

**Final Finding of No Significant Impact (FONSI)
Environmental Assessment for
Demolition and Construction of Military Personnel Support Facilities**

Kirtland Air Force Base, New Mexico

Introduction

The U.S. Air Force (Air Force) prepared this Finding of No Significant Impact (FONSI) in accordance with the National Environmental Policy Act (NEPA) of 1969; President's Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, 40 Code of Federal Regulations (CFR) 1500-1508; and Environmental Impact Analysis Process, 32 CFR 989. The decision in this FONSI is based on information contained in the *Environmental Assessment (EA) for Demolition and Construction of Military Personnel Support Facilities*, which is attached and incorporated herein.

The purpose of the EA is to determine the extent of environmental impact that may result from proposed demolition and construction at Kirtland Air Force Base (AFB) and to evaluate whether these impacts, if any, would be significant. The purpose of the Proposed Action is to consolidate and upgrade the existing dormitories and the associated facilities. The consolidation and upgrades are needed because the facilities are outdated and do not comply with current Air Force design standards, and because of stationing decisions, such as those under Base Realignment and Closure.

Description of Proposed Action and Alternatives

The Air Force proposes to demolish all or portions of 21 military personnel support facilities and construct 8 new facilities. Facilities to be demolished include visiting officers' quarters (VOQ), offices, dormitories, fitness/gymnasium, and others. Proposed construction includes VOQ, General's Quarters/Administration, dormitories, dining hall, and fitness center. It is anticipated that all projects would start at different times within the next 5 years, each having a duration of 2 to 3 years.

The Proposed Action Alternative is analyzed in the EA. The No Action Alternative is carried forward for analysis in accordance with Air Force Regulation 32 CFR 989.8 (d). The Proposed Action is the only alternative that meets the selection criteria, in addition to having no significant adverse effect on the natural or human environment.

Environmental Analysis

On the basis of the analysis in the EA, the Air Force has decided to proceed with demolition and construction of military personnel support facilities. The potential impacts to the human and natural environment were evaluated relative to the existing environment.

The Proposed Action will occur in the developed area of Kirtland AFB, therefore, potential impacts related to disturbance of previously undisturbed areas will be avoided. The Proposed Action will comply with all federal, state, county, municipal, and Department of Defense rules and regulations as listed in Section 1.5 of the EA. During construction and operation, the Proposed Action would result in less than significant impacts to air quality, biological resources, cultural resources, land use, utilities/infrastructure, hazards/hazardous materials, water resources/floodplains/wastewater, noise, geology/soils, health/safety, and environmental justice. During construction, the Proposed Action would provide short-term, socioeconomic benefits through the generation of construction jobs. Onbase traffic is expected to be less than current conditions because personnel would have access to services and administrative facilities close to the dormitories. This would result in a beneficial impact to onbase traffic.

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE DEC 2010		2. REPORT TYPE		3. DATES COVERED 00-00-2010 to 00-00-2010	
4. TITLE AND SUBTITLE Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities Kirtland Air Force Base, New Mexico				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) 377th Mission Support Group (377 MSG/CEIE),2050 Wyoming Blvd SE Suite 125,Kirtland AFB,NM,87117				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 141	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Overall, the analysis for this EA indicates that the demolition and construction of the military personnel support facilities, as described under the Proposed Action, would not result in or contribute to significant negative cumulative or indirect impacts to the resources in the region.

Conclusion

In accordance with the CEQ regulations implementing NEPA and the Air Force Environmental Impact Analysis Process, the Air Force concludes that the Proposed Action will have no significant impact on the quality of the human environment and that the preparation of an environmental impact statement is not warranted.

The Draft EA was available for public review and comment from May 6, 2010 through June 11, 2010 at the Central New Mexico Community College Montoya Campus and the Kirtland AFB Library. Two comments were received.

SIGNED:



DATE: 13 Dec 2010

ROBERT L. MANESS, Colonel, USAF
Commander

Final

**Environmental Assessment for
Demolition and Construction of
Military Personnel Support
Facilities
Kirtland Air Force Base,
New Mexico**

Prepared for
Kirtland Air Force Base

July 2010

Contents

	Page
Section	
Acronyms and Abbreviations	vii
1 Purpose and Need for Action	1-1
1.1 Introduction and Background	1-1
1.2 Location of the Proposed Action	1-1
1.3 Purpose and Need for the Proposed Action	1-2
1.4 Scope of the Environmental Assessment	1-3
1.4.1 Resources Analyzed in This Environmental Assessment	1-3
1.4.2 Resources Eliminated from Further Study	1-4
1.5 Regulatory Framework	1-4
1.6 Compliance Requirements	1-5
2 Description of the Proposed Action and Alternatives	2-1
2.1 Identification of Selection Criteria	2-1
2.2 Description of the Proposed Action	2-1
2.2.1 Visiting Officer Quarters Complex	2-3
2.2.2 Main Enlisted Dormitory Campus	2-3
2.2.3 Gymnasium Area	2-3
2.2.4 Noncommissioned Officer Academy	2-4
2.2.5 Dormitory Campus 2	2-4
2.3 No Action Alternative	2-4
2.4 Alternatives Considered but Eliminated from Detailed Study	2-5
2.5 Comparison of Alternatives	2-5
3 Affected Environment	3-1
3.1 Air Quality	3-1
3.1.1 Regional Climate	3-1
3.1.2 Current Air Quality Conditions	3-1
3.1.3 Greenhouse Gas Inventory	3-3
3.2 Biological Resources	3-3
3.2.1 Vegetation and Wildlife	3-4
3.2.2 Special-status Species	3-4
3.2.3 Waters of the United States Including Wetlands	3-5
3.3 Cultural Resources	3-5
3.3.1 Cultural History	3-6
3.3.2 Cultural Resource Investigations and Resources	3-7
3.4 Land Use	3-8
3.5 Utilities and Infrastructure	3-9
3.5.1 Water Supply	3-9
3.5.2 Wastewater	3-10
3.5.3 Energy	3-10

Contents, Continued

	Page
3.5.4 Solid Waste	3-11
3.6 Transportation System	3-11
3.7 Hazardous Materials, Hazardous Wastes, Environmental Restoration Program Sites, and Stored Fuels	3-11
3.7.1 Hazardous Materials and Hazardous Wastes	3-11
3.7.2 Environmental Restoration Program Sites	3-12
3.8 Water Resources and Floodplains	3-12
3.8.1 Groundwater	3-12
3.8.2 Surface Water	3-12
3.8.3 Floodplains	3-13
3.9 Noise	3-13
3.10 Geology and Soils	3-13
3.10.1 Geology	3-13
3.10.2 Soils	3-14
3.11 Safety and Occupational Health	3-14
3.12 Socioeconomic Resources	3-15
3.12.1 Population	3-15
3.12.2 Economy	3-15
3.13 Environmental Justice and Protection of Children	3-15
4 Environmental Consequences	4-1
4.1 Air Quality	4-1
4.1.1 Laws and Regulations	4-1
4.1.2 Proposed Action Alternative	4-4
4.1.3 No Action Alternative	4-8
4.2 Biological Resources	4-8
4.2.1 Proposed Action Alternative	4-9
4.2.2 No Action Alternative	4-10
4.3 Cultural Resources	4-10
4.3.1 Laws and Regulations	4-10
4.3.2 Proposed Action Alternative	4-11
4.3.3 No Action Alternative	4-11
4.4 Land Use	4-11
4.4.1 Proposed Action Alternative	4-11
4.4.2 No Action Alternative	4-12
4.5 Utilities and Infrastructure	4-12
4.5.1 Proposed Action Alternative	4-13
4.5.2 No Action Alternative	4-14
4.6 Transportation System	4-14
4.6.1 Proposed Action Alternative	4-14
4.6.2 No Action Alternative	4-15

Contents, Continued

	Page
4.7 Hazardous Materials, Hazardous Wastes, Environmental Restoration Program Sites, and Stored Fuels.....	4-15
4.7.1 Proposed Action Alternative	4-16
4.7.2 No Action Alternative	4-17
4.8 Water Resources and Floodplains.....	4-17
4.8.1 Proposed Action Alternative	4-17
4.8.2 No Action Alternative	4-18
4.9 Noise.....	4-18
4.9.1 Proposed Action Alternative	4-18
4.9.2 No Action Alternative	4-19
4.10 Geology and Soils.....	4-19
4.10.1 Proposed Action Alternative	4-19
4.10.2 No Action Alternative	4-19
4.11 Health and Safety	4-20
4.11.1 Proposed Action Alternative	4-20
4.11.2 No Action Alternative	4-20
4.12 Socioeconomic Resources.....	4-20
4.12.1 Proposed Action Alternative	4-20
4.12.2 No Action Alternative	4-21
4.13 Environmental Justice and Protection of Children.....	4-21
4.13.1 Proposed Action Alternative	4-21
4.13.2 No Action Alternative	4-21
4.14 Indirect and Cumulative Impacts	4-21
4.15 Unavoidable Adverse Impacts	4-23
4.16 Relationship between Short-term Uses and Enhancement of Long-term Productivity.....	4-23
4.17 Irreversible and Irretrievable Commitment of Resources	4-23
5 List of Preparers	5-1
6 Consultation and Coordination	6-1
7 Works Cited.....	7-1

Appendices

A	Air Force Form 1391
B	Air Emission Calculations
C	Clean Air Act Conformity Applicability Analysis
D	Tribal Coordination
E	Proof of Publication
F	Public Comments

Contents, Continued

Page

Tables

2-1	Summary of Projects Included in the Proposed Action	2-2
2-2	Buildings Included in the Proposed Action	2-2
2-3	Summary of Potential Environmental Consequences	2-6
3-1	Bernalillo County Attainment Status as of October 2009	3-2
3-2	Air Monitoring Data Summary	3-3
3-3	Special-status Species Potentially Occurring at Kirtland Air Force Base.....	3-5
3-4	Results of Architectural Survey	3-7
3-5	Land Uses and Ownership at Kirtland Air Force Base.....	3-8
3-6	Demographic Statistics for Kirtland Air Force Base Communities	3-15
4-1	Estimated Proposed Action Alternative Demolition and Construction Emissions...	4-5
4-2	Estimated Proposed Action Alternative Operation Emissions	4-6
4-3	Proposed Action General Conformity Applicability	4-7
4-4	Proposed Action Greenhouse Gas Emission Impacts.....	4-8

Figures

(Figures appear at the end of the section in which they are first referenced.)

1-1	Kirtland Air Force Base Location Map.....	1-7
1-2	Location of Proposed Action Areas.....	1-9
2-1	Visiting Officer Quarters Complex and Main Enlisted Dormitory Campus.....	2-7
2-2	Gymnasium Area, Noncommissioned Officer Academy Area, and Dormitory Campus 2.....	2-9
3-1	Installation Road Network on Kirtland Air Force Base.....	3-17
3-2	Noise Contours on Kirtland Air Force Base	3-19

Acronyms and Abbreviations

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
377 ABW	377th Air Base Wing
AAFES	Army and Air Force Exchange Service
ACAM	Air Conformity Applicability Model
ACM	asbestos-containing material
ADA	Americans with Disabilities Act of 1990
AFB	Air Force Base
Air Force	U.S. Air Force
AQCB	Albuquerque/Bernalillo County Air Quality Control Board
AT/FP	anti-terrorism/force protection
Base	Kirtland Air Force Base
BMP	best management practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
dB	decibel
DMP	<i>2008 Air Force Dormitory Master Plan, Kirtland Air Force Base</i>
DNL	day-night noise level
DoD	Department of Defense
EA	<i>Environmental Assessment for the Demolition and Construction of Military Personnel Support Facilities, Kirtland Air Force Base, New Mexico</i>
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
FY	fiscal year
GHG	greenhouse gas

Kirtland AFB General Plan	<i>Comprehensive Plan, Kirtland Air Force Base, New Mexico, General Plan</i>
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
LMP	limited maintenance plan
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NCO	Noncommissioned Officer
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide
O ₃	ozone
PCB	polychlorinated biphenyl
PJ/CRO	Pararescue (formerly parajumper) and Combat Rescue Officer
PM _{2.5}	particulate matter with aerodynamic diameter less than 2.5 micrometers
PM ₁₀	particulate matter with aerodynamic diameter less than 10 micrometers
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
SIP	state implementation plan
SO ₂	sulfur dioxide
State Act	New Mexico Air Quality Control Act
SWPPP	stormwater pollution prevention plan
ton/year	ton(s) per year
USAF	U.S. Air Force
USC	<i>United States Code</i>
VOC	volatile organic compound
VOQ	Visiting Officer Quarters
WMNM	Waste Management of New Mexico

SECTION 1

Purpose and Need for Action

This *Environmental Assessment for the Demolition and Construction of Military Personnel Support Facilities, Kirtland Air Force Base, New Mexico*, has been prepared in accordance with U.S. Air Force (USAF or Air Force) obligations under the National Environmental Policy Act of 1969 (NEPA) (42 *United States Code* [USC] Sections 4321–4370d), the Council on Environmental Quality (CEQ) NEPA-implementing regulations (40 *Code of Federal Regulations* [CFR] Parts 1500–1508), USAF NEPA-implementing regulation (32 CFR 989), and Department of Defense (DoD) Instruction 4715.9 (Environmental Planning Analysis).

Under the Proposed Action, the Air Force would demolish several existing dormitories, Visiting Officer Quarters (VOQ), and associated support facilities, and construct new facilities. This section describes the purpose of and need for the Proposed Action and summarizes the scope of the environmental review and applicable regulatory framework.

1.1 Introduction and Background

Kirtland Air Force Base (Kirtland AFB or Base) employs more than 4,200 active duty personnel, 1,000 Air National Guard personnel, and 3,200 part-time Reservists (Kirtland AFB, 2009a). The 377th Air Base Wing (377 ABW) was designated and activated as a host unit for Kirtland AFB in 1993. The 377 ABW supports approximately 75 federal government and 385 private sector units (Kirtland AFB, 2009a). The mission of the 377 ABW is to provide world-class nuclear surety, expeditionary forces, and support to Base operations.

The 377 ABW has the largest security forces squadron in the Air Force Materiel Command, providing Base operations support to more than 100 associate units, including those with flight missions, in more than 2,000 buildings. The 377 ABW also provides support services, such as medical care, housing, fire protection, and transportation, to the Kirtland AFB community, including active duty personnel, retirees, dependants, and civilians (Kirtland AFB, 2006). The Albuquerque International Sunport shares its runways with Kirtland AFB.

Support facilities provided at Kirtland AFB associated with the Proposed Action include personnel dormitories for associate units such as the 58th Special Operations Wing, the Noncommissioned Officer (NCO) Academy, and the Pararescue (formerly Parajumper) and Combat Rescue Officers (PJ/CRO) Academy. Other support services include facilities for visiting military and civilian personnel, a fitness center, dining hall, and retail facilities.

1.2 Location of the Proposed Action

Kirtland AFB is located in Bernalillo County, southeast of Albuquerque, New Mexico (see Figure 1-1; figures appear at the end of the section in which they are first referenced). The Base is the sixth largest installation in the USAF, occupying approximately 52,000 acres.

The Base is bounded on the west and north by the City of Albuquerque, on the south by Isleta Pueblo Reservation, and on the east by the Cibola National Forest. Kirtland AFB includes undeveloped land, U.S. Forest Service and Bureau of Land Management withdrawn public domain lands, and developed land.

The proposed construction and demolition actions are located in the developed area of the northwestern portion of Kirtland AFB and include the five following projects (see Figure 1-2):

- VOQ Complex located south of Club Road, north of A Avenue, and bounded by 15th Street to the west and 18th Street to the east.
- Main Enlisted Dormitory Campus located south of Gibson Boulevard between Pennsylvania and 1st Streets and north of H Avenue. For the purpose of this *Environmental Assessment for the Demolition and Construction of Military Personnel Support Facilities* (EA), the area extends to the west across Pennsylvania Street north of G Avenue.
- The Gymnasium area located north of San Mateo Boulevard, west of Truman Street, and south of Gibson Street.
- NCO Academy located east of the flight line south of Biggs Avenue and north of Randolph Avenue, between Truman and Eileen Streets.
- Dormitory Campus 2 located on the west side of the Base between Sherman and Lowry Avenues and Maxwell and Chanute Streets.

1.3 Purpose and Need for the Proposed Action

As discussed in Section 1.1, part of the mission of the 377 ABW is to provide and meet the requirements for military personnel support facilities. Implementation of the Proposed Action would help the 377 ABW meet the requirements of its mission. The purpose of the Proposed Action is to consolidate and upgrade the existing dormitories and the associated facilities. The consolidation and upgrades are needed because the facilities are outdated and do not comply with current Air Force design standards, and because of stationing decisions, such as those under Base Realignment and Closure (BRAC).

The 2008 *Air Force Dormitory Master Plan, Kirtland Air Force Base* (DMP) (Kirtland AFB, 2008a) examined the current unaccompanied housing inventory available for Kirtland AFB and the projected 2012 manpower requirements by grade as provided by Headquarters, Air Force. The projected requirements considered BRAC impacts, approved tenant needs, and available offbase housing when defining final room requirements. The analysis included a functional assessment of existing room size and configuration compared to current Air Force design standards, as well as a condition assessment of existing dormitory buildings and building systems. Current Air Force design standards include requirements for anti-terrorism/force protection (AT/FP) and provisions under the Americans with Disabilities Act of 1990 (ADA), 42 USC 126 et seq. The DMP concluded that 828 rooms currently exist in the building inventory, and the 2012 projected room requirement is 600 rooms. The DMP found that the existing dormitories are inadequate to meet the needs

and goals identified (e.g., costs to renovate as compared to demolition and construction of new facilities, noise levels, campus location, and energy efficiency) and recommended that several existing dormitory buildings be demolished and replaced.

Many of the support facilities such as additional dormitories, the dining hall, the fitness center, and the VOQ do not meet current Air Force design standards, ADA requirements, AT/FP requirements, or do not meet the use demands for the facility. The buildings are over 50 years old and have never been fully renovated. Finishes and systems such as the evaporative cooling systems are old, dilapidated, and deficient by current standards. The current occupancy rate of the VOQ is 95 percent, and 10 to 15 personnel are sent to offbase lodging daily. The fitness facilities are undersized, poorly laid out, dilapidated, and do not meet current standards for ADA requirements, fitness center design, or AT/FP.

Additionally, changes at Kirtland AFB, such as the NCO Academy plans to move to another base and the PJ/CRO campus move to another location on Kirtland AFB, have resulted, or will result, in changes of use and occupancy of several areas.

The Proposed Action would be consistent with the goals and recommendations of the DMP (Kirtland AFB, 2008a) and would construct facilities in compliance with ADA requirements, AT/FP requirements, and current Air Force design standards.

1.4 Scope of the Environmental Assessment

NEPA requires federal agencies to consider environmental consequences in their decision making process. The CEQ issued regulations to implement NEPA (40 CFR 1500–1508) that include provisions for both the content and procedural aspects of the required environmental analysis. The Air Force environmental impact analysis process is accomplished through adherence to the procedure set forth in 32 CFR 989. The environmental impact evaluation is designed to provide decision makers with an understanding of the potential environmental consequences of a proposed action.

1.4.1 Resources Analyzed in This Environmental Assessment

This EA addresses the potential environmental and socioeconomic effects of implementing the Proposed Action relative to the No Action Alternative. The following resources are addressed in this EA:

- Air quality
- Biological resources
- Cultural resources
- Land use
- Utilities and infrastructure
- Transportation
- Hazards and hazardous materials
- Water resources
- Noise
- Geology and soils
- Health and safety

- Socioeconomics
- Environmental justice

1.4.2 Resources Eliminated from Further Study

As stated in 40 CFR 1500.1(b), "...NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail." Accordingly, potential impacts on several environmental resource areas were initially considered but determined not to be significant to the Proposed Action or No Action Alternative. In these instances, either the environmental resources were not present within the Proposed Action area or the Proposed Action would have a negligible impact on these environmental resources. The following resources were eliminated from further study:

- **Airspace and Aircraft Operations:** The activities that would be conducted under the Proposed Action would not affect airspace or aircraft operations. There would be no change in the number of aircraft using the Base and no change in the airspace associated with aircraft operations at the Base. No proposed structures would penetrate into airspace or affect flight paths or patterns.
- **Visual and Aesthetic Resources:** Potential effects to the visual and aesthetic resources on and around Kirtland AFB were considered but not included for detailed analysis. Construction of new facilities would introduce new elements to the visual landscape, but these changes either would not be visible from areas offbase or are consistent with the character of the Base. Therefore, there would be no adverse visual or aesthetic impacts resulting from construction and operation of the Proposed Action.

1.5 Regulatory Framework

The Proposed Action would comply with all federal, state, county, municipal, and DoD rules and regulations, to include, but not limited to, the following:

- Archaeological Resources Protection Act of 1970, 16 USC 470 et seq.
- Clean Air Act of 1990 (CAA), 42 USC 7401 et seq.
- Clean Water Act (CWA), 33 USC 1251 et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601 et seq.
- Endangered Species Act of 1973, 16 USC 1531 et seq.
- Migratory Bird Treaty Act (MBTA), 16 USC 703 et seq.
- National Historic Preservation Act of 1966, (NHPA) 16 USC 470 et seq.
- Noise Control Act, 42 USC 4901 et seq.
- Occupational Safety and Health Act of 1970, 29 USC 651 et seq.
- Pollution Prevention Act of 1990, 42 USC 13101 et seq.

- Resource Conservation and Recovery Act of 1976 (RCRA), 42 USC 6901 et seq.
- Toxic Substances Control Act of 1976, 15 USC 2601 et seq.
- “Fugitive Dust Control Construction Permit and Asbestos Notification,” *New Mexico Administrative Code* (NMAC) 20.11.20.22
- “Emission Standards for Hazardous Air Pollutants for Stationary Sources,” NMAC 20.11.64
- “National Emission Standards for Asbestos,” 40 CFR 61 Subpart M

The following Executive Orders (EO) are applicable to the Proposed Action as described in this EA:

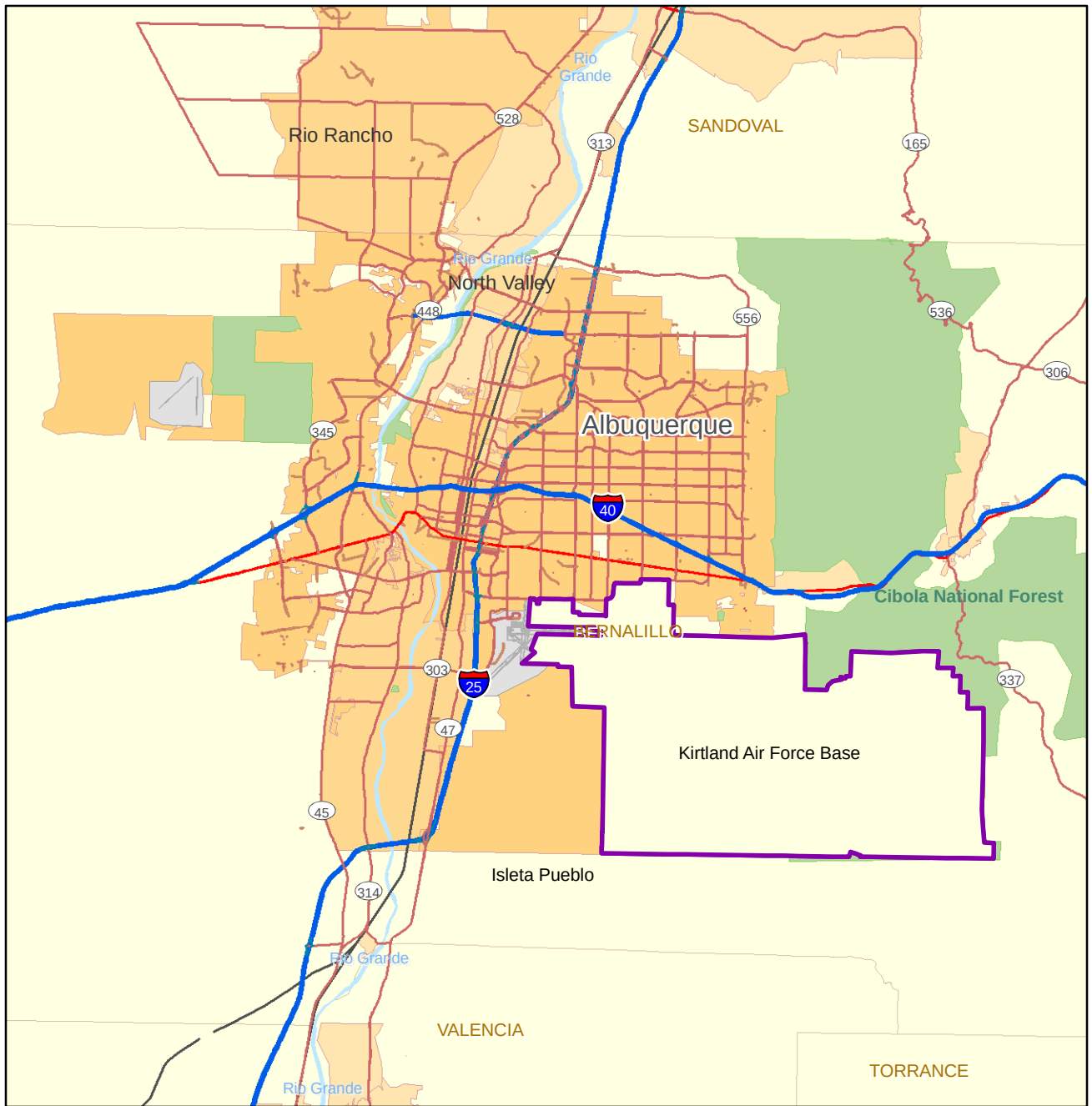
- EO 11514, *Protection and Enhancement of Environmental Quality*
- EO 12372, *Interagency and Intergovernmental Coordination for Environmental Planning*
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risk*
- EO 13175, *Consultation and Coordination with Indian Tribal Governments*
- EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*
- EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*
- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*

1.6 Compliance Requirements

Under the Proposed Action, the following permits or plans would be required for compliance with applicable regulations:

- National Pollutant Discharge Elimination System Construction General Permit and stormwater pollution prevention plan (SWPPP) for ground disturbance of more than 1 acre during construction and demolition activities.
- National Pollutant Discharge Elimination System General Permit for Discharges from Small Municipal Storm Sewer Systems (MS4). Compliance with existing permit (Permit Number NMR040000).
- City of Albuquerque Environmental Health Department, Air Quality Division, Surface Disturbance Permit for ground disturbance of more than 0.75 acre during construction and demolition activities.
- Albuquerque/Bernalillo County Air Quality Control Board (AQCB) and City of Albuquerque, Air Quality Division, Authority to Construct, Operation Permit, or Source Registration for stationary sources (heaters/boilers, etc.) used for dormitory and supporting facilities, unless these types of equipment are exempt under NMAC Title 20, Chapter 11.

- City of Albuquerque Environmental Health Department, Air Quality Division, notification by the contractor and compliance with CAA, National Emissions Standards for Hazardous Air Pollutants, U.S. Environmental Protection Agency (EPA), New Mexico Environment Department (NMED) for removal of asbestos-containing material (ACM).
- New Mexico State Historic Preservation Office, NHPA Section 106 consultation for excavation or removal of archaeological resources from public lands or American Indian lands, and performing activities associated with such excavation or removal.



LEGEND

 Installation Boundary

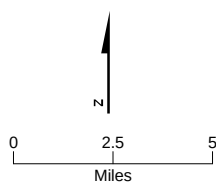
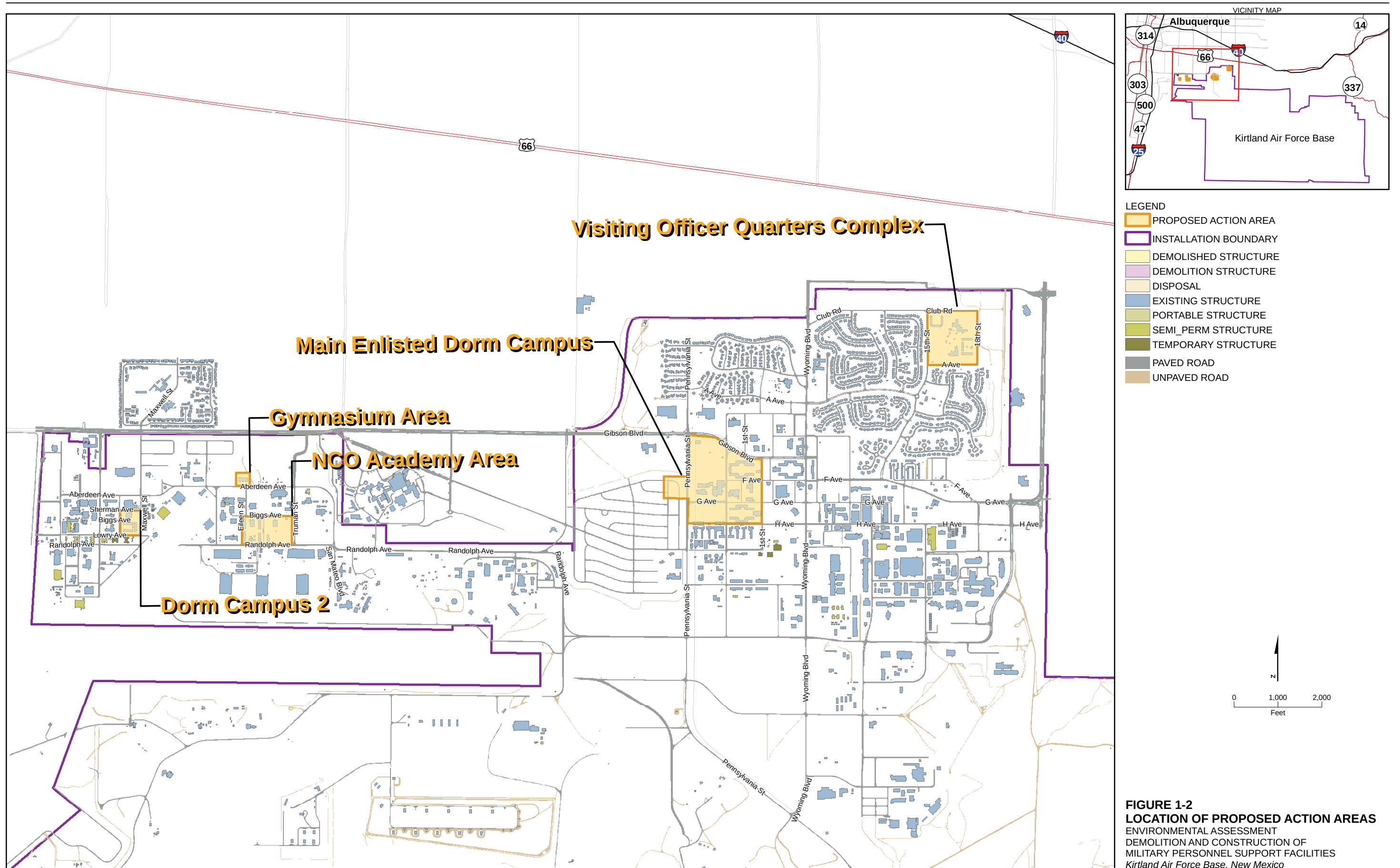


FIGURE 1-1
KIRTLAND AIR FORCE BASE LOCATION MAP
 ENVIRONMENTAL ASSESSMENT
 DEMOLITION AND CONSTRUCTION OF
 MILITARY PERSONNEL SUPPORT FACILITIES
 KIRTLAND AIR FORCE BASE, NEW MEXICO



SECTION 2

Description of the Proposed Action and Alternatives

This section identifies criteria used to measure the effectiveness of each alternative in meeting the purpose and need, provides a detailed description of the Proposed Action and the No Action Alternative, presents the eliminated alternatives, and presents a comparison of the alternatives.

