construction would occur. The 14 acres of soils would remain undisturbed and continue to biologically produce common local vegetation.

### **4.7 WATER RESOURCES**

#### **4.7.1 Affected Environment**

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

The Rio Grande, which is located approximately 5 miles west of Kirtland AFB, is the major surface water body in the region. The Tijeras Arroyo and Arroyo del Coyote are the primary surface drainages of Kirtland AFB. Arroyo del Coyote flows into the Tijeras Arroyo approximately 1 mile west of the Tijeras Arroyo Golf Course (Figure 4-3). Both of these channels are ephemeral streams, however, and provide surface water only during and shortly after rainfall events. Perennial surface water bodies at Kirtland AFB are typically small and scattered, including Coyote Springs, Sol se Mete Spring, and ponds on the golf course (Kirtland AFB 2005b). The Tijeras Arroyo is located approximately 0.5 mile south-southeast of Option Site 1. The Arroyo del Coyote is located approximately 0.25 mile west of Option Site 3.

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

Generally, the upper unit of the Santa Fe Formation contains the most productive portion of the regional aquifer that supplies groundwater to the City of Albuquerque and Kirtland AFB. The base uses five wells, with an average depth of 450 to 550 feet to provide over 960 million gallons of water per year. One inactive well is also available for emergency situations. Some of the installation's wells have been installed to depths of 1,000 feet. High arsenic levels are present in much of the groundwater; however, only two wells have elevated arsenic level and a water-blending system has been utilized to lower the arsenic levels in the base potable water supply. The base also purchases water from the City of Albuquerque to accommodate peak water demands or low water levels within the aquifer. In 2004, Kirtland purchased nearly 9 million gallons of water from the city (Kirtland AFB 2005a and 2005b). The groundwater contains elevated levels of arsenic and copper, but no contaminants exceed the safe drinking water standards established by EPA, under the Safe Drinking Water Act (Kirtland AFB 2005a); Kirtland's potable water supply system has not exceeded copper levels within the past 5 years.

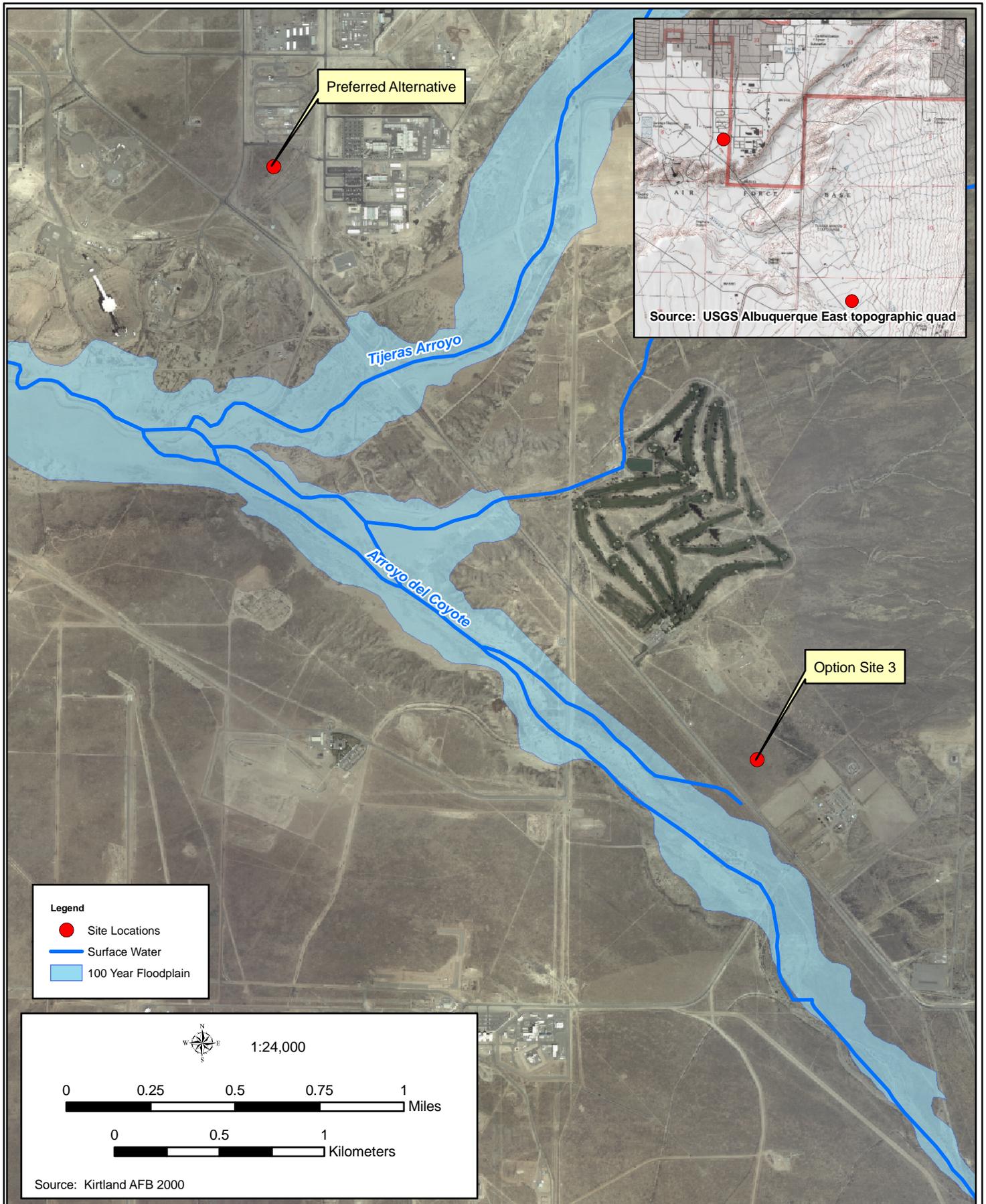


Figure 4-3: Surface Water and 100 Year Floodplain near the Preferred and Alternative Site Locations



January 2007

There are also multiple shallow zones of perched water that may not be continuous at approximately 300 to 400 feet below ground surface. Groundwater investigations conducted in the mid-1990s identified trichloroethene (TCE) and nitrate as the primary contaminants of concern in the Tijeras Arroyo Groundwater study area. No potable water wells are in the perched aquifer.

A soil-vapor monitoring well was identified at Option Site 1. The well belongs to the DOE and is monitoring tri-chloroethene (TCE) that was found in the perched aquifer underlying this site. A letter was sent to the New Mexico Environment Department (NMED) requesting the status of the well. On 3 August 2006, NMED approved plugging and abandoning the well and it has been closed and sealed.

#### ***4.7.1.3 Floodplains***

EO 11988 (*Floodplain Management*) directs Federal agencies to avoid developments within floodplains. The 100-year floodplains of the Tijeras Arroyo and Arroyo del Coyote are contained within the arroyos' channels (see Figure 4-3). Floods generally occur between May and October and are characterized by high peak flows with small volumes that are short-lived. Over 95 percent of the water that flows through the Tijeras Arroyo evaporates before it reaches the Rio Grande; the remaining 5 percent contributes to groundwater recharge and minor discharge into the Rio Grande (Kirtland AFB 2005b). Neither site is located within a 100-year floodplain.

#### ***4.7.1.4 Wetlands***

EO 11990 (*Protection of Wetlands*) directs Federal agencies to avoid developments within wetlands. Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory 1987). There are no hydric soils on either site and no potential jurisdictional wetland sites or other Waters of the U.S. were identified during the pedestrian surveys.

### **4.7.2 Environmental Consequences**

#### ***4.7.2.1 Preferred Alternative (Option Site 1)***

Under the Preferred Alternative, up to 14 acres of soils would be cleared of vegetation and consequently susceptible to erosion during construction activities. Tijeras Arroyo could be affected by storm water runoff and suspended sediments resulting from precipitation events

during the construction period if best management practices (BMP) are not properly implemented. The potential effects on surface waters, if they occurred, would be limited to Tijeras Arroyo and would not likely extend downstream past its confluence with the Rio Grande.

However, because the construction area is greater than 1 acre, a NPDES Storm Water Discharge permit would be required prior to construction. This permit would require that a SWPPP be prepared and a NOI to be filed with the EPA. Specific erosion and sedimentation controls and other BMPs would limit the amount of erosion that occurs on site and restrict potential impacts to the Tijeras Arroyo. Therefore, no significant impacts to surface waters would occur.

As shown in Figure 4-3, previously, the Tijeras Arroyo floodplain is approximately 0.5 mile south-southeast of the Preferred Alternative Site. Since no wetlands or Waters of the U.S. are present, no impacts to these resources would occur. Therefore, construction of the AFRC at this site would be in compliance with EO 11988 and EO 11990.

Construction of the proposed AFRC would increase demands on water supplies during the construction period. Water would be needed for a variety of construction activities including, but not limited to drinking water supply for construction crews, wetting construction sites for dust suppression, and concrete mixing. These increases would be temporary and minimal.

The new facilities would increase the overall proportion of paved surfaces within the watershed. The facility design would incorporate storm water control features preventing the degradation of the water quality of the drainages on Kirtland AFB. Such controls include an on-site detention basin. Incorporation of post-construction storm water controls within Kirtland AFB's existing SWPPP for base-wide facilities and operations would minimize long-term impacts to surface waters and allow for groundwater recharge. Therefore, no significant impacts to surface waters would occur as a result of post-construction operations of the facility implemented under the Preferred Alternative.

Operation of the AFRC would have negligible impacts to the water supply at Kirtland AFB. As indicated previously, the full-time labor force at the AFRC is typically less than 50 persons. Some weekends could see up to 800 persons when each of the Reserves (i.e., Army, Navy and Marine Corps) have their full contingent of units. However, such situations usually only happen

a few times a year and many of the units would deploy from the base to other areas for training. In addition, this same situation occurs at the extant Jenkins AFRC, which receives its water supply from the City of Albuquerque. Therefore, only negligible, if any, impacts would occur to the region's water supply under the Preferred Alternative.

#### ***4.7.2.2 Alternative 2 (Option Site 3)***

Construction and operation of the AFRC at Option Site 3 would result in similar types and magnitude of impacts as those described for the Preferred Alternative.

#### ***4.7.2.3 No Action Alternative***

Under the No Action Alternative, the Jenkins AFRC would continue to operate at its location north of Kirtland AFB. No temporary impacts to water demand or from storm water runoff would occur. The long term demand on regional water supplies would remain the same.

### **4.8 BIOLOGICAL RESOURCES**

#### **4.8.1 Affected Environment**

##### ***4.8.1.1 Vegetation***

The potential project sites assessed in this document are both desert grassland with few, scattered shrubs, although the Option Site 1 lies within developed areas of the base (Figure 4-4). The grasslands of Kirtland AFB are influenced primarily by the Chihuahuan Desert (Stephens and Associates 1996). Black grama (*Bouteloua eriopoda*) forms nearly monotypic stands in some parts of the base; however, it is more often found in association with several other grasses. Where the soil has not been disturbed by construction, the grassland vegetation on Kirtland AFB is generally in excellent condition and is relatively free of shrubs and subshrubs (Stephens and Associates 1996). The common grass associates and dominant shrub species in the grassland community are presented in Appendix B.

On May 3, 2006, Gulf South Research Corporation (GSRC) biologists conducted pedestrian field surveys by walking transects within the two alternative sites for this project. The vegetation observed at the alternative sites is discussed below in the following paragraphs.

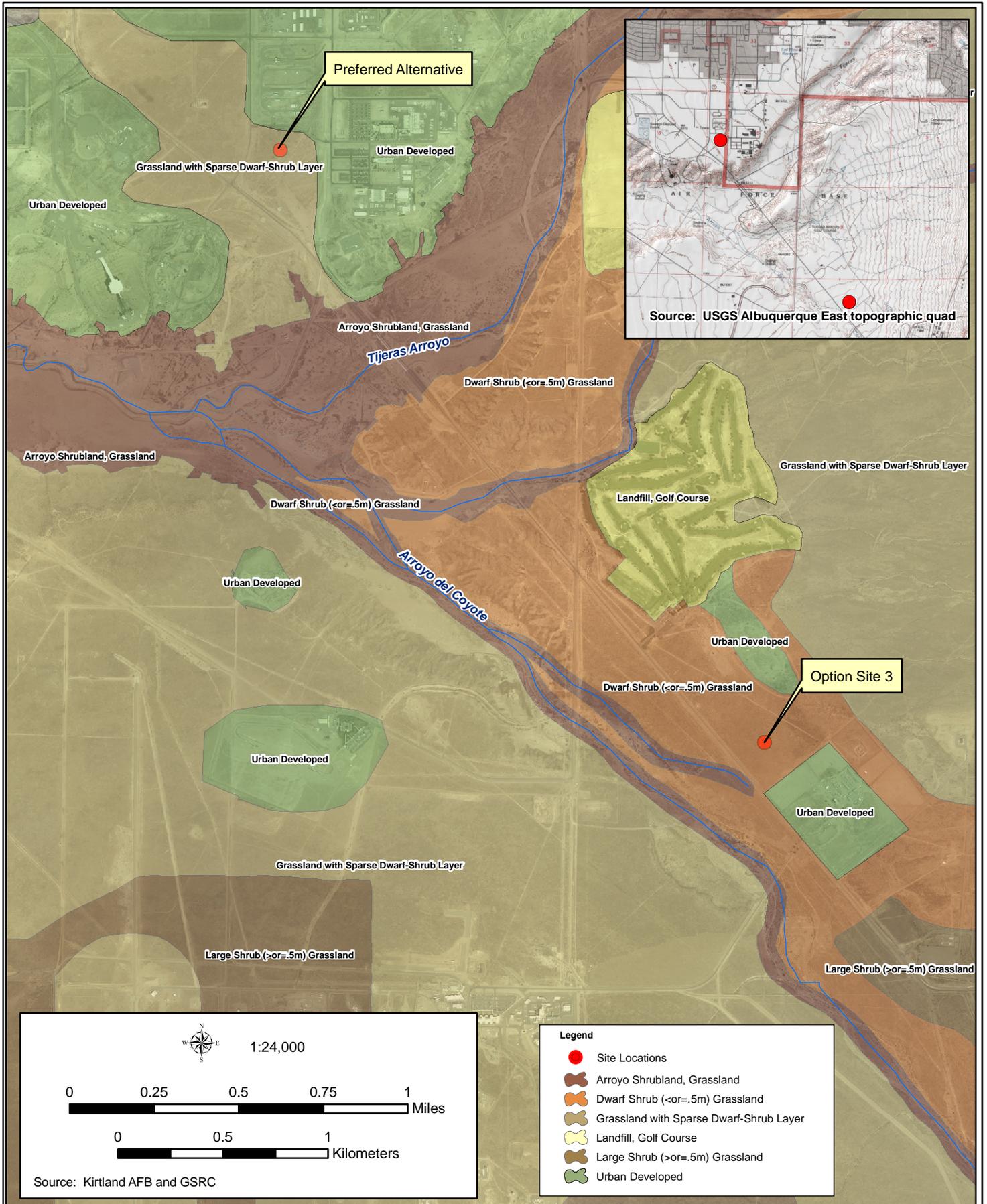


Figure 4-4: General Vegetation at the Preferred and Alternative Site Locations



January 2007

#### 4.8.1.1.1 Preferred Alternative (Option Site 1)

The preferred alternative site is a disturbed grassland with scattered shrubs. Common grasses observed at the site included bush muhly (*Muhlenbergia porterii*), fluff grass (*Tridens pulchellus*), alkali sacaton (*Sporobolus airoides*), sand dropseed (*Sporobolus cryptandrus*), and purple three-awn (*Aristida purpurea*). Russian thistle (*Salsola kali*), fourwing saltbush (*Atriplex canescens*), sand sagebrush (*Artemisia filifolia*), prickly pear (*Opuntia polyacantha*), and hedgehog cactus (*Echinocereus* sp.) were common associates found at this site. Vegetation coverage on the site was approximately 80 to 85 percent, except for disturbed areas (as described in Section 4.3.1.1) where the vegetation was less dense.

#### 4.8.1.1.2 Alternative 2 (Option Site 3)

Option Site 3 is vegetated with similar species to Option Site 1, with more dense areas of Russian thistle, sand sagebrush, and fourwing saltbush. Tobosa grass (*Hilaria mutica*) was also prevalent on this site. The western portion of the site was more densely vegetated with scrub/shrub species as the elevation sloped downward. Vegetation coverage on the site was approximately 75 to 80 percent.

#### **4.8.1.2 Wildlife**

Wildlife communities on Kirtland AFB are typical of those found in central New Mexico (Stephens and Associates 1996). The composition of these communities is dependent upon the quality and quantity of available habitat that meets the needs of individual wildlife species. The poor availability of water has been a limiting factor to the wildlife communities, and the lack of permanent water sources is particularly prevalent in the grasslands where wildlife populations appear smaller and less diverse than the forage production could potentially support (Stephens and Associates 1996).

No amphibians have been documented in the grassland habitat on Kirtland AFB and none were observed by GSRC biologists during the May 2006 surveys. Two reptiles were observed by GSRC biologists during the May 2006 surveys, a six-lined racerunner (*Aspidoscelis sexlineata*) and a whiptail (*Cnemidophorus* sp.). Other common amphibians and reptiles with the potential to occur on the grasslands of Kirtland AFB are listed in Appendix B.