2.1 Identification of Selection Criteria

Selection criteria were developed on the basis of mission needs for Kirtland AFB and compatibility with land use. Meeting the following criteria would satisfy the Proposed Action's purpose and need:

- Maintain a campus atmosphere that fosters unit cohesion
- Maintain or enhance the quality of life
- Minimize displacement of personnel during demolition and construction
- Meet AT/FP requirements
- Comply with the goals and recommendations of the DMP (including provide appropriate number of rooms and provide a compact, energy-efficient campus)
- Meet demand for VOQ
- Meet current Air Force design standards, including the ADA

2.2 Description of the Proposed Action

Kirtland AFB proposes to demolish and construct several military personnel support facilities in the developed area located in the northwestern portion of the Base. The Proposed Action activities include the VOQ Complex, the Main Enlisted Dormitory Campus, the Gymnasium area, the NCO Academy, and Dormitory Campus 2 sites (see Figure 1-2). Approximately 38 acres would be affected by the construction and demolition activities.

Although it is anticipated that all projects would start at different times within the next 5 years, each having a duration of 2 to 3 years, it is possible that the projects would overlap or occur concurrently. This EA assesses the scenario of all projects occurring concurrently. Table 2-1 lists the project areas included in the Proposed Action. Table 2-2 lists the buildings proposed for demolition and construction.

TABLE 2-1

Summary of Projects Included in the Proposed Action

Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities, Kirtland Air Force Base, New Mexico

Area	Number of Projects in Area (Construction and Demolition)	Estimated Total Size of Area ^a (acres)	Estimated Size of Disturbance ^b (acres)
VOQ Complex	4	33	5
Main Enlisted Dormitory Campus	14	77	23
Gymnasium Area	1	2	2
NCO Academy Area	8	13	7
Dormitory Campus 2	1	10	1
Total		135	38

^aEstimated approximate area in which demolition and construction could occur (the areas include streets, parking, and other areas that would not be disturbed during demolition and construction)

^bEstimated area of ground disturbance related to demolition and construction, including construction laydown and other areas

TABLE 2-2

Buildings Included in the Proposed Action

Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities, Kirtland Air Force Base, New Mexico

Area	Demolition	Construction
VOQ Complex	B22016–Administration Office B22010–VOQ	B22019–VOQ B22020–General's Quarters/Administration (currently VOQ)
Main Enlisted Dormitory Campus	B20221–Dormitory B20222–Dormitory B20350–Dining Hall B20351–Dormitory B20352–Dormitory B20224–AAFES Mini Mall B20226–Sandia Crest Club B20229–Portion of Fitness Center B20228–Fitness Center	B20249–Dormitory (120 rooms) B20251–Dormitory (120 rooms) B20252–Dormitory (120 rooms) B20253–58 th Special Operations Wing Pipeline Dormitory (84 rooms) B20336–Dining Hall/Administration B19040–Fitness Center
Gymnasium Area	B585–Gymnasium	No Planned Construction
NCO Academy Area	B915–Dormitory B916–Administration B917–Visiting Airmen Dormitory B918–Visiting Airmen Dormitory B922–Dormitory B924–Visiting Airmen Dormitory B926–Administration B2586–Paved Pad	No Planned Construction
Dormitory Campus 2	B425–Dormitory	No Planned Construction

Note:

AAFES = Army and Air Force Exchange Service

2.2.1 Visiting Officer Quarters Complex

The Proposed Action in the VOQ Complex would include demolition of the administrative office building (Building 22016) located near the southeastern corner of the area (see Figure 2-1). A new VOQ (Building 22019) would be constructed near the southwestern corner of the area, west of the recently completed VOQ (Building 22018). The new VOQ (Building 22019) would be similar in shape and size to Building 22018. After completion of the new VOQ building, the existing VOQ (Building 22010) would be demolished, and a new, approximately 20,000-square foot, General's Quarters and administration office would be constructed.

2.2.2 Main Enlisted Dormitory Campus

The following activities are proposed for the Main Enlisted Dormitory Campus:

- All of the new dormitories proposed for permanent party personnel, as well as a new pipeline dormitory, would be located within the Main Enlisted Dormitory Campus (see Figure 2-1). The Proposed Action would create a pedestrian-oriented campus with parking located within easy walking distance of the dormitories. Three new, 120-room dormitories and a new, 84-room pipeline dormitory would be constructed on the Main Enlisted Dormitory Campus. Four existing dormitories (Buildings 20221, 20222, 20351, and 20352) would be demolished in phases. Two of the existing structures are not needed to meet the projected room demand and would be demolished as soon as possible. The other dormitory structures would continue to be used until the new dormitories are constructed.
- An existing dining hall (Building 20350) would be demolished, and a new dining hall would be constructed to replace it.
- The AAFES Mini Mall (Building 20224) and the Sandia Crest Club (Building 20226), located in the central portion of the Main Enlisted Dormitory Campus, would be demolished under the Proposed Action.
- A new fitness center would be constructed to replace the existing fitness center (Building 20228) west of Pennsylvania Street, approximately one block from the existing fitness center. After completion of the new facility, the existing fitness center and a portion of an associated structure (Building 20229) would be demolished. The new fitness center would be constructed in accordance with current Air Force design standards. The project would include a controlled entrance, lobby, gymnasium, locker rooms, group exercise area, a health and wellness center, space for fitness equipment, 1/8-mile indoor track, and administrative and other support spaces. Construction would include site preparation; parking; a reinforced concrete foundation; a steel structure; reinforced masonry walls; standing seam metal roof; fire protection; heating, ventilation, and air conditioning; and utilities.

2.2.3 Gymnasium Area

The existing gymnasium (Building 585) north of the NCO Academy area would be demolished (see Figure 2-2).

2.2.4 Noncommissioned Officer Academy

The Proposed Action would include demolition of three dormitories (Buildings 917, 918, and 924) in the NCO Academy area (see Figure 2-2). Demolition of administration and support facilities (Buildings 915, 916, 922, 2586, and 926) would also be included.

2.2.5 Dormitory Campus 2

The existing PJ Pipeline Dormitory (Building 425) would be demolished under the Proposed Action (see Figure 2-2).

2.3 No Action Alternative

The following list summarizes the current conditions and use of the VOQ Complex, Main Enlisted Dormitory Campus, NCO Academy, and Dormitory Campus 2:

- The VOQ Complex is located near the northern Base boundary (see Figure 2-1). The existing VOQs are part of a complex of 10 VOQ buildings that adjoins an all-ranks dining/club facility, swimming pool, tennis courts, picnic area, and other amenities. The current occupancy rate is 95 percent; 10 to 15 personnel seek offbase lodging daily. Most of the structures are more than 50 years old and have never been fully renovated. The structures and systems do not meet current Air Force design standards.
- The Main Enlisted Dormitory Campus (see Section 1.2) is located near most Base community facilities (see Figure 2-1). The campus consists of dormitories, essential services (e.g., dining hall and post office), parking areas, and recreational amenities. The area west of Pennsylvania Street was formerly the Zia Park housing area, which was demolished in 2006. There are currently four dormitories on the campus, all constructed in 1950 (Buildings 20221, 20222, 20351, and 20352). The dormitories on the Main Enlisted Dormitory Campus provide 784 rooms for unaccompanied enlisted personnel. The Sandia Crest Club (Building 20226), AAFES Mini Mall (Building 20224), and dining hall (Building 20350) are located within walking distance of the dormitories. All structures are more than 50 years old and do not meet current Air Force design standards. The fitness center (including a portion of Building 20228 and Building 20229), located west of the Sandia Crest Club, is a collection of structures and additions dating back to the early 1950s. The facility does not meet the needs of the community because of its inadequate size, dilapidated condition, and poor layout.
- The Gymnasium area includes the existing gymnasium (Building 585). The structure was built in 1968, and does not meet current Air Force design standards. The gymnasium is 2 miles from the services and dormitories at the Main Enlisted Dormitory Campus.
- The NCO Academy area includes three visiting airmen dormitories (Buildings 917, 918, and 924) and two permanent party dormitories (Buildings 915 and 922). Several support facilities (Buildings 916, 926, and 2586) are also included in the area. The structures do not meet current Air Force design standards and are located more than 2 miles from the services at the Main Enlisted Dormitory Campus.

- The Dormitory Campus 2 area includes one 44-room dormitory (Building 425) used by PJ/CRO pipeline students. The building was constructed in 1958, and does not meet current Air Force design standards. The dormitory is more than 3 miles from the services at the Main Enlisted Dormitory Campus.

Existing dormitories and support facilities do not meet current Air Force design standards, including ADA requirements. In addition, they do not comply with AT/FP requirements. Under the No Action Alternative, replacement of facilities would not occur; therefore, Kirtland AFB would remain out of compliance with these requirements.

2.4 Alternatives Considered but Eliminated from Detailed Study

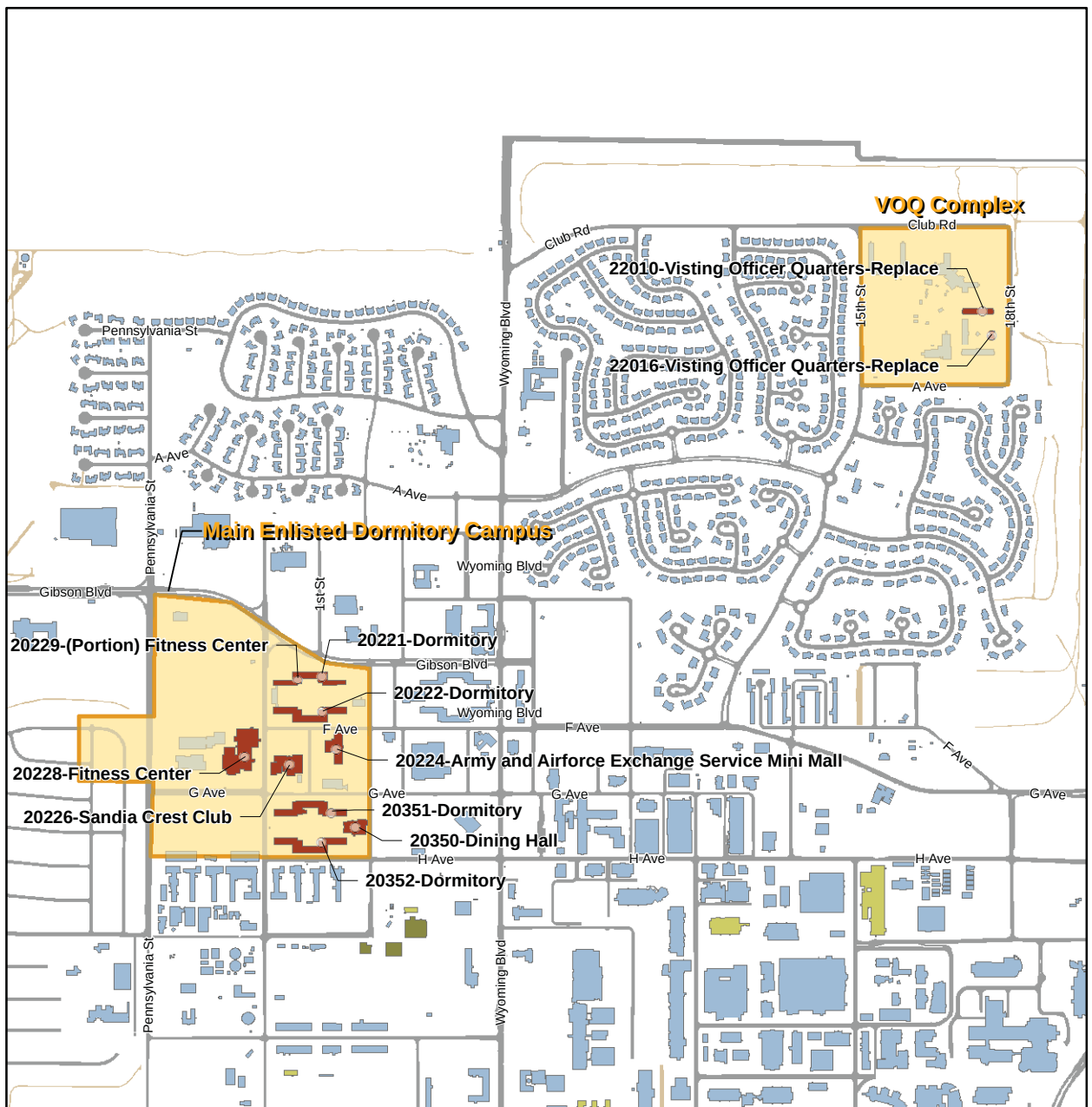
This EA analyzes the Proposed Action and the No Action Alternative. Renovating current facilities to meet the standards and requirements was considered as an alternative but would not maintain a campus atmosphere that fosters unit cohesion, minimize displacement of personnel during demolition and construction, or comply with the goals and recommendations of the DMP as discussed in Section 2.1; therefore, it was not carried forward for further analysis. Renovation would not comply with the goals and recommendations of the DMP to create a compact campus that fosters unit cohesion. Renovating the existing structures that are located in different areas of the Base would result in some personnel living offbase and would therefore not maintain a campus atmosphere that fosters unit cohesion. Compliance with AT/FP would not be possible with renovation of existing structures such as the fitness facilities because main thoroughfares and parking are located close to those facilities, and minimum setback requirements could not be met. Additionally, renovating the current facilities would not be economically feasible.

2.5 Comparison of Alternatives

Table 2-3 compares the impacts on environmental resources analyzed in this EA for the Proposed Action and No Action Alternatives.

TABLE 2-3
 Summary of Potential Environmental Consequences
*Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
 Kirtland Air Force Base, New Mexico*

Resource	Proposed Action Alternative	No Action Alternative
Air Quality	Less than significant impact	No impact
Biological Resources	Less than significant impact	No impact
Cultural Resources	Less than significant impact	No impact
Land Use	Less than significant impact	No impact
Utilities and Infrastructure	Less than significant impact	No impact
Transportation	Beneficial impact	No impact
Hazards and Hazardous Materials	Less than significant impact	No impact
Water Resources, Floodplains, and Wastewater	Less than significant impact	No impact
Noise	Less than significant impact	No impact
Geology and Soils	Less than significant impact	No impact
Health and Safety	Less than significant impact	No impact
Socioeconomics	Slight beneficial impact	No impact
Environmental Justice	Less than significant impact	No impact



LEGEND

- BUILDING LOCATION
- EXISTING STRUCTURE TO BE DEMOLISHED
- PROPOSED ACTION AREA
- EXISTING STRUCTURE
- SEMI_PERM STRUCTURE
- TEMPORARY STRUCTURE
- PAVED ROAD
- UNPAVED ROAD

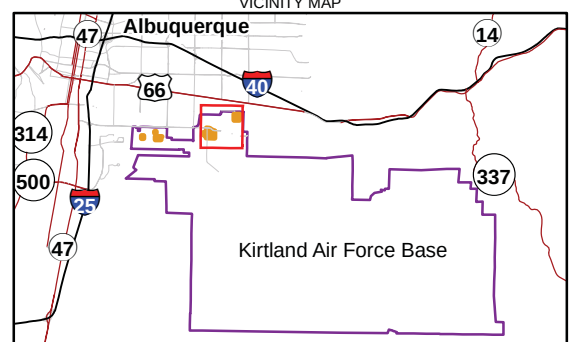
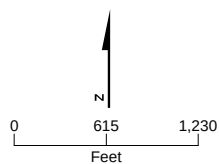
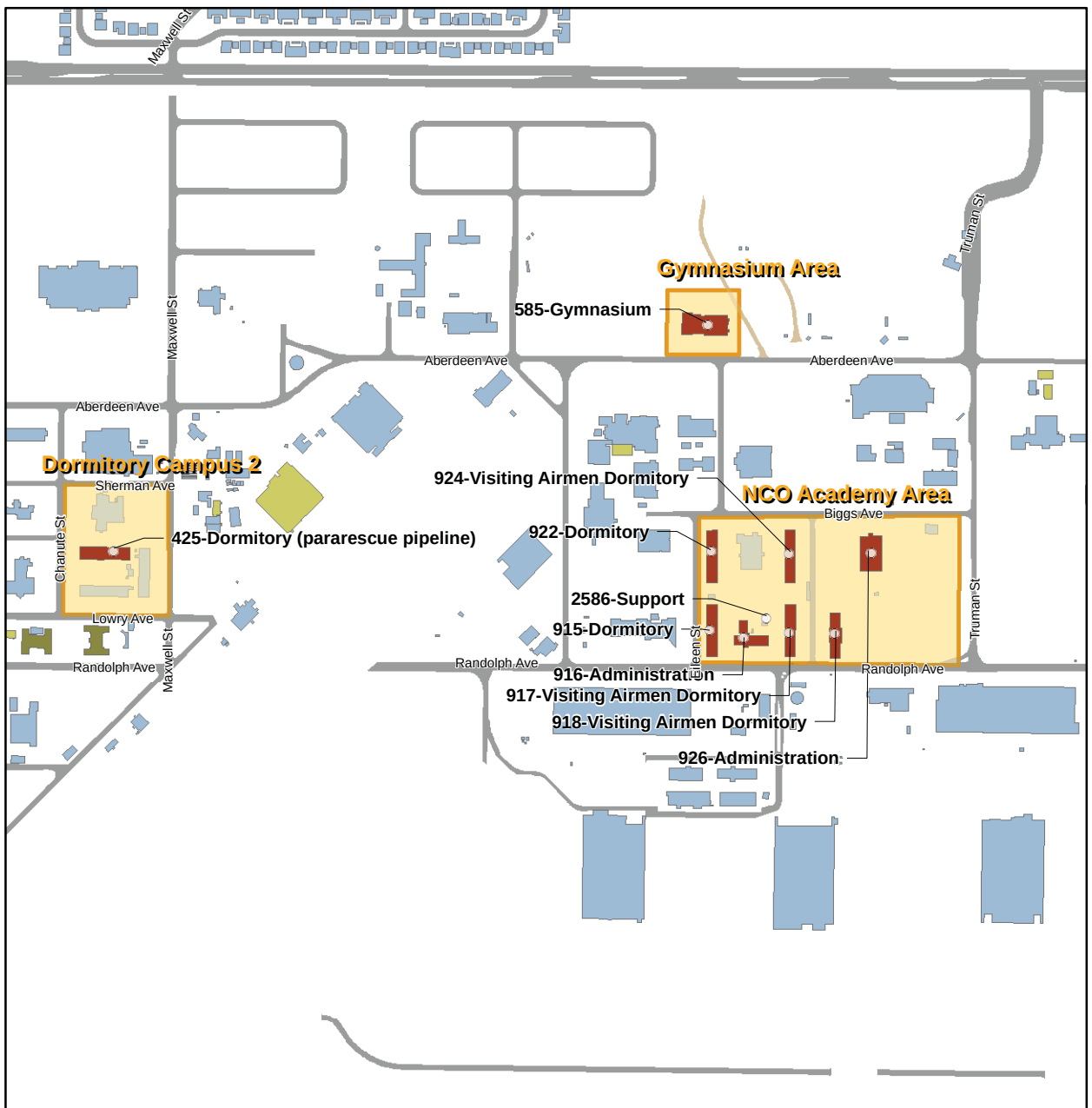


FIGURE 2-1
VISITING OFFICER QUARTERS COMPLEX
AND MAIN ENLISTED DORMITORY CAMPUS
 ENVIRONMENTAL ASSESSMENT
 DEMOLITION AND CONSTRUCTION OF
 MILITARY PERSONNEL SUPPORT FACILITIES
 Kirtland Air Force Base, New Mexico



LEGEND

- BUILDING LOCATION
- EXISTING STRUCTURE TO BE DEMOLISHED
- PROPOSED ACTION AREA
- EXISTING STRUCTURE
- SEMI_PERM STRUCTURE
- TEMPORARY STRUCTURE
- PAVED ROAD
- UNPAVED ROAD

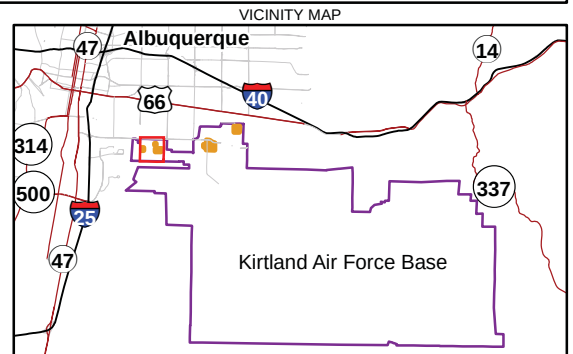
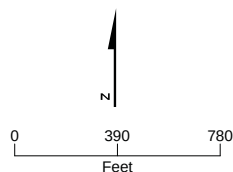


FIGURE 2-2
GYMNASIUM AREA, NONCOMMISSIONED OFFICER
ACADEMY AREA, AND DORMITORY CAMPUS 2
 ENVIRONMENTAL ASSESSMENT
 DEMOLITION AND CONSTRUCTION OF
 MILITARY PERSONNEL SUPPORT FACILITIES
 Kirtland Air Force Base, New Mexico



SECTION 3

Affected Environment

This section presents specific information about the environment at Kirtland AFB that could be adversely affected as a result of implementing the Proposed Action. Potential impacts resulting from the Proposed Action are described in detail in Section 4.

3.1 Air Quality

This section provides an overview of regional air quality. The information presented in this section includes a discussion of existing meteorological conditions, applicable federal and state regulations, regional air quality management programs, and the current air quality conditions.

3.1.1 Regional Climate

The weather in the Kirtland AFB area is generally dry and sunny all year, although temperature variations between winter and summer are extreme. It is hot during the summer months, and the temperature can reach well over 90 degrees Fahrenheit most days, particularly during June and July. In contrast, winters are cold, and daytime temperatures can plummet to below freezing during December and January. Precipitation averages 8.7 inches per year and snowfall averages 9.2 inches per year. During winter months, winds tend to flow from the north, ranging from 7 to 8 miles per hour. Winds are mostly from the south and southeast for the remainder of the year, ranging from 8 to 11 miles per hour.

3.1.2 Current Air Quality Conditions

Bernalillo County, where Kirtland AFB is located, is designated in attainment or unclassified for ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), particulate matter with aerodynamic diameter less than 10 micrometers (PM₁₀), and particulate matter with aerodynamic diameter less than 2.5 micrometers (PM_{2.5}). The only pollutant subject to a maintenance plan in Bernalillo County is CO (EPA, 2009b).

Bernalillo County is currently under a limited maintenance plan (LMP) for CO approved by EPA on 21 July 2005. Ambient CO levels are no longer a major concern in Bernalillo County (NMED, Air Quality Bureau, 2009).

Table 3-1 lists relevant federal and state ambient air quality standards along with their respective attainment status.

TABLE 3-1

Bernalillo County Attainment Status as of October 2009

*Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
Kirtland Air Force Base, New Mexico*

Pollutant	Averaging Time	New Mexico	Federal	
		Standard	Standard	Attainment Status
O ₃	8-hour	NA	0.075 ppm	Attainment
CO	8-hour	8.7 ppm 13.1 ppm	9.0 ppm	Attainment/maintenance
	1-hour		35.0 ppm	
NO ₂	Annual	0.05 ppm	0.053 ppm	Attainment
	1-hour	0.10 ppm	NA	
SO ₂	Annual	0.02 ppm	0.03 ppm	Attainment
	24-hour	0.10 ppm	0.14 ppm	
PM ₁₀	24-hour	NA	150 µg/m ³	Attainment
PM _{2.5}	Annual arithmetic mean	NA	15 µg/m ³	Attainment
	24-hour	NA	35 µg/m ³	

Sources: EPA, 2009a; NMED, Air Quality Bureau, 2009

Notes:

NA = not applicable

ppm = parts per million

µg/m³ = micrograms per cubic meter

Air monitoring data in the project area were obtained from the two closest stations: 201 Prosperity SW in Albuquerque and 6000 Anderson Avenue SE in Albuquerque. The monitoring data for O₃, nitrogen oxide (NO_x), CO, and PM_{2.5} were from the 6000 Anderson Avenue SE station. PM₁₀ data were not available at the Anderson Avenue station; therefore, data from the 201 Prosperity SW station was used. As shown in Table 3-2, CO, NO_x, and PM_{2.5} concentrations were all below the National Ambient Air Quality Standards (NAAQS) in the last 3 years (2006 through 2008). The maximum 8-hour O₃ concentrations were above the NAAQS once in the 3-year period. The area remains in attainment of the 8-hour O₃ standard, because the 3-year average of the fourth highest O₃ concentrations are below the NAAQS, and attainment is determined by the fourth highest value. Maximum 24-hour PM₁₀ emissions exceeded the NAAQS twice in the 3-year period, once in 2006 and once in 2007. Attainment of the PM₁₀ 24-hour standard is based on more than three measured concentrations above the standard in a 3-year period. Therefore, the area remains in attainment for PM₁₀. The Prosperity and Anderson stations are both located in urban areas. It is expected that pollutant concentrations inside Kirtland AFB would be lower because of its rural setting and fewer emissions sources in the project vicinity.

TABLE 3-2
Air Monitoring Data Summary
*Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
Kirtland Air Force Base, New Mexico*

Pollutant	Averaging Time	2006	2007	2008
O ₃ (ppm)	8-hour (1st maximum)	0.079	0.072	0.71
NO _x (ppm)	Annual	0.013	0.011	0.009
CO (ppm)	1-hour (1st maximum)	4.20	4.20	3.6
	8-hour (1st maximum)	2.2	2.8	1.8
PM ₁₀ (µg/m ³)	24-hour (1st maximum)	164	310	147
PM _{2.5} (µg/m ³)	24-hour (1st maximum)	22.9	34.5	18.9
	Annual	6.52	6.48	5.90

Source: EPA, 2009b

3.1.3 Greenhouse Gas Inventory

The *New Mexico Greenhouse Gas Emissions and Sinks Inventory: Summary* indicated that in 1990, New Mexico emitted greenhouse gases (GHG) in the amount of 47.6 million metric tons of carbon dioxide equivalent. In 2000, GHG emissions increased to 62.0 million metric tons of carbon dioxide equivalent, an overall increase of 30 percent from 1990 to 2000.

The largest contributor to New Mexico's GHG emissions is the energy sector, which accounted for 90 percent of the gross GHG emissions in 2000. Between 1990 and 2000 alone, the energy sector contribution increased by 18 percent. Within the energy sector, electricity production is the largest single source of emissions, contributing to 40 percent of gross emissions for 2000, followed by the fossil fuel industry, accounting for 24 percent of gross emissions in 2000.

3.2 Biological Resources

Kirtland AFB is located within the following ecoregions: Arizona/New Mexico Plateau; Arizona/New Mexico Mountains Level III Ecoregion; Albuquerque Basin Conifer Woodlands and Savannas; and the Rocky Mountain Conifer Forests Level IV Ecoregion (Kirtland AFB, 2007).

Kirtland AFB is located near three natural resource areas: the Sandia Mountain Wilderness Area, Sandia Foothills Open Space, and the Rio Grande Valley State Park. The Sandia Mountains Wilderness Area is a known raptor migration route. These natural areas provide habitat for plants and wildlife and a variety of bird species (Kirtland AFB, 2007).

3.2.1 Vegetation and Wildlife

Four main plant communities are found on Kirtland AFB. These communities are grassland (sagebrush steppe and juniper woodlands), pinyon-juniper woodlands, ponderosa pine woodlands, and riparian/wetland/arroyo. Grassland and pinyon-juniper woodlands are the most common communities on Kirtland AFB. Examples of commonly occurring plant species include ring muhly (*Muhlenbergia torreyi*), winterfat (*Krascheninnikovia lanata*), alderleaf mountain mahogany (*Cercocarpus montanus*), one-seeded juniper (*Juniperus monosperma*), and ponderosa pine (*Pinus ponderosa*).

Wildlife species on Kirtland AFB are typical of woodland and grassland habitat in central New Mexico. Examples of commonly occurring wildlife species include Woodhouse's toad (*Bufo woodhousii*), red-spotted toad (*Bufo punctatus*), horned lark (*Eremophila alpestris*), mourning dove (*Zenaidura macroura*), American crow (*Corvus brachyrhynchos*), northern harrier (*Circus cyaneus*), desert cottontail (*Sylvilagus audubonii*), spotted ground squirrel (*Spermophilus spilosoma*), and Gunnison's prairie dog (*Cynomys gunnisoni*) (Kirtland AFB, 2007).

The Proposed Action is located in the developed areas of Kirtland AFB. Vegetation types in the developed areas are predominantly nonnative species and common landscape plants. Species within these areas include rabbits, coyotes (*Canis latrans*), prairie dogs, bullsnakes (*Pituophis catenifer sayi*), western rattlesnakes (*Crotalus* sp.), starlings (*Sturnus vulgaris*), robins (*Turdus migratorius*), pigeons (*Columba livia*), grackles (*Quiscalus* sp.), burrowing owls (*Athene cunicularia*), and other migratory birds. The burrowing owl, a federal species of concern, also protected by the MBTA, is known to occur within the Proposed Action area (Kirtland AFB, 2007).

3.2.2 Special-status Species

Special-status species are those species that are listed by the U.S. Fish and Wildlife Service or the New Mexico Department of Game and Fish as rare, threatened, or endangered, and plant species listed by the Native Plant Society of New Mexico. The information for this section was derived from the *Integrated Natural Resources Management Plan for Kirtland Air Force Base* (Kirtland AFB, 2007) and the *Comprehensive Plan, Kirtland Air Force Base, New Mexico, General Plan* (Kirtland AFB General Plan) (Kirtland AFB, 2002).

Eleven special-status species including two plants and nine animals are known to occur or were identified as having potential to occur within Kirtland AFB (see Table 3-3).

With the exception of burrowing owls, which are commonly seen in the developed areas of Kirtland AFB, species listed in Table 3-3 are not likely to occur in the Proposed Action area because of the lack of suitable habitat.

The burrowing owl, a federal species of concern, is a common resident on Kirtland AFB. Burrowing owls are migratory and typically nest onbase from March to late October. They typically migrate south for the winter, although a few individuals might remain onbase. Prairie dogs are common onbase, and the burrowing owl is closely associated with prairie dog colonies because they use their abandoned burrows for nesting. A prairie dog management plan was developed for the Base that takes into account burrowing owl habitat requirements (Kirtland AFB, 2007).

TABLE 3-3

Special-status Species Potentially Occurring at Kirtland Air Force Base
 Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
 Kirtland Air Force Base, New Mexico

Species Common Name	Species Scientific Name	Protection Status	Presence
Plants			
Santa Fe milkvetch	<i>Astragalus feensis</i>	SS	P
wild hollyhock	<i>Iliamna gradiflora</i>	SR	P
Animals			
Texas horned lizard	<i>Phrynosoma cornutum</i>	FSC	P
Texas long-nosed snake	<i>Rhinocheilus lecontei</i>	SS	K
desert massasauga	<i>Sistrurus catenatus</i> spp. <i>edwardsii</i>	SS	K
gray vireo	<i>Vireo vicinior</i>	ST	K
burrowing owl	<i>Athene cunicularia hypugaea</i>	FSC	K
loggerhead shrike	<i>Lanius ludovicianus</i>	FSC	K
mountain plover	<i>Charadrius montanus</i>	FSC	K
southwestern myotis bat	<i>Myotis auriculus</i>	SGCN	K
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	SGCN	K

Sources: Kirtland AFB, 2007; Kirtland AFB 2002; Kirtland AFB, 2008–2009

Notes:

FSC = federal species of concern
 K = known to occur at Kirtland AFB
 P = potential to occur at Kirtland AFB
 SGCN = species of greatest conservation need
 SR = state rare species
 SS = state sensitive species
 ST = state threatened species

3.2.3 Waters of the United States Including Wetlands

Seven small wetlands areas occur on Kirtland AFB; most occupy only a few hundred feet or less of land and total approximately 1 acre. The most extensive wetlands are the Coyote Springs Complex, located along Arroyo del Coyote on the central portion of the Base. Most of the wetlands on Kirtland AFB are in good condition and occur in conjunction with other plant communities (Kirtland AFB, 2007).

No natural lakes or rivers are onbase; however, watershed features in the eastern area of Kirtland AFB include Arroyo del Coyote and other small, unnamed arroyos. These and other gullies and arroyos drain stormwater from the Base but remain dry during most of the year.

No Waters of the United States or wetlands are located within the developed areas of Kirtland AFB, including the areas of the Proposed Action.

3.3 Cultural Resources

Cultural resources include historic and prehistoric sites of interest and may include structures, archaeological sites, or religious sites of importance to Native American cultures. Section 106 of the NHPA, as amended, requires federal agencies to take into

account the effects of their actions on properties listed or eligible for listing on the National Register of Historic Places.

3.3.1 Cultural History

The cultural history of New Mexico is documented to extend back 12,000 years. A brief summary of the known cultural history for both the prehistoric and historic periods is presented below.

Prehistoric Period

The prehistory of central New Mexico can be generally divided into three major periods, the Paleoindian, the Archaic, and the Pueblo, or Ancestral Pueblo. Archaeological sites from all of these general periods are observed near Kirtland AFB. The Paleoindian Period began approximately 12,000 years ago and lasted until approximately 7,500 years ago. This period is represented by a general hunter and gatherer strategy employed by small, highly mobile groups. Traditionally, researchers proposed that these groups exploited large grazing animals, such as mammoth, horse, camel, and buffalo that resided in the local area, in a much wetter and lush environment than at present. More recently, other researchers propose that these small groups hunted much smaller game, and gathered and scavenged foods comprised a significant portion of their diet (Cordell and Gumerman, 2006). The Archaic Period lasted from approximately 7,500 years ago to 1,500 years ago. Populations continued to remain small and mobile, adapting to changing climatic conditions. Ground stone tools became widespread during this period, perhaps indicating a higher reliance on gathered resources (Irwin-Williams, 1979). The Pueblo Period dates from approximately 1,500 years ago to AD 1600. This period is marked by a greater sedentism, drastic changes in technology, including pottery and the bow and arrow, and an increased focus on agriculture (Cordell and Gumerman, 2006). The Pueblo Period in the Kirtland AFB area includes cultural traits from both the Ancestral Pueblo to the north and the Mogollon to the south.

Historic Period

The historic period begins in the area with the arrival of European explorers. Generally, the historic period in New Mexico can be divided into the following: Spanish Exploration (AD 1540–1598), Spanish Colonization-Pueblo Revolt (1598–1692), Spanish Colonial (1692–1821), Mexican (1821–1846), U.S. Territorial (1846–1912), and Statehood (1912–present). Several early Spanish expeditions passed through the region, and early land grants enticed Spanish ranchers to move into the region during this time. By AD 1600, colonists had begun to arrive from Mexico and Spain. Colonial policies, including evangelization, tribute, and enslavement, led to rebellion by the Pueblo peoples, and for the 12 years between 1680 and 1692, the Spanish were pushed out of New Mexico. This revolt led into the Spanish Colonial Period, which saw more extensive European settlements, the introduction of a land grant system, the introduction of the presidios, and an increase in the number of colonists (Simmons, 1979; Sando, 1979). It is also during this period that the Navajo were forced out of the Dinétah area and entered the vicinity of Kirtland AFB. Mexican independence from Spain marked the start of the Mexican Period. This period marked the beginning of strong ties between the United States and New Mexico as trade increased along the Santa Fe Trail. The United States acquired New Mexico from Mexico as a result of the Mexican American War. Trade networks increased with the eastern United

States, and a substantial increase in homesteading occurred. In 1880, the first rail line reached into New Mexico at Albuquerque; the completion of the Atchison, Topeka, and Santa Fe Railroad led to an increase in mining activities in the New Mexico Territory and a radical shift in the population. Five years after completion of the rail line, Albuquerque became predominately Anglo-Protestant (Roberts and Roberts, 2004). The early years of the 1900s brought statehood and Route 66 to New Mexico; mining and ranching continued to be important industries for the state. During World War II, the Manhattan Project designed and built the first atomic bombs at Los Alamos. Testing of these bombs occurred at the Trinity site on the White Sands Proving Ground. The electronics industry grew rapidly alongside mining and ranching in post-World War II New Mexico, and the state's population grew to 1.5 million.

3.3.2 Cultural Resource Investigations and Resources

Archaeological sites have been located and recorded throughout Kirtland AFB, providing insight into the chronology and culture of south-central New Mexico, dating back into the Paleoindian Period 12,000 years ago. Historic resources include Native American villages, Native American and European trade routes, stage lines, cattle and sheep ranching, mining operations, and railways.

No cultural resource surveys have been conducted within the Proposed Action areas; however, all five areas are developed, and little to no open space remains within any of these areas (New Mexico State Historic Preservation Division, 2009), with the exception of the southwestern portion of the VOQ Complex. Several historic structures are present in the VOQ Complex. Structures on Kirtland AFB older than 50 years were recorded and evaluated in 2003 (Van Critters and Bisson, 2003; and Kirtland AFB, 2008b). Table 3-4 summarizes the inventory.

TABLE 3-4
Results of Architectural Survey
*Environmental Assessment for the Demolition and Construction of Military Personnel Support Facilities,
Kirtland Air Force Base, New Mexico*

Building Number	Year Constructed	Area	Eligibility
Building 20221 – Dormitory	1950	Main Enlisted Dormitory Campus	Not eligible
Building 20222 – Dormitory	1950	Main Enlisted Dormitory Campus	Not eligible
Building 20351 – Dormitory	1950	Main Enlisted Dormitory Campus	Not eligible
Building 20352 – Dormitory	1950	Main Enlisted Dormitory Campus	Not eligible
Building 20224 – AAFES Mini Mall	1956	Main Enlisted Dormitory Campus	Not eligible
Building 20226 – Sandia Crest Club	1951	Main Enlisted Dormitory Campus	Not eligible
Building 20228 – Fitness Center	1950	Main Enlisted Dormitory Campus	Not eligible
Building 20229 – Indoor Swimming Pool	1956	Main Enlisted Dormitory Campus	Not eligible
Building 20350 – Dining Hall	1950	Main Enlisted Dormitory Campus	Not eligible
Building 585 – Gymnasium	1968	Gymnasium area	Not eligible
Building 425 – Dormitory	1958	Dormitory Campus 2	Not eligible
Building 915 – Dormitory	1955	NCO Academy area	Not eligible

TABLE 3-4

Results of Architectural Survey

Environmental Assessment for the Demolition and Construction of Military Personnel Support Facilities, Kirtland Air Force Base, New Mexico

Building Number	Year Constructed	Area	Eligibility
Building 916 – Administration	1954	NCO Academy area	Not eligible
Building 922 – Dormitory	1955	NCO Academy area	Not eligible
Building 926 – Administration	1956	NCO Academy area	Not eligible
Building 2586 – Paved Pad	1980	NCO Academy area	Not applicable
Building 917 – Visiting Airmen Dormitory	1954	NCO Academy area	Not eligible
Building 918 – Visiting Airmen Dormitory	1952	NCO Academy area	Not eligible
Building 924 – Visiting Airmen Dormitory	1955	NCO Academy area	Not eligible
Building 22016 – Administration	1990	VOQ	Not applicable
Building 22010 – VOQ	1954	VOQ	Not eligible

Sources: Van Critters and Bisson, 2003; Kirtland AFB, 2008b

3.4 Land Use

Kirtland AFB occupies approximately 52,000 acres. Table 3-5 lists the land uses and ownership at Kirtland AFB (Kirtland AFB, 2002).

TABLE 3-5

Land Uses and Ownership at Kirtland Air Force Base

Environmental Assessment for the Demolition and Construction of Military Personnel Support Facilities, Kirtland Air Force Base, New Mexico

Ownership	Land Use	Acreage
U.S. Air Force (Host)	Unimproved areas (south and west portions)	20,783
	“Withdrawal area,” former U.S. Forest Service land now used by DoD, U.S. Department of Energy, and their contractors for tactical training, research, and military development	15,891
	Improved grounds (i.e., office buildings, schools, military family housing, training facilities)	7,311
	Sanitary landfill	40
U.S. Department of Energy		7,533
Total		51,558

The land use areas of Kirtland AFB are grouped into the following 10 functional categories:

- **Aircraft Operations/Maintenance** – Uses include maintenance hangars and docks; avionics; and facilities such as control towers, installation operations, flight simulators, and other instructional facilities.
- **Airfield** – Uses include runways, taxiways, aprons, and airfield parking.

- **Administration and Research** – Uses include administration and research facilities, personnel, headquarters, legal, research, laboratories, and other support functions.
- **Community** – Uses include both commercial and service functions. Commercial uses include the Base exchange, dining halls, service stations, bowling alley, and clubs; and service uses include chapels, libraries, credit unions, fitness centers, child care centers, the arts and crafts center, and two elementary schools.
- **Military Family Housing** – Uses include both accompanied and unaccompanied housing. Accompanied housing is single-family housing provided to personnel with dependants, and unaccompanied housing is dormitories reserved for single personnel, temporary personnel, and visitors.
- **Industrial** – Uses include sites for the storage of supplies and installation maintenance and utility facilities, and munitions facilities. Industrial land uses are often adjacent to aircraft operations/maintenance facilities.
- **Medical** – Uses include hospitals, medical clinics, dental clinics, and pharmacies.
- **Outdoor Recreation** – Uses include activities such as ball fields, golf courses, riding stables, and other recreational uses.
- **Open Space** – Uses include all developable sites, all areas used to buffer installation facilities, and areas preserved because of environmental sensitivity.
- **Associate Owned** – Uses include only the facilities owned by U.S. Department of Energy and used by Sandia National Laboratories.

The northwestern portion of the installation is the most heavily constructed area of Kirtland AFB, and is often referred to as the cantonment area. Within the cantonment area, airfield operations/maintenance and airfield uses are concentrated on the west side, along with several of the largest associates. The Base administration area is concentrated on the east side, along with some of the major tenants, including Sandia National Laboratories. The Starfire Optical Range and High Energy Research and Technology Facility are located in the southern portion of the Base, as well as the majority of the open space and outdoor recreation areas. The housing areas are primarily located at the installation's northern edge (Kirtland AFB, 2002). The Proposed Action area is located within the developed area on the northwestern portion of the installation.

3.5 Utilities and Infrastructure

This section identifies the existing utilities at Kirtland AFB associated with drinking water, wastewater, electrical system, natural gas, communication infrastructure, and solid waste. Information regarding utilities and infrastructure has been summarized from the Kirtland AFB General Plan (Kirtland AFB, 2002).

3.5.1 Water Supply

Drinking water is supplied to Kirtland AFB by seven installation water wells and two distribution systems. Water can be distributed throughout the Base from the Albuquerque

Bernalillo County Water Utility Authority during high water demands, when wells are out of service, or for keeping water supply within water rights allocations. Buried water lines are located throughout the developed portion of Kirtland AFB. Kirtland AFB has over 5.5 million gallons of total onsite water storage capacity. Recent utility improvements on Kirtland AFB include repair of water distribution systems and improvements to backflow prevention, water valves, water wells, water tanks, and swimming pools. Upgrades to the water system allow Kirtland AFB to meet current needs and increased needs resulting from growth on the installation, as projected in the 2002 Kirtland AFB General Plan (Kirtland AFB, 2002).

3.5.2 Wastewater

Kirtland AFB discharges roughly 1.15 million gallons of wastewater daily, not including Sandia National Laboratories. Wastewater, including effluents from Kirtland AFB laboratories, aircraft maintenance facilities, and production operations, as well as discharges from installation washrooms and military housing, are discharged via pipelines connected to the City of Albuquerque sanitary sewer system.

Kirtland AFB maintains an industrial discharge permit with the City of Albuquerque's Publicly Operated Treatment Works for effluent disposal. In addition, Sandia National Laboratories, a tenant of Kirtland AFB, maintains nine separate discharge monitoring permits with the City of Albuquerque. Forty-nine active oil/water separators remove oil and solids from the wastewater prior to discharge to the sewer system (Kirtland AFB, 2002).

3.5.3 Energy

Kirtland AFB purchases power from the Public Service Company of New Mexico. Power utilities connect to Kirtland AFB at the Sandia Switching Station with primary transmission connection points. Kirtland AFB is served from 46- and 115-kilovolt voltages. Upgrades to the electrical infrastructure are ongoing on Kirtland AFB. Upgrades have included replacing overhead lines with underground lines; upgrading 4.16-kilovolt lines to 12.47-kilovolt lines; upgrading transformers; upgrading the east and west side electrical systems; and repairing substations, power poles, and traffic lights. The overall electrical infrastructure within the developed area supports installation requirements (Kirtland AFB, 2002).

Natural gas is supplied to Kirtland AFB by Wasatch Energy LLC. Gas is delivered to Kirtland AFB through Public Service Company of New Mexico gas service pipelines. There are 70.51 miles of gas mains on Kirtland AFB. Gas enters Kirtland AFB at a regulating and metering station located near Pennsylvania Boulevard and Gibson Boulevard. Gas is distributed to either the Sandia Steam Plant or to a Kirtland AFB regulator station. From the regulator station gas is distributed to facilities throughout the eastern portion of the developed area (Kirtland AFB, 2002).

Kirtland AFB consumes approximately 15.7 million gallons of jet propulsion grade 8 fuel, 257,000 gallons of unleaded gasoline, and approximately 243,500 gallons of low-sulfur diesel fuel per year (Kirtland AFB, 2002).

3.5.4 Solid Waste

All solid waste from Kirtland AFB is disposed of in accordance with USAF; Kirtland AFB; and all applicable federal, state, and local regulations. Nonhazardous waste and recyclables from the privatized military housing areas are collected by a contractor, Waste Management of New Mexico (WMNM), and disposed of at their landfill in Rio Rancho or recycled at an offbase location. WMNM also collects all nonhazardous waste generated from onbase commercial activities such as McDonald's. Urrutia, Inc., under contract to Kirtland AFB Civil Engineering collects all nonhazardous waste generated by the Base and disposes of its dry waste at Sandia National Laboratories, Solid Waste Transfer Station. It is screened for hazardous waste, hazardous materials, and prohibited or banned materials, and scanned for radiological material prior to being baled and transferred to the WMNM Rio Rancho landfill. Wet nonhazardous waste from food service and the barracks areas is hauled directly to the WMNM Rio Rancho facility. Construction and demolition debris generated onbase is taken to the Kirtland AFB construction and demolition landfill. Recyclable wastes such as paper, cardboard, and aluminum are separated for pickup according to the Kirtland AFB Qualified Recycling Program and collected by a contractor (Kirtland AFB, 2007).

3.6 Transportation System

Information regarding the transportation system has been summarized from the Kirtland AFB General Plan (Kirtland AFB, 2002) and the *Integrated Natural Resources Management Plan for Kirtland Air Force Base* (Kirtland AFB, 2007).

The major arterials across the developed area of Kirtland AFB include Wyoming Boulevard, Gibson Boulevard, and F Street (see Figure 3-1). The major arterial in the eastern portion of the Base is Hardin Boulevard, and Aberdeen Avenue is the major arterial in the west. Minor arterials, including Pennsylvania Street, serve as the primary route to the southern portion of the Base.

Traffic flow is generally unimpeded in the western portion of the developed areas because of light traffic volumes and favorable intersection operations. The eastern portion of the developed area is more heavily populated and has a greater number of signalized intersections. Traffic problems on Kirtland AFB generally occur during peak-traffic morning and afternoon periods (Kirtland AFB, 2007).

3.7 Hazardous Materials, Hazardous Wastes, Environmental Restoration Program Sites, and Stored Fuels

3.7.1 Hazardous Materials and Hazardous Wastes

The activities conducted at Kirtland AFB that involve hazardous materials include maintenance of aircraft, transportation equipment, and facilities operation. Hazardous materials are ordered, stored, and used in accordance with Air Force Instruction 32-7086, "Hazardous Material Management" (USAF, 2004).

Air Force installations typically generate waste solvents, oils, paints, paint sludge, and some research and development chemical waste. The Base maintains and implements a *Hazardous*

Waste Management Plan to comply with RCRA, federal, state, local, and USAF regulations. The *Hazardous Waste Management Plan* establishes local management procedures for managing hazardous waste and preventing pollution (Kirtland AFB, 2002). The Base has approximately 150 initial accumulation points and three 90-day accumulation areas. Hazardous waste collection and storage sites are managed by the Environmental Compliance Section. Wastes are disposed of at a permitted offsite treatment, storage, and disposal facility (Kirtland AFB, 2007).

Lead-based paint (LBP) and ACM might be present in structures located at the Proposed Action areas. It is possible that polychlorinated biphenyl (PCB)-laden caulk was used in the construction/maintenance of buildings between 1950 and 1978, and therefore, might be present in structures in the Proposed Action area. Kirtland AFB maintains an asbestos management plan and an LBP management plan. Sampling for LBP and asbestos is required prior to demolition of structures that might contain these materials. PCB-containing materials are handled according to the Kirtland AFB hazardous waste management plan.

3.7.2 Environmental Restoration Program Sites

Kirtland AFB has implemented an Environmental Restoration Program (ERP) to remediate all accident, disposal, and spill sites that might pose a potential threat to human health and welfare or the environment. Kirtland AFB's ERP identifies and investigates corrective action units (Kirtland AFB, 2002). ERP sites on Kirtland AFB include landfills, sewage lagoons, radioactive holding tanks, oil/water separators, drainage areas, septic systems, spill areas, fire-training areas, and others. Soil and water contaminants on Kirtland AFB are associated with fuels, waste solvents, dissolved-phase fuels and solvents, and low-level radiation waste (Kirtland AFB, 2007). Currently, 218 ERP sites and 12 areas of concern are identified at Kirtland AFB (Kirtland AFB, 2007; Kirtland AFB, 2008-2009). No further action status has been issued to 139 of the 218 ERP sites.

3.8 Water Resources and Floodplains

3.8.1 Groundwater

Kirtland AFB is located within the limits of the Rio Grande Underground Water Basin, which the State of New Mexico designated a "declared underground water basin" and regulates as a sole source of potable water. The average depth to groundwater beneath Kirtland AFB is 450 to 550 feet. Groundwater flow direction is generally south, but can experience local variations due to groundwater pumping, geologic structures, or river influences (Kirtland AFB, 2007). Groundwater pumped by seven installation water wells supplies water to Kirtland AFB (Kirtland AFB, 2002).

3.8.2 Surface Water

Kirtland AFB is located within the Rio Grande watershed. No natural lakes/impoundments, permanent streams, or rivers are at Kirtland AFB. At least 11 naturally occurring springs are onbase: four in the withdrawal area and seven on other portions of Kirtland AFB.

Surface water generally only flows intermittently during heavy thunderstorms, when the storm drains, flood canals, gullies, and natural flow lines feed into the two main

surface-water drainage courses on Kirtland AFB, the Tijeras Arroyo, and the smaller Arroyo del Coyote. Generally, most of the stormwater percolates or evapotranspires before it reaches the Rio Grande River. Four stormwater detention ponds are located within the developed area (Kirtland AFB, 2002).

3.8.3 Floodplains

The Tijeras Arroyo and the Arroyo del Coyote are located within a 100-year floodplain and are the only two arroyos with a floodplain at Kirtland AFB. Flooding occurs infrequently at both arroyos, and is generally characterized as high peak flows, small volumes, and short duration. At times, overgrown vegetation can obstruct flows within the Tijeras Arroyo channel and cause flooding (Kirtland AFB, 2007).

3.9 Noise

The day-night noise level (DNL) is the noise level descriptor used for the preparation of noise exposure contours and assessment of land use compatibility around military facilities. The DNL is assessed a penalty of 10 decibel (dB) added to sound levels occurring during the night (10:00 p.m. to 7:00 a.m.).

The DoD has established land use noise compatibility criteria consistent with those published by the Federal Interagency Committee on Urban Noise in the *Guidelines for Considering Noise in Land Use Planning and Control* (1980). The DoD noise-level criterion is a DNL of 65 dB. This is the threshold of incompatibility for residential and other noise-sensitive land uses, such as schools, hospitals, and religious facilities, to be developed near military facilities and operating areas.

The majority of the Base experiences DNLs ranging from 60 to 75 dB. Land exposed to elevated noise levels from aircraft operation are confined to areas adjacent to the airfield.

The Kirtland AFB General Plan identifies areas of the Base that experience DNLs at and above 65 dB. The VOQ Complex, Main Enlisted Dormitory Campus, and Gymnasium sites are located outside of the 65-dB DNL noise exposure contour (Kirtland AFB, 2002). The NCO Academy and the Dormitory Campus 2 sites are located in proximity to the airfield, and portions of each site are located within the 65-dB DNL noise exposure contour (Kirtland AFB, 2002). Figure 3-2 shows the noise contours on Kirtland AFB.

3.10 Geology and Soils

This section describes the regional geology of Kirtland AFB, soil types present, and pollution prevention programs that are in place.

3.10.1 Geology

Kirtland AFB sits on the eastern portion of the Albuquerque Basin, which is at its widest point in the Kirtland AFB area. Mesas, benches, stream terraces, low hills, ridges, and graded alluvial slopes comprise the landforms within the Albuquerque Basin (Kirtland AFB, 2007).

The current geology of the area is the result of filling basins through sedimentary action, alluvial material and fluvial materials reworked by erosional forces. Poorly consolidated sediments that eroded from surrounding mountains mostly comprise the portion of the basin underlying Kirtland AFB. Bedrock in a series of northeast-trending hemeclines is exposed in the eastern half of Kirtland AFB. The bedrock consists primarily of pre-Cambrian granite and metamorphic rocks, and Paleozoic marine carbonate rocks.

Most of Kirtland AFB is located on a flat, arid mesa with an average approximate elevation of 5,300 feet. A portion of the Manzano Mountains is located on the eastern side of Kirtland AFB with elevations as high as 7,920 feet.

Rift zone faults are present throughout the area. Three major faults traverse Kirtland AFB; Kirtland AFB lies within Seismic Risk Zone 2, with moderate potential for damage to structures from seismic activity.

3.10.2 Soils

Soils in the Albuquerque Basin range from fine-grained clays and silts near the river channel to well-drained sands and sandy loams on the mesas and highlands. The following soil series have been identified for Kirtland AFB: Bluepoint, Cut and Fill, Embudo, Gila, Ildefonso, Laporte, Latene, Madurez, Nickel, Pino, Rock Outcrop, Salas, Seis, Silver, Tesajo, Tijeras, Tome, and Wink.

Twenty-six soil types have been identified on Kirtland AFB (Kirtland AFB, 2007). The developed area of the Base is mostly composed of the following types and depths (Kirtland AFB, 2002):

- Embudo – soil depth of 0 to 20 inches
- Gila – soil depth of 0 to 44 inches
- Madurez – soil depth of 0 to 21 inches
- Latene – soil depth of 0 to 15 inches
- Seis – soil depth of 0 to 7 inches
- Wink – soil depth of 0 to 35 inches

3.11 Safety and Occupational Health

Safety and occupational health on Kirtland AFB are managed by BioEnvironmental Engineering. Operations and maintenance activities conducted at Kirtland AFB are performed in accordance with applicable USAF safety regulations, published Air Force technical orders, and standards prescribed by Air Force occupational safety and health requirements. The Base implements health and safety procedures, and workers receive regular health and safety training. Traffic safety is enforced by Kirtland AFB military police and security contractors.

Construction site safety and accident prevention are ongoing activities for all job sites. As part of the contracts for construction services, standard terms and conditions include safety as a priority. Areas of concern include compliance with regulations typical to construction projects, such as confined-space regulations, handling of hazardous materials, minimum personal protection equipment standards, and limited access to the construction area.

3.12 Socioeconomic Resources

Socioeconomic resources include the population, income, employment, and housing conditions of a community or region of influence. Socioeconomic conditions could be affected by changes in the rate of population growth, the demographic characteristics of a community, or employment within the region of influence caused by the implementation of the Proposed Action.

3.12.1 Population

Kirtland AFB is located in Bernalillo County, southeast of Albuquerque, New Mexico. Table 3-6 provides the demographics for the Kirtland AFB areas.

TABLE 3-6
Demographic Statistics for Kirtland Air Force Base Communities
*Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
Kirtland Air Force Base, New Mexico*

	Total Population (2000^a)	Total Population (2005 to 2007 Estimate^a)	Estimated Percent Change Since 2000 Census
Bernalillo County	556,678	618,845	11.1
Albuquerque	448,607	505,578	11.3

^aSource: U.S. Census Bureau, 2007

Approximately 20 percent of Bernalillo County is unincorporated. In 2002, unincorporated areas had a population of approximately 90,000 (Kirtland AFB, 2002).

3.12.2 Economy

Bernalillo County had a per capita income of \$25,144 (2007 inflation-adjusted dollars). Albuquerque had a per capita income of \$24,897 (U.S. Census Bureau, 2007) (2007 inflation-adjusted dollars).

As of 2002, Kirtland AFB added approximately 23,500 jobs to the local economy, and with over 31,000 employees, Kirtland AFB is Albuquerque's largest employer. The Base's overall contribution to the county and surrounding area is estimated to be in excess of \$4.6 billion (Kirtland AFB, 2002).

3.13 Environmental Justice and Protection of Children

EO 12898 (1994) requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations." A minority population can be described as being composed of people who identify themselves to the U.S. Census Bureau as American Indian or Alaskan Native, Asian or Pacific Islander, Black or African American, or of Hispanic origin, and where such population exceeds 50 percent of the population in an area or where the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ, 1997).

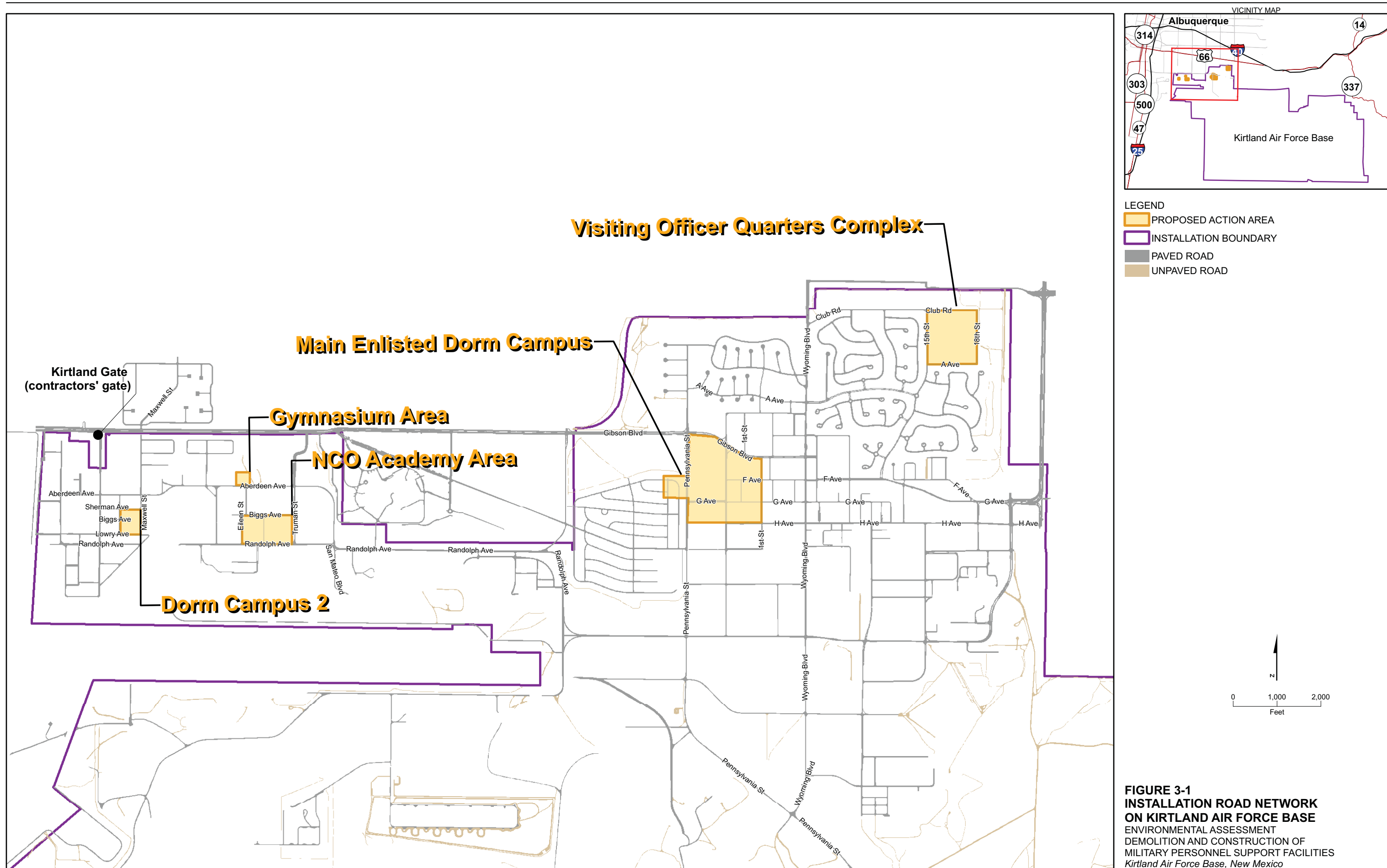
Each year, the U.S. Census Bureau defines the national poverty thresholds, which are measured in terms of household income and the number of people within the household. Individuals falling below the poverty threshold (\$22,050 for a household of four in 2009) are considered low-income individuals (U.S. Department of Health and Human Services, 2009).