GSRC biologists observed loggerhead shrikes (*Lanius ludovicianus*), lark buntings (*Calamospiza melanocorys*), mourning doves (*Zenaida macroura*), scaled quail (*Callipepla*

*squamata*), and western meadowlarks (*Sturnella neglecta*) during site surveys in May 2006. Burrowing owls (*Athene cunicularia*) and their burrows were observed adjacent to Option Site 1, along Wyoming Boulevard and Pennsylvania Avenue. Burrowing owls and loggerhead shrikes are listed as species of concern by the USFWS (2006). A mourning dove nest with two eggs was also observed. Other birds which may use the grassland community for hunting or nesting are listed in Appendix B.

Black-tailed jackrabbits (*Lepus californicus*) and Gunnison's prairie dogs (*Cynomys gunnisoni*) were the only mammals observed by GSRC biologists. These were observed at Option Site 3 and along Pennsylvania Avenue adjacent to Option Site 1, respectively. Other mammals which could occur within these grassland communities are presented in Appendix B.

#### **4.8.1.3 Sensitive Species**

Sensitive species, as used herein, are those plant and animals species that are protected by the Federal government under the Endangered Species Act (ESA) or by the State of New Mexico under the Wildlife Conservation Act (WCA) or the New Mexico Endangered Plant Species Act. The USFWS has the responsibility to identify and conserve species protected under the ESA. These species are listed as either threatened or endangered. In addition, the USFWS has identified species that are candidates for listing. The New Mexico Department of Game and Fish (NMDGF) is responsible for these species protected by the WCA. The New Mexico Energy, Minerals, and Natural Resources Department (NMEMNRD) maintains listings of state threatened and endangered plants, which are protected under the New Mexico Endangered Plant Species Act. The USFWS and NMDGF were contacted regarding any potential impact to threatened, endangered, or sensitive species. A response was received from the USFWS on 30 January 2007, which indicated that there were no ESA issues at either of the sites. The NMDGF's response requested clarification regarding the potential to relocate Gunnison's prairie dogs and the potential to affect migratory birds. A copy of these responses is included at Appendix C. Clarification has been provided in this document.

Federal and state listed species which may occur on Kirtland AFB are shown in Table 4-3. The categorization of "sensitive" or "species of concern", as for some species in Table 4-3, carries no legal requirements or protections. It simply identifies those species that deserve special consideration in management and planning and to alert land managers to the need for caution in management where these taxa may be affected (NMDGF 2006). Species of concern may be

protected under other Federal or state laws, such as the MBTA. A survey for Federal and state listed species was conducted in 2004 and only one state-listed species, the gray vireo (*Vireo vicinior*), was observed on the base. This observation occurred in juniper woodlands along the eastern boundary. No similar habitat occurs within or near either project site.

During the May 2006 pedestrian surveys, three of the species listed in Table 4-3 were observed at or near one of the sites, as will be discussed later. In addition to the ESA and WCA, migrating birds are also protected under the MBTA. As indicated previously, the MBTA prohibits the take of migratory birds, their nests, and their eggs. Disturbance, relocation, or removal of an occupied nest (e.g., burrowing owls) would require a permit from the USFWS.

**Table 4-3. Federally and State Listed Species for Bernalillo County, New Mexico Potentially Occurring on Kirtland AFB**

Common Name	Scientific Name	USFWS ESA	NMDGF	Suitable Habitat in Option Sites (1 or 3)
Rio Grande silvery minnow	<i>Hybognathus amarus</i>	E	E	No
neotropic cormorant	<i>Phalacrocorax brasilianus</i>		T	No
bald eagle	<i>Haliaeetus leucocephalus</i>	T	T	No
common black-hawk	<i>Buteogallus anthracinus anthracinus</i>		T	No
American peregrine falcon	<i>Falco peregrinus anatum</i>		T	Yes
whooping crane	<i>Grus americana</i>	E	E	No
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T		No
white-eared hummingbird	<i>Hylocharis leucotis borealis</i>		T	No
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	E	No
Bell's vireo	<i>Vireo bellii</i>		T	No
gray vireo	<i>Vireo vicinior</i>		T	No
Baird's sparrow	<i>Ammodramus bairdii</i>		T	Yes
spotted bat	<i>Euderma maculatum</i>		T	No
Western burrowing owl	<i>Athene cunicularia</i>	SoC	SoC	Yes
Loggerhead shrike	<i>Lanius ludovicianus</i>	SoC	SoC	Yes
Gunnison's prairie dog	<i>Cynomys gunnisoni</i>	SoC	SoC	Yes
New Mexican jumping mouse	<i>Zapus hudsonius luteus</i>		T	No
Texas horned lizard	<i>Phrynosoma cornutum</i>	SoC	SoC	Yes
Santa Fe milkvetch	<i>Astragalus feensis</i>	SoC	SoC	Yes
La Jolla prairie clover	<i>Dalea scariosa</i>	SoC	SoC	No
Sapello Canyon larkspur	<i>Delphinium sapellonis</i>	SoC	SoC	No
Sandia alumroot	<i>Heuchera pulchella</i>	SoC	SoC	No
Plank's catchfly	<i>Silene plankii</i>	SoC	SoC	No

E – Endangered                      T – Threatened  
 SOC – Species of Concern              S – Sensitive  
 Source: NHHM 2006, NMDGF 2006, USFWS 2006

## **4.8.2 Environmental Consequences**

### ***4.8.2.1 Preferred Alternative (Option Site 1)***

Construction and operation of AFRC at the preferred site would eliminate some of the desert grasslands that provide habitat for many species on Kirtland AFB. This site is located adjacent to other developed areas, which reduces its suitability as quality wildlife habitat. Gunnison's prairie dog, the western burrowing owl, and loggerhead shrike may forage within the project area but most likely would choose habitat of higher quality elsewhere on base for foraging and nesting. No species protected under the ESA were observed on Option Site 1. The loss of this habitat for listed species would not be significant because of the low quality of the habitat and the abundance of higher quality habitat in other areas on the base.

Kirtland AFB has a Gunnison prairie dog relocation plan, which states that every effort will be made to capture and relocate prairie dogs before ground disturbance activities. In accordance with this plan, prairie dogs at or near the Option Site 1 would be trapped and relocated 3 weeks prior to any ground disturbance.

In addition, a qualified biologist will survey for nesting birds prior to construction. Surveys for burrowing owls will occur 1 day prior to ground-disturbing activities and the morning of the proposed disturbance. If nesting birds are discovered, appropriate actions will be taken in conformance with the MBTA through coordination with the USFWS. Burrowing owls are relocated in accordance with guidelines established by the California Burrowing Owl Consortium (1993).

Approximately 14 acres of grassland/mixed scrub and wildlife habitat would be permanently replaced with pavement and hard structures. Temporary construction areas would need to be immediately replanted with native vegetation to avoid additional long-term or permanent adverse effects to available wildlife habitat. In addition, environmental protection measures that can be implemented to further reduce effects are presented in Section 4.15. Nonetheless, because of the small amount of acreage impacted relative to that within and surrounding Kirtland AFB, the permanent and temporary effects would not be considered significant.

### ***4.8.2.2 Alternative 2 (Option Site 3)***

As indicated previously, this site is open grassland and mixed desert scrub and located adjacent to other facilities on base. These disturbed and developed areas have reduced the suitability of

the area as high quality wildlife habitat. None of the species in Table 4-3 were observed at this site. Approximately 14 acres of grassland/mixed scrub and wildlife habitat would be permanently replaced with pavement and hard structures. The permanent and temporary effects would be the same as those from the Preferred Alternative. Environmental protection measures that can be implemented to further reduce any adverse effects are presented in Section 4.15.

#### ***4.8.2.3 No Action Alternative***

Implementation of the No Action Alternative would allow both of the alternative sites to remain in the current conditions, at least for the short term. However, each of these sites is subject to future development.

### **4.9 CULTURAL RESOURCES**

#### **4.9.1 Affected Environment**

The term 'cultural resource' refers to any prehistoric or historic resource such as prehistoric settlement sites, historic archaeological sites and other evidence of our cultural heritage. The term 'historic property' refers specifically to a cultural resource that has been determined eligible for inclusion in the National Register of Historic Places (NRHP). Five classes of historic properties are defined that are eligible for listing on the NRHP: buildings, sites, districts, structures, or objects (36 CFR 60.3). In addition, cultural resources may qualify for protections afforded by the Archeological Resources Protection Act (ARPA) or the Native American Graves Protection and Repatriation Act (NAGPRA).

Under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, the USAF is required to assess the effects of undertakings prior to their initiation to ensure that there will be no adverse effects on historic properties (36 CFR 800). The NHPA also establishes the National Register of Historic Places (NRHP) and Title 36 CFR Section 60.4 defines the criteria used to establish significance and eligibility to the NRHP. Section 110 of the NHPA requires the USAF to complete an inventory of historic properties located on its land (36 CFR 60, 63, 78, 79, and 800). AMEC Earth & Environmental completed a pedestrian survey in 2002 of all Kirtland AFB property. The results of this survey found three archaeological sites within 1 mile of the Preferred Alternative Site (Option Site 1) and nine sites within 1 mile of the Option Site 3. The State Historic Preservation Office (SHPO) was consulted during the

archaeological inventory and concurred with the recommendations of eligibility for the archaeological sites in 2002. The SHPO was also consulted regarding this specific site and agreed with Kirtland AFB's determination of no adverse effect (see Appendix C).

#### **4.9.2 Environmental Consequences.**

Analysis of potential impacts to significant cultural resources considers both direct and indirect impacts. Impacts may occur by:

1. Physically altering, damaging, or destroying all or part of a resource;
2. Altering the characteristics of the surrounding environment that contribute to resource significance;
3. Introducing visual, audible, or atmospheric elements that are out of character with the property or alter its setting; or
4. Neglecting the resource to the extent that it is deteriorating or destroyed.

##### ***4.9.2.1 Preferred Alternative (Option Site 1)***

The Proposed construction of the AFRC would permanently disturb up to 14 acres, some of which has been disturbed in the past. There are no historic properties or protected cultural resources on the site. Three archaeological resource sites exist within 1 mile of the Option Site 1. However, all three sites are not considered eligible to the NRHP. Therefore, this construction would not affect any cultural resources.

##### ***4.9.2.2 Alternative 2 (Option Site 3)***

According to the current archaeological survey, nine archaeological sites are known to exist within 1 mile of the alternative location. Three sites have been recommended eligible for inclusion on the NRHP. The remaining six sites have been recommended not eligible to the NRHP. However, none of these sites are located on Option Site 3 and development of the AFRC at this site would completely avoid the eligible archaeological resources. Therefore, no cultural resources would be affected by this action.

##### ***4.9.2.3 No Action Alternative***

Implementation of the No-Action Alternative would result in no change to existing conditions of historic properties and, therefore, would have no impact to those resources.

## **4.10 TRANSPORTATION**

### **4.10.1 Affected Environment**

Numerous modes of transportation are available at Kirtland AFB including air, rail and Federal and state highway access. The Albuquerque International Sunport is located along the western boundary of the base and provides commercial and general aviation as well as military support, particularly for Kirtland AFB and Air Force Reserve units. The airfield has three air carrier runways and one dedicated to general aviation (City of Albuquerque 2006).

Kirtland AFB is situated approximately 4 miles east of Interstate 25 (I-25) and about 1.5 miles south of I-40. The base is served from both of these Interstate highways and many state and local roads. Access to the base is allowed through any of seven gates (Figure 4-5), although the primary access is through the Wyoming Boulevard, Gibson Boulevard, and Eubank Boulevard gates. On weekends, only the Wyoming, Truman, and Gibson gates are open. Construction contractors access the base through Kirtland Gate on the western side of the installation. Major east-west streets in the eastern portion of the cantonment area include Gibson Boulevard and Hardin Street. Major north-south roads include Carlisle Avenue, San Mateo Avenue, Wyoming Boulevard and Pennsylvania Avenue. However, the latter turns toward the east and eventually intersects with Wyoming Boulevard, before turning back toward a north-south direction. Table 4-4 provides the traffic volumes of 12 major intersections on Kirtland AFB. Most of the congestion occurs at or near the access gates. However, the Kirtland AFB Clean Air Act Transportation Intermodal Study (Kirtland AFB 1999) indicated that the Wyoming Boulevard – Gibson Boulevard and Wyoming Boulevard – Hardin Street intersections were congested at unacceptable levels in both peak hours (i.e., morning and evening). These intersections are located approximately 1.25 miles and 0.5 mile, respectively, north of Option Site 1 (Figure 4-6). Because the base is Albuquerque's largest employer, it is a principal destination for commuters in the southern part of the city.

**Table 4-4. Kirtland AFB Traffic Analysis Data**

Intersection	ADT <sup>a</sup>	Peak Hour	Peak Car/hour	Avg. Car/hour
Carlisle Blvd. and Aberdeen Dr.	4,512	6:45 a.m.	903	188
San Mateo Blvd. and Randolph Ave.	6,768	6:45 a.m.	903	282
Pennsylvania St. and Gibson Blvd.	13,512	4:00 p.m.	1,803	563
Truman and Aberdeen Dr.	8,904	6:45 a.m.	1,083	371
Pennsylvania St. and Hardin Dr.	8,976	7:00 a.m.	1,196	374
Texas St. and Gibson Blvd.	9,720	4:00 p.m.	1,299	405
Wyoming Blvd. and Gibson Blvd	14,016	4:00 p.m.	1,869	584
Wyoming Blvd. and F Ave.	14,016	7:00 a.m.	1,870	584
Wyoming Blvd. and Hardin Dr.	8,832	7:00 a.m.	1,176	368
9 <sup>th</sup> St. and Hardin Dr.	6,480	7:00 a.m.	867	270
14 <sup>th</sup> St. and Hardin Dr.	9,072	7:00 a.m.	1,211	378
20 <sup>th</sup> St. and Gibson Blvd.	16,394	6:45 a.m.	2,490	812

ADT = average daily traffic

<sup>a</sup> ADT is defined as the number of vehicles in a 24-hour period.

Source: **Kirtland Air Force Base 2005b**

## 4.10.2 Environmental Consequences

### 4.10.2.1 Preferred Alternative (Option Site 1)

Construction of the AFRC would have no effect on regional rail or air service. Vehicle traffic on base would be increased during the construction period, primarily along Pennsylvania Avenue, Gibson Boulevard and Randolph Road. Construction crews would access Option Site 1 via the Kirtland Gate then onto Aberdeen to Randolph Road. From Randolph Road, construction crews would use Hardin Street to access either Wyoming or Pennsylvania. Vehicle traffic off-base would increase along the major arteries as construction crews and equipment commute to and from the construction site. The Kirtland Gate, which is accessed via Gibson Boulevard, is currently the only gate authorized for contractor entry. This is the only gate where resources are available to inspect incoming trucks and commercial vehicles. Slight increases in traffic would occur due to the construction traffic, particularly during the peak morning hours. However, most equipment would be left on-site to reduce on- and off-base traffic.