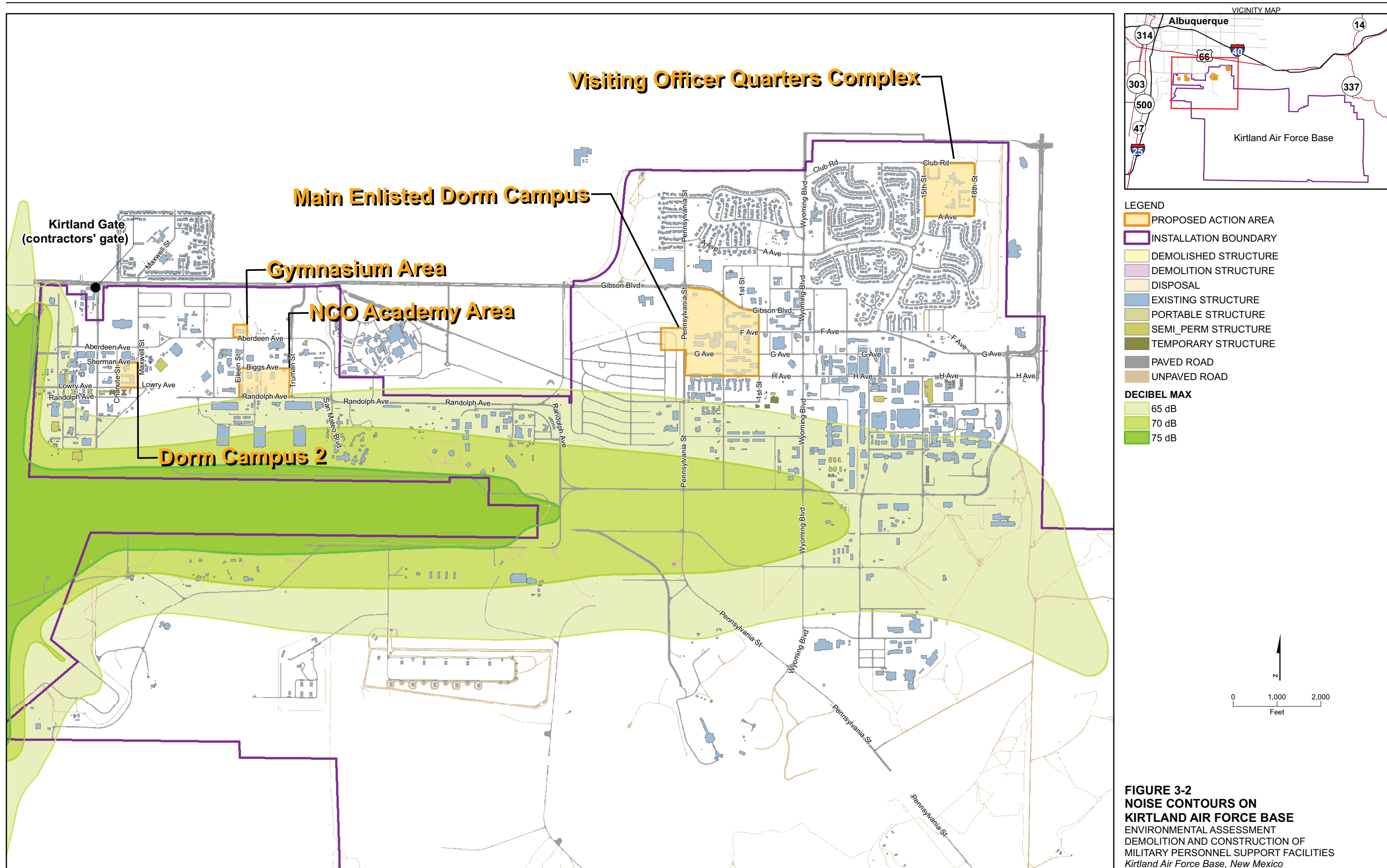
Bernalillo County is the most populated county in the State of New Mexico. The estimated 2007 population of Bernalillo County was 618,845, with 68.9 percent white, 3.1 percent African American, and 4.7 percent American Indian or Alaskan Native. Approximately 44.7 percent of the population was estimated to be Hispanic or Latino (of any race) (U.S. Census Bureau, 2007). Approximately 20 percent of Bernalillo County is unincorporated. Unincorporated areas have a population of about 90,000. Several Pueblo Indian groups live near Albuquerque and Kirtland AFB. The Isleta Pueblo borders Kirtland AFB to the south (Kirtland AFB, 2002).

The City of Albuquerque had an estimated 2007 population of 505,578. Albuquerque is the closest city to Kirtland AFB. The greater part of the population in Albuquerque is white (67.7 percent), with lower percentages of Hispanic (43.7 percent) and African American (3.4 percent) or American Indian or Alaskan Native (4.9 percent). Approximately 43.7 percent of the population was estimated to be Hispanic or Latino (of any race). Approximately 14.8 percent of individuals in the population in Albuquerque was estimated to be at or below the poverty level (U.S. Census Bureau, 2007).

Kirtland AFB employs approximately 31,000 persons, and is considered Albuquerque's largest employer. In 2002, approximately 1,170 active duty personnel were living onbase (Kirtland AFB, 2002).

Although demographic data for Kirtland AFB were not available, the racial composition of the Air Force serves as an approximation of the racial composition of the Base. In 2009, the Air Force was 73.3 percent white, 14.6 percent African American, and the remaining 12.1 percent was composed of other races, or personnel who declined to report their race (Air Force Personnel Center, 2009).





SECTION 4

Environmental Consequences

This section provides the regulatory background, as applicable, for various environmental resource areas and evaluates potential impacts resulting from demolition and construction of the facilities. The potential impacts on the human and natural environments were evaluated by comparing the Proposed Action to the No Action Alternative. The subsection for each environmental resource or issue assesses the anticipated direct and indirect impacts, considering both short- and long-term project effects. As described in the following subsections, no significant adverse environmental impacts are anticipated for establishing the demolition and construction of military personnel support facilities.

4.1 Air Quality

4.1.1 Laws and Regulations

Federal

EPA adopted the CAA in 1970 and its amendments in 1977 and 1990. Under the authority of the CAA, EPA has established nationwide air quality standards to protect public health and welfare with an adequate margin of safety. These federal standards, known as the NAAQS, represent the maximum allowable atmospheric concentrations and were developed for the following seven “criteria” pollutants: O₃, NO₂, CO, PM₁₀ and PM_{2.5}, SO₂, and lead.

The 1977 CAA required each state to develop and maintain a state implementation plan (SIP) for each criteria pollutant that violates the applicable NAAQS. The SIP serves as a tool to avoid and minimize emissions of pollutants that exceed ambient thresholds and to achieve compliance with the NAAQS. In 1990, the CAA was amended to strengthen regulation of both stationary and mobile emissions sources for criteria pollutants.

Under the conformity provisions of the CAA Amendments of 1990, no federal agency can approve or undertake a federal action, or “project,” unless the project has been demonstrated to conform to the applicable SIP. These conformity provisions were put in place to ensure that federal agencies would contribute to efforts to attain the NAAQS. EPA has issued two conformity guidelines: (1) transportation conformity rules that apply to transportation plans and (2) projects and general conformity rules that apply to all other federal actions. A conformity determination is only required for the alternative that is ultimately selected and approved. A conformity determination is a process that demonstrates how an action would conform to the applicable implementation plan. If the emissions cannot be reduced sufficiently, and if air dispersion modeling cannot demonstrate conformity, then either a plan for mitigating or a plan for offsetting the emissions would need to be pursued. The general conformity determination is submitted in the form of a written finding, issued after a minimum 30-day public comment period on the draft determination.

Applicable only in areas designated as nonattainment or maintenance for NAAQS, general conformity applicability analysis requires quantification of direct and indirect construction and operation emissions for the project, and comparison of these emissions levels to baseline emissions levels. If the differences in emissions (the net emissions associated with the project) exceed the general conformity de minimis levels for the peak year or any milestone year for attainment of the standards, additional general conformity determination is required.

An action is exempt from the conformity rule (presumed to conform) if the total net project-related emissions (construction and operation) pass two tests: (1) they are less than the de minimis thresholds established by the conformity rule, and (2) they are not regionally significant (emissions are regionally significant if they exceed 10 percent of the total regional emissions inventory). An action that produces emissions that exceed conformity thresholds, or is regionally significant, is required to demonstrate conformity with the SIP through mitigation or other accepted practices.

The CAA also requires preconstruction review of facilities and equipment that could potentially emit air contaminants. Permitting depends on the size of the emissions source and its location in an attainment or nonattainment area.

State and Bernalillo County

The NMED manages air quality for the State of New Mexico outside of Bernalillo County and is responsible for monitoring and enforcing federal air quality standards and regulations. New Mexico has developed the state ambient air quality standards published in Chapter 2 of Title 20 of the NMAC. These standards are generally more stringent than the NAAQS and limit additional pollutants including total suspended particulate and sulfur compounds.

The AQCB is the federally delegated air quality authority for Albuquerque and Bernalillo County. The AQCB administers and enforces the CAA and the New Mexico Air Quality Control Act (State Act) in the Albuquerque/Bernalillo County area. The authority of the AQCB was established by New Mexico State Legislature in 1967, when the legislature adopted the State Act authorizing the City of Albuquerque and Bernalillo County to adopt ordinances providing for the creation of the AQCB. The city and the county adopted parallel ordinances, creating the AQCB shortly after the State Act was adopted.

The primary function of the AQCB is to ensure that provisions of the CAA are implemented. According to the State Act, the AQCB shall “adopt, promulgate, publish, amend and repeal regulations consistent with the [State Act] to attain and maintain NAAQS and prevent or abate air pollution, including regulations prescribing air standards, within the geographic area of the local board’s jurisdiction or any part thereof.”

The Albuquerque Environmental Health Department, Air Quality Division is the local agency that governs air quality issues on Kirtland AFB.

Local Agency and Fugitive Dust Control Requirements

To control fugitive dust emissions, Albuquerque/Bernalillo County requires that dirt tracked onto paved surfaces be promptly removed and that measures be taken to control dust from operations, such as construction, landscaping, and road work at all times.

The AQCB requires that any building containing over 75,000 cubic feet of space requires delivery of a fugitive dust control construction permit application and fugitive dust control plan to the Albuquerque Environmental Health Department, Air Quality Division along with the required fee (NMAC 20.11.2). In addition, no active operations shall commence until a department manager, supervisor, scientist, field operations officer, or health specialist signs a fugitive dust control construction permit and a copy of the signed permit is available at the site of active operations. Failure to obtain a fugitive dust control construction permit prior to commencement of demolition activities as described in NMAC 20.11.20.22 would be a violation of NMAC 20.11.20.

The Albuquerque Environmental Health Department, Air Quality Division requires a surface disturbance permit for all jobs that will disturb 0.75 acre or more of soil.

Regulation Background of Greenhouse Gases

Federal. Although climate change has been a concern since at least 1988, as evidenced by establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years. The following are brief summaries of EPA regulatory actions under the CAA and, in some cases, other statutory authorities to address issues related to climate change.

Proposed Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards. On 15 September 2009, EPA and the Department of Transportation's National Highway Traffic Safety Administration proposed a new national program that would reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the United States. EPA proposed the first-ever national GHG emissions standards under the CAA, and the National Highway Traffic Safety Administration proposed Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act, 42 USC 6421 et seq. This proposed national program would allow automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both federal programs and the standards of California and other states.

Final Mandatory Greenhouse Gas Inventory Rule. In response to the Fiscal Year (FY) 2008 Consolidated Appropriations Act, 2008 (House Resolution 2764; Public Law 110-161), EPA has issued the "Final Mandatory Reporting of Greenhouse Gases Rule." Signed by the Administrator on 22 September 2009, the rule requires, in general, that suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside of the light-duty sector, and facilities that emit 25,000 metric tons or more of GHGs per year to submit annual reports to EPA. The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change.

Proposed Greenhouse Gas Permitting Requirements on Large Industrial Facilities. On 30 September 2009, EPA proposed new thresholds for GHGs that define when CAA permits

under the New Source Review and Title V operating permits programs would be required. The proposed thresholds would tailor these permit programs to limit which facilities would be required to obtain permits, and would cover nearly 70 percent of the nation's largest stationary-source GHG emitters (including power plants, refineries, and cement production facilities) while shielding small businesses and farms from permitting requirements.

Comment Requested on Greenhouse Gas Permitting Guidance under Reconsideration. On 30 September 2009, EPA released a request for public comment as the agency reconsiders the 18 December 2008 memorandum titled "EPA's Interpretation of Regulations that Determine Pollutants Covered by Federal Prevention of Significant Deterioration (PSD) Permit Program." This interpretive memorandum, from then-EPA Administrator Stephen L. Johnson to the EPA Regional Administrators, addressed when the Prevention of Significant Deterioration program applies to carbon dioxide, a chief GHG, and other GHGs.

Executive Order 13514. Signed on 05 October 2009, EO 13514, *Federal Leadership In Environmental, Energy, and Economic Performance*, introduced new GHG emissions management requirements for the federal government. EO 13514 requires agencies to establish percentage reduction targets for agencywide GHG emissions in absolute terms by FY2020, relative to an FY2008 baseline. These targets are subject to review and approval by the Office of Management and Budget and the CEQ.

EO 13514 requires agencies to develop an inventory of their absolute (total quantity of metric tons of carbon dioxide equivalent) GHG emissions for FY2010 by January 2011. Each year thereafter, agencies must submit an annual inventory for the preceding fiscal year to the Office of Management and Budget and the CEQ.

Final Endangerment Finding. On 07 December 2009, Administrator Lisa Jackson signed a final action, under Section 202(a) of the CAA, finding that six key, well-mixed GHGs constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to the climate change problem.

State. On 28 December 2006, New Mexico Governor Richardson signed EO 06-069, which committed the state to joining regionally and nationally with other states in assuming a leadership role in addressing the risks of climate change. The goal of this EO is to reduce New Mexico's GHG emissions to (1) 2000 levels by 2012, (2) 10 percent below 2000 levels by 2020, and (3) 70 percent below 2000 levels by 2050.

Currently, no state or regional air quality agency has yet adopted a methodology or quantitative threshold that can be applied to evaluate the significance of an individual project's contribution to GHG emissions.

4.1.2 Proposed Action Alternative

Estimated Emissions Impacts from Demolition and Construction

Construction emissions include those from existing building demolition and new building construction activities. Emissions are expected to occur as a result of engine exhaust from the vehicle trips by construction workers, onroad delivery trucks, and offroad construction equipment. These emissions would primarily consist of CO, NO_x, PM₁₀, PM_{2.5}, SO₂, and

volatile organic compounds (VOC). In addition, activities such as demolition and site preparation/grading would result in fugitive dust emissions.

Emissions were estimated for each phase of the construction activities including demolition of existing buildings, site grading, and new building construction. Equipment and vehicle emissions of NO_x, SO₂, PM₁₀, CO, and VOCs during demolition, grading, and new building construction, as well as fugitive dust emissions were estimated using the methodologies and emissions factors in the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3* (Air Force Center for Engineering and the Environment [formerly Air Force Center for Environmental Excellence], 2005), the California Air Resources Board URBEMIS2007 program, and EPA's Mobile6.2 program. The California Air Resources Board URBEMIS2007 program was used to model offroad construction equipment emissions because ACAM does not include equipment emissions for offroad construction equipment during demolition and does not have GHG emissions. PM_{2.5} emissions were assumed to be the same as PM₁₀. Detailed project construction information, assumptions used in the emissions analysis, and model outputs are provided in Appendix B. Table 4-1 summarizes the estimated construction emissions of criteria pollutants. Although the project demolition and construction timing will occur over a 5-year period, to be conservative, it was assumed that all demolition and construction would be completed within a 2-year period.

TABLE 4-1

Estimated Proposed Action Alternative Demolition and Construction Emissions
Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
Kirtland Air Force Base, New Mexico

Activity	VOC (ton/year)	CO (ton/year)	NO _x (ton/year)	SO _x (ton/year)	PM ₁₀ (ton/year)	PM _{2.5} (ton/year)
Demolition	0.15	0.76	1.33	0.004	0.88	0.88
Grading	0.019	0.048	0.182	0.018	4.983	4.983
Construction	8.20	16.29	4.54	0.52	0.36	0.36
Total	8.4	17.1	6.1	0.5	6.2	6.2

Note:

ton/year = ton(s) per year

There is no threshold for construction emissions, with the exception of the general conformity de minimis threshold for CO discussed below. Implementation of the Proposed Action would result in temporary, short-term air quality impacts from construction emissions. Construction-related impacts are expected to be localized (e.g., confined to the construction site area). To reduce the potential emissions of fugitive dust, control measures recommended by the AQCB would be implemented during construction.

Operation Emissions Impacts

Operation emissions from the Proposed Action might be generated by the vehicles traveling to the new facilities and stationary sources such as emergency generators and space-heating equipment used at the new facilities. Demolition and construction of the military personnel

support facilities would not change the number of employees traveling from or to the Base during project operation, and the overall Base vehicle emissions from commute would change minimally. Therefore, emissions from personnel vehicle travel would not change compared to current existing emissions levels.

Detailed information on the type and rating of the stationary equipment such as boilers/heaters and backup generators is not yet available and, therefore, emissions during operation of the existing and new dormitories and the supporting facilities were estimated using the energy consumption rates for residential buildings and nonresidential buildings provided in URBEMIS and ACAM programs. Emission factors for the heating devices were obtained from EPA AP-42. Emissions from emergency engines were not quantified in this analysis because of the minimal usage. Emergency engines typically operate a couple hours a month for required maintenance and testing, and the total operating hours (including emergency use) are limited to 500 hours per year according to the permitting policy of Albuquerque Environmental Health Department, Air Quality Division (Appendix F).

Detailed operation emission calculations are presented in Appendix B. Table 4-2 summarizes the operation emissions. Operation emissions of criteria pollutants from the Proposed Action are expected to decrease compared to No Action because of the decrease of both the dormitory units and the total square footage of the supporting facilities.

TABLE 4-2

Estimated Proposed Action Alternative Operation Emissions

*Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
Kirtland Air Force Base, New Mexico*

Activity	VOC (ton/year)	CO (ton/year)	NO _x (ton/year)	SO _x (ton/year)	PM ₁₀ (ton/year)	PM _{2.5} (ton/year)
Existing Emissions from Buildings to Be Demolished	0.05	0.79	0.94	0.006	0.05	0.05
New Emissions from Proposed Project	0.03	0.52	0.62	0.004	0.03	0.03
Total Net Emission Change	-0.02	-0.27	-0.33	-0.002	-0.02	-0.02

General Conformity

The CAA established a number of programs and permitting processes designed to protect and improve air quality. Section 176(c) of the CAA, as amended, 42 USC Section 7506(c), established a conformity requirement for federal agencies, which has been implemented by 40 CFR 93, Subpart B. A general conformity applicability analysis is provided in Appendix C and summarized below.

The Proposed Action would be located in Bernalillo County, which is in attainment of or is unclassified for NAAQS for all criteria pollutants. Bernalillo County is also in CO maintenance and is currently under an LMP. As a result, CO emissions are subject to general conformity requirements. In accordance with the air conformity requirements of 40 CFR Sections 51.853 and 93.153(b)(1), the de minimis threshold for a CO maintenance area is 100 tons/year per federal action. Table 4-3 shows the annual emissions increases associated

with the Proposed Action and the comparison with the de minimis threshold. CO emissions during the construction and the operation of the Proposed Action are below the de minimis thresholds.

TABLE 4-3

Proposed Action General Conformity Applicability

Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities, Kirtland Air Force Base, New Mexico

Activity	Annual Emissions (ton/year)
	CO
Construction (2010)	17.1
Construction (2011)	17.1
Operation (2012 and beyond)	< 0 (net decrease)
De Minimis Threshold	100

Regional Significance

When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis limit, the emissions must then be compared to the air quality emissions inventory of the air basin to determine regional significance of the federal action. If the amount of the emissions is greater than 10 percent of the emissions inventory, the federal action is considered regionally significant for that pollutant (40 CFR Part 93, Subpart 153[i]).

Bernalillo County is under the LMP for CO. According to EPA's approval of the LMP, "an emissions budget for the area is not necessary; therefore, there is not a need for a cap on total emissions during the maintenance period." As a result, the significance threshold of the 10 percent of the SIP budget does not apply to projects in Bernalillo County. Given the minimal emissions levels associated with the project construction and operation, the Proposed Action would not result in significant impacts regionally.

In summary, construction emissions of CO at the Proposed Action would be below the de minimis levels. The emissions would not result in significant regional impacts. On the basis of the conformity applicability criteria, the project is below the de minimis threshold; therefore, the Proposed Action is exempt from the CAA conformity requirements and does not require a detailed conformity demonstration.

Greenhouse Gas Emission Impacts

GHG emissions from construction equipment and space heating during operation were estimated using emission data from the California Air Resources Board URBEMIS2007 program, EPA's Mobile6.2, and EPA's AP-42. In addition, indirect emissions of CO₂ from power generation for the electricity used by the dormitories and supporting facilities are estimated on the basis of the New Mexico state average energy consumption rate and the CO₂ emission factors provided in *California Climate Action Registry General Reporting Protocol* (Version 3.1, 2009). Table 4-4 compares the GHG emissions from the project with the emission inventories of New Mexico. As shown in Table 4-4, GHG emissions associated with the project construction are minimal compared to the emission inventory of the state. During project operation, the GHG emissions will decrease compared to the No Action

Alternative. Therefore, the project GHG emissions are not expected to affect the implementation of the state's GHG emission reduction target.

TABLE 4-4

Proposed Action Greenhouse Gas Emission Impacts

*Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
Kirtland Air Force Base, New Mexico*

	Emissions from Buildings to Be Demolished (metric tons/year)	New Buildings (metric tons/year)	Net Emission Change of Proposed Project (metric tons/year)	State Inventory (metric tons/year)	Percent to State Inventory
Construction	NA	696.6	696.6	62 million	<0.01%
Operation	8,196.9	4,831.3	-3,365.5 (net decrease)	62 million	None

Source: EPA, 2010

Notes:

State inventory is for year 2000.

NA = not applicable

< = less than

New Source Review

Installation and operation of the stationary sources such as boilers/heaters and the emergency generators may need Authority to Construct and Operate Permits, unless they fall under certain exemptions cited in NMAC 20.11.41 and NMAC 20.11.42. Detailed information of the boilers/heaters and the emergency generators is not yet available. If the selected equipments are subject to air permitting requirements, Kirtland AFB will obtain permits as required by NMAC or have the equipments registered in accordance with NMAC 20.11.40 (Appendix F).

4.1.3 No Action Alternative

Under the No Action Alternative, construction would not occur, and air pollutant emissions associated with construction would not be generated. Emissions from vehicle operations and equipment used for dorms and supporting facilities would not change from current conditions. No changes in air quality impacts are expected from implementation of the No Action Alternative.

4.2 Biological Resources

Impacts to biological resources would be significant if species or habitats of concern, including Waters of the United States, were adversely affected over relatively large areas, or if disturbances and impacts could result in reductions in population size or distribution of a species of concern. This section analyzes the potential for adverse impacts to biological resources, such as habitat loss, from implementation of the Proposed Action and the No Action Alternative.

4.2.1 Proposed Action Alternative

The following are applicable biological resources laws and regulations for the Proposed Action:

- The CWA, 42 USC 7401 et seq., is the primary federal law governing water pollution. Wetlands and other Waters of the United States are protected from dredging or filling under the CWA.
- The Endangered Species Act of 1973 was enacted to prevent the extinction of imperiled plant and animal life, and to recover and maintain those populations by removing or lessening threats to their survival.
- The MBTA was established to protect migratory birds by making it illegal to pursue, hunt, take, capture, kill, or sell them.
- EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, directs executive departments and agencies to take actions to further implement the MBTA.

Special-status Species

No known unique or protected vegetation species are located on or near the areas of the Proposed Action; therefore, no impact would occur. Other than burrowing owls, which are commonly seen in the developed areas of Kirtland AFB, special-status wildlife species are not likely to occur in the Proposed Action areas because of the lack of suitable habitat.

Burrowing owls are protected under the MBTA. Suitable nesting habitat for this species occurs in the open space area located in the southwestern portion of the VOQ site and near the fitness center. Construction at these sites might result in the direct loss of nesting habitat. Kirtland AFB has large expanses of contiguous habitat for the burrowing owl, and this loss of burrowing owl habitat (approximately 5 acres) would be a less than significant impact and would, therefore, not require mitigation. Mortality of individuals resulting from construction (e.g., removal of occupied burrows or nest abandonment) would be considered a significant impact. Preconstruction surveys for burrowing owls would be conducted to identify burrow locations. Construction would not occur within 500 feet if nesting burrowing owls were present.

Measures to avoid impacts to burrowing owls would include passive relocation of birds near the Proposed Action area. To reduce the possibility of nesting, the burrows would be either collapsed or equipped with one-way doors during the nonbreeding season (late October to the end of February) to prevent occupation of burrows. The one-way doors prevent owls from re-entering burrows, thus encouraging them to find other burrows. If it is not possible to avoid nesting owls, potential impacts may be mitigated using an active relocation method. Adult owls, eggs, or young would be trapped, banded, and relocated to the soft release cage on Kirtland AFB. The soft release cage is an enclosed area that allows the owls to recover from the relocation and banding process in a protected area. Typically, owls are released back into the wild in approximately 1 month. The project proponent would be responsible for all costs associated with mitigation until the owls are ready to be released. Potential impacts to burrowing owls would be less than significant with the implementation of this conservation measure.

Migratory Birds

Potential permanent and direct impacts to migratory birds could occur as a result of construction of the Proposed Action. The potential for migratory bird species to be present is considered low because of a lack of suitable habitat within the developed area of Kirtland AFB. If mortality of individuals resulted from construction (e.g., removal of occupied nests or nest abandonment), this impact would be considered significant. Measures reducing impacts include performing construction outside of the nesting season (i.e., March through late October), this would be the preferred method; or, if construction activities were to begin within the nesting season, migratory bird surveys would be conducted no more than 2 days prior to ground-disturbing activities, and nests would be avoided.

Trees/bushes would be removed as part of construction and demolition activities. Any removal of trees/bushes during the nesting season would require a survey prior to construction or demolition to determine the presence or absence of nesting birds. Trees/bushes with active nests would not be removed and would be avoided; therefore, impacts to migratory birds as a result of construction or tree/bush removal would be less than significant.

Waters of the United States Including Wetlands

No known wetlands are located on or near the areas of the Proposed Action (Kirtland AFB, 2007) and, therefore, no impact would occur.

4.2.2 No Action Alternative

Under the No Action Alternative, facilities would not be demolished or replaced; therefore, no change in impacts on biological resources would result from implementation of the No Action Alternative.

4.3 Cultural Resources

Adverse effects on historic properties can include the following:

- Physically altering, damaging, or destroying all or part of a resource
- Altering characteristics of the surrounding environment that contribute to the resource's significance
- Introducing visual or audible elements that are out of character with the property or that alter its setting
- Neglecting the resource to the extent that it deteriorates or is destroyed
- Selling, transferring, or leasing the property out of federal agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance

4.3.1 Laws and Regulations

The protection of historic properties is governed by several federal laws and regulations, including the NHPA, the Archeological and Historic Preservation Act of 1974, the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act of 1979,

and the Native American Graves Protection and Repatriation Act of 1990. Under Section 110 of the NHPA, federal agencies are required to locate and inventory all resources under their purview that are recommended as eligible for inclusion in the National Register of Historic Places on owned, leased, or managed property. In accordance with EO 12372, *Intergovernmental Review of Federal Programs*, determinations regarding the potential effects of an undertaking on historic properties are presented to the State Historic Preservation Office, federally recognized Native American tribes, and other interested parties.

4.3.2 Proposed Action Alternative

If any potential cultural resources are discovered during demolition or construction, the Air Force would adhere to the requirements of Section 5 of the *Kirtland AFB Cultural Resources Management Plan* (Kirtland AFB, 2008b). These measures would include work stoppage in the immediate vicinity of the find, notification of the Environmental Management Division, an in situ evaluation of the found resource by a qualified archaeologist or appropriate personnel, consultation with the cultural resources manager and the State Historic Preservation Office based on recommendations from the archaeologist, and evaluation of eligibility of the resource for the National Register of Historic Places. Consultation to resolve adverse effects, as required by Section 800.6, would also be performed, which would reduce the potential impact to less than significant levels.

As described in Section 3.3.2, an architectural survey completed for the Proposed Action area indicates the presence of historic structures that could be affected by implementation of the Proposed Action. None of these structures is eligible for National Register of Historic Places and, therefore, are not considered historic properties under Section 106. Kirtland AFB is coordinating with tribes to facilitate review on several proposed projects including the Demolition and Construction of Military Personnel Support Facilities (see Appendix D for the coordination letter that was sent to the tribes and the distribution list).

4.3.3 No Action Alternative

Under the No Action Alternative, no demolition or new construction would occur, and existing conditions would not change. Therefore, there would be no change in impacts on cultural resources as a result of implementing the No Action Alternative.

4.4 Land Use

4.4.1 Proposed Action Alternative

The Kirtland AFB General Plan (Kirtland AFB, 2002) guides land use on Kirtland AFB and categorizes the manner in which the land is used. These land uses are an important component for future planning. Existing land uses for the Proposed Action areas are as follows:

- **VOQ Complex** – The buildings to be replaced in the VOQ Complex are in an area currently categorized as Military Family Housing.
- **Main Enlisted Dormitory Campus** – The buildings to be demolished and constructed in the Main Enlisted Dormitory Campus are in an area currently categorized as either Community or Military Family Housing areas.

- **Gymnasium** – The gymnasium to be demolished is currently in a Community area.
- **NCO Academy** – The buildings to be demolished in the NCO Academy are currently located in a Military Family Housing area.
- **Dormitory Campus 2** – The building to be demolished in the Dormitory Campus 2 area is currently in a Military Family Housing area (Kirtland AFB, 2002).

The construction associated with the Proposed Action is consistent with current land use designations, and no changes would be made to current designations after construction and demolition. Consequently, there would be no impacts to land use on Kirtland AFB.

4.4.2 No Action Alternative

No change in land use would be required with implementation of the No Action Alternative; therefore, there would be no impact on land use under the No Action Alternative.

4.5 Utilities and Infrastructure

The following are applicable policies, laws, and regulations related to utilities and infrastructure for the Proposed Action:

- Air Force Sustainable Design and Development Policy requires the Air Force to reduce the environmental impact and total ownership cost of facilities; improve energy efficiency and water conservation; and provide safe, healthy, and productive built environments. All Air Force construction projects shall endeavor to use the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) Building Rating Systems as their self-assessment metric (USAF, 2007).
- EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, requires agencies to reduce greenhouse gases through a reduction in energy intensity. Agencies must ensure that at least half of renewable energy comes from new renewable sources. Agencies must also reduce water consumption, and new construction/major renovation must comply with the 2006 Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding.
- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, establishes an integrated strategy towards sustainability in the federal government and to make reduction of greenhouse gas emissions a priority for federal agencies. This includes, but is not limited to, increasing energy efficiency; measuring, reporting, and reducing greenhouse gas emissions from direct and indirect activities; conserving and protecting water resources through efficiency, reuse, and stormwater management; and eliminating waste, recycling, and preventing pollution.
- CWA, 33 USC 1251 et seq., established the goals of eliminating releases of toxic substances to water, eliminating additional water pollution, and ensuring that surface waters would meet standards necessary for human sports and recreation.

4.5.1 Proposed Action Alternative

There would be a slight increase in water demand during the construction and demolition phase of the Proposed Action. Additionally, there would be a small increase of personnel temporarily residing and using water in the VOQ and new General's Quarters.

Kirtland AFB's water system is capable of meeting the slight increase of water usage through existing infrastructure and the ability to purchase water from the City of Albuquerque (Kirtland AFB, 2002). Also, the new facilities will be designed to conserve water. Therefore, there would be no significant impacts to water supply from the Proposed Action.

The demand for electricity and gasoline could increase during demolition and construction. The overall electrical infrastructure and gasoline supply within the developed area support installation requirements and would be able to handle this increased demand (Kirtland AFB, 2002). Additionally, the energy systems in the buildings to be demolished are antiquated, and the new buildings will be designed to meet LEED standards (USAF, 2007). Thus energy consumption is expected to decrease. Consequently, there would be a slight benefit in energy usage resulting from the Proposed Action.

No significant changes are anticipated to the generation of wastewater during the construction or operational phases of the Proposed Action. Construction workers would not use the Kirtland AFB sanitary system, but would be supplied portable facilities that would be serviced by the contractor. Additionally, the small increase of personnel using the VOQ would not result in a substantial increase in wastewater. The wastewater infrastructure is suitably sized to meet both current and future needs at Kirtland AFB (Kirtland AFB, 2002). Stormwater is discussed in Section 4.8.

The demolition of buildings, and removal of parking lots and landscaping would generate solid waste consisting of concrete, asphalt, glass, metals (e.g., conduit, piping, and wiring), and lumber. If asphalt and concrete were to be further processed onsite, appropriate permits would be obtained prior to the construction of crushing and screening equipment (see Section 4.1.2). Items and materials that could be reused would be salvaged to the extent possible for future use by the Air Force in accordance with applicable regulations and policies. Non-salvageable solid waste would be disposed of in accordance with all applicable health and safety and environmental regulations. The majority of the waste would be generated from demolition of the existing buildings, which are constructed of concrete masonry units. Nonhazardous materials that cannot be reused or recycled would be disposed of in the construction and demolition landfill on Kirtland AFB. The landfill has an estimated life of 50 years (CH2M HILL, 2009). Because demolition materials would be reused or recycled to the extent possible and the landfill has adequate capacity for approximately 50 years, potential impacts would be less than significant.

The Proposed Action would be designed and constructed in accordance with the regulations and policies described above, and would therefore result in a more energy-efficient Base. There would be no net increase in the number of personnel permanently assigned to Kirtland AFB and, therefore, the water demand, generation of wastewater, energy consumption, and solid waste generation would remain relatively constant after implementation of the Proposed Action. There would be a small increase in the number of personnel residing in the VOQ Complex; however, the Base's potable water supply,

wastewater system, and energy availability are adequate and would not be affected by this minimal increase in demand. Overall, there would be a slight benefit to utility usage due to removing the antiquated utility systems and replacing them with LEED-certified systems.

4.5.2 No Action Alternative

Under the No Action Alternative, construction or demolition would not occur. The existing facilities would continue to be used and operated as under existing conditions. Current use of utilities would not change and, therefore, no change in impacts on utilities would result.

4.6 Transportation System

The Proposed Action areas are located in the developed area in the northwestern portion of Kirtland AFB (see Figure 1-2):

- VOQ Complex located south of Club Road, north of A Avenue, and bounded by 15th Street to the west and 18th Street to the east.
- Main Enlisted Dormitory Campus located south of Gibson Boulevard between Pennsylvania Street and 1st Street and north of H Avenue. For the purpose of this assessment, the area extends to the west across Pennsylvania Street north of G Avenue.
- Gymnasium located north of San Mateo Boulevard, west of Truman Street, and south of Gibson Street.
- NCO Academy located east of the flight line south of Biggs Avenue and north of Randolph Avenue, between Truman and Eileen Streets.
- Dormitory Campus 2 located on the west side of the Base between Sherman and Lowry Avenues and Maxwell and Chanute Streets.

4.6.1 Proposed Action Alternative

Vehicles entering the Base for construction and demolition of the Proposed Action would use the Kirtland Gate located at Gibson Boulevard SE and Carlisle Boulevard SE (see Figure 3-1). The typical truck routes (roadways) that are used by construction traffic are Carlisle Boulevard SE, Aberdeen Avenue SE, San Mateo Avenue, Randolph Avenue, and Hardin Boulevard.

Traffic problems on the eastern portion of the developed area generally occur during peak-traffic morning and afternoon periods. Because the construction period is of limited duration, potential traffic impacts resulting from the proposed construction and demolition are considered to be temporary and, therefore, less than significant.

Onbase traffic is expected to be less than current conditions because construction of facilities under the Proposed Action, in the northeast portion of the developed area, would allow personnel to access services in proximity to the dormitories, therefore reducing traffic movement across the installation. In addition, the Main Enlisted Dormitory Campus site would be near administrative uses onbase, therefore reducing cross Base traffic flow (Kirtland AFB, 2002). Because personnel would have access to services and administrative

facilities within proximity to the Main Enlisted Dormitory Campus site there would be a beneficial impact during operation in the form of reduced traffic flow on base.

4.6.2 No Action Alternative

Under the No Action Alternative, construction or demolition would not occur. The existing facilities would continue to be used and operated as under existing conditions. Current traffic levels and patterns would be maintained; therefore, no change in impacts on traffic and transportation would result.

4.7 Hazardous Materials, Hazardous Wastes, Environmental Restoration Program Sites, and Stored Fuels

The following are applicable hazardous substances laws and regulations for the Proposed Action:

- RCRA, 42 USC 6901 et seq., was passed by United States Congress in 1976, to protect both human health and the environment from the mishandling of solid and hazardous waste and to encourage the conservation of natural resources. RCRA requires a system for managing hazardous and universal wastes. Regulations adopted by EPA in 40 CFR Sections 260 through 279 carry out RCRA's congressional mandate.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 was designed to clean up abandoned hazardous waste sites and provide broad federal authority to clean up releases or threatened releases of hazardous substances that might endanger public health or the environment. The act authorizes EPA to identify parties responsible for contamination of sites and order them to clean up the sites.
- Pollution Prevention Act of 1990 institutes policy that pollution should be prevented or reduced at the source whenever feasible. Pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible. Disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner.
- Toxic Substances Control Act of 1976 authorizes EPA to require reporting, record keeping, and testing requirements and restrictions relating to chemical substances and mixtures. It addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls, asbestos, radon, and LBP.
- CWA 33 USC 1251 et seq., established the goals of eliminating releases of toxic substances to water, eliminating additional water pollution, and ensuring that surface waters would meet standards necessary for human sports and recreation.
- NMAC 20.11.20.22 requires compliance with NMAC 20.11.64 and by incorporation, 40 CFR 61 Subpart M for notification to Albuquerque Environmental Health Department, Air Quality Division for removal of asbestos. 40 CFR 61 Subpart M specifies when notification is required.

4.7.1 Proposed Action Alternative

Hazardous Materials and Hazardous Wastes

Construction and demolition activities would be performed by equipment that requires maintenance and fuel. Maintenance would likely occur at an offsite location; however, use of equipment could result in slight increases in the volume of hazardous materials and wastes. Paint, adhesive, solvent, and cleaning agents would also likely be used during construction and demolition. The slight increases in the volume of hazardous materials and wastes from construction and demolition would be minor and temporary and would, therefore, result in less than significant impacts. Initial accumulation points located within the Proposed Action areas include one in the VOQ Complex, one within the Main Enlisted Dormitory Campus, and one within the Dormitory Campus 2 (Kirtland AFB, 2002).

Hazardous materials and wastes at initial accumulation points located within the Proposed Action areas would be removed prior to demolition and construction activities. Hazardous wastes will be disposed of in accordance with the *Hazardous Waste Management Plan* (Kirtland AFB, 2004). Hazardous materials would be used in accordance with applicable USAF regulations, such as Air Force Instruction 32-7086, *Hazardous Materials Management*, and Air Force Instruction 32-7042, *Solid and Hazardous Waste Compliance*. Lists of hazardous materials used at the Proposed Action areas will be submitted through Kirtland AFB contracting.

LBP, ACM, and PCB could have been used during construction and maintenance of the existing structures. Allowing hazardous waste to come into contact with people or the environment could cause detrimental impacts on human or environmental health. Because of the age of the structures, LBP, ACM, and PCB surveys would be completed prior to construction and demolition. If LBP, ACM, or PCB is present, an abatement plan would be prepared and implemented for their safe removal and disposal. The abatement plan, if needed, would be reviewed and approved by Civil Engineering Squadron Environmental Flight and BioEnvironmental Engineering prior to the start of abatement. Written notification would be made to the Albuquerque Environmental Health Department, Air Quality Division, in accordance with NMAC 20.11.20.22, which requires compliance with NMAC 20.11.64 and, by incorporation, 40 CFR 61 Subpart M. 40 CFR 61 Subpart M specifies when notification is required. The contractor/building point of contact would be responsible for submitting the notification to the Albuquerque Environmental Health Department, Air Quality Division. The abatement plan and any abatement work would be completed in accordance with federal, state, and local regulations and policies. Conducting LBP and ACM surveys and implementing an abatement plan (if necessary) would reduce potential impacts from LBP and ACM to less than significant levels.

Environmental Restoration Program Sites

No active ERP sites are located in any of the Proposed Action areas; however, several ERP sites that have been issued no further action status are located within the Proposed Action areas. ST-284 is located within the VOQ Complex. ST-282 and ST-283 are located within the Main Enlisted Dormitory Campus. ST-278 is located within the Gymnasium area, the NCO Academy, and Dormitory Campus 2. The no further action status is issued for ERP sites that do not require additional investigation or corrective action. At Kirtland AFB, no further action status is granted on the basis of standards for residential developments. There are no

specific requirements pertaining to contamination for demolition or construction on ERP sites with a no further action status.

If contaminated materials are encountered during demolition or construction, protective measures would be implemented in accordance with direction from Base Environmental Restoration, and potential impacts on human health and the environment from the contamination would be less than significant.

Because there are no known contaminants and because appropriate steps would be taken in the unlikely event that contamination was discovered at the site, potential impacts on human health and the environment would be less than significant.

4.7.2 No Action Alternative

Implementation of the No Action Alternative would not result in changes to current hazardous waste production or hazardous materials and hazardous waste management practices.

4.8 Water Resources and Floodplains

Applicable laws for the Proposed Action related to water resources and floodplains includes the CWA, 33 USC 1251 et seq., which established the goals of eliminating releases of toxic substances to water, eliminating additional water pollution, and ensuring that surface waters would meet standards necessary for human sports and recreation.

4.8.1 Proposed Action Alternative

The Proposed Action areas are located outside the 100-year floodplain. Consequently, there would be no impact to floodplains resulting from the Proposed Action.

Construction resulting in the disturbance of land of one or more total acres requires the preparation of a Notice of Intent to comply with the General Permit for discharge of stormwater and preparation of a SWPPP in accordance with the National Pollutant Discharge Elimination System requirements of the CWA. The Proposed Action would be considered a common plan of development and would require all construction phases to be covered under the Construction General Permit. The contractor is responsible for submitting a notice of intent to the EPA to obtain Construction General Permit coverage. The SWPPP must be submitted to the 377 Mission Support Group/Civil Engineering Assets and Natural Resources Compliance office for review prior to the contractor submitting for coverage.

Best management practices (BMPs) identified in the SWPPP would be implemented to address erosion and sediment control, source controls, and waste management. Compliance may include installation and maintenance of appropriate stormwater BMPs to minimize impacts associated with erosion following precipitation. These BMPs could include, but not be limited to, installation of silt fencing and sediment traps, and revegetation of disturbed areas as soon as possible. All disturbed areas would be stabilized upon completion of construction activities. Implementation of these standard measures to prevent construction pollutants from contacting stormwater and moving offsite into receiving waters would reduce potential impacts to a less than significant level.

Requirements of the Construction General Permit to minimize the potential for construction-related stormwater to impact downstream water resources, and BMPs identified in the SWPPP would be implemented during construction and demolition activities; therefore, impact on surface waters is anticipated to be less than significant.

Construction under the Proposed Action within the existing open space area of the VOQ Complex would increase impervious surface area and has the potential to permanently alter drainage patterns. The increase in impervious surface area would also increase the potential for erosion and negative direct and indirect impacts on surface waters. Impacts on surface waters can be minimized and mitigated through the use of BMPs, including stormwater detention ponds to control levels of stormwater runoff to minimize the potential for downstream impacts on water resources.

The average depth to groundwater on Kirtland AFB is between 450 and 550 feet (Kirtland AFB, 2007). Consequently, the likelihood of encountering or impacting groundwater during construction is low. Nonetheless, the contractor will develop a contingency plan prior to construction and implement it if groundwater is discovered during construction. Kirtland AFB will review and approve the contingency plan prior to construction.

Because water resources would be managed in accordance with the above-mentioned standards and regulations, the water resource impacts associated with the Proposed Action would be minimal.

4.8.2 No Action Alternative

There would be no change to groundwater, surface water, floodplains, or stormwater if the No Action Alternative were implemented.

4.9 Noise

Potential future project-related noise impacts were determined by analyzing anticipated changes in noise exposure attributable to the Proposed Action and No Action Alternative at identified noise-sensitive locations such as schools, hospitals, and religious facilities. Project-related noise exposure changes would result from construction and demolition activities under the Proposed Action.

Applicable laws and regulations includes the Noise Control Act which regulates noise pollution with the intent of protecting human health and minimizing noise annoyance to the general public.

4.9.1 Proposed Action Alternative

Under the Proposed Action, ambient noise levels would temporarily increase during construction and demolition activities. Personnel residing or working at buildings within nearby facilities would be exposed to noise from these activities. In addition, personnel residing in family housing areas near the VOQ Complex and Main Enlisted Dormitory Campus sites might be exposed to noise from construction and demolition activities. The increased noise levels are expected to be intermittent, short term, and typically limited to

normal weekday working hours; therefore, noise impacts resulting from demolition and construction activities are expected to be less than significant.

There are no sensitive receptors (e.g., schools, hospitals, day care facilities, or religious facilities) located within 0.5 mile of the Proposed Action; therefore, noise impacts on sensitive receptors are not anticipated to occur.

There would not be an increased number of onbase personnel permanently stationed at the Base as a result of the Proposed Action; therefore, onbase traffic is expected to be similar to that under current conditions, and no additional noise impacts are expected to occur.

4.9.2 No Action Alternative

Implementing the No Action Alternative would not result in construction or demolition activities; therefore, construction or demolition noise would not occur. Current operational noise levels would not change.

4.10 Geology and Soils

4.10.1 Proposed Action Alternative

The construction projects identified in the Proposed Action could result in minor short-term impacts on geology and soils in the developed area. The majority of locations where construction and demolition would occur are currently paved. Paved areas would be removed and graded prior to construction activities, therefore exposing soils. Staging areas would be located within the boundaries of the Proposed Action sites and might occur on currently unpaved soils. Impacts on soil would be minimized by using construction BMPs that would limit erosion and soil movement, stabilize runoff, and control sedimentation. These BMPs would be implemented as soon as possible following construction and demolition and would include installation of silt fencing and sediment traps, application of water sprays to keep soil from becoming airborne, and revegetation of disturbed areas that would not be repaved. BMPs identified in the SWPPP would be implemented during construction and demolition activities; therefore, potential impacts on geology or soils associated with the Proposed Action would be less than significant.

The new facilities at the Proposed Action sites would be designed and constructed in compliance with building codes current during the design process. Soil erosion, dust, and sedimentation impacts resulting from construction of the Proposed Action would be less than significant with implementation of BMPs identified in the SWPPP (see Section 4.8). Therefore, potential impacts on geology or soils associated with the Proposed Action would be less than significant.

4.10.2 No Action Alternative

There would be no change to geology or soils if the No Action Alternative were implemented.

4.11 Health and Safety

4.11.1 Proposed Action Alternative

Applicable rules and regulations regarding safety and occupational health would be followed during construction and demolition activities at the Proposed Action sites. A health and safety plan for construction would be prepared prior to activities at the sites. LBP and ACM surveys would be completed prior to construction and demolition if, on the basis of age, the structures have the potential for having been constructed with use of these materials (see Section 4.7.1). If LBP or ACM were discovered, an approved abatement plan would be adopted that would stipulate the precautions necessary to protect worker health and safety. Construction areas would be secured as necessary to prevent unauthorized personnel from entering the work sites or excavations.

In accordance with the Occupational Safety and Health Act of 1970, all workers would be provided with appropriate personal protective equipment. Personal protective equipment would include, but not be limited to, approved hard hats, safety shoes, gloves, goggles, eye/face protection, safety belts, harnesses, respirators, hearing protection, and traffic safety vests. The potential for adverse impacts on safety and occupational health would be limited to the duration of demolition and construction.

4.11.2 No Action Alternative

Implementing the No Action Alternative would not change health or safety conditions. Construction would not be required under this alternative; therefore, no changes to ongoing safety and occupational health practices would occur.

4.12 Socioeconomic Resources

The socioeconomic conditions of the region could be affected if implementation of the Proposed Action or the No Action Alternative caused changes in the rate of population growth, demographic characteristics of the Base or Bernalillo County, or employment or economic activity onbase or in the county. This section evaluates potential impacts on socioeconomic resources.

4.12.1 Proposed Action Alternative

Implementation of the Proposed Action would have a short-term, beneficial impact on socioeconomic resources because it would require a temporary increase of civilian contract employees (construction workers) at the Base. Given the ample supply of construction labor in the region, it is anticipated that construction workers would commute to the work site and would not require temporary housing.

The impacts on socioeconomic conditions from temporary employment would be beneficial, but negligible compared to the Base or the county economy. The Proposed Action would not result in long-term change to socioeconomic conditions.

4.12.2 No Action Alternative

Selection of the No Action Alternative would result in no changes to the socioeconomic resources at the Base or to Bernalillo County.

4.13 Environmental Justice and Protection of Children

4.13.1 Proposed Action Alternative

No minority or low-income populations in the surrounding area would be affected by the construction of the Proposed Action because no such populations are located near the Proposed Action sites. In addition, the Proposed Action would not cause any adverse impacts with the potential to disproportionately affect such populations if they were present.

The Proposed Action does not include changes to populations living on Kirtland AFB; therefore, environmental health or safety risks would not affect children. Access to construction areas would be controlled, thereby limiting unauthorized access by any person, including children, therefore reducing any potential impact to less than significant.

Emissions from operations would either be exempt from permitting or comply with permit conditions. Hazardous wastes produced at the Proposed Action sites would be handled and disposed of in accordance with applicable regulations and the *Hazardous Waste Management Plan* (Kirtland AFB, 2004) and would, therefore, not pose a disproportionate risk to minority populations or children.

4.13.2 No Action Alternative

Implementation of the No Action Alternative would not affect any minority or low-income populations, or children.

4.14 Indirect and Cumulative Impacts

Indirect impacts are defined by the CEQ in 40 CFR Section 1508.8 as those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects to air, water, and other natural systems, including ecosystems.”

Indirect impacts of the Proposed Action have been addressed in the preceding resource-specific analyses. Implementing the Proposed Action is not expected to result in significant indirect impacts on environmental or socioeconomic resources. Because the Proposed Action does not involve relocation of personnel to the area or require large, long-term construction that would attract workers to the area, it would not result in growth-inducing effects, induced changes in population, or related effects.

Cumulative impacts are defined by the CEQ in 40 CFR Section 1508.7 as “impacts on the environment which result from the incremental impact of the action when added to other

past, present, and reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”

Projects considered in this EA for cumulative impact are those that are ongoing or planned to begin within the next 5 years within the developed area at Kirtland AFB. Projects being considered beyond 5 years are too uncertain to be evaluated. The following are the foreseeable future actions that could occur within the developed area at Kirtland AFB:

- Construct HC/MC-130 Aircraft Simulator Facilities
- Construct Hot Cargo Pad
- Construct AAFES Base Exchange Shopping Center
- Construct 498th Nuclear System Wing Facility
- Construct Air Force Nuclear Weapons Center Sustainment Center
- Construct Security Forces Complex
- Construct Military Working Dog Facility
- Demolish Buildings at Kirtland AFB

The potential for short-term cumulative impacts to air quality would be from multiple construction projects occurring simultaneously. Not all of the projects listed above would begin construction simultaneously during the next 5 years. No significant impacts are expected to occur to air quality as a result of the Proposed Action; therefore, implementation of the Proposed Action would not be expected to result in significant short-term cumulative effects in conjunction with other proposed projects on Kirtland AFB. It is not expected that the Proposed Action would contribute to long-term cumulative impacts to air quality because an increase in personnel permanently stationed at Kirtland AFB would not occur. As a result, no cumulative air quality impacts are anticipated to result from the Proposed Action.

Development in the cantonment at Kirtland AFB has fragmented habitat typically consisting of nonnative vegetation and landscape plants. The Proposed Action would result in a reduction of habitat within the developed area as a result of the permanent loss of approximately 5 acres of currently undeveloped land. Construction projects anticipated to occur on Kirtland AFB within the next 5 years might also reduce habitat, although the projects would primarily be constructed in the developed area on disturbed or currently paved areas. Kirtland AFB has large expanses of contiguous habitat outside of the developed area, including habitat for the burrowing owl, the only special-status species likely to occur in the Proposed Action area. Construction of proposed projects listed above would primarily occur within the developed area, therefore reducing the loss of contiguous habitat onbase. As a result, cumulative biological impacts are not anticipated to result in combination with other actions.

Construction of the VOQ facility would involve ground disturbance of previously undisturbed land and, thus, have the potential to disturb previously unknown locations of archaeological or cultural resources. Compliance with practices listed in Section 4.3, Cultural Resources, would be implemented to reduce impacts on cultural resources from multiple actions. Long-term impacts on cultural resources would not occur under the Proposed Action, and, therefore, the Proposed Action would not contribute to a cumulative impact in combination with other actions.

4.15 Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are expected from construction or operation under the Proposed Action Alternative. Any impacts resulting from demolition and construction are expected to be less than significant and short in duration.

4.16 Relationship between Short-term Uses and Enhancement of Long-term Productivity

The Proposed Action would meet the Base's need to provide for and meet the requirements of military personnel support facilities through consolidation and upgrade of the existing dormitories and support facilities. The consolidation and upgrades are needed because the facilities are outdated and do not comply with current Air Force design standards, and because of stationing decisions, such as those under BRAC.

4.17 Irreversible and Irretrievable Commitment of Resources

Irreversible or irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources would have on future generations.

Resources expected to be affected during the long-term use of the military support facilities include design and construction costs. In addition, construction of facilities would require use of construction materials, such as concrete and steel. Although the materials could be recycled, some permanent loss of energy would be expected in the manufacture and recycling processes, and would be considered an irreversible effect.

Other committed resources would include water and energy used for the construction of the Proposed Action, as well as for the continued operation and maintenance of the military support facilities.

SECTION 5

List of Preparers

Name	Education	Experience	Role
Karin Lilienbecker	B.S. Environmental Science M.S. Biology	17 years	Senior Reviewer
Karen Jarocki, P.G.	B.S. Geology M.A. Geology	14 years	Project Manager
Lyna Black	B.S. Biology M.S. Geosciences	12 years	Task Manager/EA Document Manager
Julie Petersen	B.S. Biology	8 years	Environmental Scientist/Planner
Michelle Rau	B.S. Ecology, MBA	13 years	Environmental Planner
Hong Zhuang	M.S. Environmental Science and Engineering	13 years	Air Quality
Natalie Lawson, R.P.A.	B.S. Chemistry M.A. Anthropology	9 years	Cultural Resources
Celeste Brandt	B.A. English	11 years	Technical Editor

SECTION 6

Consultation and Coordination

Distribution List

Ms. Mary Lou Leonard
City of Albuquerque
Acting Environmental Health Department Director

Ms. Georgia Cleverly
New Mexico Environmental Department
Office of Planning and Performance

Ms. Terra Monasco
New Mexico Game and Fish
Assistant Chief of Conservation Services Division

The Honorable Thomas E. Swisstack
Mayor of Rio Rancho

Mr. Robert Campellone
U.S. Fish and Wildlife Service
Division of Planning

Ms. Jackie Andrew
Southwestern Region NEPA Coordinator
U.S. Forest Service

Ms. Julie Alcon
U.S. Army Corps of Engineers
Chief of Environmental Resources Section

Individuals Contacted

Joshua Adkins	377 MSG/CEANQ
Aaron Brackett	377 MSG/CEYE
Cole Crosgrove	377 MSG/CEANC
Lori Crump	377 MSG/CEANC
Jennifer Dann	377 MSG/CEANC
James Doyle	377 MSG/CEP
Carol Finley	377 MSG/CEANQ
Martha Garcia	377 MSG/CEANC
Steven Kitt	377 MSG/CEANC
Jeffrey McCann	377 MSG/CEANQ

Pat Montano	377 MSG/CEANQ
Bill Sayner	CHUGACH
Chris Segura	377 MSG/CEANC
Evelyn Watkins	377 MSG/CEANQ

SECTION 7

Works Cited

Air Force Center for Engineering and the Environment (formerly Air Force Center for Environmental Excellence). 2005. *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM)* 4.3.

Air Force Personnel Center. 2009. "Air Force Demographics." Available at: <http://www.afpc.randolph.af.mil/library/airforcepersonnelstatistics.asp>. Accessed 14 September.

California Climate Action Registry. 2009. *California Climate Action Registry General Reporting Protocol, Version 3.1*. January. Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf.

CH2M HILL. 2009. Kirtland Air Force Base – Demolition and Construction of Military Personnel Support Facilities Environmental Assessment – Kick-off Meeting. 11 August.

Cordell, Linda S. and George J. Gumerman. 2006. *Dynamics of Southwest Prehistory*. University of Alabama Press, Tuscaloosa.

Council on Environmental Quality (CEQ). 1997. *Environmental Justice, Guidance Under the National Environmental Policy Act*. Available at: ceq.hss.doe.gov/nepa/regs/ej/justice.pdf.

Federal Interagency Committee on Urban Noise. 1980. *Guidelines for Considering Noise in Land Use Planning and Control*.

Irwin-Williams, Cynthia. 1979. "Post-Pleistocene Archaeology, 7000-2000 B.C." In *Southwest*, edited by A. Ortiz, pp. 31-42. *Handbook of North American Indians*, vol. 9. W.C. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

Kirtland Air Force Base (Kirtland AFB). 2009a. Kirtland Air Force Base Web site. Available at: <http://www.kirtland.af.mil/units/index.asp>. Accessed 19 October.

Kirtland Air Force Base (Kirtland AFB)/Donna Dunn, Base Community Planner. 2009b. Personal conversation with CH2M HILL/Lyna Black. 08 October.

Kirtland Air Force Base (Kirtland AFB)/Watkins, Evelyn, NEPA Program Manager. 2008-2009. Personal communications with CH2M HILL/Lyna Black. October 2008 through June 2009.

Kirtland Air Force Base (Kirtland AFB). 2008a. *2008 Air Force Dormitory Master Plan, Kirtland Air Force Base*.

Kirtland Air Force Base (Kirtland AFB). 2008b. *Kirtland AFB Cultural Resources Management Plan*.

Kirtland Air Force Base (Kirtland AFB). 2007. *Integrated Natural Resources Management Plan for Kirtland Air Force Base*. July.

Kirtland Air Force Base (Kirtland AFB). 2006. "KAFB 377th ABW Fact Sheet." Available at: <http://www.kirtland.af.mil/library/factsheets/factsheet.asp?id=5889>. Accessed 25 September 2008.

Kirtland Air Force Base (Kirtland AFB). 2004. *Hazardous Waste Management Plan*. 377th Air Base Wing, Environmental Management Division. December.

Kirtland Air Force Base (Kirtland AFB). 2002. *Comprehensive Plan, Kirtland Air Force Base, New Mexico, General Plan*.

New Mexico Environment Department (NMED), Air Quality Bureau. 2009. Title 20 Environmental Protection, Chapter 2 Air Quality (Statewide), Part 3 Ambient Air Quality Standards. Available at: <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.002.0003.htm>. Accessed October 2009.

New Mexico State Historic Preservation Division. 2009. Archaeological Record Management Section (ARMS) – New Mexico Cultural Resources Information System (NMCRIIS), administered by the state Historic Preservation Division.

Roberts, Calvin A. and Susan A. Roberts. 2004. *A History of New Mexico*. University of New Mexico Press.

Sando, Joe S. 1979. "The Pueblo Revolt." In *Southwest*, edited by A. Ortiz, pp. 194-197. *Handbook of North American Indians*, vol. 9. W.C. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

Simmons, Marc. 1979. "History of Pueblo-Spanish Relations to 1821." In *Southwest*, edited by A. Ortiz, pp. 178-193. *Handbook of North American Indians*, vol. 9. W.C. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

United States Air Force (USAF). 2004. Air Force Instruction 32-7086, "Hazardous Materials Management." Issued by HQ USAF/ILEVQ. 01 November.

United States Air Force (USAF). 2007. "Memorandum: Air Force Sustainable Design and Development (SDD) Policy." Issued by HQ USAF/A7C. 31 July.

U.S. Department of Health and Human Services. 2009. "The 2009 Poverty Guidelines." Available at: <http://aspe.hhs.gov/poverty/09poverty.shtml>. Accessed 14 September.

U.S. Census Bureau. 2007. "American FactFinder." Available at: <http://factfinder.census.gov/>. Accessed September 2009.

U.S. Environmental Protection Agency (EPA). 2009a. Green Book. "The Green Book Nonattainment Areas for Criteria Pollutants." Available at: <http://www.epa.gov/oar/oaqps/greenbk/>. Accessed October 2009.

U.S. Environmental Protection Agency (EPA). 2009b. Air Data. "AirData : Access to Air Pollution Data." Available at: <http://www.epa.gov/air/data/index.html>. Accessed October 2009.

U.S. Environmental Protection Agency (EPA). 2010. *New Mexico Greenhouse Gas Emissions and Sinks Inventory: Summary*. Available at:
http://www.epa.gov/climatechange/emissions/state_ghginventoriesarchive.htm.
Accessed February 2010.

Van Critters, Karen, CSI, CDT, and Kristen Bisson. 2003. *National Register of Historic Places, Historic Context and Evaluation for Kirtland AFB, Albuquerque, New Mexico*. June. Unpublished manuscript on file, CH2M HILL.