Operation of the AFRC would also create sporadic and minor increases to base vehicle traffic. As mentioned previously, less than 50 additional full-time personnel would be expected to access Kirtland AFB on a daily basis as a result of the implementation of the Preferred Alternative. Some of the more congested intersections would experience an increase of about 2 percent, which given the current conditions, would be considered a moderate impact. Increased traffic would primarily occur during the weekends, particularly during the times when all three

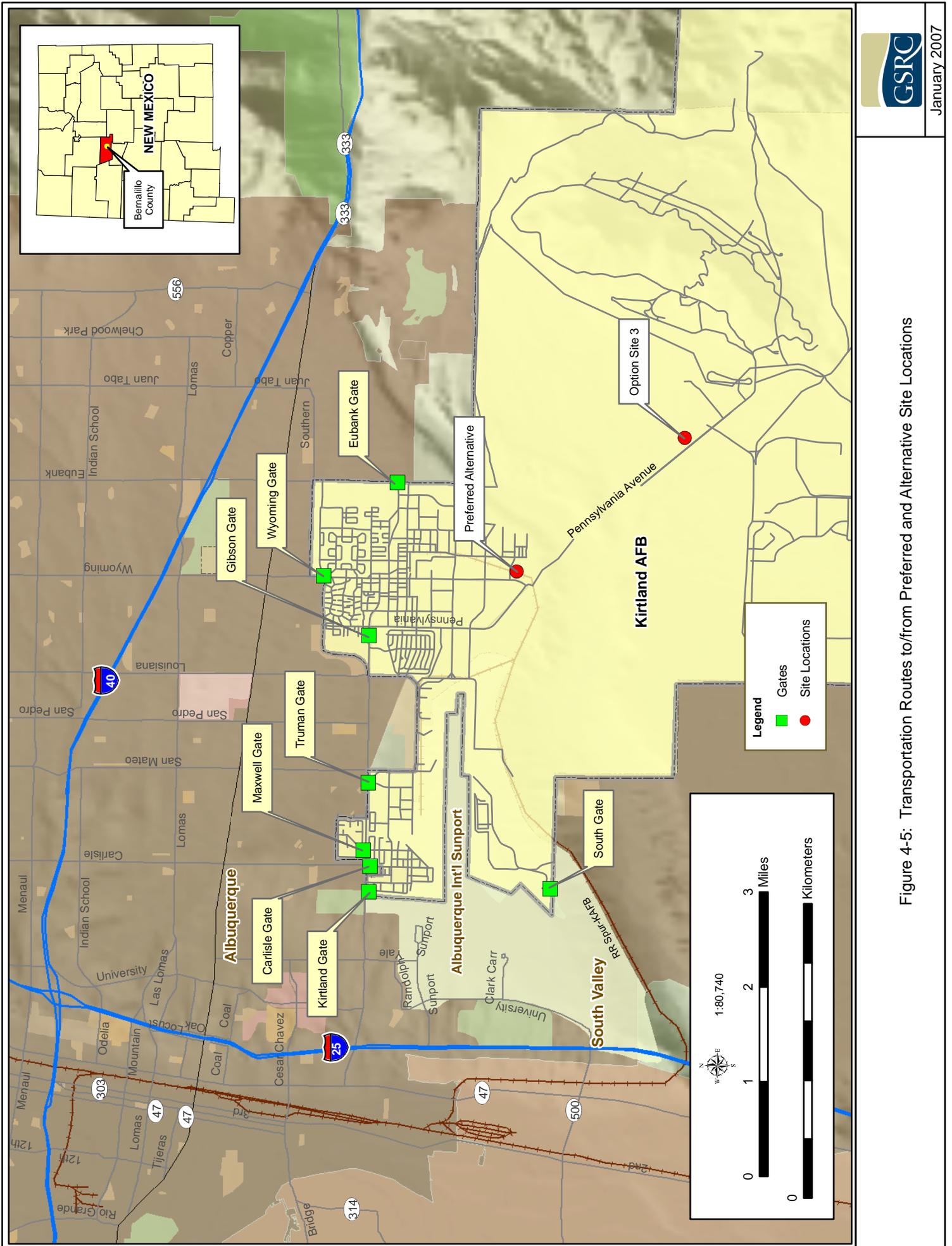


Figure 4-5: Transportation Routes to/from Preferred and Alternative Site Locations

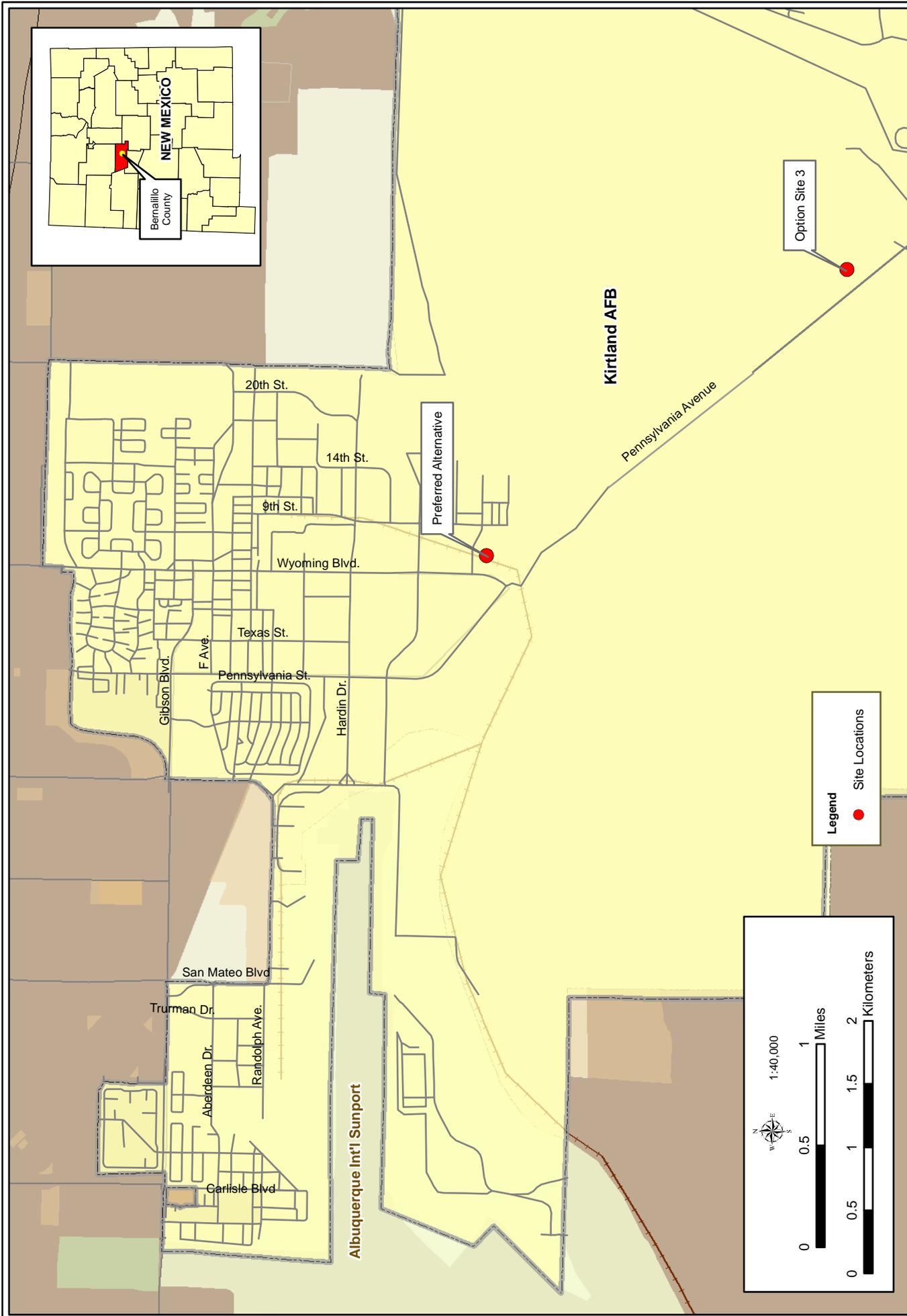


Figure 4-6: Major intersections near the Option Sites 1 and 3

Reserve units are conducting training activities. However, other base traffic would be substantially reduced during the weekend. Therefore, construction and operation of the AFRC at the Preferred Alternative Site (Option Site 1) would not significantly impact the traffic on or off Kirtland AFB.

#### ***4.10.2.2 Alternative 2 (Option Site 3)***

Impacts to transportation at the Option Site 3 would be similar to those described under the Preferred Alternative. However, because Reserve units could access the Option Site 3 via Pennsylvania Avenue from any of the western gates, traffic congestion would be expected to be slightly less at the Wyoming – Hardin intersection. The construction crews would access the base in the same manner as they would for the Preferred Site.

#### ***4.10.2.3 No Action Alternative***

Under the No Action Alternative, there would be no effect to vehicle traffic on or off-base. Air and rail service would be maintained at status quo.

### **4.11 UTILITIES**

#### **4.11.1 Affected Environment**

##### ***4.11.1.1 Potable Water Supply***

Kirtland AFB obtains its potable water from five wells dispersed across the installation and through water purchases from the City of Albuquerque. The wells have been installed in the Albuquerque Regional Water Basin at depths of 450 to 1,000 feet and water obtained from the wells is treated through a blending system to reduce arsenic levels. The supply and quality are considered adequate to meet present and future regional demands.

No water lines are immediately adjacent to either site. Therefore, engineering designs would need to consider installation of lines to tie into existing lines in other parts of the base. Option Site 1 would require a 0.6-mile line to connect to a 36-inch water main that parallels Hardin Street, north of the site. Although a 6-inch water line is located approximately 1 mile to the east of Option Site 3, this size is not sufficient to accommodate the AFRC; thus, a new line would need to be installed and tied into one of the base's main supply lines, most probably at Hardin Street (Hale et al. 2006).

#### ***4.11.1.2 Wastewater System***

Wastewater generated at Kirtland AFB is treated by the City of Albuquerque. Discharges to the city's system are authorized under a City of Albuquerque Wastewater Permit. The City of Albuquerque's wastewater treatment plant currently operates under a NPDES Permit (NMS000101) issued by the EPA. In 2001, Kirtland AFB contributed 2.5 million gallons per day (MGD) of wastewater to the city's treatment facility.

Both alternative locations have sewer lines in proximity to the sites. Option Site 1 would need to tie into a sewer line located approximately 300 feet to the west. An 8-inch sewer line is located adjacent to Pennsylvania Avenue at the Option Site 3. Both lines have capacity to accommodate the new AFRC (Hale et al. 2006).

#### ***4.11.1.3 Storm Water System***

Kirtland AFB currently holds a Multi-Sector General Permit (MSGP) and has a SWPPP which identifies the BMPs and other actions the installation would take to reduce the amount of water pollution that occurs from storm water runoff from industrial areas into public waters. The MSGPs issued by the EPA expired in October 2005, but all facilities operating under a MSGP at that time were allowed to continue operating under the MSGP until EPA issues a new MSGP. The new requirements were promulgated in early 2007, but EPA has not yet issued the MSGP for Region 6.

#### ***4.11.1.4 Solid Waste Disposal***

Solid waste is removed to an off-base disposal site operated by the City of Albuquerque (Kirtland AFB 2000). Kirtland AFB also has an on-base landfill used for the disposal of non-hazardous demolition and construction debris (Kirtland AFB 2000).

#### ***4.11.1.5 Electrical Power***

Electric power for Kirtland AFB is purchased from the Public Service Company of New Mexico. A 115 kVA line is located adjacent to Option Site 1 and ties into a power substation immediately north of the site. Power to the AFRC would require that a transformer be added to the substation. Underground lines would be installed from the substation to the AFRC (Hale et al. 2006).

Option Site 3 has adjacent power lines also; however, this line is considered one of the oldest and most unreliable power sources on the base. Consequently, the design and construction of the AFRC would probably need to incorporate a new line from Option Site 3 to the power substation near Option Site 1 (Hale et al. 2006).

#### ***4.11.1.6 Communications***

Kirtland AFB operates its own telephone switching system. Communication lines are located adjacent to both sites, but would need to be updated to accommodate the new AFRC.

### **4.11.2 Environmental Consequences**

#### ***4.11.2.1 Preferred Alternative (Option Site 1)***

Construction of the proposed AFRC facility at the preferred location would have temporary and minimal effects on Kirtland AFB's potable water supply, wastewater treatment system and storm water discharges. Construction crews would bring water on-site for their personnel, and portable latrines would collect sanitary waste. Since construction at the site would disturb greater than 1 acre, a NPDES Storm Water Discharge Permit would be required prior to construction. This permit would require that a SWPPP be prepared and NOI be filed with the EPA. The SWPPP would identify BMPs that are recommended to be implemented to control storm water erosion and runoff from the site and sedimentation into downstream areas. Upon completion of the construction activities, all disturbed areas that are not going to be landscaped and routinely maintained should be reseeded with native vegetation.

Operation of the AFRC would result in a slight increase in the demands on water supply and wastewater treatment systems. Both systems have ample capacity to accommodate the increased demands and essentially there would be no change to the region's water supply or quality. Storm water run-off would be controlled by an on-site detention basin, which is recommended for every major facility on Kirtland AFB. Collection and disposal of solid waste would need to be contracted by the AFRC. BMPs that would be implemented for the operation of the Vehicle Maintenance Shop are described later in Section 4.12.2.1.

Installation of communication, sewer, water and power lines to Option Site 1 would require additional ground disturbance. However, the longest line (0.6 mile) that would be required would be for potable water supply and the pipeline corridor would be located adjacent to Wyoming Boulevard. Similarly, the corridors for the other utility transmission lines would also

follow previously disturbed corridors (e.g., roads or existing transmission lines) to reduce ground disturbing impacts. The sewer line corridor would be approximately 300 feet long. Power and communication lines would be less than 100 feet long. Thus, these effects would be considered insignificant.

#### ***4.11.2.2 Alternative 2 (Option Site 3)***

Similar types of impacts, as discussed under the Preferred Alternative, would occur if the Option Site 3 were selected for the construction and operation of the AFRC. However, due to the proximity of the site to Arroyo del Coyote, there would be a greater potential for storm water erosion and sedimentation during construction. BMPs and construction methods would have to take into consideration the proximity to Arroyo del Coyote, and ensure that such erosion and sedimentation controls are properly implemented and maintained throughout the construction period. An on-site detention basin, which is required for all major facilities on Kirtland AFB, would be constructed to control post-construction storm water run-off.

In addition, potable water and power transmission lines, of sufficient size or capacity, are not located in proximity of Option Site 3. Consequently, more ground disturbance would be required to install these utilities than was described for the Preferred Alternative Site. The construction corridors for these transmission lines would still be expected to be located along existing roads or other utility corridors and, thus, would result in negligible impacts.

#### ***4.11.2.3 No Action Alternative***

Under the No Action Alternative, no construction of the AFRC facility would occur; thus, no effects would occur to the installation's storm water system or existing discharges. Furthermore, no additional demands, temporary or long-term, on Kirtland AFB's water supply or wastewater treatment systems would occur under this alternative.

## **4.12 HAZARDOUS AND TOXIC SUBSTANCES**

### **4.12.1 Affected Environment**

#### ***4.12.1.1 Uses of Hazardous Materials***

Hazardous materials such as pesticides, herbicides, and chemicals associated with the operation of research laboratories, fire control training, and industrial shops are used on Kirtland AFB (Kirtland AFB 2000).

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

Kirtland AFB operates a 90-day accumulation site managed by 377 MSG/CEVC. Waste disposal is coordinated by 377 MSG/CEVC. Wastes are collected at specified initial accumulation points (IAP). After the waste is properly contained, labeled and readied for shipping, the IAP contacts the Defense Reutilization and Marketing Office (DRMO), which organizes off-site disposal of waste by private contractors (Kirtland AFB 2006b).

#### ***4.12.1.3 Site Contamination and Cleanup***

A search was conducted on the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). CERCLIS contains information on hazardous waste sites, potential hazardous waste sites, and remedial activities, including sites that are on the National Priorities List (NPL) or being considered for the NPL.

Kirtland AFB does not have a NPL site but has had lead compounds and naphthalene released into the environment during 2003 and 2004 (EPA 2006a). No reports have been issued for 2005. Lead compounds were released into the Rio Grande from storm water runoff in 2004. Lead compounds and naphthalene were released as fugitive or stack air emissions in 2003. Proper documentation was reported to the EPA.

The Kirtland AFB Management Action Plan (Kirtland AFB 2005c) was reviewed to assess potential hazardous waste sites that were being assessed by the Environmental Restoration Program (ERP) adjacent to Option Site 1 and Option Site 3. One site (AFRIMS Site SS065) is located about 0.5 mile west of Option Site 1. This site was a horizontal dipole drum rack; remediation has occurred and the site has been approved for No Further Action (NFA).

A radioactive burial site (AFRIMS Site RW006) is located 0.5 mile east of Option Site 3. This site may contain a 55-gallon drum of mercury and animal carcasses that were reputed to have been disposed of in trenches, which may be radioactive. The site was operated from 1961 until 1970. It is currently undergoing investigation to determine if remediation is required. In addition, a solid waste management unit site (AFRIMS Site WP016) is located approximately 2,000 feet southeast of Option Site 3. This site is undergoing further investigation required by a Notice of Deficiency (Kirtland AFB 2005c).

#### ***4.12.1.4 Special Hazards***

Many of the buildings on Kirtland AFB contain asbestos and lead paint (Kirtland AFB 2000). The NMED has approved the petitions for NFA for the skeet range (located adjacent to Option Site 1) and a septic system (within 0.5 mile). Another site (S5-102) is contaminated with dielectric fluid and is still under investigation. This site is located within 0.5 mile of Option Site 1.

### **4.12.2 Environmental Consequences**

#### ***4.12.2.1 Preferred Alternative (Option Site 1)***

The potential exists for petroleum, oil, and lubricants (POL) storage and use at the temporary staging areas to maintain and refuel construction equipment. Small quantities of POL will also be stored and used at the AFRC for vehicle maintenance. However, these activities would include secondary containment to hold 110 percent of the largest container capacity (40 CFR 112.12). Clean-up materials (e.g., oil mops) would also be maintained at the site to allow immediate action in case an accidental spill occurs. Drip pans would be provided for stationary equipment to capture any POL accidentally spilled during maintenance activities or leaks from the equipment. In addition, a Spill Prevention, Containment and Countermeasures Plan (SPCCP) would be in place prior to the start of construction and all personnel would be briefed on the implementation and responsibilities of this plan.

Some activities associated with the operation of the AFRC would generate small quantities of hazardous waste. Waste POLs would be generated during the repair and maintenance of military vehicles and equipment. An Initial Accumulation Point (IAP) would be established and hazardous wastes would be disposed in coordination with the 377 MSG/CEVC. The addition of this facility would increase the number of satellite accumulation points and waste disposal. Kirtland AFB would recycle parts cleaner solution. No USTs or ASTs would be required for operation of the new facilities. Vehicles and equipment will be fueled off-base at commercial facilities (Lynn 2006). The current ERP sites near Option Site 1 would not be a significant issue in the design, construction or operation of the AFRC.

Because Reserve units that will use the AFRC include medical units, minor amounts (i.e., less than 5 pounds per quarter) of bio-medical waste would be generated. There are currently no facilities on Kirtland AFB suitable for this type of disposal. AFRC would contract support for medical waste disposal. These wastes would be properly collected and disposed off site by licensed contractors in the same manner in which such wastes are currently disposed (Kluzak

2006). It is also probable that small quantities of small arms munitions would be stored at the AFRC. Under this scenario, Explosive Facility Licenses would be required from Kirtland AFB's Safety Office (NWC/SE).

The Preferred Action Alternative would not result in a significant hazard to the public or environment regarding the transport, use, or disposal of hazardous materials or bio-medical wastes.