Appendix A
Air Force Form 1391

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PHYSICAL FITNESS CENTER	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 740-674	7. PROJECT NUMBER MHMV003019	8. PROJECT COST (\$000) 36,000	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				25,881
CONSTRUCT FITNESS CENTER	SM	9,415	2,669	(25,128)
AT/FP PROVISIONS	SM	9,415	27	(254)
SDD EPACT05	SM	9,415	53	(499)
SUPPORTING FACILITIES				5,170
UTILITIES	LS			(660)
PAVEMENTS	LS			(675)
SITE IMPROVEMENTS	LS			(205)
DEMOLITION	SM	8,274	390	(3,230)
COMMUNICATIONS	LS			(400)
SUBTOTAL				31,050
CONTINGENCY (5.0%)				1,553
TOTAL CONTRACT COST				32,603
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				1,858
DESIGN/BUILD - DESIGN COST (4.0% OF SUBTOTAL)				1,242
TOTAL REQUEST				35,703
TOTAL REQUEST (ROUNDED)				36,000)
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(2,000
10. Description of Proposed Construction: Construct new centrally-located consolidated fitness center to replace old east and west side facilities. Construction includes site work, landscaping, parking, reinforced concrete foundation, steel structure, reinforced masonry walls, insulated standing seam metal roof, fire protection systems, HVAC, all utilities, communications, and demolition of existing buildings 585, 20228 and 688 SM of Bldg 20227 (8,274 SM total). Project includes controlled entrance, lobby, gymnasium with two basketball courts and seating, 14 racquetball courts, 1/8 mile indoor track, aerobics room, weight room, family fitness, restrooms, showers and locker rooms, Health and Wellness Center (HAWC), administrative and support spaces. Project complies with base architectural compatibility standards, sustainable design principles mandated by Executive Order 13423, and DoD minimum force protection construction standards. Air Conditioning: 300 Tons				
11. Requirement: 9415 SM Adequate: 0 SM Substandard: 8274 SM PROJECT: Physical Fitness Center (Current Mission) REQUIREMENT: This Quality of Life, Modernization/Recapitalization Project constructs a consolidated fitness center per Fitness Center Design Guide and July 2004 Facility Needs Assessment. Size determined by base population and Design Guide Table 2-1 is "Mega 4" with 9,415 SM (101,296 SF). Current usage is 1400 persons/day. Current space of 8,274 SM is 28% less than authorized when spaces duplicated at the current two locations are deducted, and due to inadequacies and poor condition their value toward a modern fitness program is closer to half the current space. A consolidated fitness center will provide more facilities and programs by eliminating duplication of gymnasiums, restrooms, showers, locker rooms, support spaces and staffing at the current two separate locations. New				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO		4. PROJECT TITLE PHYSICAL FITNESS CENTER	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 740-674	7. PROJECT NUMBER MHMV003019	8. PROJECT COST (\$000) 36,000
facility will be walking distance from the enlisted dorms. CURRENT SITUATION: Kirtland AFB's current fitness facilities are buildings and additions on the east and west sides of the base dating back to 1950: - East Fitness Center 6,753 SM (72,661 SF) from 1950. Adjoining 688 SM (7,403 SF) racquetball building from 1956. Both buildings are old, undersize, worn-out and structurally deficient. HVAC systems are antiquated, do not provide proper temperature and humidity, and require constant maintenance to keep running. Huge portable fans must be placed in every room to keep the stale air moving. Most cooling is from old humidity-producing evaporative coolers. Due to poor ventilation, locker rooms are musty and moldy. Weight room, lockers, and exercise equipment rooms are undersize and overcrowded. Wood floors in two basketball courts and eight racquetball courts have been sanded so many times they are so thin they must be completely replaced. Facility security is nearly impossible due to jumbled floor plan and many uncontrollable outside doors. AT/FP provisions nonexistent and unattainable due to adjoining roads and parking. Aisles and doorway widths narrower than ADA standards. Showers and walk-off areas do not meet sanitation standards. Deteriorated wall and floor surfaces cannot be kept clean. Cardio equipment is jammed into undersize rooms and hallways. Roofs leak and need to be replaced. Plumbing systems corroded and require continual repair. Minimal space for administration, lobby and sales. Health and Wellness Center (HAWC) too small to accommodate all programs. - West Fitness Center 1,521 SM (16,370 SF) built in 1968. One basketball court, undersize and worn-out men's and women's dressing rooms and showers, undersize cardio rooms jammed with equipment, undersize support spaces. Worn-out HVAC systems do not adequately heat, cool or ventilate. Like the East Fitness Center, huge portable fans must be placed in every room to keep the stale air moving. IMPACT IF NOT PROVIDED: Kirtland AFB will continue to have fitness facilities that do not meet current standards in numerous ways. Physical conditioning, HAWC and recreational programs will continue to be constrained by worn-out, undersize facilities. Limited staff that could be managing valuable fitness programs will continue to be dissipated tending two separate inadequate locations. Long waits for showers and exercise equipment will continue. Year-round active duty PT testing will continue to be impossible without an indoor track due to outdoor weather extremes, wind and blowing dust. Physical conditioning, HAWC and recreation programs will continue to be constrained by worn-out facilities and insufficient space. Deficiencies in all areas discourage use and will continue to impact military fitness, readiness, quality of life, morale, productivity and retention. ADDITIONAL: Currently Kirtland has 8,274 SM (89,031 SF) of fitness facilities but this figure is misleading: Because of poor condition, inadequacies and duplications between east and west side facilities, their value toward a modern fitness program is closer to half the current space. Limited staff that could be managing a wide variety of fitness programs at a single adequate facility are tied up simply tending separate inadequate facilities. For example, there are two old gyms with three worn-out basketball courts while the need is one top-notch gym with two basketball courts; there are antiquated undersize men's and women's dressing room-locker-shower facilities at two locations while the need is for a modern facility at a single location; there are many worn out, poorly operating, inefficient HVAC systems at multiple locations while the need is for a modern, well-designed, efficient system at one location. This project meets the criteria/scope specified in Air Force Handbook 32-1084 "Facility Requirements" and the December 2005 Fitness Center Design Guide. Total Request includes 5.9375% State			

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PHYSICAL FITNESS CENTER	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 740-674	7. PROJECT NUMBER MHMV003019	8. PROJECT COST (\$000) 36,000	
of New Mexico gross receipts tax levied on all design and construction contracts. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Base Civil Engineer: Mr. D. Brent Wilson, P.E. (505) 846-7911. Gymnasium: 9,415 SM = 101,296 SF; 8,274 SM = 89,028 SF. <u>JOINT USE CERTIFICATION:</u> This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PHYSICAL FITNESS CENTER	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 740-674	7. PROJECT NUMBER MHMV003019	8. PROJECT COST (\$000) 36,000	
12. SUPPLEMENTAL DATA: a. Estimated Design Data: (1) Project to be accomplished by design-build procedures (2) Basis: (a) Standard or Definitive Design - NO (b) Where Design Was Most Recently Used (3) All Other Design Costs 0 (4) Construction Contract Award (5) Construction Start (6) Construction Completion (7) Energy Study/Life-Cycle analysis was/will be performed YES b. Equipment associated with this project provided from other appropriations:				
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	
FURNITURE & EQUIPMENT	83	2013	2,000	

1. COMPONENT AIR FORCE	FY 2016 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE VISITING OFFICERS QUARTERS	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 724-417	7. PROJECT NUMBER MHMV023009	8. PROJECT COST (\$000) 20,000	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITY				11,429
VISITING OFFICERS QUARTERS	SM	6,384	1,738	(11,095)
SDD/EPACT05/E013423	SM	6,384	35	(222)
AT/FP PROVISIONS	SM	6,384	17	(111)
SUPPORTING FACILITIES				6,084
UTILITIES	M	1,200	295	(354)
SITE IMPROVEMENTS	LS			(444)
COMMUNICATIONS SUPPORT	LS			(350)
SITE PREPARATION	LS			(275)
DEMOLITION	SM	4,661	1,000	(4,661)
SUBTOTAL				17,513
CONTINGENCY (5.0%)				876
TOTAL CONTRACT COST				18,388
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				1,048
DESIGN/BUILD - DESIGN COST (4.0% OF SUBTOTAL)				701
TOTAL REQUEST				20,137
TOTAL REQUEST (ROUNDED)				20,000)
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(1,500
10. Description of Proposed Construction: A 3-story, 6,384 SM 133-room facility with reinforced concrete foundation, floors and structure, insulated reinforced, stucco-finished masonry walls and insulated standing seam metal roof. Includes site preparation and improvement, seismic provisions, elevator, lounge, laundry and recreational facilities, parking, landscaping, HVAC, fire protection, communications and all supporting utilities. Demolish existing buildings 917, 918 and 924 totaling 4,661 SM (50,151 SF). Project complies with sustainable design principles mandated by Executive Order 13423 and DoD minimum antiterrorism force protection standards. Air Conditioning: 180 Tons				
11. Requirement: 6384 SM Adequate: 0 SM Substandard: 4661 SM PROJECT: Visiting Officers Quarters (Current Mission) REQUIREMENT: Replace three outdated, substandard dorm buildings built in 1954 that currently house 133 visiting enlisted personnel. The new visiting quarters will house all ranks. CURRENT SITUATION: Three existing visiting quarters on the west side of Kirtland AFB do not meet the Air Force Materiel Command (AFMC) Strategic Plan Private Room Standards established in 1999. The Lodging Shared-Bath Resolution Plan determined that renovation of these facilities would not be cost effective. If a low cost conversion were performed, transient bedspaces on Kirtland AFB would be reduced by half, which would force sending temporary duty personnel to expensive contract quarters off base.				

1. COMPONENT AIR FORCE	FY 2016 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE VISITING OFFICERS QUARTERS	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 724-417	7. PROJECT NUMBER MHMV023009	8. PROJECT COST (\$000) 20,000	
IMPACT IF NOT PROVIDED: Four of five Strategic Plan goals will not be met. Personnel will continue to reside in outdated, substandard quarters, reducing morale and mission effectiveness. ADDITIONAL: This project meets the criteria/scope specified in Air Force Handbook 32-1084 "Facility Requirements." Total Request includes 5.8125% State of New Mexico Gross Receipts Tax levied on all design and construction contracts. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Base Civil Engineer: Mr. D. Brent Wilson, P.E. (505) 846-7911. 6,384 SM = 68,692 SF; 1,200 M = 3,937 FT; 4,661 SM = 50,153 SF JOINT USE CERTIFICATION: This facility can be used by other components on as "as available" basis; however, the scope of the project is based on Air Force requirements.				

1. COMPONENT AIR FORCE	FY 2016 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE								
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE VISITING OFFICERS QUARTERS									
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 724-417	7. PROJECT NUMBER MHMV023009	8. PROJECT COST (\$000) 20,000									
12. SUPPLEMENTAL DATA: a. Estimated Design Data: (1) Project to be accomplished by design-build procedures (2) Basis: (a) Standard or Definitive Design - NO (b) Where Design Was Most Recently Used (3) All Other Design Costs 0 (4) Construction Contract Award (5) Construction Start (6) Construction Completion (7) Energy Study/Life-Cycle analysis was/will be performed YES b. Equipment associated with this project provided from other appropriations: <table border="0"> <thead> <tr> <th>EQUIPMENT NOMENCLATURE</th> <th>PROCURING APPROPRIATION</th> <th>FISCAL YEAR APPROPRIATED OR REQUESTED</th> <th>COST (\$000)</th> </tr> </thead> <tbody> <tr> <td>FURNITURE & EQUIPMENT</td> <td>83</td> <td>2015</td> <td>1,500</td> </tr> </tbody> </table>					EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	FURNITURE & EQUIPMENT	83	2015	1,500
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)									
FURNITURE & EQUIPMENT	83	2015	1,500									

1. COMPONENT AIR FORCE	FY 2013 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE AIRMEN DINING FACILITY	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 722-351	7. PROJECT NUMBER MHMV053108	8. PROJECT COST (\$000) 16,800	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				9,719
DINING FACILITY	SM	1,510	4,400	(6,644)
REPLACE SERVICES OFFICES	SM	930	3,000	(2,790)
ANTITERRORISM/FORCE PROTECTION	SM	2,440	39	(95)
SDD/EPACT05/E013423	SM	2,440	78	(190)
SUPPORTING FACILITIES				4,838
UTILITIES	LS			(1,200)
PAVEMENTS	LS			(750)
SITE IMPROVEMENTS	LS			(750)
COMMUNICATIONS	LS			(400)
DEMOLITION	SM	3,476	500	(1,738)
SUBTOTAL				14,557
CONTINGENCY (5.0%)				728
TOTAL CONTRACT COST				15,285
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				871
TOTAL REQUEST				16,157
TOTAL REQUEST (ROUNDED)				16,800)
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(1,000
10. Description of Proposed Construction: Construct new full service airmen dining facility in accordance with USAF Dining Facilities Design Guide, including dining areas, kitchen, flight kitchen, food storage, preparation, dish and pot washing, serving stations, cashier stations, staff restrooms and lockers, patron restrooms, lobby, food service offices, and mechanical room. Construct 930 SM office area to replace Services offices on second floor of present dining hall so entire oversize old building 20350 can be demolished by this project. Construction includes site work, landscaping, parking lot, reinforced concrete foundation, reinforced masonry walls, standing seam metal roof, all kitchen, food service and refrigeration equipment, HVAC and fire protection systems, utilities and communications. Comply with DoD force protection requirements and sustainable design principles mandated by Executive Order 13423. Air Conditioning: 150 Tons				
11. Requirement: 2440 SM Adequate: 0 SM Substandard: 3476 SM PROJECT: Airmen dining facility. (Current Mission) REQUIREMENT: This modernization, recapitalization, quality of life project constructs a new airmen dining facility to current USAF standards to replace outdated, poorly laid out, and deficient dining hall built in 1950, along with new offices to replace Services offices presently on second floor, so entire existing oversize old bldg 20350 can be demolished by the project. Provide an airmen dining facility whose construction, materials, layout, equipment, features, finishes and amenities meet Air Force standards. Provide replacement Services offices that meet current office standards.				

1. COMPONENT AIR FORCE	FY 2013 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE AIRMEN DINING FACILITY	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 722-351	7. PROJECT NUMBER MHMV053108	8. PROJECT COST (\$000) 16,800	
CURRENT SITUATION: Existing dining hall building 20350 was built in 1950. Dining facilities are on the ground floor, Services offices on the second floor, and a partial basement with mechanical room and storage. Last major dining remodel was 1993. The building's long narrow shape prevents modern, efficient serving and dining space layout. Due to unalterable structural and site constraints, past remodels have done as much as possible with the existing structure but numerous deficiencies remain: Kitchen is undersize and poorly laid out by today's standards. Flight kitchen is a five foot long counter top - standards call for 2,250 SF. Staff restrooms open directly into kitchen; staff must walk through kitchen in street clothes to access lockers and changing rooms. Janitor space, dish and pan washing rooms are too small. Refrigerator and freezer space is undersize. Floor drains are incorrectly located and lacking in many places. Hoods do not properly ventilate. Serving area is outdated and congested, with several dead ends. Serving station sizes and locations do not reflect demand for foods they serve. Dining room ceiling is too low. Lobby space is excessive and takes space that should be in dining, serving and kitchen. Due to numerous doors, kitchen cannot be properly secured. Loading dock lacks security, is poorly located, and difficult to access. Unstoppable rain water leaks cause perpetual ponds in basement mechanical room. There are many AT/FP deficiencies. Second floor Services offices are not ADA accessible because there is no elevator. IMPACT IF NOT PROVIDED: Existing 1950 structure has limited remaining life. Dining hall layout is undersize, inefficient and outdated. Unalterable structural and site constraints make further remodeling infeasible and uneconomic. Without this project, Kirtland's already deficient airmen dining facility will continue to deteriorate and fall farther behind Air Force standards. Construction of a new facility is the only way to provide airmen dining facilities for Kirtland AFB that meet Air Force standards and will be able to serve well into the 21st century. ADDITIONAL: New dining facility size of 1,510 SM is based on the following space allowances in AFH 32-1084 for 450 persons per meal and 4,500 flight meals per month: Dining facility 1,200 SM, flight kitchen 209 SM, mechanical room 102 SM. Total Request includes 5.8125% New Mexico Gross Receipts Tax levied on all design and construction contracts. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Base Civil Engineer: Mr. D. Brent Wilson, PE (505) 846-7911. 1,510 SM = 16,250 SF; 930 SM = 10,000 SF; 2,400 SM = 26,250 SF; 3,476 SM = 37,402 SF; 1,200 SM = 12,900 SF; 209 SM = 2,250 SF; 102 SM = 1,100 SF. JOINT USE CERTIFICATION: This facility can be used by other components on as "as available" basis; however, the scope of the project is based on Air Force requirements.				

1. COMPONENT AIR FORCE	FY 2013 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE								
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE AIRMEN DINING FACILITY									
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 722-351	7. PROJECT NUMBER MHMV053108	8. PROJECT COST (\$000) 16,800									
12. SUPPLEMENTAL DATA: a. Estimated Design Data: (1) Project to be accomplished by design-build procedures (2) Basis: (a) Standard or Definitive Design - YES (b) Where Design Was Most Recently Used (3) All Other Design Costs 0 (4) Construction Contract Award (5) Construction Start (6) Construction Completion (7) Energy Study/Life-Cycle analysis was/will be performed YES b. Equipment associated with this project provided from other appropriations: <table border="1"> <thead> <tr> <th>EQUIPMENT NOMENCLATURE</th> <th>PROCURING APPROPRIATION</th> <th>FISCAL YEAR APPROPRIATED OR REQUESTED</th> <th>COST (\$000)</th> </tr> </thead> <tbody> <tr> <td>FURNITURE & EQUIPMENT</td> <td>83</td> <td>2011</td> <td>1,000</td> </tr> </tbody> </table>					EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	FURNITURE & EQUIPMENT	83	2011	1,000
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)									
FURNITURE & EQUIPMENT	83	2011	1,000									

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE VISITING OFFICERS QUARTERS	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 724-417	7. PROJECT NUMBER MHMV083106	8. PROJECT COST (\$000) 9,500	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				6,145
VISITING OFFICERS QUARTERS	SM	1,847	3,231	(5,968)
ANTITERRORISM/FORCE PROTECTION	SM	1,847	32	(59)
SDD EPACT05	SM	1,847	64	(118)
SUPPORTING FACILITIES				2,088
UTILITIES	LS			(353)
PAVEMENTS	LS			(310)
SITE IMPROVEMENTS	LS			(134)
DEMOLITION	SM	1,847	468	(864)
COMMUNICATIONS SUPPORT	LS			(310)
ELEVATOR	EA	1	116,300	(116)
SUBTOTAL				8,233
CONTINGENCY (5.0%)				412
TOTAL CONTRACT COST				8,644
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				493
DESIGN/BUILD - DESIGN COST (4.0% OF SUBTOTAL)				329
TOTAL REQUEST				9,466
TOTAL REQUEST (ROUNDED)				9,500)
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(950
10. Description of Proposed Construction: Two story 1,847 SM steel or concrete framed structure with reinforced concrete foundation and floors, insulated reinforced stucco-finished masonry walls, and insulated standing seam metal roof. Includes plumbing, electrical, HVAC, and fire protection systems, hydraulic elevator, exterior and interior communications, all utilities and site improvements. Continue to use existing parking. Demolish existing old VOQ 22010 (1,665 SM) and existing undersize registration/office 22016 (182 SM). Project complies with base architectural compatibility standards, sustainable design principles as mandated by Executive Order 13423, and DoD minimum antiterrorism force protection standards. Air Conditioning: 75 Tons				
11. Requirement: 1847 SM Adequate: 0 SM Substandard: 1847 SM PROJECT: Visiting Officers Quarters (Current Mission) REQUIREMENT: This Quality of Life, Modernization/Recapitalization Project constructs a 1,847 SM combination VOQ and registration/office for the VOQ complex to replace existing worn-out, substandard VOQ 22010 and undersize registration/office 22016. New VOQ will provide authorized accommodations for 6 general officers, 3 aides and 19 distinguished visitors, providing proximity and access to numerous organizations and facilities at Kirtland AFB, avoiding high-cost off-base commercial lodging, transportation and meals. New registration/offices will provide enough space to handle VOQ population increases since 22016 was built. Current occupancy rate is close to 100% and 10 to 15 personnel are sent to off-base				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE VISITING OFFICERS QUARTERS	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 724-417	7. PROJECT NUMBER MHMV083106	8. PROJECT COST (\$000) 9,500	
lodging daily. CURRENT SITUATION: Existing VOQ 22010 is part of a large complex of eight VOQ buildings adjoining an all-ranks dining/club facility, swimming pool, tennis courts, picnic area and other amenities. VOQ 22010 was built in 1954 and has reached the end of its usable life. Five similar nearby 1950's VOQs were totally renovated in the 1990's. VOQ 22010 was never fully renovated - over the years it received only various cosmetic repairs. It retains most of its original appearance and configuration. Finishes and systems are old, worn-out and very deficient by current standards. The floor plan and room sizes do not meet current Air Force standards. The exterior has cracked and streaked stucco, weathered and rotting wood window frames, crumbling putty barely holding old single-pane window glass, and mis-fitting windows. The concrete roof overhang is disintegrating in many places and chunks of concrete regularly fall two stories to the ground. The evaporative cooling system is in particularly bad condition - there are no exhausts or returns so windows must be kept open for air flow. The system constantly runs at full speed during warm weather. It is so noisy in both summer and winter that VOQ 22010 is off limits to flight crews and last to fill. Knowledgeable guests call in advance to be sure they are not billeted there. An economic analysis prepared by the Air Force Center of Expertise in September 2007 determined that replacement is more cost effective than renovation. Registration/Office building 22016 is twenty years old and too small to handle VOQ population increases since it was built: registration counter has too few positions and there is no space to add more; lobby is too small to handle peaks - there is no queuing space and no luggage space; waiting area is too small; office space is overcrowded; there is no space for adequate business center. IMPACT IF NOT PROVIDED: Maintenance and repair requirements for VOQ 22010 have become so large they are unfeasible and uneconomical. Some rooms are so deficient they are no longer used. Conditions are now so poor the end is almost here. Without this project, the living environment, already very poor, will become so bad that all of VOQ 22010 will have to be closed and needed on-base lodging will be lost. ADDITIONAL: This project meets applicable criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements." Total Request includes 5.9375% State of New Mexico gross receipts tax levied on all design and construction contracts. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Base Civil Engineer: Mr. D. Brent Wilson, P.E. (505) 846-7911. Visiting Officers Quarters 1,847 SM = 19,872 SF JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE								
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE VISITING OFFICERS QUARTERS									
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 724-417	7. PROJECT NUMBER MHMV083106	8. PROJECT COST (\$000) 9,500									
12. SUPPLEMENTAL DATA: a. Estimated Design Data: (1) Project to be accomplished by design-build procedures (2) Basis: (a) Standard or Definitive Design - NO (b) Where Design Was Most Recently Used (3) All Other Design Costs 0 (4) Construction Contract Award (5) Construction Start (6) Construction Completion (7) Energy Study/Life-Cycle analysis was/will be performed YES b. Equipment associated with this project provided from other appropriations: <table border="1"> <thead> <tr> <th>EQUIPMENT NOMENCLATURE</th> <th>PROCURING APPROPRIATION</th> <th>FISCAL YEAR APPROPRIATED OR REQUESTED</th> <th>COST (\$000)</th> </tr> </thead> <tbody> <tr> <td>FURNITURE & EQUIPMENT</td> <td>83</td> <td>2014</td> <td>950</td> </tr> </tbody> </table>					EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	FURNITURE & EQUIPMENT	83	2014	950
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)									
FURNITURE & EQUIPMENT	83	2014	950									

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 1 (120 RM)	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083109	8. PROJECT COST (\$000) 27,300	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				13,036
DORM AM PP/PCS-STD	SM	3,960	2,908	(11,516)
ANTITERRORISM/FORCE PROTECTION	SM	3,960	326	(1,291)
SDD EPACT05	SM	3,960	58	(230)
SUPPORTING FACILITIES				10,690
UTILITIES	LS			(525)
PAVEMENTS	LS			(830)
SITE IMPROVEMENTS	LS			(1,685)
ELEVATOR	EA	1	120,000	(120)
BUILDING DEMOLITION	SM	14,690	468	(6,875)
COMMUNICATIONS SUPPORT	LS			(655)
SUBTOTAL				23,726
CONTINGENCY (5.0%)				1,186
TOTAL CONTRACT COST				24,913
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				1,420
DESIGN/BUILD - DESIGN COST (4.0% OF SUBTOTAL)				949
TOTAL REQUEST				27,282
TOTAL REQUEST (ROUNDED)				27,300)
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(700
10. Description of Proposed Construction: Three-story steel-frame structure with reinforced concrete foundation and floors, reinforced, insulated split-faced CMU walls and insulated standing seam metal roof. Building configuration to be 4-Airmen modules with breezeway access per Unaccompanied Housing Design Guide, stacked washer/dryer and storage in each module, and these common spaces on the ground floor: Day room, vending machine area, mail room, game room, public restrooms, admin/office room, maintenance repair and storage room, supply storage room, janitor closet, electrical, mechanical and communications equipment rooms and outside storage room. Includes seismic provisions, elevator, parking, landscaping, HVAC, plumbing, electrical and fire protection systems, all utilities, exterior and interior communications. Includes site demolition and site development for this new dorm's part of the Master Plan. Comply with base architectural compatibility standards, DoD minimum force protection construction standards for dormitories, and sustainable design principles as mandated by Executive Order 13423. Demolish old dorms 425, 20221 and 20222 (14,690 SM). Air Conditioning: 150 Tons				
11. Requirement: 3960 SM Adequate: 0 SM Substandard: 14690 SM <u>PROJECT:</u> Construct Permanent Party Dorm 1 (120 RM) (Current Mission) <u>REQUIREMENT:</u> This Airmen quality of life, modernization/recapitalization project constructs a new 120 room 3,960 SM Permanent Party Dorm to Air Force standards and demolishes three old dorms totaling 14,690 SM as recommended by the 2008 Air Force Dormitory Master Plan (DMP) for Kirtland AFB. Demolition ratio is 371%.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 1 (120 RM)	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083109	8. PROJECT COST (\$000) 27,300	
CURRENT SITUATION: This project is Kirtland's #1 priority permanent party dorm as recommended by the DMP. Kirtland AFB currently has a surplus of old substandard dorm space that this project will eliminate. Currently there are 828 rooms of which 288 are excess to current and projected needs. This project will demolish 408 rooms and construct 120 new rooms, resulting in a total inventory of 540 rooms to accommodate projected future needs. The new dorm will be located on the present site of dorms 20221 and 20222 in the heart of Kirtland's east side community center, close to the dining hall, fitness center, swimming pool, base theater, library, bowling alley, exchange, chapel, post office and many other amenities. Demolition will be phased so there will always be sufficient rooms during the project. IMPACT IF NOT PROVIDED: Without this project, Kirtland AFB will continue to be burdened with excessive numbers of old, oversize, high-maintenance, energy-gobbling substandard dorms built in 1950, and dorm residents will continue to live in substandard conditions. ADDITIONAL: This project meets applicable criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements." Project scope complies with the recommendations of the DMP. All known alternative options were considered during development of this project. No other option could meet mission requirements; therefore, no economic analysis was needed or performed and a certificate of exception has been prepared. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Primary facility costs are from the DMP that used cost models developed from the DoD Facilities Pricing Guide, 2 July 2007 edition. Total Request includes 5.9375% State of New Mexico gross receipts tax levied on all design and construction contracts. Base Civil Engineer: Mr. D. Brent Wilson, P.E. (505) 846-7911. (3,960 SM = 42,600 SF; 14,690 SM = 158,065 SF) JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE								
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO		4. PROJECT TITLE PERMANENT PARTY DORM 1 (120 RM)									
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083109	8. PROJECT COST (\$000) 27,300								
12. SUPPLEMENTAL DATA: a. Estimated Design Data: (1) Project to be accomplished by design-build procedures (2) Basis: (a) Standard or Definitive Design - NO (b) Where Design Was Most Recently Used (3) All Other Design Costs 0 (4) Construction Contract Award (5) Construction Start (6) Construction Completion (7) Energy Study/Life-Cycle analysis was/will be performed YES b. Equipment associated with this project provided from other appropriations: <table border="1"> <thead> <tr> <th>EQUIPMENT NOMENCLATURE</th> <th>PROCURING APPROPRIATION</th> <th>FISCAL YEAR APPROPRIATED OR REQUESTED</th> <th>COST (\$000)</th> </tr> </thead> <tbody> <tr> <td>FURNITURE & EQUIPMENT</td> <td>83</td> <td>2011</td> <td>700</td> </tr> </tbody> </table>				EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	FURNITURE & EQUIPMENT	83	2011	700
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)								
FURNITURE & EQUIPMENT	83	2011	700								

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 1 (120 RM)	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083109	8. PROJECT COST (\$000) 27,300	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				13,036
DORM AM PP/PCS-STD	SM	3,960	2,908	(11,516)
ANTITERRORISM/FORCE PROTECTION	SM	3,960	326	(1,291)
SDD EPACT05	SM	3,960	58	(230)
SUPPORTING FACILITIES				10,690
UTILITIES	LS			(525)
PAVEMENTS	LS			(830)
SITE IMPROVEMENTS	LS			(1,685)
ELEVATOR	EA	1	120,000	(120)
BUILDING DEMOLITION	SM	14,690	468	(6,875)
COMMUNICATIONS SUPPORT	LS			(655)
SUBTOTAL				23,726
CONTINGENCY (5.0%)				1,186
TOTAL CONTRACT COST				24,913
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				1,420
DESIGN/BUILD - DESIGN COST (4.0% OF SUBTOTAL)				949
TOTAL REQUEST				27,282
TOTAL REQUEST (ROUNDED)				27,300)
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(700
10. Description of Proposed Construction: Three-story steel-frame structure with reinforced concrete foundation and floors, reinforced, insulated split-faced CMU walls and insulated standing seam metal roof. Building configuration to be 4-Airmen modules with breezeway access per Unaccompanied Housing Design Guide, stacked washer/dryer and storage in each module, and these common spaces on the ground floor: Day room, vending machine area, mail room, game room, public restrooms, admin/office room, maintenance repair and storage room, supply storage room, janitor closet, electrical, mechanical and communications equipment rooms and outside storage room. Includes seismic provisions, elevator, parking, landscaping, HVAC, plumbing, electrical and fire protection systems, all utilities, exterior and interior communications. Includes site demolition and site development for this new dorm's part of the Master Plan. Comply with base architectural compatibility standards, DoD minimum force protection construction standards for dormitories, and sustainable design principles as mandated by Executive Order 13423. Demolish old dorms 425, 20221 and 20222 (14,690 SM). Air Conditioning: 150 Tons				
11. Requirement: 3960 SM Adequate: 0 SM Substandard: 14690 SM <u>PROJECT:</u> Construct Permanent Party Dorm 1 (120 RM) (Current Mission) <u>REQUIREMENT:</u> This Airmen quality of life, modernization/recapitalization project constructs a new 120 room 3,960 SM Permanent Party Dorm to Air Force standards and demolishes three old dorms totaling 14,690 SM as recommended by the 2008 Air Force Dormitory Master Plan (DMP) for Kirtland AFB. Demolition ratio is 371%.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 1 (120 RM)	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083109	8. PROJECT COST (\$000) 27,300	
CURRENT SITUATION: This project is Kirtland's #1 priority permanent party dorm as recommended by the DMP. Kirtland AFB currently has a surplus of old substandard dorm space that this project will eliminate. Currently there are 828 rooms of which 288 are excess to current and projected needs. This project will demolish 408 rooms and construct 120 new rooms, resulting in a total inventory of 540 rooms to accommodate projected future needs. The new dorm will be located on the present site of dorms 20221 and 20222 in the heart of Kirtland's east side community center, close to the dining hall, fitness center, swimming pool, base theater, library, bowling alley, exchange, chapel, post office and many other amenities. Demolition will be phased so there will always be sufficient rooms during the project. IMPACT IF NOT PROVIDED: Without this project, Kirtland AFB will continue to be burdened with excessive numbers of old, oversize, high-maintenance, energy-gobbling substandard dorms built in 1950, and dorm residents will continue to live in substandard conditions. ADDITIONAL: This project meets applicable criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements." Project scope complies with the recommendations of the DMP. All known alternative options were considered during development of this project. No other option could meet mission requirements; therefore, no economic analysis was needed or performed and a certificate of exception has been prepared. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Primary facility costs are from the DMP that used cost models developed from the DoD Facilities Pricing Guide, 2 July 2007 edition. Total Request includes 5.9375% State of New Mexico gross receipts tax levied on all design and construction contracts. Base Civil Engineer: Mr. D. Brent Wilson, P.E. (505) 846-7911. (3,960 SM = 42,600 SF; 14,690 SM = 158,065 SF) JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE								
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO		4. PROJECT TITLE PERMANENT PARTY DORM 1 (120 RM)									
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083109	8. PROJECT COST (\$000) 27,300								
12. SUPPLEMENTAL DATA: a. Estimated Design Data: (1) Project to be accomplished by design-build procedures (2) Basis: (a) Standard or Definitive Design - NO (b) Where Design Was Most Recently Used (3) All Other Design Costs 0 (4) Construction Contract Award (5) Construction Start (6) Construction Completion (7) Energy Study/Life-Cycle analysis was/will be performed YES b. Equipment associated with this project provided from other appropriations: <table border="1"> <thead> <tr> <th>EQUIPMENT NOMENCLATURE</th> <th>PROCURING APPROPRIATION</th> <th>FISCAL YEAR APPROPRIATED OR REQUESTED</th> <th>COST (\$000)</th> </tr> </thead> <tbody> <tr> <td>FURNITURE & EQUIPMENT</td> <td>83</td> <td>2011</td> <td>700</td> </tr> </tbody> </table>				EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	FURNITURE & EQUIPMENT	83	2011	700
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)								
FURNITURE & EQUIPMENT	83	2011	700								

1. COMPONENT AIR FORCE	FY 2014 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE 58 SOW PIPELINE DORM (84 RM)	
5. PROGRAM ELEMENT 85796	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083123	8. PROJECT COST (\$000) 19,000	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				13,516
PIPELINE DORM	SM	4,200	2,843	(11,941)
ANTITERRORISM/FORCE PROTECTION	SM	4,200	318	(1,336)
SDD/EPACT05/E013423	SM	4,200	57	(239)
SUPPORTING FACILITIES				3,452
UTILITIES	LS			(863)
PAVEMENTS	LS			(1,593)
SITE IMPROVEMENTS	LS			(597)
COMMUNICATIONS SUPPORT	LS			(398)
SUBTOTAL				16,967
CONTINGENCY (5.0%)				848
TOTAL CONTRACT COST				17,816
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				1,015
TOTAL REQUEST				18,831
TOTAL REQUEST (ROUNDED)				19,000
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(850.0)
10. Description of Proposed Construction: Three-story steel-frame structure with reinforced concrete foundation and floors, reinforced, insulated split-faced CMU walls and insulated standing seam metal roof. Floor plan to be linear design similar to a motel with interior corridor and bedrooms large enough for two beds and desks, a bathroom and two closets. Includes site preparation, seismic provisions, hydraulic passenger-freight elevator, day room with kitchen, laundry room, storage and supporting spaces, parking, landscaping, HVAC, plumbing, electrical and fire protection systems, communications and all utilities. Comply with DoD minimum force protection standards for dormitories and sustainable design principles as mandated by Executive Order 13423. Air Conditioning: 150 Tons Grade Mix: E1-E4 168				
11. Requirement: 84 RM Adequate: 0 RM Substandard: 84 RM PROJECT: 58 SOW Pipeline Dorm (84 RM) (Current Mission) REQUIREMENT: This important quality of life project constructs a new 84 room dorm to house 58 SOW pipeline students, to replace substandard space in present dorm 20351 as recommended by the 2008 Air Force Dormitory Master Plan for Kirtland AFB. CURRENT SITUATION: Dorm 20351 was built 1950. It has been renovated several times but the basic structure and floor plan are outdated and the facility has reached the end of its useful life. The Dormitory Master Plan determined that dorm 20151 is uneconomic to remodel and recommended that it be replaced. The new 58 SOW pipeline dorm will be smaller than the dorm space it replaces so it will be more energy-efficient and more economical to maintain. The new dorm will be located in the heart of Kirtland's east side community center, close to the dining hall, fitness center, swimming pool, base theater, library, bowling alley, exchange, chapel, post				

1. COMPONENT AIR FORCE	FY 2014 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO		4. PROJECT TITLE 58 SOW PIPELINE DORM (84 RM)	
5. PROGRAM ELEMENT 85796	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083123	8. PROJECT COST (\$000) 19,000

office and many other amenities.