#### ***4.12.2.2 Alternative 2 (Option Site 3)***

The storage, handling, use, and disposal of hazardous materials and wastes during construction and operation of the AFRC would be the same at Option Site 3 as it would be for the Preferred Action Alternative site. No significant hazard to the public or environment regarding hazardous materials or wastes is anticipated under this alternative. The current ERP sites at or near Option Site 3 would not be a significant issue in the design, construction or operation of the proposed AFRC.

#### ***4.12.2.3 No Action Alternative***

The potential release of hazardous materials during construction would not occur under the No Action Alternative because no construction would occur.

### **4.13 SOCIOECONOMICS**

#### **4.13.1 Affected Environment**

Bernalillo County is one of 33 counties in New Mexico and is considered the Region of Influence (ROI) for socioeconomic effects of the proposed action. Bernalillo County is part of the Albuquerque Metropolitan Statistical Area (MSA). The racial mix of Bernalillo County consists predominantly of Caucasians (78 percent), followed by Native American (5 percent), and African American (3 percent). The remainder is divided among people claiming to be of other races two or more races. Approximately 44 percent of the population of Bernalillo County claim Hispanic or Latino origins (U.S. Census Bureau 2004).

The total number of jobs in the ROI was 308,251 for 2004. An estimated 22 to 25 percent of all workers in the region are employed by the public sector. This estimate includes military personnel, government, and contract personnel. In 2004, Bernalillo County had a per capita

personal income (PCPI) at \$31,360, which exceeds the state average and represented a 3 percent increase over the 1994 PCPI for Bernalillo County.

#### **4.13.2 Environmental Consequences**

##### ***4.13.2.1 Preferred Alternative (Option Site 1)***

The proposed realignment of the AFRC would not result in any changes to the employment of military personnel or civil/private employees at the AFRC. To assess the impacts of the proposed action, the Army's Economic Impact Forecast System (EIFS) was used to model the effects to employment, income and population. The results are presented in Appendix A. The EIFS analyses indicated that the proposed action would produce no major socioeconomic effects in the ROI. Very slight changes (less than 0.1 percent) in income, employment and business sales volumes would be expected during the construction at the proposed AFRC.

No displacement of residences or businesses would be required and the construction area would be restricted to authorized personnel. Therefore, no disproportionate impacts to minority or low-income families or effects to children would occur as a result of the proposed action or alternatives.

##### ***4.13.2.2 Alternative 2 (Option Site 3)***

The impacts to socioeconomic resources in the ROI would be the same as those described for the Preferred Alternative.

##### ***4.13.2.3 No Action Alternative***

Under the No Action Alternative, socioeconomic conditions would remain status quo.

#### **4.14 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

##### **4.14.1 Affected Environment**

###### ***4.14.1.1 Environmental Justice***

EO 12898 (*Environmental Justice*) requires all Federal agencies to identify and address disproportionately high and adverse effect of its programs, policies, and activities on minority and low-income populations. As indicated previously, although the majority of the population in Bernalillo County claims to be Caucasians, about 44 percent claim Hispanic origin and about 8 percent claim to be African American or Native American. In addition, over 14 percent of the

Bernalillo County population is considered to live below the poverty level (U.S. Census Bureau 2004). Consequently, there is a potential for the BRAC actions to encounter environmental justice issues within the ROI. However, there are no private residential areas or businesses located within or near either site, since the sites are located on a military installation.

#### ***4.14.1.2 Protection of Children***

EO 13045 (*Protection of Children*) requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children”; and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” In Bernalillo County, about 7 percent of the population is 5 years old or less and 24 percent are younger than 18 years (U.S. Census Bureau 2000). The nearest school is an elementary school located at the Gibson Boulevard gate, approximately 2 miles from Option Site 1. There are no residential areas near either site.

### **4.14.2 Environmental Consequences**

#### ***4.14.2.1 Preferred Alternative (Option Site 1)***

No significant adverse impacts are anticipated as result of the construction and operation of the AFRC. All ground disturbance would occur entirely within Kirtland AFB. No displacement of housing, parks, schools, commercial enterprises, or churches would occur and no such resources are located in proximity to Option Site 1 that would result in increased noise or air quality effects. No wetlands, Federally listed threatened or endangered species, or cultural resources that are present at this site; thus no effects to these resources would be incurred. Therefore, no disproportionate impacts to low income or minority families and no additional risks to the safety of children would occur as a result of the proposed action.

#### ***4.14.2.2 Alternative 2 (Option Site 3)***

Impacts relative to environmental justice issues or the protection of children as a result of construction and operation of the AFRC at Option Site 3 would be the same as that described for the Preferred Alternative.

#### ***4.14.2.3 No Action Alternative***

Since the AFRC would not be constructed or operated on Kirtland AFB, there would be no effects relative to EO 12898 or EO 13045 issues.

## **4.15 CUMULATIVE EFFECTS AND IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES**

### **4.15.1 Cumulative Effects**

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives and other projects/programs that are planned for the region. The CEQ defines cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). The effects of individual minor disturbances and other changes to the environment by humans will accumulate when the frequency of disturbances is so high that the ecosystem has not fully rebounded before another stressful event is introduced. The spatial and temporal crowding of such disturbances can result in cumulative effects. The factors used in this document to determine which resources are cumulatively affected considered:

- a) whether the proposed action is one of several similar actions in the same geographic area;
- b) whether other activities in the area have similar effects on the resource;
- c) whether the resource is especially vulnerable to incremental effects;
- d) whether these effects have been historically significant for this resource; and
- e) whether other analyses in the area have identified a cumulative effects concern.

Kirtland AFB has been used for military missions since the 1930s and has continuously been developed as DoD missions, organizations, needs and strategies have evolved. Development and operation of training ranges have impacted thousands of acres with synergistic and cumulative impacts to soil, wildlife habitats, water quality, and noise. Beneficial effects, too, have resulted from the operation and management of Kirtland AFB including, but not limited to, increased employment and income for Bernalillo County, the City of Albuquerque, and its surrounding communities; restoration and enhancement of sensitive resources such as the Coyote Springs wetland area; consumptive and non-consumptive recreation opportunities; and increased knowledge of the history and pre-history of the region through numerous cultural resources surveys and studies.

With continued funding and implementation of the installation’s Integrated Natural Resources Management Plan (INRMP), Integrated Cultural Resources Management Plan (ICRMP),

Installation Restoration Plan (IRP) and Master Plan, adverse impacts due to future and on-going projects would be avoided or minimized. Projects at or adjacent to Kirtland AFB which were examined for cumulative impacts include the following:

- Demolition and replacement of aging housing
- Relocation of Truman Gate
- Construction and operation of a car wash and coffee shop at the Army and Air Force Exchange Services (AAFES)
- Construction of a pararescue and parajumper (PJ/CRO) training facility
- Beddown of the training wing of the CV-22 Osprey and CSAR-X helicopters
- Construction and operation of Kirtland Technology Park
- Construction of a bulk fuel storage and off-loading facility
- Construction, repair and replacement of the base perimeter fencing
- Implementation of prairie dog management
- Construction of a potable water blending system to reduce arsenic levels
- Kirtland AFB Enhanced Use Lease (EUL) development
- Proposed expansion of the Sunport

In addition, the Air Force has or is reviewing other BRAC actions that affect Kirtland AFB including the realignment of the Confinement Facility to Miramar Marine Corps Air Station, California; realignment of a portion (three aircraft) of the 27<sup>th</sup> Fighter Wing from Cannon AFB, New Mexico to Kirtland AFB's 150<sup>th</sup> Fighter Wing; and realignment of the Battlespace Environmental Division of the AFRL from Hanscom AFB, Massachusetts to Kirtland AFB. These actions are currently being evaluated under separate NEPA documents. Only the latter is expected to cause additional impacts.

The other actions described above have not resulted in any identified incremental or cumulative significant impacts on sensitive resources. Demolition of the housing units will occur over the next several years, but construction of all new housing has been completed. These actions occurred in areas that had been previously disturbed, developed, or planned for such development. The Truman Gate was relocated in 2006 and is expected to reduce the amount of traffic on Gibson Boulevard. Similarly, the AAFES facilities have been completed and were constructed in a previously disturbed/developed site. The PJ/CRO facility is scheduled to be constructed in 2007, and it will also be sited in previously disturbed area.

The beddown and plus-up of the 58th Special Operations Wing at Kirtland AFB would replace 11 aging H-53 helicopters with seven CV-22 tilt-rotor aircraft. In addition, the action includes an increase of four other helicopters and three HC-130P fixed wing aircraft and renovation of existing facilities. The first four of the CV-22s arrived at Kirtland AFB in early 2006. The CSAR-X helicopters will not arrive until FY10, and will replace existing Pave Hawks (HH-60G). A flight simulator for these aircraft is under construction on the west side of base.

Kirtland Technology Park is an AFRL-proposed phased development to provide a physical environment for co-locating military, academic, and defense industry professional operations to research and develop space and directed energy technologies vital to future warfighter requirements. The Kirtland Technology Park will be located along Gibson on the west side of the base (roughly between Truman and Carlisle gates). Phase I, to be started in approximately 2 years, would result in the construction of three new facilities containing laboratory, educational, and administrative space on approximately 36 acres on Kirtland AFB. The second area (92 acres) is to be developed under an Enhanced Use Lease; development would start during the next 5 years; additional development of the area currently occupied by Maxwell family housing is anticipated to start in approximately 15 to 25 years.

The construction or major renovation of a new bulk fuel storage and off-loading facility is needed to bring the aging facility into compliance. No definitive plans for this facility have been developed as yet. However, the action is expected to occur on or near the current site, which is located about 2 miles west of the Option Site 1. Similarly, the construction of the perimeter fence would occur as funding becomes available. However, the fence right-of-way is already disturbed and is a considerable distance from the preferred alternative site.

Implementation of the prairie dog management plan is on-going and must be taken into consideration during the planning of all actions on Kirtland AFB. As indicated previously, the potable water blending system is complete and in operation. It, too, was constructed in an area that had been previously disturbed.

The EUL is a 92-acre development that is currently proposed at Kirtland AFB to increase the use of underutilized lands. The proposal is to develop a mixed use commercial site comprised of offices, research, light industrial, retail and senior citizen housing. However, no definitive

plans have been prepared as this proposal is in the very early stages of planning. The EUL is located approximately 10 miles from the Option Site 1.

The Sunport has developed a Master Plan that includes numerous short and long-term goals for improvement and expansion (Sunport 2002). Some of the initial plans include expansion of the Air Cargo facility, near University Boulevard on the western portion of Sunport. No definitive schedules for any of the improvements, that might affect Kirtland AFB, are known at the present, however.

A summary of the anticipated cumulative impacts associated with the proposed action on each of the resources described previously is presented below.

#### ***4.15.1.1 Land Use***

A significant impact would occur if any action is inconsistent with adopted land use plans or action would substantially alter those resources required for, supporting or benefiting the current use. The Proposed Action is consistent with the base's general plan and would only affect 14 acres. This action, when considered with other potential alterations of land use, would not be expected to result in a significant cumulative adverse effect. All reasonable past, present, and foreseeable actions on Kirtland are consistent with the installation Master Plan, have been implemented in previously disturbed lands, or at great distances from the proposed action site such that no incremental impacts would occur.

#### ***4.15.1.2 Visual Resources***

Actions that cause the permanent loss of the characteristics that make an area visually unique or sensitive would be considered to cause a significant impact. No major impacts to visual resources would occur from implementing the propose action, due in part to the surrounding development at Option Site 1. Construction and operation of the AFRC, when considered with existing and proposed developments on Kirtland AFB, would not result in a significant cumulative negative impact on the visual quality of the base or region. These actions occurred in previously disturbed lands or at great distances from the proposed action site such that no incremental impacts would occur.

#### ***4.15.1.3 Air Quality***

Impacts to air quality would be considered significant if the action resulted in a violation of air quality standards, obstructs implementation of an air quality plan, or exposes sensitive receptors to substantial pollutant concentrations. The emissions generated during and after the construction of the AFRC would be short-term and minor. Construction activities that would use large equipment or large vehicles produce carbon monoxide, pollutant for which the Albuquerque-Bernalillo County area has been designated as a maintenance area. In addition, fugitive dust is created from the soil disturbance during construction. Permits are required by the City of Albuquerque-Bernalillo County for construction operations which disturb  $\frac{3}{4}$  acre or more. The fugitive dust at these sites is monitored by the Albuquerque-Bernalillo County Air Quality Control Board (AQCB) and activities are restricted if air quality is being degraded; thus, no significant cumulative fugitive dust effects are anticipated.

Although Albuquerque-Bernalillo County is under a 20-year State Implementation Plan (SIP) to reduce carbon monoxide emissions, the air quality in Bernalillo County has improved to the extent that, as a result of the 10-year review, the AQCB approved a CO Limited Maintenance Plan, which would eliminate the requirement for General Conformity analyses. The combined emissions from the Proposed Action, when considered with potential emissions from the other actions considered, are not expected to have any significant cumulative impacts on air quality, especially in view of the improvements in county air quality.

#### ***4.15.1.4 Noise***

Actions would be considered to cause significant impacts if they permanently increase ambient noise levels over the 65 dBA or raise the ambient noise by 3 dBA or greater. Most of the noise generated by the proposed action would occur during. Operation of the AFRC would result in slight increases in noise levels, particularly if Option Site 3 were ultimately selected. Potential sources of noise from other projects are not close enough in time or location to increase ambient noise levels above the 65 dBA range at the proposed sites. Thus, the noise generated by the AFRC, when considered with the other existing and proposed projects on Kirtland AFB, would not be considered as a significant cumulative adverse effect. The reasonable past, present and foreseeable actions resulted in only temporary increases in ambient noise levels during construction activities or at distances and during different schedules from the proposed action that no significant increase in ambient noise levels would be experienced.

#### **4.15.1.5 Soils**

A significant impact would occur if the action exacerbates or promotes long-term erosion, if the soils are inappropriate for the proposed construction, or if there would be a substantial reduction in agricultural production or loss of prime farmland soils. The proposed action and other local actions have not reduced prime farmland soils or agricultural production. Post-construction SWPPP measures, including the storm water detention basin, would be implemented to control erosion. No soil types inappropriate for engineering or construction uses are located at the project site. The disturbance of 14 acres of soils, when combined with past and proposed projects on Kirtland AFB, would not create a significant cumulative adverse impact, as all construction projects require prescribed erosion controls and stabilization of the disturbed area. As indicated previously, the majority of the past, present, and foreseeable projects are located on previously disturbed sites.

#### **4.15.1.6 Water Resources**

The significance threshold for water resources include any action that substantially depletes ground water supplies or interferes with groundwater recharge, substantially alters drainage patterns, or results in the loss of Waters of the U.S. that cannot be compensated. No significant impact to water resources would occur as a result of the construction and operation of the proposed AFRC. The proposed construction and operation of the AFRC would increase the disturbed areas on Kirtland AFB by 14 acres, regardless of the site ultimately selected. This construction, in combination with the other construction, would increase the storm water run-off and, without proper erosion and sedimentation control measures, could adversely affect drainage flow and surface water quality. However, the required SWPPP storm water detention basin would reduce erosion and sedimentation during construction to negligible levels and would eliminate post-construction erosion and sedimentation from the site. The detention basin would minimize any potential losses to groundwater recharge. The same measures would be implemented for other construction projects; therefore, cumulative impacts would not be significant.

#### **4.15.1.7 Biological Resources**

Significance thresholds for biological resources would include a reduction in ecological process, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could be off-set or otherwise compensated. Removal of the 14 acres of desert grassland would result in insignificant cumulative impacts to

vegetation communities and wildlife populations due to the vast amount of similar habitat contained within and surrounding Kirtland AFB and the juxtaposition of the two alternative sites with other disturbed and developed areas. The long-term viability of species and communities at Kirtland and AFB would not be threatened. In addition, prior to construction, sites are surveyed for migratory species and appropriate mitigation measures would be implemented. As indicated previously, the majority of the past, present, and foreseeable projects are located on previously disturbed sites. The Kirtland Technology Park would remove approximately 120 acres in the western portion of the base. This area has been highly disturbed by past actions and does not offer high quality habitat. Therefore, the loss of 14 acres associated with the proposed action, when combined with other ground disturbing or development projects on Kirtland AFB, would not result in significant cumulative negative impacts on the base's or the region's biological resources.

#### ***4.15.1.8 Cultural Resources***

The proposed action would have no effect on cultural resources. The installation has been surveyed for cultural resources and all historic properties have been identified. In addition, all proposed actions are reviewed to avoid adverse impacts to cultural resources and the majority of the reasonable past, present and foreseeable projects were constructed or would be constructed in areas that have been previously disturbed. Therefore, this action, when combined with other existing and proposed projects on Kirtland AFB, would not result in significant cumulative impacts to historical properties.

#### ***4.15.1.9 Socioeconomics***

Significance threshold for socioeconomic conditions include displacement or relocation of residences or commercial buildings; increases in long-term demands to public services in excess of existing and projected capacities; and disproportionate impacts to minority and low income families. Construction of the AFRC would result in temporary, minor and beneficial impacts to the region's economy. No impacts to residential areas, population, or minority or low-income families off base would occur. These effects, when combined with the other projects currently proposed or on-going at Kirtland AFB, would not be considered as significant cumulative impacts.