IMPACT IF NOT PROVIDED: 58 SOW students will continue to be housed in substandard dorms that do not meet Air Force standards which will adversely affect morale, instructional efficiency and training effectiveness.

ADDITIONAL: This project meets applicable criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements." AT/FP protection includes reinforced exterior walls and doors, laminated glass windows in heavy-duty window frames, and site perimeter setback. Scope and cost are based on the Dormitory Master Plan. All known alternative options were considered during development of this project. No other option could meet mission requirements; therefore, no economic analysis was needed or performed. A certificate of exception is being prepared. Total Request includes 5.8125% State of New Mexico gross receipts tax levied on all design and construction contracts. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Costs are from the Dormitory Master Plan that used cost models developed from the DoD Facilities Pricing Guide, 2 July 2007 edition. \$850,000 of equipment from other appropriations will be required for standard room furnishings and other necessary furnishings, equipment and non-real-property items to outfit the facility. Base Civil Engineer: Mr. D. Brent Wilson, P.E. (505) 846-7911. 4,200 SM = 45,192 SF. This DD1391 was last updated on 31 July 2008.

JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.

1. COMPONENT AIR FORCE	FY 2014 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE 58 SOW PIPELINE DORM (84 RM)	
5. PROGRAM ELEMENT 85796	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083123	8. PROJECT COST (\$000) 19,000	
12. SUPPLEMENTAL DATA:				
a. Estimated Design Data:				
(1) Status:				
(a) Date Design Started				
(b) Parametric Cost Estimates used to develop costs				
(c) Percent Complete as of 01 JAN 2013				
(d) Date 35% Designed				
(e) Date Design Complete				
(f) Energy Study/Life-Cycle analysis was/will be performed YES				
(2) Basis:				
(a) Standard or Definitive Design - NO				
(b) Where Design Was Most Recently Used				
(3) Total Cost (c) = (a) + (b) or (d) + (e): (\$000)				
(a) Production of Plans and Specifications 0				
(b) All Other Design Costs 0				
(c) Total 0				
(d) Contract 0				
(e) In-house 0				
(4) Construction Contract Award				
(5) Construction Start				
(6) Construction Completion				
b. Equipment associated with this project provided from other appropriations:				
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	
FURNITURE & EQUIPMENT	83	2015	850	

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 2 (120 RM)	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083124	8. PROJECT COST (\$000) 22,500	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				13,036
PERMANENT PARTY DORM	SM	3,960	2,908	(11,516)
ANTITERRORISM/FORCE PROTECTION	SM	3,960	326	(1,291)
SDD EPACT05	SM	3,960	58	(230)
SUPPORTING FACILITIES				6,544
UTILITIES	LS			(525)
PAVEMENTS	LS			(830)
SITE IMPROVEMENTS	LS			(1,685)
COMMUNICATIONS SUPPORT	LS			(525)
DEMOLITION	SM	6,110	468	(2,859)
ELEVATOR	EA	1	120,000	(120)
SUBTOTAL				19,581
CONTINGENCY (5.0%)				979
TOTAL CONTRACT COST				20,560
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				1,172
DESIGN/BUILD - DESIGN COST (4.0% OF SUBTOTAL)				783
TOTAL REQUEST				22,515
TOTAL REQUEST (ROUNDED)				22,500)
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(700
10. Description of Proposed Construction: Three-story steel-frame structure with reinforced concrete foundation and floors, reinforced, insulated split-faced CMU walls and insulated standing seam metal roof. Building configuration to be 4-Airmen modules with breezeway access per Unaccompanied Housing Design Guide, stacked washer/dryer and storage in each module, and these common spaces on the ground floor: Day room, vending machine area, mail room, game room, public restrooms, admin/office room, maintenance repair and storage room, supply storage room, janitor closet, electrical, mechanical and communications equipment rooms and outside storage room. Includes seismic provisions, elevator, parking, landscaping, HVAC, plumbing, electrical and fire protection systems, all utilities, exterior and interior communications. Includes site demolition and site development for this new dorm's part of the Master Plan. Comply with base architectural compatibility standards, DoD minimum force protection construction standards for dormitories, and sustainable design principles as mandated by Executive Order 13423. Demolish old dorm 20351 (6,110 SM). Air Conditioning: 150 Tons				
11. Requirement: 120 RM Adequate: 0 RM Substandard: 120 RM <u>PROJECT:</u> Permanent Party Dorm 2 (120 RM) (Current Mission) <u>REQUIREMENT:</u> This Airmen quality of life, modernization/recapitalization project constructs a new 120 room 3,960 SM Permanent Party Dorm to Air Force standards and demolishes existing old dorm 20351 as recommended by the 2008 Air Force Dormitory Master Plan (DMP) for Kirtland AFB. Demolition ratio is 154%.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 2 (120 RM)	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083124	8. PROJECT COST (\$000) 22,500	
CURRENT SITUATION: This project constructs the second of three new permanent party dorms to replace old substandard dorms built in 1950. Kirtland AFB currently has a surplus of old substandard dorm space this project will help eliminate. The new dorm will be smaller than the dorm it replaces so it will be more energy-efficient and more economical to maintain. The new dorm will be located in the heart of Kirtland's east side community center, close to the dining hall, fitness center, swimming pool, base theater, library, bowling alley, exchange, chapel, post office and many other amenities. IMPACT IF NOT PROVIDED: Without this project, Kirtland AFB will continue to be burdened with excessive numbers of old, oversize, high-maintenance, energy-gobbling substandard dorms built in 1950, and dorm residents will continue to live in substandard conditions. ADDITIONAL: This project meets applicable criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements". AT/FP protection includes reinforced exterior walls and doors, laminated glass windows in heavy-duty window frames, and site perimeter setback. Project scope complies with the recommendations of the DMP. All known alternative options were considered during development of this project. No other option could meet mission requirements; therefore, no economic analysis was needed or performed and a certificate of exception has been prepared. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Primary facility costs are from the DMP that used cost models developed from the DoD Facilities Pricing Guide, 2 July 2007 edition. Total Request includes 5.9375% State of New Mexico gross receipts tax levied on all design and construction contracts. Base Civil Engineer: Mr. D. Brent Wilson, P.E. (505) 846-7911. (3,960 SM = 42,600 SF; 6,110 SM = 65,748 SF) JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE								
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 2 (120 RM)									
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083124	8. PROJECT COST (\$000) 22,500									
12. SUPPLEMENTAL DATA: a. Estimated Design Data: (1) Project to be accomplished by design-build procedures (2) Basis: (a) Standard or Definitive Design - NO (b) Where Design Was Most Recently Used (3) All Other Design Costs 0 (4) Construction Contract Award (5) Construction Start (6) Construction Completion (7) Energy Study/Life-Cycle analysis was/will be performed YES b. Equipment associated with this project provided from other appropriations: <table border="1"> <thead> <tr> <th>EQUIPMENT NOMENCLATURE</th> <th>PROCURING APPROPRIATION</th> <th>FISCAL YEAR APPROPRIATED OR REQUESTED</th> <th>COST (\$000)</th> </tr> </thead> <tbody> <tr> <td>FURNITURE & EQUIPMENT</td> <td>83</td> <td>2015</td> <td>700</td> </tr> </tbody> </table>					EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	FURNITURE & EQUIPMENT	83	2015	700
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)									
FURNITURE & EQUIPMENT	83	2015	700									

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 3 (120 RM)	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083125	8. PROJECT COST (\$000) 23,000	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
PRIMARY FACILITIES				13,036
PERMANENT PARTY DORM	SM	3,960	2,908	(11,516)
ANTITERRORISM/FORCE PROTECTION	SM	3,960	326	(1,291)
SDD EPACT05	SM	3,960	58	(230)
SUPPORTING FACILITIES				7,042
UTILITIES	LS			(525)
PAVEMENTS	LS			(830)
SITE IMPROVEMENTS	LS			(1,685)
COMMUNICATIONS SUPPORT	LS			(525)
DEMOLITION	SM	7,174	468	(3,357)
ELEVATOR	EA	1	120,000	(120)
SUBTOTAL				20,079
CONTINGENCY (5.0%)				1,004
TOTAL CONTRACT COST				21,083
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				1,202
DESIGN/BUILD - DESIGN COST (4.0% OF SUBTOTAL)				803
TOTAL REQUEST				23,088
TOTAL REQUEST (ROUNDED)				23,000)
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(700
10. Description of Proposed Construction: Three-story steel-frame structure with reinforced concrete foundation and floors, reinforced, insulated split-faced CMU walls and insulated standing seam metal roof. Building configuration to be 4-Airmen modules with breezeway access per Unaccompanied Housing Design Guide, stacked washer/dryer and storage in each module, and these common spaces on the ground floor: Day room, vending machine area, mail room, game room, public restrooms, admin/office room, maintenance repair and storage room, supply storage room, janitor closet, electrical, mechanical and communications equipment rooms and outside storage room. Includes seismic provisions, elevator, parking, landscaping, HVAC, plumbing, electrical and fire protection systems, all utilities, exterior and interior communications. Includes site demolition and site development for this new dorm's part of the Master Plan. Comply with base architectural compatibility standards, DoD minimum force protection construction standards for dormitories, and sustainable design principles as mandated by Executive Order 13423. Demolish old dorm 20352 (7,174 SM). Air Conditioning: 150 Tons				
11. Requirement: 120 RM Adequate: 0 RM Substandard: 120 RM <u>PROJECT:</u> Permanent Party Dorm 3 (120 RM) (Current Mission) <u>REQUIREMENT:</u> This Airmen quality of life, modernization/recapitalization project constructs a new 120 room 3,960 SM Permanent Party Dorm to Air Force standards and demolishes existing dorm 20352 as recommended by the 2008 Air Force Dormitory Master Plan (DMP) for Kirtland AFB. Demolition ratio is 181%.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE PERMANENT PARTY DORM 3 (120 RM)	
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083125	8. PROJECT COST (\$000) 23,000	
CURRENT SITUATION: This project constructs the third of three new permanent party dorms to replace substandard old dorms built in 1950. Kirtland AFB currently has a surplus of substandard old dorm space this project will help eliminate. The new dorm will be smaller than the dorm it replaces so it will be more energy-efficient and more economical to maintain. The new dorm will be located in the heart of Kirtland's east side community center, close to the dining hall, fitness center, swimming pool, base theater, library, bowling alley, exchange, chapel, post office and many other amenities. IMPACT IF NOT PROVIDED: Without this project, Kirtland AFB will continue to be burdened with excessive numbers of old, oversize, high-maintenance, energy-gobbling substandard dorms built in 1950, and dorm residents will continue to live in substandard conditions. ADDITIONAL: This project meets applicable criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements." AT/FP protection includes reinforced exterior walls and doors, laminated glass windows in heavy-duty window frames, and site perimeter setback. Project scope complies with the recommendations of the DMP. All known alternative options were considered during development of this project. No other option could meet mission requirements; therefore, no economic analysis was needed or performed and a certificate of exception has been prepared. Sustainable principles will be integrated into the design, development and construction of the project in accordance with Executive Order 13423 and other applicable laws and Executive Orders. Primary facility costs are from the DMP that used cost models developed from the DoD Facilities Pricing Guide, 2 July 2007 edition. Total Request includes 5.9375% State of New Mexico gross receipts tax levied on all design and construction contracts. Base Civil Engineer: Mr. D. Brent Wilson, P.E. (505) 846-7911. (3,960 SM = 42,600 SF; 7,174 SM = 77,193 SF) JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.				

1. COMPONENT AIR FORCE	FY 2012 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE								
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO		4. PROJECT TITLE PERMANENT PARTY DORM 3 (120 RM)									
5. PROGRAM ELEMENT 72976	6. CATEGORY CODE 721-312	7. PROJECT NUMBER MHMV083125	8. PROJECT COST (\$000) 23,000								
12. SUPPLEMENTAL DATA: a. Estimated Design Data: (1) Project to be accomplished by design-build procedures (2) Basis: (a) Standard or Definitive Design - NO (b) Where Design Was Most Recently Used (3) All Other Design Costs 0 (4) Construction Contract Award (5) Construction Start (6) Construction Completion (7) Energy Study/Life-Cycle analysis was/will be performed YES b. Equipment associated with this project provided from other appropriations: <table border="1"> <thead> <tr> <th>EQUIPMENT NOMENCLATURE</th> <th>PROCURING APPROPRIATION</th> <th>FISCAL YEAR APPROPRIATED OR REQUESTED</th> <th>COST (\$000)</th> </tr> </thead> <tbody> <tr> <td>FURNITURE & EQUIPMENT</td> <td>83</td> <td>2014</td> <td>700</td> </tr> </tbody> </table>				EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)	FURNITURE & EQUIPMENT	83	2014	700
EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)								
FURNITURE & EQUIPMENT	83	2014	700								

Appendix B

Air Emission Calculations

Air Emission Calculations

B.1 Construction Emissions

Construction emissions include those from building demolition, and new building construction and paving activities. Emissions are expected to occur as a result of engine exhaust from the vehicle trips by construction workers, onroad delivery trucks, offroad construction equipment, and organic gas from paving. These emissions would primarily consist of carbon monoxide (CO), nitrogen oxide (NO_x), particulate matter with aerodynamic diameter less than 10 micrometers (PM₁₀), particulate matter with aerodynamic diameter less than 2.5 micrometers (PM_{2.5}), sulfur dioxide (SO₂), and volatile organic compounds (VOC). In addition, activities such as demolition and site preparation/grading would result in fugitive dust emissions.

Emissions were estimated for each phase of the construction activities including existing building demolition, site grading, and new building construction. The emission calculations used as much as possible the information provided in the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3* (Air Force Center for Engineering and the Environment [formerly Air Force Center for Environmental Excellence], 2005). If information or emission factors were not available in ACAM, the California Air Resources Board (CARB) URBEMIS2007 program, EPA's Mobile6.2 program, and EPA AP-42 were used.

Emissions during grading and building construction (including equipment emissions and workers' commute), as well as fugitive emissions during demolition were estimated using the ACAM emission factors. Emission factors for haul trucks and offroad equipment used during demolition are not available in ACAM; therefore, emissions from onsite construction equipment during demolition were estimated using CARB's URBEMIS2007 program. Onroad vehicle emissions during demolition for debris removal were estimated using emissions factors from Mobile6 for heavy-duty diesel vehicles.

To estimate the worst-case annual emissions during the project construction, it was assumed that demolition, grading, and construction of the military personal support facilities will occur concurrently in 2 years starting 2010. Total emissions of the entire project were estimated and averaged over 2 years to obtain annual emissions. Other assumptions used in the construction emission calculations include the following:

- Duration of demolition: 8 months
- Duration of site preparation and grading: 8 months
- Duration of constructing new buildings: 8 months
- Working days: 22 days per month
- Total area to be disturbed: 36 acres
- Area to be disturbed/graded: 2 acres/day
- Haul-truck capacity: 20 cubic yards
- Haul-truck round-trip distance: 40 miles

- Debris to be removed during demolition: 50 percent of total building volume
- Each building floor height: 12 feet
- Area to be paved: 10 acres

Detailed project construction information, assumptions used in the emissions analysis, and emission calculations are provided in Attachments B1 through B3. Model outputs of URBEMIS2007 and Mobile6 are provided in Attachments B4 and B5.

B.2 Operation Emissions

Operation emissions from the Proposed Action would potentially be generated by the vehicles traveling to the new facilities and stationary sources, such as emergency generators and space-heating equipment used at the new facilities. Demolition and construction of the military personnel support facilities would not change the number of employees traveling from or to Kirtland Air Force Base during project operation, and the overall Kirtland Air Force Base vehicle emissions from employee commutes would change minimally. Therefore, emissions from personnel vehicle travel would not change compared to current existing emissions levels.

Emissions from space heating of the dormitories and the supporting facilities are estimated using the energy consumption rates for residential buildings and nonresidential buildings provided in the URBEMIS and ACAM programs, respectively. Emission factors for the heating devices were obtained from EPA AP-42 for small boilers less than 100 million British thermal units per hour (MMBTU/hour). Emissions from emergency engines were not quantified in this analysis because of their minimal usage. Emergency engines typically operate a couple hours a month for required maintenance and testing, and the total operating hours are limited to 500 hours per year according to the permitting policy of Albuquerque Environmental Health Department, Air Quality Division. If the selected emergency engines are subject to air permitting requirements under NMAC 20.11.41 and NMAC 20.11.42, then potential to emit from the emergency engines will be estimated for the permit application when equipment details are available.

Detailed operation emission calculations are presented in Attachment B3-2.

B.3 Greenhouse Gas

ACAM does not have emission factors for CO₂. Greenhouse gas emissions from construction equipment and vehicles, as well as the emissions from space heating during operation were estimated using emission factors from CARB's URBEMIS, EPA's Mobile6.2, and EPA's AP-42:

- Onroad vehicle: CO₂ emissions during construction phase were estimated using the emission factors from Mobile6.
- Offroad equipment emissions during demolition were estimated using URBEMIS2007 emission factors.
- ACAM does not provide CO₂ emission factors for these activities, and CO₂ emissions were estimated by multiplying the NO_x emissions estimated using ACAM emission factor by a CO₂ to NO_x ratio derived from the URBEMIS emission factors. This approach

avoided additional assumptions of equipment usage for construction activities when switching to a different emission model, which might cause inconsistency with the assumptions ACAM used. The ratio of CO₂ to NO_x in URBEMIS2007 of a grader and a tractor/loader/backhoe were used to estimate the CO₂ emissions for the grading and building construction, respectively. CO₂ emissions from stationary sources during construction were estimated using the CO₂ to NO_x ratio in EPA AP-42 of a gasoline engine.

Operation emissions of CO₂ were estimated for the space heating for the dorms and the supporting facilities using the same methodologies as for the criteria pollutants. In addition, indirect emissions of CO₂ from power generation for the electricity use by the dormitories and supporting facilities are estimated by using the New Mexico average energy consumption rates for residential and nonresidential buildings, and the CO₂ emission factors provided in California Climate Action Registry General Reporting Protocol (Version 3.1, 2009). Detailed emission calculations are provided in Attachment B3.

B.4 Works Cited

Air Force Center for Engineering and the Environment (formerly Air Force Center for Environmental Excellence). 2005. *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

URBEMIS 2007 for Windows, Version 9.2. Available at: <http://www.urbemis.com/software/download.html>. Released June 2007.

Attachment B1
Project Information – Demolition

ATTACHMENT B1

Project Information – Demolition

Project Areas with Demolition Activities:

Visiting Officer Quarters Complex
Main Enlisted Dormitory Campus
Noncommissioned Officer Academy
Dormitory Campus 2

1. Residential Buildings to Be Demolished

Locations	Total Square Footage	Number of Units	Number of Floors	Building Volume (ft ³) ^a
Visiting Officer Quarters Complex	NA ^b	NA ^b	NA ^b	NA ^b
Main Enlisted Dormitory Campus				
B20221-Airmen Dormitory	50,167	154	3	602,004
B20222-Airmen Dormitory	55,890	210	3	670,680
B20351-Airmen Dormitory	55,890	206	3	670,680
B20352-Airmen Dormitory	55,890	209	3	670,680
Noncommissioned Officer Academy				
B915-Dormitory	17,387	45	2	208,644
B917-Dormitory	17,290	49	2	207,480
B918-Dormitory	15,571	34	2	186,852
B922-Dormitory	17,290	47	2	207,480
B924-Dormitory	17,290	50	2	207,480
Dormitory Campus 2				
B425-Dormitory, Airmen	16,992	44	2	203,904

^aBuilding volumes were estimated assuming each floor is 12 feet high.

^bNo residential buildings will be demolished in Visiting Officer Quarters Complex.

Notes:

ft³ = cubic feet

2. Nonresidential Buildings to Be Demolished

Locations	Total Square Footage	Number of Floors	Building Volume (ft ³) ^a
Visiting Officer Quarters Complex			
B22016-Administration	1,990	1	23,880
B22010-Visiting Officer Quarters	17,912	2	429,888
Main Enlisted Dormitory Campus			
B20350-Airmen Dining and Administration	37,402	3	1,346,472
B20224-AAFES Mini Mall	18,594	1	223,128
B20226-Sandia Crest Club	29,824	1	357,888
B20228-Fitness Center	65,258	1	783,096
B20227-(Portion) Fitness Center	7,403	1	88,836
B585-Gymnasium	16,370	2	392,880
Noncommissioned Officer Academy			
B916-Administration	12,580	1	150,960
B926-Administration	18,021	1	216,252
B2586-Paved Pad	-		
Dormitory Campus 2	NA ^b	NA ^b	NA ^b

^aEach floor was assumed to be 12 feet high.

^bNo nonresidential buildings will be demolished in Dormitory Campus 2.

Note:

AAFES = Army and Air Force Exchange Service

3. Demolition Summary

Locations	Number of Residential Units	Nonresidential Square Footage	Building Volume (ft ³)
Visiting Officer Quarters Complex	NA	19,902	453,768
Main Enlisted Dormitory Campus	779	174,851	5,806,344
Noncommissioned Officer Academy	225	30,601	1,385,148
Dormitory Campus 2	44	NA	203,904
Total			7,849,164

Note:

NA = no demolition would occur

Attachment B2
Project Information – Construction

ATTACHMENT B2

Project Information – Construction

Project Areas with Construction Activities:

Visiting Officer Quarters Complex
Main Enlisted Dormitory Campus
Noncommissioned Officer Academy
Dormitory Campus 2

1. Residential Buildings to Be Constructed

Locations	Number of Units
Visiting Officer Quarters Complex	
B22019-VOQ	133
Main Enlisted Dormitory Campus	
B20249-Permanent Party Dormitory 1	120
B20251-Permanent Party Dormitory 2	120
B20252-Permanent Party Dormitory 3	120
B20253-58 SOW Pipeline Dormitory	84

Notes:

Number of units provided by Kirtland Air Force Base.

No new buildings will be constructed in Noncommissioned Officer Academy and Dormitory Campus 2.

SOW = Special Operations Wing

2. Nonresidential Buildings to Be Constructed

Locations	Total Square Footage
Visiting Officer Quarters Complex	
B22020-VOQ and Administration	19,902
Main Enlisted Dormitory Campus	
B19040-Fitness Center	101,305
B20336-Airmen Dining and Administration	26,255

Notes:

Square footage data provided by Kirtland Air Force Base.

No new buildings will be constructed in Noncommissioned Officer Academy and Dormitory Campus 2.

3. Construction Summary

Locations	Disturbed Areas (acre)	Residential Units	Nonresidential Square Footage
Visiting Officer Quarters Complex	5	133	19,902
Main Enlisted Dormitory Campus	23	444	127,560
Noncommissioned Officer Academy	7	NA ^a	NA ^a
Dormitory Campus 2	1	NA ^a	NA ^a

^aNo new buildings will be constructed in Noncommissioned Officer Academy and Dormitory Campus 2. However, it was assumed that the areas might be disturbed during construction phases for grading.

Attachment B3
Emission Calculations

ATTACHMENT B3-1

Emission Calculations - During Construction Phase

Assumptions:

Duration of Demolition	8 months
Duration of Site Preparation and Grading	8 months
Duration of Constructing New Buildings	8 months
Working Days per Month	22 days per month
Total Area to Be Disturbed	36 acres
Area to Be Disturbed/Graded Daily	2 acres per day
Haul Truck Capacity	20 cubic yards
Haul Truck Round-trip Distance	40 miles per round trip
Debris to Be Removed during Demolition	50% of total building volume
Area to Be Paved	10 acres

Emissions during Demolition

1. Demolition - Fugitive Dust

Pollutant	Emission Factor (lb/ft ³) ^a	Total Volume (ft ³)	Emissions (ton)
PM ₁₀	0.00042	7,849,164	1.65

^aEmission factors were from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

2. Demolition - Offroad Equipment Emissions

Pollutant	Emissions (ton) ^a
VOC	0.100
NO _x	0.670
PM ₁₀	0.050
CO	0.500
SO ₂	0.000
CO ₂	60.230

^aEmission factors for offroad equipments during demolition are not available in the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*. Offroad equipment emissions during demolition were estimated using the California Air Resources Board URBEMIS2007 model (URBEMIS, 2007).

3. Demolition - Haul Truck Emissions

Total Volume of Debris^a 3,924,582 ft³ 145,355 cubic yards
Number of Vehicle Trips 7,268 trips

Pollutant	Emission Factor (gram/mile) ^b	Total Vehicle Miles Traveled	Emissions (ton)
VOC	0.63	290,710	0.202
NO _x	6.24	290,710	1.999
PM ₁₀	0.22	290,710	0.069
CO	3.21	290,710	1.029
SO ₂	0.026	290,710	0.008
CO ₂	1,417.80	290,710	454.3

^aIt was assumed that 50% of the total building volume will be debris that needs to be removed to offsite locations.

^bHaul truck emission factors were obtained from Mobile6 modeling. Emission factors used in the analysis are for heavy-duty diesel trucks. The modeling year is 2010.

Emissions during Site Grading

1. Grading Equipment Operations

Pollutant	Emission Factor (lb/acre/day) ^a	Acres to Be Graded ^b (acre/day)	Days for Grading ^c	Emissions (ton)
VOC	0.22	2	176	0.039
NO _x	2.07	2	176	0.364
PM ₁₀	0.17	2	176	0.030
CO	0.55	2	176	0.097
SO ₂	0.21	2	176	0.037
CO ₂ ^d	189.6	3	176	50.06

^aEmission factors were from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

^bIt was assumed that 2 acres of area will be disturbed daily.

^cIt was assumed that grading will take about 8 months. Work schedule is 5 days per week.

^dCO₂ emission factor is not available in ACAM. The CO₂ emission factor was estimated by using the emission ratio of CO₂ to NO_x, which is 91.6 based on URBEMIS model default emission factors of a 250-horsepower grader in 2010.

2. Grading Dust Emission

Uncontrolled Emissions

Pollutant	Emission Factor (lb/acre/day) ^a	Acres to Be Graded ^b (acre/day)	Days for Grading ^c	Emissions (ton)
PM ₁₀	60.7	2	176	10.7

^aEmission factors were from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

Grading Dust Emission Reduction Due to Using Paved Haul Roads

Pollutant	Uncontrolled Emissions (ton)	PM ₁₀ Reduced Due to Paved Haul Road (ton) ^a
PM ₁₀	10.7	0.75

^aAll haul roads are paved. Emission reductions were calculated by using the emission reduction factors in the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

Adjusted PM₁₀ Emissions (with paved haul roads)

Pollutant	Emissions (ton)
PM ₁₀	9.9

Emissions during Building Construction

1. Emissions Due to Construction Worker Trips

Number of Worker Trips

	Residential Units	Nonresidential Square Footage	Number of Worker Trips ^a
Visiting Officer Quarters Complex	133	19,902	54
Main Enlisted Dormitory Campus	444	127,560	201

^aNumber of trips were estimated using the methods listed in the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

Worker Trips Emissions for Years 2010 and Beyond

Pollutant	Emission Factor (lb/day/trip) ^a	Trips	Days per Year for Construction ^b	Emissions (ton)
VOC	0.012	255	176	0.27
NO _x	0.013	255	176	0.29
PM ₁₀	0.0022	255	176	0.05
CO	0.262	255	176	5.88
CO ₂ ^c	32.5	255	176	728.15

^aEmission factors were from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

^bIt was assumed that construction of the buildings will take about 8 months. Work schedule is 5 days per week.

^cCO₂ emission factor is not available in ACAM. The CO₂ emission factor was estimated by using the emission factor of 368.1 gram/mile from Mobile6 for cars in 2010, and a round trip of 40 miles per commute.

2. Stationary Equipment Emissions

Pollutant	Emission Factor (lb/day) ^a	Gross Square Feet (1,000 ft ²) ^b	Days per Year for Construction ^c	Emissions (ton)
VOC	0.198	50	176	0.87
NO _x	0.137	50	176	0.60
PM ₁₀	0.004	50	176	0.018
CO	5.29	50	176	23.28
SO ₂	0.007	50	176	0.03
CO ₂ ^d	12.95	50	176	56.96

^aEmission factors were from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

^bGross square feet of the area were set to 50,000 ft² by using the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

^cIt was assumed that construction of the buildings will take about 8 months. Work schedule is 5 days per week.

^dCO₂ emission factor is not available in ACAM. The CO₂ emission factor was estimated by using the emission ratio of CO₂ to NO_x, which is 94.5 based on EPA AP-42 emission factors for gasoline engines (Table 3.3-1).

3. Mobile Equipment Emissions

Pollutant	Emission Factor (lb/day) ^a	Gross Square Feet (1,000 ft ²) ^b	Days per Year for Construction ^c	Emissions (ton)
VOC	0.17	50	176	0.75
NO _x	1.86	50	176	8.2
PM ₁₀	0.15	50	176	0.66
CO	0.78	50	176	3.43
SO ₂	0.23	50	176	1.01
CO ₂ ^d	207.8	50	176	914.15

^aEmission factors were from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

^bGross square feet of the area were set to 50,000 ft² by using the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

^cIt was assumed that construction of the buildings will take about 8 months. Work schedule is 5 days per week.