#### ***4.15.1.10 Transportation***

Significance threshold for transportation impacts would include an increase in congestion that would substantially (>15%) increase a commuter's average driving time, or result in substantial increase in vehicle trips that would exceed the current and projected capacity of the road system to the point that it would cause potential safety risks. Construction of the AFRC would result in temporary, minor increases in traffic. Operation of the AFRC would increase traffic congestion (up to 2 percent) at some of the main intersections during peak hours. However, the majority of the increased traffic would occur during the weekends, when other base traffic is reduced. Therefore, these increases, when combined with other proposed projects on base, would not be considered as a significant cumulative negative impact. Other projects (e.g., Battlespace Environment Division) would occur on the west side of the base, so traffic at this location would not add to the congestion in the main containment area. Other future projects would occur after the anticipated construction schedule of the AFRC; therefore, no significant adverse cumulative effects to transportation would be expected.

#### ***4.15.1.11 Utilities***

A significant impact would occur if the long-term demand for utilities exceeds the current or projected capacity. Minor modifications to transmission lines would be required to provide utilities to either location assessed in this EA. However, since the AFRC would result in little, if any, change in demand on local utilities, since the AFRC would be relocated within 3 miles of its current location. Thus, the demands on utility sources, when considered with other currently proposed projects on the base, would not be expected to result in a significant adverse cumulative impact.

#### ***4.15.1.12 Hazardous Material or Toxic Substances***

Significant impacts would occur if an action creates a public hazard, the site is considered a hazardous waste site that poses health risks, or if the action would impair the implementation of an adopted emergency response or evacuation plan. Only minor increases in the use of hazardous substances (e.g., POL) would occur as a result of the operation of the AFRC. No health or safety risks would be created by the proposed action. All present and future projects would incorporate measures to limit or control hazardous materials and waste into the design and operation plan of the facility. The ERP sites located in proximity to the Option Site 1 would continue to be monitored and cleaned, in accordance with regulations and remediation plans to ensure protection of human health and the natural environment. The proposed construction or

renovation of the bulk fueling and storage facility would bring that facility into compliance and reduce potential risks of hazardous materials/wastes being released into the environment. Therefore, the effects of this proposed action, when combined with other on-going and proposed projects on Kirtland AFB, would not be considered a significant cumulative effect.

#### **4.15.2 Irretrievable and Irreversible Commitment of Resources**

Any construction associated with the realignment of the AFRC would be an irreversible commitment of funding, labor, energy, and building materials. An irretrievable commitment of the 14 acres of wildlife habitat would be incurred upon construction of the AFRC. Kirtland AFB would commit the land and natural resources for the proposed action; all other resources (e.g., fuel, energy) would be committed by the Army and/or private commercial enterprises.

### **4.16 ENVIRONMENTAL PROTECTION MEASURES**

This section of the EA describes those measures that could be implemented to reduce or eliminate potential adverse impacts to the human and natural environment. These measures are presented for each resource category that could be potentially affected.

#### **4.16.1 Soil, Vegetation, and Wildlife**

Disturbed sites should be utilized to the maximum extent practicable for construction and construction support activities. Native seeds or plants, which are compatible with the enhancement of protected species, should be used to the extent feasible, to reseed disturbed areas that would not be landscaped or regularly maintained, once construction is complete. Additional environmental protection measures would include BMPs, as described previously, during construction to minimize or prevent erosion and soil loss. If straw bales are used as part of the BMPs, weed seed-free straw bales are recommended for use to eliminate the potential of spreading invasive species.

To avoid impacts on migratory bird species, their young, and their nests, construction would be timed to avoid the bird breeding season (typically March-April through August). In the event that construction would occur during the nesting season, a qualified biologist would survey the project site immediately before construction. If this survey reveals nesting birds protected by the MBTA, the nests would be avoided and the birds left undisturbed until the young fledge.

Alternately, bird nests could be prevented from being established prior to the onset of the breeding season.

#### **4.16.2 Air Quality**

As mentioned previously, emissions associated with construction activities would be insignificant, regardless of the alternative selected. Proper and routine maintenance of all vehicles and other equipment should be implemented to ensure that emissions are within the design standards of all construction equipment. Dust suppression methods should be implemented to minimize fugitive dust.

#### **4.16.3 Water Resources**

The proposed construction activities would require a SWPPP and NOI, which would be prepared and submitted to the EPA, as part of the NPDES permit process. The SWPPP would identify BMPs that would be implemented before, during, and after construction.

#### **4.16.4 Cultural Resources**

If any cultural resources are uncovered during construction, the Kirtland AFB Cultural Resource Program Manager would be notified and all construction activities would stop until a qualified archaeologist can assess the significance of the cultural remains. In particular, if human remains or funerary objects are discovered, construction will immediately cease until the appropriate parties, as required by NAGPRA, are consulted.

#### **4.16.5 Hazardous and Toxic Substances**

Hazardous and toxic materials/wastes in the project area during construction would likely consist of POL. If hazardous waste is generated, it would be disposed of according to Federal, state and local regulations, as well as existing Army and Air Force regulations and procedures. No maintenance to construction equipment should be conducted on-site, minimizing the potential for spills or direct contact with POLs. Equipment and vehicles parked overnight, or left for lengthy periods on site, would be fitted with drip pans. On-site use of construction equipment, use of chemical products, and wastes generated during construction shall comply with all Federal, state, and local regulations relating to protecting the environment from hazardous materials and containing spills. No hazardous wastes shall be stored on the site. There should be a Site Specific Spill Plan that describes what actions must be taken in case of a hazardous or toxic spill.

**THIS PAGE LEFT INTENTIONALLY BLANK**

**SECTION 5.0**  
***PERSONS CONSULTED AND TECHNICAL REVIEWERS***





---

---

## 5.0 PERSONS CONSULTED AND TECHNICAL REVIEWERS

---

---

CDR Grant Kluzak NOSC Albuquerque	Evelyn Watkins, Ph.D. 377 MSG/CEVQ	Jim Lynn, Facility Manager Jenkins AFRC
Edward J. Alexander Contr AFRL/VSOI (Air Force Research Laboratory/Space Vehicles)	SSG Ronald Mullin 372nd QM BN	Wayne Bitner 377 MSG/CEVC
Charles "David" Crutchfield Civ HQ NWC/SEW (Nuclear Weapons Center/ Weapons Safety)	Terry Cooper Sandia National Laboratory	John S. Pike Civ 377 MSG/CEVC Chief, Environmental Compliance Section
Donna K. Dunn Contr 377 MSG/CECE (Civil Engineering) Base Community Planner	Karen S. Baker Civ 377 MSG/CEVC Hazardous Waste Program Manager	Robert J. Dray Civ 377 MSG/CEVC Toxic Substance/Asbestos Program Manager
Kent M. Friedrichsen Civ AFRL/VSOI (Air Force Research Laboratory/ Space Vehicles) Jennifer L. Dann Civ 377 MSG/CEVC Air Program Manager	Steven C. Kitt Civ 377 MSG/CEVC Hazardous Material/Solid Waste Manager Carol A. Finley Civ 377 MSG/CEVQ Natural Resources Program Manager	Jeff Fraher DTRA/CXTS (Defense Threat Reduction Agency) Environmental Engineer Victoria R. Martinez Civ 377 AMDS/SGPB Industrial Hygienist Bioenvironmental Engineering
Robert S. Milligan Civ 377 MSG/CEVR Environmental Management Public Affairs	Cynthia Gooch Civ 377 MSG/CEVQ Chief, Environmental Quality Section	Christopher R. Bortz Civ 377 MSG/CEFO Fire Management Officer
Patrick A. Montano Civ 377 MSG/CEVC Water Program Manager	Carl J. Lanz Civ 377 MSG/CEV Chief, Restoration Section	Valerie A. Renner Civ 377 MSG/CEVQ Cultural Resources Program Manager
William V. Sayner Contr 377 MSG/CECE MILCON Project Engineer	Linda Woestendiek DTRA/BDQE (Defense Threat Reduction Agency)	Scott T. Wilson Civ 377 MSG/CEVQ Conservation Specialist
Joseph C. Otero Civ 377 ABW/XP	Elmer W. Ragan Civ HQ NWC/SE Chief, Safety	Michelle L. Hedrick Civ AFRL/DEOS (Air Force Research Laboratory/ Directed Energy)
Win Seyle BRAC NST USACE Mobile/Savannah District	Garth E. Terry Civ 377 ABW/JA Environmental Law Lawrence T. Zezza Civ 377 LRS/LGRR	Lead, Safety and Environmental Engineer

**THIS PAGE LEFT INTENTIONALLY BLANK**

**SECTION 6.0**  
**LIST OF PREPARERS**





## 6.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Environmental Assessment.

NAME	AGENCY/ORGANIZATION	DISCIPLINE/EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Suna Adam Knaus	GSRC	Forestry/Wildlife	16 years natural resources	EA Review
Chris Ingram	GSRC	Biology/Ecology	30 years NEPA and natural resources	Project Manager, DOPAA, Physical Resources
Eric Webb, Ph.D.	GSRC	Ecology/Wetlands	16 years natural resources and NEPA Studies	EA Technical Review
Maria Bernard Reid	GSRC	Ecology/Wildlife	5 years field surveys and natural resources	EA Preparation and Review Field Surveys; Biological and Water Resources
Carl Welch	GSRC	Anthropology	7 years Professional Archaeologist/Anthropologist	Socioeconomics and Cultural Resources Review
Joanna Cezniak	GSRC	Wildlife	9 years NEPA and natural resources	EA Preparation, Air Quality and Hazardous Materials
Ron Webster	Ray Clark Group, LLC	Socioeconomics/Civil Engineering	35 years NEPA studies and socioeconomic analyses	EIFS modeling and analysis

**THIS PAGE LEFT INTENTIONALLY BLANK**

***SECTION 7.0***  
***REFERENCES***





---

---

## 7.0 REFERENCES

---

---

- Bugliarello, G., Alexandre, A., Barnes, J., and Wakstein, C. 1976. The Impact of Noise Pollution: A Socio-Technological Introduction. New York: Pergamon Press.
- California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Technical Report Burrowing Owl Consortium, Alviso, California.
- City of Albuquerque. 2005. City of Albuquerque: About the Albuquerque-Bernalillo County Air Quality Control Board.
- City of Albuquerque. 2006. Albuquerque International Sunport. Facts and Figures. Found at website: <http://www.cabq.gov/airport/facts.html> Accessed 16 May 2006.
- Envirollogical Services, Inc. 2004. Base Wide Raptor Survey for Kirtland Air Force Base. Albuquerque, New Mexico. 2003/2004
- Environmental Laboratory. 1987. U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- Generac Power Systems, Inc. 2004. Technical Perspective: Sound Measurement and Attenuation. Bulletin 0170310SBY. Waukesha, Wisconsin
- Hale, Danny, Don Warnack, and Randy Mann. 2006. Personal communication between Messrs. Hale, Warnack, and Mann, Kirtland AFB Utility Division, and Mr. Chris Ingram, Gulf South Research Corporation, Baton Rouge, Louisiana on 19 July 2006.
- Kirtland Air Force Base (Kirtland AFB). 1999. Clean Air Act Transportation Intermodal Study. Phase I Traffic Analysis Report. April 30, 1999. Accessed via website: [http://www.kirtland.af.mil/base\\_information](http://www.kirtland.af.mil/base_information)
- Kirtland AFB. 2000. Final Environmental Assessment for Kirtland Air Force Base Privatization of Military Housing. March 2000.
- Kirtland AFB. 2003. Final 2002 Kirtland Air Force Base Emissions Inventory. Kirtland Air Force Base Environmental Management Division 37 ABW, Albuquerque, New Mexico
- Kirtland AFB. 2005a. Annual Consumer Confidence Report on the Quality of Drinking Water, 2004 Operating Year. Found at website: <http://www.kirtland.af.mil/doc/2004%20CCR%20Final.pdf>
- Kirtland AFB. 2005b. Environmental Assessment of the Construction and Operation of an HC-130P Flight Simulator and Aircraft Corrosion Control Facility, Kirtland Air Force Base, Albuquerque, New Mexico.
- Kirtland AFB. 2005c. Environmental Restoration Program, Management Action Plan, Kirtland AFB, Restoration Branch, 377 MSG/CEVR, May 2005. 2050 Wyoming Boulevard SE, Kirtland AFB, New Mexico.

- Kirtland AFB. 2006a. Kirtland Air Force Base: Air Quality Management. Internet Website: <http://www.kirtland.af.mil/Organizations/377MSG/CivilEngineer/Environ/AQMgmt.htm>. [Accessed: 17 May 2006].
- Kirtland AFB. 2006b. Kirtland Air Force Base: Initial Accumulation Point. Internet Website: <http://www.kirtland.af.mil/Organizations/377MSG/CivilEngineer/Environ/IAP.htm>. [Accessed: 15 July 2006].
- Kluzak, Grant CMDR 2006. Personal communication between CMDR Kluzak, Commanding Officer, Navy Operational Support Center, Albuquerque, NM and Ms. Maria Reid, GSRC, Baton Rouge, LA on 14 November 2006 regarding the bio-medical waste generated by the Navy at the Jenkins Armed Forces Reserve Center.
- Lopez Garcia Group. 2004. Rare Amphibian and Reptile Survey Report for Kirtland Air Force Base. Albuquerque, New Mexico. February 2004.
- Lynn, Jim. 2006. Personal communication among Mr. Jim Lynn, Facilities Manager, Jenkins AFRC, Maria Reid (GSRC), and Chris Ingram (GSRC) on 8 May 2006
- Mullin, Ronald, SSG. 2006. Personal communication among SSG Mullin (U.S. Army Reserves), Maria Reid (GSRC), and Chris Ingram (GSRC) on 8 May 2006.
- Natural Heritage New Mexico (NHNM). 2006. Natural Heritage New Mexico Species Information: Bernalillo County. Natural Heritage New Mexico Biological and Conservation Data System, internet version updated February 3, 2006. [http://nhnm.unm.edu/query\\_bcd/bcd\\_county\\_results.php?output=html](http://nhnm.unm.edu/query_bcd/bcd_county_results.php?output=html)
- Natural Resources Conservation Service (NRCS). 2006. Web Soil Survey. Version 1.1. Internet Resource: <http://websoilsurvey.nrcs.usda.gov/app/>. [Accessed: 16 May 2006].
- New Mexico Department of Game and Fish (NMDGF). 2000. Threatened and Endangered Species of New Mexico, Biennial Review and Recommendations; Revised Draft. New Mexico Department of Game and Fish, Conservation Services Division. Santa Fe, NM.
- NMDGF. 2006. New Mexico Species of Concern: Status and Distribution. Biota Information System of New Mexico, Department of Game and Fish, Conservation Services Division. Santa Fe, New Mexico.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Internet Resource: <http://soils.usda.gov/technical/classification/osd/index.html> [Accessed: 16 May 2006].
- Stephens, Daniel B. and Associates, Inc. 1996. Kirtland Air Force Base Fish and Wildlife Plan. Daniel B. Stephens and Associates, Inc. Albuquerque, New Mexico.
- Sunport. 2002. Albuquerque International Sunport. Airport Master Plan. Internet Website: [http://www.cabq.gov/airport/pdf/MP\\_Summary1.pdf](http://www.cabq.gov/airport/pdf/MP_Summary1.pdf). Last Accessed May 16, 2007.
- U.S. Bureau of Economic Analysis (BEA). 2004. Internet Website: <http://www.bea.gov>. Last updated: May 12, 2006.

- U.S. Census Bureau. 2000. Internet Website: <http://www.census.gov>. Last Updated: May 12, 2006.
- U.S. Census Bureau. 2004. Internet Website: <http://www.census.gov/>. Last Revised: March 23, 2006.
- U.S. Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Report 550/9-47-004.
- EPA. 2006a. Envirofacts Data Warehouse. Internet Website: [http://oaspub.epa.gov/enviro/ef\\_home2.toxics](http://oaspub.epa.gov/enviro/ef_home2.toxics). [Accessed: 16 May 2006].
- EPA. 2006b. Green Book. Internet Website: <http://www.epa.gov/oar/oaqps/greenbk/>. Last updated March 15, 2006.
- EPA. 2006c. Multi-Sector General Permits. Enviro\_Facts Website. Located at <http://cfpub.epa.gov/npdes/stormwater/msgp.cfm> Accessed on 16 May 2006 and last updated on 6 April 2006.
- EPA. 2006d. Water Discharge Permits. Enviro\_Facts Website. Located at <http://oaspub.epa.gov/enviro> Accessed on 16 May 2006 and last updated 24 April 2006.
- U.S. Fish and Wildlife Service. 2006. Listed and Sensitive Species in Bernalillo County. New Mexico Ecological Services Field Office. Internet Website: [http://www.fws.gov/ifw2es/NewMexico/SBC\\_view.cfm?spcnty=Bernalillo](http://www.fws.gov/ifw2es/NewMexico/SBC_view.cfm?spcnty=Bernalillo). Last accessed on November 8, 2006.
- Wyle Research Corporation. 1992. Noise Measurement and Assessment Methodologies. Arlington Virginia.

**THIS PAGE LEFT INTENTIONALLY BLANK**

***SECTION 8.0***  
***ACRONYMS AND ABBREVIATIONS***

---

---



---

---

## 8.0 ACRONYMS AND ABBREVIATIONS

---

---

AAFES	Army and Air Force Exchange Services
AFB	Air Force Base
AFMC	Air Force Materiel Command
AFRC	Armed Forces Reserve Center
AFRL	Air Force Research Laboratory
AICUZ	Air Installation Compatibility Use Zone
APZ	accident potential zone
AST	above ground storage tank
AT/FP	Anti-Terrorism/Force Protection
BMP	best management practices
BRAC Commission	Defense Base Closure and Realignment Commission
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
dB	decibel
dBA	A-weighted decibel
DNL	Day-Night Level
DoD	Department of Defense
DOE	Department of Energy
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EIFS	Economic Impact Forecast System
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	Endangered Species Act
GSRC	Gulf South Research Corporation
HVAC	heating, ventilation, and air conditioning
IAP	Initial accumulation points
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Plan
MBTA	Migratory Bird Treaty Act
MGD	million gallons per day
MSGP	Multi-Sector General Permit
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NFA	No Further Action
NHPA	National Historic Preservation Act
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMDGF	New Mexico Department of Game and Fish
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List

NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PCPI	per capita personal income
POL	petroleum, oils, and lubricants
POV	privately owned vehicle
ROI	region of influence
SF	square feet
SHPO	State Historic Preservation Officer
SPCCP	Spill Prevention, Control, and Countermeasures Plan
SSS	Soil Survey Staff
SWPPP	Storm Water Pollution Prevention Plan
TCE	tri-chloroethene
tpy	tons per year
U.S.	United States
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
WCA	Wildlife Conservation Act

*APPENDIX A*  
*EIFS*





# **Analysis of Socioeconomic Effects for Jenkins AFRC/BRAC05**

## **Introduction**

The socioeconomic analysis requirements of NEPA have been established over the years through successful early NEPA litigation (“McDowell vs Schlesinger”, US District Court, Western District of Missouri, Western Division, No. 75-CV-234-W-4 (June 19,1975) and “Breckinridge vs Schlesinger”, US District Court, Eastern District of Kentucky, No. 75-100 (October 31,1975)), as well as the practical need for communication and collaboration with affected communities. The social and economic effects of Base Realignment and Closure (BRAC) actions are especially relevant and important, as these issues are often the source of community concerns and subsequent controversies.

## **The Economic Impact Forecast System (EIFS) and the Hierarchical Approach.**

### The Model:

The Economic Impact Forecast System (EIFS) (Huppertz, Claire E.; Bloomquist, Kim M.; Barbehenn, Jacinda M.; EIFS 5.0 Economic Impact Forecast System, User’s Reference Manual; USACERL Technical Report TA-94/03; July 1994.) has been a mainstay of Army NEPA practice since its initial development and implementation in the mid-70s. EIFS provides a mechanism to estimate impacts, and ascertain the "significance" of projected impacts, using the Rational Threshold Value (RTV) technique. This analysis and determination can be readily documented, and if significance thresholds are not exceeded, the analysis can be completed. EIFS was designed to address NEPA applications, providing a “two-tier” approach to the process; (1) a simple and quick aggregate model (sufficient to ascertain the overall magnitude of impacts) and (2) a more detailed, sophisticated input-output (I-O) model to further analyze impacts that appear significant, in NEPA terms, and worthy of additional expenditures and analyses. This “two-tier” approach is consistent with the two common levels of NEPA analysis, the Environmental Assessment (EA) and the Environmental Impact Statement (EIS). EIFS has facilitated efficient and effective completion of such analyses for approximately 3 decades.

Complete documentation of the model, its development, and applicable theoretical underpinnings is available in numerous publications:

Huppertz, Claire E.; Bloomquist, Kim M.; Barbehenn, Jacinda M.; EIFS 5.0 Economic Impact Forecast System, User’s Reference Manual; USACERL Technical Report TA-94/03; July 1994.

Isard, W., Methods of Regional Analysis, MIT Press, 1960.

Isard, W. and Langford, T., Regional Input-Output Study: Recollections, Reflections, and Diverse Notes on the Philadelphia Experience, MIT Press, 1971.

Isserman, A., "The Location Quotient Approach to Estimating Regional Economic Impacts", AIP Journal, January, 1977, pp. 33-41.

- Isserman, A., "Estimating Export Activity in a Regional Economy: A Theoretical and Empirical Analysis of Alternative Methods", International Regional science Review, Vol. 5, 1980, pp. 155-184.
- Leigh, R., " The Use of Location Quotients in Urban Economic Base Studies", Land Economics, Vol 46, May, 1970, pp 202-205.
- Mathur, V.K. and Rosen, H.S. , "Regional Employment Multiplier: A new Approach", Land Economics, Vol 50, 1974, pp 93-96.
- Mayer, W. and Pleeter, S., "A Theoretical Justification for the Use of Location Quotients", Regional Science and Urban Economics, Vol 5, 1975, pp 343-355.
- Robinson, D.P., Hamilton, J.W., Webster, R.D., and Olson, M.J., Economic Impact Forecast System (EIFS) II: User's Manual, Updated Edition, Technical Report N-69/ADA144950, U.S. Army Construction Engineering Research Lab (USACERL),1984.
- Robinson, D.P. and Webster,R.D., Enhancements to the Economic Impact Forecast System (EIFS), Technical Report N-175/ADA142652, USACERL, April, 1984.
- Rogers, Claudia and Webster, Ron, "Qualitative Answers to Quantitative Questions", Impact Assessment, IAIA, Vol.12, No.1, 1999.
- Thompson, W., A Preface to Urban Economics, Johns Hopkins Press, 1965.
- Tiebout, C., The Community Economic Base, New York Committee for Economic Development, 1962.
- USACERL, " Methods for Evaluating the Significance of Impacts: The RTV and FSI Profiles"; USACERL EIFS Tutorial; July 1987.
- U.S. Army, Department of the Army, DA Pamphlet 200-2, "Economic Impact Forecast System-User Instructions", 1980.
- U.S. Army, "Base Realignment and Closure "How-To" Manual for Compliance with the National Environmental Policy Act", revised and published as official Department of Army Guidance, 1995.
- U.S. Army, Army Regulation 5-20, "Commercial Activities"
- U.S. Army, Department of the Army, DA Pamphlet 200-2, "Economic Impact Forecast System-User Instructions", 1980
- Webster, R.D.and Shannon, E.; The Rational Threshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts; USACERL Technical Report TR N-49/ADA055561; 1978.
- Webster, R.D., Hamilton, J.W., and Robinson, D.P., "The Two-Tier Concept for Economic Analysis: Introduction and User Instructions", USACERL Technical Report N-127/ADA118855.

These efforts reflect development of a tool for specific NEPA application, following the successful NEPA litigation referenced in the Introduction. As EIFS has been used for Army NEPA analyses, the results of EIFS analyses have been reviewed by stakeholder (affected community) representatives, and, as a result of BRAC application, twice reviewed by the Government Accounting Office (GAO). During such reviews, the analyses and resultant decisions were upheld, and EIFS was lauded as a uniform (non-arbitrary and non-capricious) approach to such requirements. Drawing from a national, uniform database, and using a common, systematic approach, EIFS allowing the improved comparison of project alternatives (the heart of NEPA analysis), and provides comparable analyses across the U.S.

#### NEPA Process Improvement:

Since NEPA was implemented, it has been commonly criticized as expensive and time-consuming. While these criticisms have been often justified, the President's Council on Environmental Quality (CEQ) has actively promoted NEPA process improvements; first

in the publication of the CEQ NEPA regulations (CEQ, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, Reprint, 40 CFR Parts 1500-1508, Executive Office of the President, Council on Environmental Quality, 1992.), and, more recently, through a NEPA anniversary introspective (CEQ, The National Environmental Policy Act: A Study of its Effectiveness After Twenty-five Years, Executive Office of the President, Council on Environmental Quality, January, 1997.) and the formal CEQ NEPA Task Force (CEQ, The NEPA Task Force Report to the Council on Environmental Quality: Modernizing NEPA Implementation; September, 2003.). All three CEQ initiatives call for more "focus" on NEPA documents, eliminating the analyses of minor or unimportant issues, and focusing, instead, on those issues that should be part of an informed agency decision. The use of EIFS, and the "two-tier" approach is consistent with these CEQ recommendations.

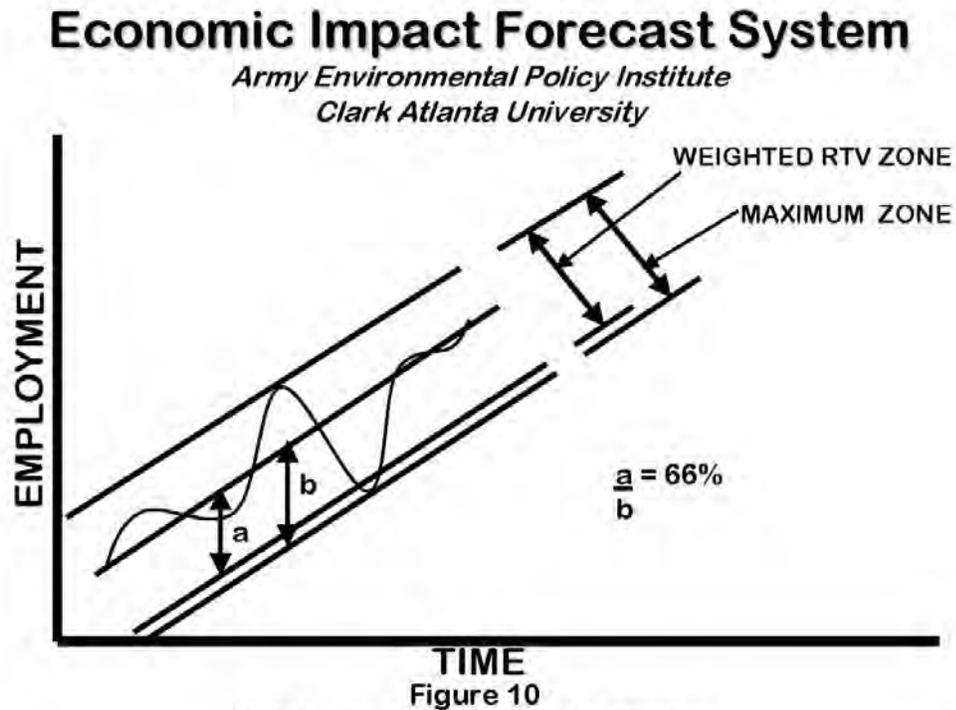
#### Determining Significance:

While EIFS was being developed, communities began to question the rationale for determining the significance of socioeconomic impacts. USACERL was directed to develop a defensible procedure for such a determination, resulting in the Rational Threshold Value (RTV) technique (Webster, R.D.; and Shannon, E.; The Rational Theshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts; USACERL Technical Report TR N-49/ADA055561; 1978). This technique relies on the yearly Bureau of Economic Analysis (BEA) time series data on employment, income, and population to evaluate historical trends within a subject community (region); and uses those trends to measure the "resilience" of the local community to change, or its ability to accommodate such change. This approach has worked well when communicating with affected communities. The combined use of RTV with the EIFS model meet the two pronged approach for significance determinations, intensity and context (CEQ, 1992)

The initial EIFS implementation (USACERL, 1975) included the analysis of numerous variables: business volume, personal income, employment, government revenues and expenditures, income and employment distribution, local housing impacts, regional economic stability, school system impacts, government bond obligations, population, welfare and dependency, social control, and aesthetic considerations. The selection of these variables was based on the predictive capability of forecasting techniques and data availability. Over some 30 years of practice, pragmatism and sufficiency led to the use of sales volume, employment, personal income, and population as indicators of impacts (as a "first tier" approximation of effects). These effects can also be readily evaluated (and significance determined) using the BEA time series data. Population, important in its own right, is also a valuable indicator of other factors (e.g., impact on local government revenues and expenditures, housing, local school systems, and the change in welfare and dependency), as impacts on such variables are driven, to a large extent, by a population change.

Using BEA time series data is used to analyze the four variables for the ROI, the RTV model produces thresholds for assessing the magnitude of impacts. The RTV technique is

simple, starting with a straight line between the first year of record and the last year of record for that variable, establishing the average rate of change over time. Then, each yearly deviation from that growth rate is calculated and converted to a percentage. The largest historical changes (both increase and decrease) are used to define significance thresholds. The following figure illustrates the RTV concept:



A "factor of safety" is applied to negative thresholds, as shown in the figure, to produce a conservative analysis; while 100% of the maximum positive thresholds is used; as indicated below:

	<u>Increase</u>	<u>Decrease</u>
Total sales volume	100 percent	75 percent
Total employment	100 percent	66 percent
Personal Income	100 percent	66 percent
Total population	100 percent	50 percent

The maximum positive historical fluctuation is used because of the positive connotations generally associated with economic growth. While economic growth can produce

unacceptable impacts and the "smart growth" concept is increasingly favored, the effects of reductions and closures are usually much more controversial. These adjustments, while arbitrary, are sensible. The negative sales volume threshold is adjusted by 75%, as sales volume impacts can be absorbed by such factors as the manipulation of inventory, new equipment, etc; and the impacts on individual workers or proprietors is indirect, if at all. Changes in employment and income, however, are impacts that immediately affect individuals; thus they are adjusted by 66%. Population is extremely important, as an indicator of other social issues, and is thus adjusted by 50%.

To adjust dollar amounts for inflation (to create "constant dollars" prior to calculations), the Consumer Price Index (CPI) is used for appropriate years, and all dollar values are adjusted to 1987 equivalents.

The main strength of the RTV approach stems from its reliance on data for each individual ROI. This approach addressed previous criticism of more simple approaches that applied arbitrary criteria to all communities. This approach establishes unique criteria, representative of local community patterns, and, while a community may not completely agree, a common frame of reference is established. Critics of the RTV technique have questioned the arbitrary selection of the maximum allowable deviations to indicate impact significance, but the process has proven workable over the years.

### **The Application of EIFS to the Proposed Action**

To effect these analyses, the inputs to the EIFS model must be estimated. The normal EIFS inputs include:

- Number of affected (moving) civilians and their salaries
- Number of affected (moving) military employees and their salaries
- Percentage of affected military employees living on-post
- Changes in local procurement, contracting, and purchases
- Definition of the multi-county region of influence (ROI)

This data has often proven difficult to obtain, given the current immaturity of the proposed BRAC actions, or the inability to produce an early, detailed Description of Proposed Action and Alternatives (DOPAA), from which these input data could be extracted. In order to produce the required analyses, numerous data sources can be used as potential sources for EIFS input data. To initiate this analysis, Appendix B of the BRAC Commission announcement was reviewed; followed by inquiries from the affected installations, a part of DOPAA development. This data source provides no indication of timing, or the number of years required to implement the BRAC recommendations in the ROI. The changes in military and civilian employment were verified, estimates of salary levels were derived, and major changes in local procurements were ascertained (primarily any major construction required to support the proposed action). In this case, no major construction is anticipated.

Once input data, describing the nature of the proposed BRAC action, has been determined, the EIFS region of influence (ROI), a multi-county determination, must be

defined. The regional definitions were taken directly from Appendix B of the BRAC announcement, which used the Metropolitan Statistical Areas (MSAs) where available, or counties in which the installation resides, if MSAs were not applicable. For the Jenkins AFRC, the Albuquerque, NM MSA was selected, consisting of Bernalillo, Sandoval, Tarrant, and, Valencia Counties.

The estimated inputs were used to produce EIFS reports (model results) for changes in total business volume, employment, income, and population. These are best shown as percentages (of the total activity in the ROI), and can be prepared to the RTVs for that variable in that ROI. The following EIFS documentation is provided; detailing the inputs, documenting projected changes, and evaluating the potential significance of the predicted change, based on the RTV technique.

## STUDY AREA

35001 Bernalillo, NM  
 35043 Sandoval, NM  
 35057 Tarrant, NM  
 35061 Valencia, NM

## FORECAST INPUT

Change In Local Expenditures	\$0
Change In Civilian Employment	-1
Average Income of Affected Civilian	\$45,000
Percent Expected to Relocate	100
Change In Military Employment	-35
Average Income of Affected Military	\$43,500
Percent of Military Living On-post	0

## FORECAST OUTPUT

Employment Multiplier	2.26
Income Multiplier	2.26
Sales Volume -	(\$780,682)

Direct			
Sales Volume - Induced	(\$983,660)		
Sales Volume - Total	-\$1,764,342		-0.01%
Income - Direct	-\$1,567,500		
Income - Induced)	-\$195,042		
Income - Total(place of work)	-\$1,762,542		-0.01%
Employment - Direct	-40		
Employment - Induced	-5		
Employment - Total	-44		-0.01%
Local Population	-90		
Local Off-base Population	-90		-0.01%

As the projected net total change for each the variables was negative, the following RTV's apply.

### RTV SUMMARY

	Sales Volume	Income	Employment	Population
<b>Negative RTV</b>	-7.5 %	-6.91 %	-3.3 %	-3.36 %

To further clarify the basis for the significance determination, the following time series data and RTV calculations are provided:

### SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	940094	4108211	0	0	0
1970	1043268	4308697	200486	-72461	-1.68

1971	1172397	4642692	333995	61048	1.31
1972	1352058	5178382	535690	262743	5.07
1973	1509033	5447609	269227	-3720	-0.07
1974	1667119	5418137	-29472	-302419	-5.58
1975	1849412	5511248	93111	-179836	-3.26
1976	2114662	5963347	452099	179152	3
1977	2401791	6340728	377382	104435	1.65
1978	2795071	6875875	535146	262199	3.81
1979	3181764	7031699	155824	-117123	-1.67
1980	3500254	6790493	-241206	-514153	-7.57
1981	3835565	6750594	-39899	-312846	-4.63
1982	3999370	6638954	-111640	-384587	-5.79
1983	4448113	7161462	522508	249561	3.48
1984	4980197	7669503	508041	235094	3.07
1985	5481388	8167268	497765	224818	2.75
1986	5800082	8468120	300852	27905	0.33
1987	6202153	9613337	1145217	872270	9.07
1988	6608722	8987862	-625475	-898422	-10
1989	6950662	8966354	-21508	-294455	-3.28
1990	7398777	9100496	134142	-138805	-1.53
1991	7884688	9303931	203436	-69511	-0.75
1992	8496054	9685501	381570	108623	1.12
1993	9261189	10279920	594418	321471	3.13
1994	10114886	10924077	644157	371210	3.4
1995	10819319	11360284	436207	163260	1.44
1996	11244917	11469815	109531	-163416	-1.42
1997	11757417	11757417	287602	14655	0.12
1998	12395403	12147495	390078	117131	0.96
1999	12891359	12375704	228209	-44738	-0.36
2000	13809155	12842514	466810	193863	1.51

## INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1169862	5112297	0	0	0
1970	1320660	5454326	342029	-44172	-0.81
1971	1487619	5890971	436645	50444	0.86
1972	1703433	6524148	633177	246976	3.79
1973	1910762	6897851	373702	-12499	-0.18

1974	2150791	6990071	92220	-293981	-4.21
1975	2422918	7220296	230225	-155976	-2.16
1976	2772130	7817406	597111	210910	2.7
1977	3136431	8280178	462772	76571	0.92
1978	3647743	8973448	693270	307069	3.42
1979	4194589	9270042	296594	-89607	-0.97
1980	4726134	9168700	-101342	-487543	-5.32
1981	5275197	9284347	115646	-270555	-2.91
1982	5522604	9167522	-116824	-503025	-5.49
1983	6042885	9729045	561522	175321	1.8
1984	6764579	10417451	688406	302205	2.9
1985	7450132	11100697	683245	297044	2.68
1986	7915063	11555992	455296	69095	0.6
1987	8466493	13123064	1567071	1180870	9
1988	9004590	12246243	-876821	-1263022	-10.31
1989	9541068	12307977	61735	-324466	-2.64
1990	10245537	12602011	294033	-92168	-0.73
1991	10978638	12954792	352782	-33419	-0.26
1992	11700279	13338318	383526	-2675	-0.02
1993	12603131	13989476	651158	264957	1.89
1994	13721879	14819630	830154	443953	3
1995	14728961	15465408	645778	259577	1.68
1996	15502528	15812578	347170	-39031	-0.25
1997	16272253	16272253	459675	73474	0.45
1998	17111173	16768950	496697	110496	0.66
1999	17642681	16936973	168024	-218177	-1.29
2000	18785721	17470721	533747	147546	0.84

## EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	148307	0	0	0
1970	152992	4685	-4883	-3.19
1971	164048	11056	1488	0.91
1972	177979	13931	4363	2.45
1973	187854	9875	307	0.16
1974	193501	5647	-3921	-2.03
1975	198940	5439	-4129	-2.08
1976	210268	11328	1760	0.84

1977	221553	11285	1717	0.77
1978	237630	16077	6509	2.74
1979	248207	10577	1009	0.41
1980	249283	1076	-8492	-3.41
1981	251616	2333	-7235	-2.88
1982	248919	-2697	-12265	-4.93
1983	260544	11625	2057	0.79
1984	277244	16700	7132	2.57
1985	292054	14810	5242	1.79
1986	302649	10595	1027	0.34
1987	316684	14035	4467	1.41
1988	333269	16585	7017	2.11
1989	339864	6595	-2973	-0.87
1990	343871	4007	-5561	-1.62
1991	350515	6644	-2924	-0.83
1992	357815	7300	-2268	-0.63
1993	373339	15524	5956	1.6
1994	393785	20446	10878	2.76
1995	415678	21893	12325	2.97
1996	422507	6829	-2739	-0.65
1997	429825	7318	-2250	-0.52
1998	436673	6848	-2720	-0.62
1999	442808	6135	-3433	-0.78
2000	454471	11663	2095	0.46

## POPULATION

Year	Value	Change	Deviation	%Deviation
1969	377600	0	0	0
1970	382076	4476	-6585	-1.72
1971	397496	15420	4359	1.1
1972	407732	10236	-825	-0.2
1973	426583	18851	7790	1.83
1974	440633	14050	2989	0.68
1975	450712	10079	-982	-0.22
1976	464570	13858	2797	0.6
1977	481349	16779	5718	1.19
1978	492914	11565	504	0.1
1979	508581	15667	4606	0.91

1980	525593	17012	5951	1.13
1981	534415	8822	-2239	-0.42
1982	511169	-23246	-34307	-6.71
1983	522356	11187	126	0.02
1984	533544	11188	127	0.02
1985	544603	11059	-2	0
1986	558859	14256	3195	0.57
1987	574324	15465	4404	0.77
1988	583976	9652	-1409	-0.24
1989	594036	10060	-1001	-0.17
1990	602588	8552	-2509	-0.42
1991	616345	13757	2696	0.44
1992	633032	16687	5626	0.89
1993	649987	16955	5894	0.91
1994	669734	19747	8686	1.3
1995	687901	18167	7106	1.03
1996	700161	12260	1199	0.17
1997	709661	9500	-1561	-0.22
1998	717406	7745	-3316	-0.46
1999	722692	5286	-5775	-0.8
2000	731544	8852	-2209	-0.3

### **Summary of Results**

The EIFS analyses indicated that the proposed action will produce no major socioeconomic effects in the ROI (community). All variables (business volume, income, employment, and population will likely change approximately 0.01%, much less than the applicable respective RTVs of: -7.5%, -6.91%, -3.3%, and -3.36%.

This significance determination is "conservative"--well within any errors produced through assumed EIFS input values. While these inputs could be refined, the results of the analysis (final determination) will certainly remain unchanged.



*APPENDIX B*  
*LISTS OF COMMON BIOLOGICAL RESOURCES ON KIRTLAND AFB*

---

---



**Table B-1. Common Grasses and Shrubs of the Grassland Community at Kirtland AFB**

<b>Common Name</b>	<b>Scientific Name</b>
<b>Grasses</b>	
tobosagrass	<i>Hilaria mutica</i>
Black grama	<i>Bouteloua eriopoda</i>
sand dropseed	<i>Sporobolus cryptandrus</i>
spike dropseed	<i>Sporobolus contractus</i>
mesa dropseed	<i>Sporobolus ilexuosus</i>
purple three-awn	<i>Aristida purpurea</i>
Indian ricegrass	<i>Oryzopsis hymenoides</i>
ring muhly	<i>Muhlenbergia torreyi</i> ,
ear muhly	<i>Muhlenbergia arenacea</i>
bush muhly	<i>Muhlenbergia ported</i>
<b>Shrubs</b>	
sand sagebrush	<i>Artemisia filifolla</i>
fourwing saltbush	<i>Atriplex canescens</i>
winterfat	<i>Eurotia lanata</i>
broomsnakeweed	<i>Gutierrezia sarothrae</i>
cane cholla	<i>Opuntia imbricata</i>
soapweed yucca	<i>Yucca glauca</i>
Mormon tea	<i>Ephedra torreyana</i>

Source: Stephens and Associates 1996

**Table B-2. Amphibians and Reptiles That Could Occur at Kirtland AFB**

<b>Common Name</b>	<b>Scientific Name</b>
<b>Amphibians</b>	
Tiger salamander	<i>Ambystoma tigrinum</i>
Red-spotted toad	<i>Bufo punctatus</i>
Woodhouse toad	<i>Bufo woodhousii</i>
Couch's spadefoot toad	<i>Scaphiopus couchii</i>
New Mexico Spadefoot	<i>Spea multiplicata</i>
<b>Reptiles</b>	
Chihuahuan spotted whiptail	<i>Cnemidophorus exangius</i>
Little striped whiptail	<i>Cnemidophorus inornatus</i>
New Mexico whiptail	<i>Cnemidophorus neomexicanus</i>
Common collared lizard	<i>Crotaphytus collaris</i>
Great plains skink	<i>Eumeces obsoletus</i>
Longnosed leopard lizard	<i>Gambelia wislizenii</i>
Lesser earless lizard	<i>Holbrookia maculata</i>
Short horned lizard	<i>Phrynosoma douglassi</i>
Roundtail horned lizard	<i>Phrynosoma modestum</i>
Prairie lizard	<i>Sceloporus indulates</i>
Tree lizard	<i>Urosaurus ornatus</i>
Side-blotched lizard	<i>Uta stansburiana</i>
Glossy snake	<i>Arizona elegans</i>
Western diamondback rattlesnake	<i>Crotalus atrox</i>
Black-tailed rattlesnake	<i>Crotalus molossus</i>
Western rattlesnake	<i>Crotalus viridis</i>
Western hognoled snake	<i>Heterodon nasicus</i>
Coachwhip snake	<i>Masticophis flagellum</i>
Striped whipsnake	<i>Masticophis taeniatus</i>
Bull/Gopher snake	<i>Pituophis melanoleucus</i>
Texas longnosed snake	<i>Rhinocheilus lecontei</i>
Desert massasauga	<i>Sistrurus catenatus</i>
Desert box turtle	<i>Terrapene ornate</i> spp. <i>luteola</i>

**Table B-3. Birds Expected to Occur at Kirtland AFB**

<b>Common Name</b>	<b>Scientific Name</b>
Northern harrier	<i>Circus cyaneus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Ferruginous hawk	<i>Buteo regalis</i>
Rough-legged hawk	<i>Buteo lagopus</i>
Swainson's hawk	<i>Buteo swainsoni</i>
Golden eagle	<i>Aquila chrysaetos</i>
Turkey vulture	<i>Cathartes aura</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Merlin	<i>Falco columbarius</i>
American kestrel	<i>Falco sparverius</i>
Prairie falcon	<i>Falco mexicanus</i>
Barn owl	<i>Tyto alba</i>
Great horned owl	<i>Bubo virginianus</i>
Flammulated owl	<i>Otus flammeolus</i>
Burrowing owl	<i>Athene cunicularia</i>
Greater roadrunner	<i>Geococcyx californianus</i>
Say's phoebe	<i>Sayornis saya</i>
Horned lark	<i>Eremophila alpesfris</i>
Chihuahuan raven	<i>Corvus cryptoleucus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Black-throated sparrow	<i>Amphispiza bilineata</i>
Eastern meadowlark	<i>Sturnella magna</i>
House finch	<i>Carpodacus mexicanus</i>

**Table B-4. Mammals That Occur at Kirtland AFB**

<b>Common Name</b>	<b>Scientific Name</b>
desert cottontail	<i>Sylvilagus audubonii</i>
spotted ground squirrel	<i>Spermophilus spilosoma</i>
silky pocket mouse	<i>Perognathus flavus</i>
Ord's kangaroo rat	<i>Dipodomys ordii</i>
banner-tailed kangaroo rat	<i>Dipodomys spectabilis</i>
Merriam's kangaroo rat	<i>Dipodomys merriami</i>
western harvest mouse	<i>Reithrodontomys megalotis</i>
deer mouse	<i>Peromyscus maniculatus</i>
white-footed mouse	<i>Peromyscus leucopus</i>
northern grasshopper mouse	<i>Onychomys leucogaster</i>
coyote	<i>Canis latrans</i>
kit fox	<i>Vulpes macrotis</i>
badger	<i>Taxidea taxus</i>
striped skunk	<i>Mephitis mephitis</i>
bobcat	<i>Lynx rufus</i>

Source: Stephens and Associates 1996

*APPENDIX C*  
*CORRESPONDENCE*





# Network Focuses on Food Safety

Public awareness and research aim to protect consumers

By PHYLLIS JACOBS  
GRIEKSPoor  
McClatchy Newspapers

MANHATTAN, Kan. — E. coli in the spinach. Salmonella in the peanut butter. Listeria in the hot dogs.

Seven major food recalls since July.

The Food Safety Network, which has a new home at Kansas State University, is dedicated to stopping the epidemic of food contamination that sickens 76 million people — one out of every four Americans — and kills 5,000 each year.

The network combines public awareness with an Internet-based information service and research projects in an effort to educate growers, consumers and workers.

Microbiologist Doug Powell started the organization more than a decade ago at the University of Guelph in Canada.

Now an associate professor of food safety in Kansas State's College of Veterinary Medicine, Powell is outspoken on good farming practices and good worker hygiene and blunt about what needs to be done.

"It boils down to three words," he said. "Don't eat poop."

Simple as Powell's advice sounds, food safety is far more

complicated, he admits.

Microbial contamination — such as E. coli or salmonella — is not visible and has no taste and no smell.

It can come from water that drains from a livestock operation and runs through a field after a rain. It can come from irrigation water drawn from a contaminated pond.

It can come from processing vats, storage bags, tools, or workers' hair, skin or saliva.

While food scientists agree that proper cooking will kill

most kinds of harmful bacteria, nobody is convinced that the bulk of consumers know what proper cooking is.

The Food Safety Network will soon begin a research project to try to answer some questions about proper preparation and what people know about it.

The two-year effort, funded by a grant from the American Meat Institute, will study consumer behavior using uncooked, frozen, breaded poultry products.

## PUBLIC NOTICE

### ENVIRONMENTAL ASSESSMENT (EA) FOR REALIGNMENT OF THE ARMED FORCES RESERVE CENTER TO KIRTLAND AIR FORCE BASE, NM

An EA has been prepared to evaluate the potential impacts on environmental and human resources that would result from relocation of the Jenkins Armed Forces Reserve Center in Albuquerque, NM, to Kirtland Air Force Base, NM.

Copies of the environmental assessment and the proposed Finding of No Significant Impact (FONSI) are available now at <http://www.kirtland.af.mil/> or the following locations:

CNMCC Montoya Campus  
4700 Morris NE  
Albuquerque NM 87102

KAFB Library  
Bldg 20204  
Kirtland AFB NM 87117

The comment period ends **17 April 2007**. All comments must be received by that date. Individuals wishing further information, or to contribute comments, should contact the NEPA Program Manager, 377 MSG/CEVQ, 2050 Wyoming Blvd SE, Suite 125, Kirtland AFB, NM 87117 or send an email to [NEPA@kirtland.af.mil](mailto:NEPA@kirtland.af.mil)



AFRC construction EA  
From: Bob Anderson [REDACTED]  
Sent: Wednesday, April 04, 2007 12:38 PM  
To: 377 MSG/CEV NEPA Environmental Assessment  
Subject: AFRC construction EA

Hi,

I just saw the notice of the EA and don't have access to a paper copy to see exactly where the location is planned but I would like to say that at some point in the near future the city of Albuquerque and KAFB will probably have to make some arrangement for a major south leg by-pass from the Tijeras Canyon area to south I-25. So, it would be wise in planning to not locate any new construction in the area where a major roadway will have to pass around the base to the east and south.

Sincerely,  
Bob Anderson

Robert L. Anderson

[REDACTED]  
Albuquerque, NM [REDACTED]  
[REDACTED]

Response to Anderson Comment No. 1.

The I-25/I-40 bypass through Kirtland AFB has been proposed by some entities as a potential route. However, Kirtland AFB does not consider this proposal feasible, particularly in light of the required security measures that have been implemented since 9/11.

Comments on the Environmental Assessment for Realignment of Jenkins AFRC to Kirtland AFB Page 1 of 2

**From:** 377 MSG/CEV NEPA Environmental Assessment  
**Sent:** Wednesday, April 18, 2007 8:32 AM  
**To:** Watkins Evelyn C Civ 377 MSG/CEVQ  
**Subject:** FW: Comments on the Environmental Assessment for Realignment of Jenkins AFRC to Kirtland AFB, BRAC 2005

*Evelyn*  
 848-4377

---

**From:** Guerlin Michael K Civ AFOTEC/RME  
**Sent:** Friday, April 13, 2007 8:12 PM  
**To:** FONSI@kirtland.af.mil; 377 MSG/CEV NEPA Environmental Assessment  
**Subject:** Comments on the Environmental Assessment for Realignment of Jenkins AFRC to Kirtland AFB, BRAC 2005

I read the subject EA with interest, as a former project manager for the Army Corps of Engineers, Albuquerque District, where I managed the New Mexico Army National Guard (NMARNG) program. Please consider the following comments:

Paragraph 1.3 states, "Once the realignment is completed, it is anticipated that the Jenkins AFRC will be occupied by the New Mexico Army National Guard (Mullin 2006)."

Comments: While the New Mexico Army National Guard (NMARNG) Albuquerque Readiness Center is adjacent (north) of the Jenkins AFRC, movement of New Mexico Army National Guard (NMARNG) units to the Jenkins AFRC is not part of the BRAC Commission recommendation. That recommendation, "RC Transformation in New Mexico," states, "This recommendation is the result of a state-wide analysis of Reserve Component installations and facilities conducted by a team of functional experts from Headquarters, Department of the Army, the Office of the State Adjutant General, and the Army Reserve Regional Readiness Command." This infers that the "State Adjutant General," is commander of the NMARNG, and apparently agreed to the recommendation, which does not re-align his units to the Jenkins AFRC or the new Kirtland AFRC.

Furthermore, if NMARNG units were allowed to move into Jenkins, they would face the same antiterrorism/force protection non-compliance described in Paragraph 1.2 of the EA, which is listed as a reason for closing the Jenkins AFRC.

Unless a definitive plan for the Jenkins AFRC has been approved, the EA should address future use of those facilities in that light. According to the DOD Base Redevelopment and Realignment Manual, paragraph D1.1.14, "Projected highest and best use should not be remote, speculative, or conjectural."

Paragraph 1.5 states, "The City of Albuquerque also requires that a Fugitive Dust Control permit be filed at least 10 business days prior to the start of construction, since the site is greater than 0.75 acre."

Comment: Kirtland AFB and the project site(s) are on Federal lands outside the City of Albuquerque; therefore, the City cannot legally require a fugitive dust control permit for the project unless they have been delegated as the authority having jurisdiction by the Environmental Protection Agency, or Kirtland AFB has agreed to obtain such permits as a good neighbor gesture. Verify these requirements with the Base Environmental Flight.

Paragraph 4.2.1.3 states, "Kirtland AFB will receive a portion of the 27th Fighter Wing from Cannon AFB, New Mexico (which will be closed),..."

Comments on the Environmental Assessment for Realignment of Jenkins AFRC to Kirtla... Page 2 of 2

Comment: Cannon AFB was initially recommended for closure, but will remain open, with the 27<sup>th</sup> Fighter Wing moving out and elements of Air Force Special Operations Command moving in. Refer to the Environmental Impact Statement for that action, located at <http://www2.afsop.af.mil/shared/media/document/AFD-070326-004.pdf>.

Paragraph 4.15.1(a) discusses "whether the proposed action is one of several similar actions in the same geographic area."

Comments: Two large developments on or adjacent to Kirtland AFB are not discussed and may require consideration. The first is the proposed Kirtland AFB Enhanced Use Lease (EUL), a 92-acre development. A description of this project may be found in the Request for Qualifications documents at [http://press.com/Kirtland\\_AFB/request\\_for\\_proposal.htm](http://press.com/Kirtland_AFB/request_for_proposal.htm). The second project is proposed expansion of Albuquerque International Airport (Sunport), which shares portions of the airfield with Kirtland AFB. Refer to the airport's master plan, which may be found at [http://www.cabq.gov/airport/pdf/MP\\_Summary1.pdf](http://www.cabq.gov/airport/pdf/MP_Summary1.pdf).

Paragraph 4.15.1, Page 4-42 states, "The CSAR-X helicopters will not arrive until FY10, and will replace existing Blackhawks (H-53).

Comment: Change "Blackhawk (H53)" to "Pave Hawk (HH-60G) " The HH-60G Pave Hawk is flown by the 58<sup>th</sup> Special Operations Wing, and is the Air Force version of the Army's UH-60 Black Hawk helicopter; refer to <http://www.aetc.af.mil/units/58sow/>.

END OF COMMENTS

//SIGNED//

Michael K. Guerin, P.E.

Chief, Engineering and Logistics Division

Air Force Operational Test and Evaluation Center

[Redacted]

Kirtland AFB, NM [Redacted]

[Redacted]

[Redacted]

[Redacted]

Response to Guerin Comment No. 1.

The EA has been revised to state that the ultimate use of the existing Jenkins AFRC is unknown at the present time.

Response to Guerin Comment No. 2.

The City of Albuquerque Environmental Health Department (AEHD) has received authority from the EPA to oversee the operation of an air quality program for Bernalillo County and the City of Albuquerque. The AEHD has delegated the responsibility of administering the air quality program to the City of Albuquerque Air Quality Division the Albuquerque/Bernalillo County Air Quality Board is the federally delegated air quality authority for Albuquerque and Bernalillo County.

Response to Guerin Comment No. 3.

The EA has been revised to delete the statement that Cannon AFB is closing.

Response to Guerin Comment No. 4.

Information on what will be developed in the 92-acre EUL area will be provided by the entity that receives the lease. Information at this time is insufficient to include in the analysis of cumulative effects. The AFRC project is also separated in distance (approximately 10 miles) from the EUL area and is expected to be developed before the development of the EUL area; so, the construction impacts are not likely to coincide in time. The schedule for Sunport development is not identified by dates, but rather by short-term, intermediate, and long-term staging. Again, the distance between the Sunport and the AFRC project would not appear to have cumulative impacts on most environmental parameters; without dates, it is not possible to know that there would be short-term cumulative impacts based on the timing of the projects. The long-term cumulative impacts of the AFRC added to other potential projects are believed to be negligible, as these AFRC operations are already occurring in Albuquerque. However, the EA has been revised to acknowledge that these two potential developments would occur at or near Kirtland AFB.

Response to Guerin Comment No. 5.

The EA has been revised to correctly note that the CSAR-X will replace the HH-60G Pave Hawk.



GOVERNOR  
Bill Richardson



DIRECTOR AND SECRETARY  
TO THE COMMISSION  
Bruce C. Thompson, Ph.D.

Tod Stevenson, Deputy Director

STATE OF NEW MEXICO  
DEPARTMENT OF GAME & FISH

One Wildlife Way  
Post Office Box 25112  
Santa Fe, NM 87504  
Phone: (505) 476-8008  
Fax: (505) 476-8124

Visit our website at [www.wildlife.state.nm.us](http://www.wildlife.state.nm.us)  
For basic information or to order free publications: 1-800-662-9310.

STATE GAME COMMISSION

Alfredo Montoya, Chairman  
Alcalde, NM

Dr. Tom Arvas, Vice-Chairman  
Albuquerque, NM

David Henderson, Commissioner  
Santa Fe, NM

Jim McClintic, Commissioner  
Albuquerque, NM

Terry Z. Riley, Ph.D., Commissioner  
Tijeras, NM

M. H. "Dutch" Salmon, Commissioner  
Silver City, NM

Leo V. Sims, II, Commissioner  
Hobbs, NM

February 2, 2007

Dr. Evelyn C. Watkins  
NEPA Program Manager  
377 MSG/CEVQ  
2050 Wyoming Blvd SE, Suite 125  
Kirtland AFB, NM 87117-5270

Re: Jenkins Armed Forces Reserve Center Realignment Environmental Assessment,  
Kirtland Air Force Base  
NMGF Doc. No. 11216

Dear Dr. Watkins:

The Department of Game and Fish (Department) has reviewed the Jenkins Armed Forces Reserve Center Realignment Environmental Assessment (EA). The EA proposes to build a new Jenkins Armed Forces Reserve Center on Kirtland Air Force Base at one of two proposed sites (Option Site 1 or Option Site 3), based on recommendations by the Base Closure and Realignment Commission.

Page 4-22 of the EA indicates that Gunnison's prairie dogs occur on Option Site 1. However, with regard to Option Site 1 and the occurrence of Gunnison's prairie dogs, page 4-24 states "These species may forage within the project area but most likely would choose habitat of higher quality elsewhere on base for foraging and nesting." There also is no discussion in the EA how Gunnison's prairie dogs would be dealt with should they occur on the site selected. Therefore, it is not clear to the Department whether Gunnison's prairie dogs occur on Option Site 1. However, since Gunnison's prairie dogs have been proposed for federal listing under the Endangered Species Act, should Option Site 1 be selected for construction, we recommend that reasonable efforts be made to capture and relocate Gunnison's prairie dogs that occur on the site, to the extent practical.

The Department concurs with the Kirtland AFB policy of capturing and relocating Burrowing owls that may occur in a proposed construction footprint, or implementing timing restrictions to preclude construction during the nesting period.

However, we recommend the following modifications to the text of the EA to retain accuracy

Page 1-4 of the EA states "The Migratory Bird Treaty Act (MBTA) restricts the take of migratory bird or bird parts (e.g., nests, eggs) during the breeding season. Active nests would need to be identified and avoided the extent practicable." We advise the writers of the EA that the MBTA restriction on take of birds, bird parts, nests and eggs is in effect at any time, not just during breeding season, and that take of birds protected by the MTBA, or disturbance, relocation or removal of an occupied nest (e.g., burrowing owls) would require a permit from the U.S. Fish and Wildlife Service. A similar change to the text should be made on page 4-23.

We appreciate the opportunity to comment on this project. Should you have any questions regarding our comments, please contact Mark Watson, Habitat Specialist, of my staff at (505) 476-8115, or <mark.watson@state.nm.us>.

Sincerely,



Lisa Kirkpatrick, Chief  
Conservation Services Division

LK/MLW

CC: Wally Murphy (Ecological Services Field Supervisor, USFWS)  
Mark Olson (Northwest Area Habitat Specialist, NMGF)  
Mark Watson (Conservation Services Habitat Specialist, NMGF)

USFWS\_response

From: Watkins Evelyn C Civ 377 MSG/CEVQ [evelyn.watkins@kirtland.af.mil]  
Sent: Tuesday, January 30, 2007 4:21 PM  
To: Seyle, Charles W SAMatSAS  
Cc: Chris Ingram  
Subject: FW: Armed Forces Reserve Center at Kirtland AFB

One more down; one to go! I presume you will extract the appropriate information from the USFWS response below to meet your requirements. If you have any problems, let me know and I'll see what I can do with it.

Evelyn Watkins  
NEPA Program Manager  
Environmental Management Branch  
Kirtland AFB, NM 87117  
(505) 846-4377

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

From: Eric\_Hein@fws.gov [mailto:Eric\_Hein@fws.gov]  
Sent: Tuesday, January 30, 2007 3:03 PM  
To: Watkins Evelyn C Civ 377 MSG/CEVQ  
Cc: Finley Carol A Civ 377 MSG/CEVQ  
Subject: Re: Armed Forces Reserve Center at Kirtland AFB

Hi Evelyn:

Glad to see the message came through this time. I did not receive any earlier messages from you or Carol about this project, likely because of the period between my first and last name and not the underscore.

As a result of budget cutbacks, we generally no longer provide concurrence with project proponent's "no effect" determinations. It has been a service that we have provided in the past, but is not required by law. Under the Endangered Species Act, as amended, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with U. S. Fish and Wildlife Service (Service) further. Similarly, it is the responsibility of the action agency or project proponent, not the Service, to make "no effect" determinations.

Nevertheless, based upon the information provided in the environmental assessment, we agree with your conclusion that there would be no effects to Federally listed threatened or endangered species from the proposed action.

Thank you.

Eric

Eric W. Hein  
U. S. Fish and Wildlife Service  
2105 Osuna NE  
Albuquerque, New Mexico 87113  
505-761-4735; 346-2542 (fax)

"Watkins Evelyn C  
Civ 377 MSG/CEVQ"  
<evelyn.watkins@k

To

USFWS\_response  
<ERIC\_HEIN@FWS.GOV>  
kirtland.af.mil >

cc

01/30/2007 02:00

Subject  
PM

Armed Forces Reserve Center at  
Kirtland AFB

Mr. Hein,

Attached is a Final Environmental Assessment (EA) prepared for the relocation of the Armed Forces Reserve Center in Albuquerque to Kirtland Air Force Base. However, this EA cannot be released to the public for review until we have received concurrence from the US Fish and Wildlife Service and the State of New Mexico (NMDGF) that there will be no significant impact to protected biological resources.

An aerial photograph of the selected site is on page 27, and a photograph of the site is on page 35 of the .pdf document (section 4.2.1.4). Biological resources are described and assessed in section 4.8 (pages 51-56). Carol Finley, Natural Resources Manager at Kirtland, has reviewed the attached document, and does not anticipate any significant impacts to protected species from this action.

We need your concurrence as soon as possible in order to keep from missing the timeline established for this Base Realignment and Closure (BRAC) action. We have no control over this timeline. If you need additional information prior to concurrence, please let us know as soon as possible. We look forward to your response.

Sincerely,

Dr. Evelyn C. Watkins  
NEPA Program Manager  
377 MSG/CEVQ  
2050 Wyoming Blvd SE, Suite 125  
Kirtland AFB, NM 87117-5270

COMM: 505-846-4377  
FAX: 505-846-0400

---

From: Finley Carol A Civ 377 MSG/CEVQ  
Sent: Monday, January 08, 2007 9:00 AM

Page 2

USFWS\_response

To: Eric Hein (ERIC.HEIN@FWS.GOV)  
Cc: Watkins Evelyn C Civ 377 MSG/CEVQ  
Subject: Jenkins Armed Forces Reserve Center

Hi Eric,

Regarding the proposed realignment of the Jenkins Armed Forces Reserve Center (AFRC) to the Kirtland Air Force Base (AFB), Albuquerque, New Mexico located on the northeast of the intersection of Wyoming and Pennsylvania, and west of DOE Tech Area IV. This is a result of the BRAC recommendations.

The contractor is requesting verification from the U.S. Fish and Wildlife Service that no Threatened or Endangered species would be found on this site. I would appreciate a written response as soon as possible. If I can be of any further assistance please let me know.

Thank you,

Carol Finley  
Natural Resources  
2050 Wyoming Blvd. SE  
Kirtland AFB, NM 87117-5270  
(505)846-0053  
(505)846-0403 fax  
carol.finley@kirtland.af.mil



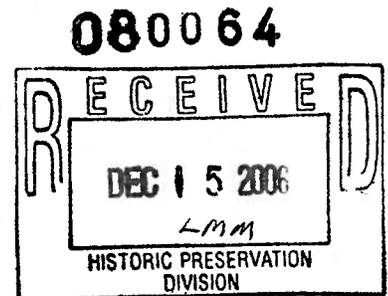


**DEPARTMENT OF THE AIR FORCE**  
377th Civil Engineer Squadron (AFMC)

14 December 2006

377 MSG/CEVQ  
2050 Wyoming Blvd., SE  
Kirtland AFB NM 87117-5270

Ms. Kak Slick  
State Historic Preservation Officer  
Office of Cultural Affairs  
Historic Preservation Division  
Bataan Memorial Building  
407 Galisteo Street, Suite 236  
Santa Fe, New Mexico 87501



Dear Ms. Slick:

This letter is a request for concurrence of no effect to historic properties. The project is the development of the Jenkins Armed Forces Reserve Center (Jenkins AFRC) that must move on to Kirtland property due to Defense Base Closure and Realignment Commission (BRAC Commission). This action will require a new facility to be constructed on Kirtland AFB.

The area Jenkins AFRC has chosen to develop their facility has previously been surveyed although the SHPO has not received the survey report from 2002 (it will be coming) the LA forms were turned into the SHPO and determinations were made by your Office in 2002. The preferred location has only two sites are within a mile (attachment 1) and one of those sites (LA134605) was determined unsure and the other site (LA108383) was determined not eligible (log #64835).

LA134605 is located on top of the terrace north of Tijeras Arroyo. The slope and dissected terrace below to the south of the site is the Kirtland AFB Archery Club Range. The site is bounded on the north by the Archery Range access road. The site is located along the edge of a dissected terrace and is fairly stable on top, but in the areas of erosion the artifacts are migrating down slope towards the Archery Club Range and into Tijeras Arroyo. There is a power line that crosses through the western portion of the site. There are numerous arrows and arrow fragments from the archery range in the vicinity. The diagnostics and the General Land Office land patent information indicate the land patent was granted to Myrtle F Friend on March 3, 1927. The assemblage consists entirely of historic artifacts, including: 8 shards of aqua glass (A.D. 1880-1920), 39 clear glass bottle shards (A.D. 1930-present), 2 blue glass shards (A.D. 1880-1920), 1 thick brown glass shard (A.D. 1873-present), 32 brown glass Clorox bottle shards (A.D. 1932-1943, based on a diagnostic maker's mark), 1 porcelain tea cup fragment, 1 metal tobacco tin lid, 1 metal tobacco tin can & lid, 1 crimped seam can (4 ½ inches tall x 4 inches diameter), 1 metal belt buckle, and 3 indeterminate metal fragments. There are also numerous items of recent trash throughout the area. The one feature on site,

Feature 1 is a surface scatter of burned coal fragments and some fire-cracked rock. This feature measures 3 m in diameter and is located on the top of the mesa, north of the terrace edge above Tijeras Arroyo. Some aeolian deposition has partially buried some artifacts. Most of the buried artifacts are within the erosion into the dissected terrace, where artifacts have washed down into the head cuts and then been partially buried. A quick probe of the coal scatter (Feature 1) indicated no depth. The coal is likely a surface dump, as the rest of the site may be as well.

LA108383 is an isolated basin hearth found in the cutbank on the south edge of Tijeras Canyon, east of the confluence with Arroyo del Coyote. The vegetation above the hearth is desert scrubland. The hearth's dimensions are 2 x 2m and is located between 88 cm below ground surface for top dimensions and 94 cm for the bottom. There was charcoal associated with the hearth but no oxidized surface or artifacts were observed. The hearth probably dates to the Archaic period on the basis of the age of the depositional fill (Middle Holocene). This site consists of one hearth, buried close to a meter bgs, with no artifacts associated with it (Mariah Assoc., 1994).

Although the sites are within a mile of the proposed location of this facility, they will not be impacted in any way by this action. Please see map for location reference.

We would be happy answer any questions you may have about our proposed action. We appreciate your review of this information and will assume your concurrence if we receive no reply within 30 days. If you have any questions or require further information, please do not hesitate to contact Valerie Renner at 505-846-8840.

Sincerely,



Valerie Renner  
Cultural Resource Manager  
Kirtland Air Force Base

No Historic Properties Affected.

  
for NM State Historic Preservation Officer