^dCO₂ emission factor is not available in ACAM. The CO₂ emission factor was estimated by using the emission ratio of CO₂ to NO_x, which is 111.7 based on URBEMIS model default emission factors of a 250-horsepower tractor/loader/backhoe in 2010.

4. Architectural Coatings Emissions

Residential	Emission Factor (lb/year/residential unit) ^a	Residential Unit	Emissions (ton)
VOC	49.2	577	14.19
Non-residential	Emission Factor (ton/year/ft ²) ^a	Square Foot	Emissions (ton)
VOC	1.63	147,462	0.31
Total			14.51

^aEmission factors were from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

5. Paving

Pollutant	Emission Factor (lb/acre) ^a	Acres to Be Paved	Emissions (ton)
VOC	2.62	10	0.01

^aEmission factors were from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3*.

Total Construction Emissions

Pollutant	Demolition (ton)	Grading (ton)	Construction (ton)	Total Emissions (ton)	Estimated Annual Emissions ^a (ton/year)
VOC	0.30	0.039	16.41	16.7	8.4
NO _x	2.67	0.364	9.08	12.1	6.1
PM ₁₀	1.77	9.965	0.73	12.5	6.2
CO	1.53	0.097	32.59	34.2	17.1
SO ₂	0.008	0.037	1.04	1.1	0.5
CO ₂	514.56	50.058	971.12	1,535.7	767.9

^aIt was assumed that all construction activities will be completed in 2 years. Annual emissions of 2010 and 2011 were estimated by averaging the total emissions over 2 years.

ATTACHMENT B3-2

Emission Calculations - During Project Operation

Proposed Project Emissions (space heating)

Total Number of Residential Units

577

Energy Consumption Rate (Residential)^a

49.1 MMBtu/resident unit/year

Total Square Footage of Nonresidential Buildings

147,462

Energy Consumption Rate (nonresidential)^b0.0843 MMBtu/ft²/year

	Emission Factor (lb/MMBtu) ^c	Residential Building Emissions (ton/year)	Nonresidential Building Emissions (ton/year)	Total Emissions (ton/year)
VOC	0.005	0.0764	0.0335	0.11
NO _x	0.098	1.3886	0.6094	2.00
PM ₁₀	0.007	0.1055	0.0463	0.15
CO	0.082	1.1664	0.5119	1.68
SO ₂	0.0006	0.0083	0.0037	0.01
CO ₂	117.6	1,666.3	731.2	2,397.6

^aEnergy Consumption Rates for residential buildings are not available in ACAM. The data were derived from URBEMIS for multi-family units of 4,011.5 ft² of natural gas usage.

^bEnergy Consumption Rates for nonresidential buildings were obtained from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM)* 4.3.

^cEmission factors were obtained from AP-42, Table 1.4-1 and Table 1.4-2, for uncontrolled emissions from small boilers less than 100 MMBtu/hour.

Existing Emissions for the Buildings to Be Demolished (space heating)

Total Number of Residential Units

1,048

Energy Consumption Rate (Residential)^a

49.1 MMBtu/resident unit/year

Total Square Footage of Nonresidential Buildings

225,354

Energy Consumption Rate (nonresidential)^a0.0843 MMBtu/ft²/year

	Emission Factor (lb/MMBtu) ^b	Residential Building Emissions (ton/year)	Nonresidential Building Emissions (ton/year)	Total Emissions (ton/year)
VOC	0.005	0.1387	0.0512	0.19
NO _x	0.098	2.5221	0.9312	3.45
PM ₁₀	0.007	0.1917	0.0708	0.26
CO	0.082	2.1186	0.7822	2.90
SO ₂	0.0006	0.0151	0.0056	0.02
CO ₂	117.6	3,026.5	1,117.5	4,144.0

^aEnergy Consumption Rates were obtained from the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM)* 4.3.

^bEmission factors were obtained from AP-42, Table 1.4-1 and Table 1.4-2, for uncontrolled emissions from small boilers less than 100 MMBtu/hour.

Net Emission Change (space heating)

	Existing Emissions for the Buildings to Be Demolished (space heating) (ton/year)	Proposed Project Emissions (space heating) (ton/year)	Net Change (ton/year)
VOC	0.19	0.11	-0.08
NO _x	3.45	2.00	-1.46
PM ₁₀	0.26	0.15	-0.11
CO	2.90	1.68	-1.22
SO ₂	0.02	0.01	-0.01
CO ₂	4,144.03	2,397.57	-1,746.46

Indirect Greenhouse Gas Emissions from Electricity Use

	Existing Emissions for the Buildings to Be Demolished (ton/year)		Proposed Project Emissions	
	Residential Buildings ^a	Nonresidential Buildings ^b	Residential Buildings	Nonresidential Buildings
Number of Units (square footage for nonresidential buildings)	1,048	225,354	577	147,462
Electricity Consumption Rate (mwh per capita/year for residents, or megawatt per ft ² /year for nonresidents)	3.061	0.0132	3.061	0.0132
Total Electricity Consumption (megawatt hour/year)	3,207.928	2,974.6728	1,766.197	1,946.4984
CO ₂ Emission Factor (lb/megawatt hour) ^c	1,311.05	1,311.05	1,311.05	1,311.05
CO ₂ Emissions (ton/year)	2,102.9	1,950.0	1,157.8	1,276.0
Total Emissions (ton/year)		4,052.8		2,434
Net Emission Change (ton/year)				-1619.1

^aElectricity consumption rate for residential buildings were obtained from <http://apps1.eere.energy.gov/states/electricity.cfm/state=NM>; accessed February 2010.

^bElectricity consumption rate for nonresidential buildings was obtained from Energy Information Administration Commercial Buildings Energy Consumption Survey, Table C19. Electricity Consumption and Conditional Energy Intensity by Census Division for Non-Mall Buildings, 2003 for the West Mountain site. Available at: http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html#consumexpen03.

^cCalifornia Climate Action Registry General Reporting Protocol, Version 3.1, Table C.2. for US-WECC Southwest.

Attachment B4
URBEMIS2007 Version 9.2.4 – Combined Annual
Emissions Reports

Page: 1

10/6/2009 1:08:48 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: Kirtland

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (tons/year unmitigated)	0.10	0.67	0.50	0.00	0.00	0.05	0.05	0.00	0.05	0.05	69.01

10/6/2009 1:08:48 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010	0.10	0.67	0.50	0.00	0.00	0.05	0.05	0.00	0.05	0.05	69.01
Demolition 01/01/2010-08/30/2010	0.10	0.67	0.50	0.00	0.00	0.05	0.05	0.00	0.05	0.05	69.01
Fugitive Dust	0.00	0.00	0.00	0.00	3.00	0.00	3.00	0.62	0.00	0.62	0.00
Demo Off Road Diesel	0.10	0.66	0.40	0.00	0.00	0.05	0.05	0.00	0.05	0.05	60.23
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.79

Phase Assumptions

Phase: Demolition 1/1/2010 - 8/30/2010 - Type Your Description Here

Building Volume Total (cubic feet): 1.429957E+07

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Attachment B5
Mobile6.2 Modeling Files

```
*****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: C:\MOBILE6\MOBILE6\RUN\NEWME\ALB2010.IN (file 1, run 1). *
*****
```

```
* File 1, Run 1, Scenario 1.
* #####
```

```
* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV
```

```
* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV
```

```
* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
```

The user supplied arterial average speed of 40.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

```
there are no sales for vehicle class HDGV8b
```

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

The input diesel sulfur level of 30.0 ppm exceeds the 2007 HDD Rule diesel sulfur limit of 15 ppm.

Exhaust I/M Program:	No
Evap I/M Program:	No
ATP Program:	No
Reformulated Gas:	No

Page 1

-----	-----	-----	-----	-----	-----
VMT Distribution:	0.3540	0.3855	0.1315	0.0357	0.0003
0.0019	0.0856	0.0054	1.0000		

Composite VOC :	0.714	0.868	1.554	1.042	1.046	0.158
0.402	0.630	2.24	0.896			
Composite CO :	15.93	17.98	24.63	19.67	23.27	0.739
0.718	3.212	22.89	17.041			
Composite NOX :	0.621	0.828	1.332	0.956	2.108	0.366
0.647	6.237	1.15	1.331			

Page 2

ALB2010.TXT
 Evap I/M Program: No
 ATP Program: No
 Reformulated Gas: No

LDDT	Vehicle Type: HDDV	LDGV MC	LDGT12 All Veh	LDGT34 <6000	LDGT >6000	LDGT (All)	HDGV	LDDV
-----	-----	-----	-----	-----	-----	-----	-----	-----
0.0020	0.0860	0.0054	1.0000	0.1336			0.0359	0.0003

Composite Emission Factors (g/mi):

0.389	0.613	2.82	0.821	0.762	1.326	0.906	1.105	0.155
0.698	3.007	23.17	8.780	8.80	12.12	9.65	18.70	0.737
0.613	5.794	0.86	1.171	0.688	1.061	0.783	1.874	0.352

Appendix C
Clean Air Act Conformity Applicability Analysis

Clean Air Act Conformity Applicability Analysis for Kirtland Air Force Base Demolition and Construction of Military Personnel Support Facilities

C.1 Purpose

The U.S. Air Force is required to perform a general conformity applicability analysis to determine whether the demolition and construction of military personnel support facilities at Kirtland Air Force Base (Base), New Mexico, will comply with the U.S. Environmental Protection Agency's (EPA) General Conformity Rule, 40 *Code of Federal Regulations* (CFR) 93, Subpart B (for federal agencies), and 40 CFR 51, Subpart W (for state requirements), of the amended Clean Air Act (CAA).

C.1 Background

EPA has issued regulations addressing the applicability and procedures for ensuring that federal activities comply with the amended CAA. The EPA General Conformity Rule implements Section 176(c) of the CAA, as amended in 42 United States Code 7506(c). This rule was published in the *Federal Register* on November 30, 1993, and took effect on January 31, 1994.

The EPA General Conformity Rule requires all federal agencies to ensure that any federal action resulting in nonattainment or maintenance criteria pollutant emissions conforms with an approved or promulgated state or federal implementation plan. Conformity means compliance with the purpose of attaining or maintaining the National Ambient Air Quality Standards (NAAQS). Specifically, this means ensuring that the federal action will not (1) cause a new violation of the NAAQS, (2) contribute to any increase in the frequency or severity of violations of existing NAAQS, or (3) delay the timely attainment of any NAAQS interim or other attainment milestones.

The current General Conformity Rule applies only to federal actions in NAAQS nonattainment or maintenance areas.

C.2 Summary of Air Pollutant Emissions and Regulatory Standards

The Proposed Action would be implemented in Bernalillo County, New Mexico, under the jurisdiction of Albuquerque/Bernalillo County Air Quality Control Board; the City of

Albuquerque Environmental Health Department, Air Quality Division; and EPA. The area is designated attainment/unclassified for all criteria pollutants. Bernalillo County is currently under a limited maintenance plan for carbon monoxide (CO) that was approved by EPA in July 2005 (The Commission of Public Records Administrative Law Division, Santa Fe, New Mexico, 2009). The only pollutant subject to the general conformity applicability analysis for the proposed project is CO.

The EPA General Conformity Rule requires that total direct and indirect emissions of nonattainment and maintenance criteria pollutants, including ozone (O₃) precursors (volatile organic compounds [VOC] and nitrogen oxides [NO_x]), be considered in determining conformity. The rule does not apply to actions where the total direct and indirect emissions of nonattainment and maintenance criteria pollutants do not exceed threshold levels for criteria pollutants established in 40 CFR 93.153(b). Consequently, the applicable de minimis level for the Proposed Action is 100 tons per year for emissions of CO. Tables C-1 and C-2 present the de minimis threshold levels of nonattainment and maintenance areas, respectively.

TABLE C-1
De Minimis Thresholds in Nonattainment Areas
*Environmental Assessment for the Demolition and Construction of Military Personnel Support Facilities,
Kirtland Air Force Base, New Mexico – Clean Air Act Conformity Applicability Analysis*

Pollutant	Degree of Nonattainment	De Minimis Threshold (tons per year)
O ₃ (VOCs and NO _x)	Serious	50
	Severe	25
	Extreme	10
	Other O ₃ – outside an O ₃ transport region	100
O ₃ (VOCs)	Marginal and moderate – inside an O ₃ transport region	50
O ₃ (NO _x)	Marginal and moderate – inside an O ₃ transport region	100
CO	All	100
PM ₁₀	Moderate	100
	Serious	70
PM _{2.5}	Direct emissions	100
	NO _x	100
	SO ₂	100
	VOC or ammonia	100
SO ₂ or NO ₂	All	100
Pb	All	25

Source: 40 CFR 93.153(b)

Notes:

NO₂ = nitrogen oxide

Pb = lead

PM₁₀ = particulate matter with aerodynamic diameter less than 10 micrometers

PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 micrometers

SO₂ = sulfur dioxide

TABLE C-2
 De Minimis Thresholds in Maintenance Areas
*Environmental Assessment for the Demolition and Construction of Military Personnel Support Facilities,
 Kirtland Air Force Base, New Mexico – Clean Air Act Conformity Applicability Analysis*

Pollutant	Maintenance Area	De Minimis Threshold (tons per year)
O ₃ (NO _x)	All	100
O ₃ (VOCs)	Inside an O ₃ transport region	50
	Outside an O ₃ transport region	100
CO	All	100
PM ₁₀	All	100
PM _{2.5}	Direct emissions	100
	NO _x	100
	SO ₂	100
	VOC or ammonia	100
SO ₂ or NO ₂	All	100
Pb	All	25

Source: 40 CFR 93.153(b)

In addition to meeting de minimis requirements, a federal action must not be considered a regionally significant action. A federal action is considered regionally significant when the total emissions from the action equal or exceed 10 percent of the emissions budget of the air quality control area for the applicable pollutant. If a federal action meets de minimis requirements and is not considered a regionally significant action, detailed conformity analyses are not required pursuant to 40 CFR 93.153(c).

C.3 Emissions Calculation Methodologies

C.3.1 Construction Emissions Impacts

The Proposed Action involves demolition and construction of several military personnel support facilities in four areas, including the Visiting Officer Quarters Complex, the Main Enlisted Dormitory Campus, the Noncommissioned Officer Academy, and Dormitory Campus 2. Approximately 36 acres would be included in the construction and demolition activities. It is anticipated that demolition and construction in these four areas would start at different times within the next 5 years, and each could take approximately 2 to 3 years to finish.

Construction emissions include those from existing building demolition and new building construction and paving activities. Emissions are expected to occur as a result of engine exhaust from the vehicle trips by construction workers, onroad delivery trucks, and offroad construction equipment. These emissions would primarily consist of CO, NO_x, PM₁₀, PM_{2.5}, SO₂, and VOCs. In addition, activities such as demolition and site preparation/grading would result in fugitive dust emissions.

Emissions were estimated for each phase of the construction activities including existing building demolition, site grading, and new building construction. The construction equipment and vehicle emissions of CO during demolition, grading, and new building construction were estimated using the methodologies and emissions factors in the *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM) 4.3* (Air Force Center for Environmental Excellence [now Air Force Center for Engineering and the Environment], 2005), the California Air Resources Board URBEMIS2007 program (California Environmental Protection Agency Air Resources Board, 2007), and EPA's Mobile6.2 program.

Table C-3 shows the estimated CO construction emissions. Detailed project construction information, assumptions used in the emissions analysis, and model outputs of URBEMIS2007 and Mobile6 are provided in Appendix B, Attachments B1 through B5.

TABLE C-3
 Estimated Proposed Action Alternative Construction Emissions
*Environmental Assessment for Demolition and Construction of Military
 Personnel Support Facilities,
 Kirtland Air Force Base, New Mexico – Clean Air Act Conformity Applicability Analysis*

	CO (ton/year)
Demolition	0.76
Grading	0.048
Construction	16.29
Total	17.1

Implementation of the Proposed Action Alternative would result in temporary, short-term air quality impacts from construction emissions. Construction-related impacts are expected to be localized (i.e., confined to the construction site area). To reduce the potential emissions of fugitive dust, control measures recommended by the Albuquerque/Bernalillo County Air Quality Control Board would be implemented during construction.

C.3.2 Operation Emissions Impacts

Operation emissions from the Proposed Action might be generated by the vehicles traveling to the new facilities, and stationary sources such as emergency generators and space-heating equipment used at the new facilities. Demolition and construction of the military personnel support facilities would not change the number of employees traveling from or to the Kirtland Air Force Base during project operation, and the overall Kirtland Air Force Base vehicle emissions from commute would change minimally. Therefore, emissions from personnel vehicle travel would not change compared to current existing emissions levels.

Detailed information on the type and rating of the stationary equipment such as boilers/heaters and emergency engines is not yet available. Emissions during operation of the dormitories and the supporting facilities are estimated using the energy consumption rates for residential buildings and nonresidential buildings provided in URBEMIS and ACAM programs. Emission factors for the heating devices were obtained from EPA AP-42.

Emissions from emergency engines were not quantified in this analysis because of the minimal usage. Detailed operation emission calculations are presented in Appendix B. Table C-4 summarizes the operation emissions. Operation emissions of criteria pollutants from the Proposed Action are expected to decrease compared to No Action because of the decrease of both the dormitory units and the total square footage of the supporting facilities.

TABLE C-4
 Estimated Proposed Action Alternative Operation Emissions
*Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
 Kirtland Air Force Base, New Mexico – Clean Air Act Conformity Applicability Analysis*

Activity	CO (ton/year)
Existing Emissions from Buildings to Be Demolished	0.79
New Emissions from Proposed Project	0.52
Total Net Emission Change	-0.27

C.4 Emissions Summary and Comparisons with Thresholds

C.4.1 Comparisons with De Minimis Levels

Table C-5 shows the annual emissions increases associated with the Proposed Action Alternative and the comparison with the de minimis thresholds. Only CO is subject to general conformity analysis. CO emissions during the construction and operation of the project are below the de minimis thresholds.

TABLE C-5
 General Conformity Analysis for the Proposed Action Alternative
*Environmental Assessment for Demolition and Construction of Military Personnel Support Facilities,
 Kirtland Air Force Base, New Mexico – Clean Air Act Conformity Applicability Analysis*

Activity	Annual CO Emissions (ton/year)
Construction (2010)	17.1
Construction 2011	17.1
Operation (2012 and beyond)	< 0 (net decrease)
De Minimis Threshold	100

C.4.2 Regional Significance

When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis limit, the emissions must then be compared with the air quality emissions inventory of the air basin to determine regional significance of the federal action. If the amount of the emissions is greater than 10 percent of the emissions inventory, the federal action is considered regionally significant for that pollutant (40 CFR Part 93, Subpart 153[i]).

Bernalillo County is under the limited maintenance plan for CO. According to EPA's approval of the limited maintenance plan, "an emissions budget for the area is not necessary; therefore, there is not a need for a cap on total emissions during the maintenance period." As a result, the significance threshold of the 10 percent of the State Implementation Plan budget does not apply to projects in Bernalillo County. Given the negligible emissions levels associated with the project construction and operation, the project would not result in significant impacts regionally.

C.4.3 Conclusion

In summary, construction and operation emissions of CO from the Proposed Action Alternative would be below de minimis levels. The emissions would not result in significant regional impacts. On the basis of the conformity applicability criteria, the project is below the de minimis threshold; therefore, the Proposed Action Alternative is exempt from the CAA conformity requirements and does not require a detailed conformity demonstration.

C.5 Works Cited

Air Force Center for Engineering and the Environment (formerly the Air Force Center for Environmental Excellence). 2005. *Technical Documentation of the U.S. Air Force Air Conformity Applicability Model (ACAM)* 4.3.

California Environmental Protection Agency Air Resources Board. 2007. *EMFAC2007 Release*. Available at: http://www.arb.ca.gov/msei/onroad/latest_version.htm. Accessed October 2009.

The Commission of Public Records Administrative Law Division Santa Fe, New Mexico. 2007. *New Mexico Register*, Volume XVIII, Number 6. March 30. Available at: <http://www.nmcpr.state.nm.us/nmregister/xviii/xviii06/xviii06.pdf>.

Appendix D

Tribal Coordination



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)

Colonel Michael S. Duvall
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB NM 87117-5000

Pueblo of Jemez
Governor David Toledo
P.O. Box 100
Jemez Pueblo NM 87024

Dear Governor Toledo

To improve our government-to-government relationship with your tribe, we would like to develop a program with you to review current and future activities associated with the mission of Kirtland Air Force Base (Kirtland AFB). Our broad mission is to ensure safe, secure and reliable weapons systems to support the national command structure and the Air Force warfighter. Our responsibilities are to advocate the Air Force's weapon system and support programs. In order to achieve this mission Kirtland AFB is constantly changing and growing.

We have seven projects currently under planning and potentially of interest to your tribe. A list of these projects is attached. If you have potential interest or concerns related to these projects, please contact Ms. Valerie Renner at telephone number (505) 846-8840.

As a follow-up to this letter, Ms. Renner will be calling you to further discuss Kirtland AFB's intent to improve our consultation process and to determine if you wish to discuss any of the projects identified on the attached list. If you would like to personally meet with me to discuss these or other topics, please advise Ms. Renner and she will facilitate a meeting. Thank you for your time in consideration of our requests.

Sincerely

MICHAEL S. DUVALL, Col, USAF
Commander

Attachment:

1. Description of Proposed Actions at Kirtland AFB

- ☐ Pueblo of Isleta
- ☐ Pueblo of Zuni
- ☐ White Mountain Apache
- ☐ Ysleta del Sur Pueblo
- ☐ Comanche Indian Tribe
- ☐ Jicarilla Apache Nation
- ☐ Mescalero Apache Tribe
- ☐ Pueblo of Nambe
- ☐ Navajo Nation
- ☐ Ohkay Owingeh
- ☐ Pueblo of Acoma
- ☐ Pueblo of Cochiti
- ☐ Pueblo of Jemez

☐ Pueblo of Laguna

- ☐ Pueblo of Picuris
- ☐ Pueblo of Pojoaque
- ☐ Pueblo of San Felipe
- ☐ Pueblo of San Ildefonso
- ☐ Pueblo of Sandia
- ☐ Pueblo of Santa Ana
- ☐ Pueblo of Santa Clara
- ☐ Pueblo of Santo Domingo
- ☐ Pueblo of Taos
- ☐ Pueblo of Tesuque
- ☐ Pueblo of Zia
- ☐ Hopi Tribal Council

HC/MC-130 Aircraft Recapitalization:

The 58th Special Operations Wing (58th SOW) proposes to get 12 new C-130 airplanes to replace 8 older ones they currently fly. No change in the mission of the 58th SOW will occur. The number of people that will come here to train will increase slightly.

Heavy Weapons Range:

The 377th Air Base Wing is proposing to establish and use a heavy weapons range in the southeast section of Kirtland AFB approximately 0.25 miles east of the Starfire Optical Range facilities along Mount Washington Road. The proposed range will encompass the existing M60 range. It would include two firing positions and firing lines and would use the existing targets at the M60 range. Firing distance would be approximately 7,300 feet. Firing position two would be used for sniper heavy weapons (.50 caliber) and would fire in a more southerly direction to the existing target area, approximately 3,800 feet.

Construct New Hot Cargo Pad:

Kirtland AFB has only one hot cargo pad that aircraft park on to load and unload supplies that are continuously flown in and out of Kirtland AFB. The new pad will consist of a cement concrete containing additives to reduce the effects of alkali-silica reactivity. The new pad will adjoin the existing. This project will include a new 6" asphalt taxiway and replace the deteriorated asphalt taxiway to Pad 5. The new pad will adjoin the existing Pad 5 to minimize enlargement of the clear zone and effects on other critical facilities.

Dormitory Master Plan:

This project proposes to construct three new permanent party dormitories to replace old substandard dormitories built in 1950. Kirtland AFB currently has a surplus of old substandard dormitory space this project will help eliminate. The proposed dormitories will be energy-efficient and more economical to maintain.

Construct New Shopping Center:

The Army and Air Force Exchange Service (AAFES) proposes to construct and operate a new Shopping Center at Kirtland AFB. This proposed project will include demolishing of existing facilities, closure of Pennsylvania Avenue, and the construction of a new road behind the new shopping center.

Construct Several New Facilities:

Kirtland AFB proposes to construct six new facilities that will support the fire department (two new fire stations), the newly formed 498th Nuclear System Wing, the newly formed Air Force Nuclear Weapons Center Sustainment Center, the Military Working Dog Facility, and a new Fitness Center. All of these proposed actions will be described in detail in separate Environmental Assessments for review.

Excavation of Five Archaeology Sites:

Kirtland AFB Cultural Resource Manager is developing a research design to excavate five archaeological sites (LA 155815, LA 156001, LA 107494, LA 53671, and LA 153888). Two of the sites (LA 155815 and LA 156001) are next to each other just south of Tijeras Arroyo. They have been exposed due to past flooding of the arroyo and are now eroding from wind and natural elements. The sites are dated as Classic Pueblo from AD 1625 – 1700. This is in the beginning stages of design and the exact procedure has not been determined.

LA 107494 had been damaged by a bulldozer and the cuts have exposed several features. It is a large habitation area with several structures dating from Late Developmental to Coalition (1050 – 1600 AD) time periods. The site is slowly being destroyed by this erosion. Therefore, we recommend stabilizing the site.

LA 53671 is a potentially extensive pithouse village dating to the Late Developmental to Early Classic period (AD 1050 – 1325). This site appears to have been damaged by a large bulldozer. We are estimating this happened during the construction of Coyote Springs Road. Several large trenches exist throughout the site and erosion of the site has been exacerbated by the trenches. The site is slowly being destroyed by this erosion. Therefore, we recommend stabilizing the site.

LA 153888 is a large biface cache. This site is also being damaged by erosion that is caused by a road that was put in near the site. We recommend stabilizing the site.

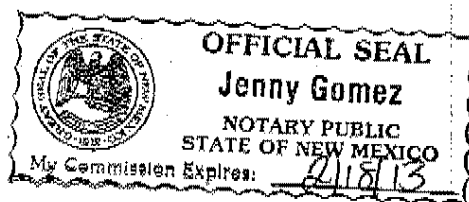
Appendix E
Proof of Publication

NAME OF PUBLICATION: Albuquerque JournalAddress: 7777 Jefferson NECity, State, Zip: Albuquerque, New Mexico 87103Phone#: 505-823-7777State of: New MexicoCounty of: BernalilloI Manuel S Montoya, for the publisher of
(Name)Albuquerque Journal, published in the city of
(Name of Publication)Albuquerque, State of New Mexico.Hereby certify that the advertisement for C H 2 M Hill

was published in said newspaper on the following dates:

May 7 2010Given under my hand, this 30 day of June, 2010Signature: Manuel S MontoyaSworn to and subscribed before me this 30 day of June, 2010, atBernalillo, state of New Mexico.Notary Public: Jenny GomezMy commission expires: 2/18/13

Seal:



Health Insurance Pool Is ‘Shovel Ready’

By JASON SANDEL
*Vice Chair and Consumer
Board Member, New Mexico
Medical Insurance Pool*

Last Friday on behalf of Gov. Bill Richardson a letter of intent was submitted to the U.S. Department of Health and Human Services indicating New Mexico's intent to submit an application to contract with the federal government to operate a temporary high-risk pool program under H.R. 3590, the Patient Protection and Affordable Care Act.

The federal program will terminate in 2014, when insurance companies can no longer deny coverage to anyone based on having a pre-existing medical condition.

The letter states that New Mexico's initial concept is to operate the federal temporary high-risk pool alongside the New Mexico Medical Insurance Pool while differentiating management of the pools and requiring executive management of the new federal funds. Currently, the New Mexico Medical Insurance Pool does not fall under the authority of the executive branch.

The New Mexico Medical



Insurance Pool is a statutorily created, independent, nonprofit quasi-governmental entity with a governing board and

does not receive direct state funding.

On behalf of the board of the New Mexico Medical Insur-

ance Pool, we extend a sincere thank you to Richardson for New Mexico's willingness to participate in the national

pool program and for choosing to utilize New Mexico Medical Insurance Pool as a means to increase insurance coverage for New Mexicans.

For several decades, the New Mexico Medical Insurance Pool has efficiently run a fiscally responsible, high-quality, responsive and accountable high-risk health insurance pool.

New Mexico Medical Insurance Pool has proven to be an excellent fiscal steward of its resources, having streamlined our administrative and executive structure costs to only 5 percent. This is considerably lower than the current administrative costs for the NM SALUD program or the national cap of 10 percent Health and Human Services is considering.

We remain fully accountable to the federal government due to our existing federal grant funding and we meet all federal audit requirements.

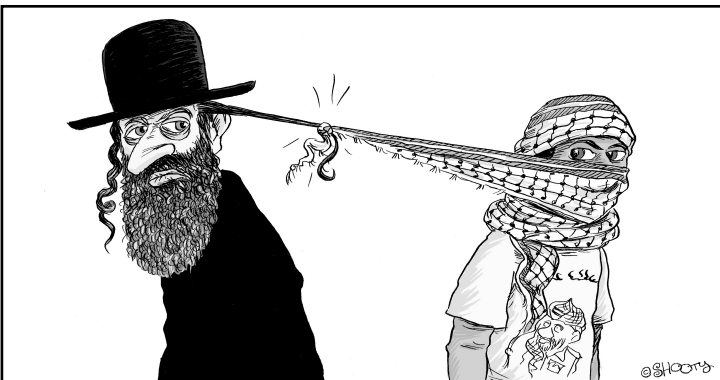
As a quasi-governmental entity, we follow the state procurement code and all of our administrative contracts have gone through the mandatory state procurement and RFP

processes. New Mexico Medical Insurance Pool is fit to meet the fiscally responsible requirements the governor intends for the pool.

In addition, based on the recent amendments to the state's Medical Insurance Pool Act, we have the full legal and specific statutory authority to contract with the federal government to operate the temporary high-risk pool program.

The benefits to having the executive branch manage a well-established, effective and fiscally sound program are unclear. We should capitalize on the pool's existing governance, efficiency in operations and fiscal accountability standards to manage the federal program alongside our existing high-risk pool.

By utilizing our existing program, the New Mexico Medical Insurance Pool will be able to maximize its ability to offer affordable coverage to New Mexicans. We are a "shovel ready" program that is well-equipped to manage this new federal funding and to assist the governor in his intent to encourage health care coverage and access for as many of our citizens as possible.



Yesterday's Terrorists Today's Folk Heroes

By CAROLE EBERHARDT
Albuquerque resident

Syndicated columnist Cal Thomas wonders why we should send foreign aid to any Muslim country. He does not wonder why we send money to a Jewish nation with no strings attached.

The Israelis are at liberty to spend our tax dollars as they please, and much of it is spent on their military machine. That military machine, in the process of protecting Israelis from those "murderous and militant" Palestinians, has managed to kill thousands of them.

Their Arab neighbors commiserate with Palestinians and feel that, but for a twist of fate, it could have been them displaced by a flood of Jewish immigration from around the world. We pay the Arabs not to make war on Israel because of their sympathy with Palestinians. We have some responsibility in the creation of Israel. It might never have happened without the aid and influence of the United States.

In 1948 following a devastating war, Europeans had little concern for the fate of the Middle East. They were busy licking their own wounds.

The United States was a victor and wielded much power in the then-fledgling United Nations.

With overwhelming U.S. influence, the UN voted to allow Israel to become a state despite Arab nations' objections and threat of war in defense of Palestinians being displaced by Jewish immigrants.

Arab nations reasoned that Palestinians had done nothing to displace the Jews of Europe. Why would they now have to pay the price by giving up their land to foreign immigrants?

Much has been written in sympathy of the Jews of Europe and I hasten to add that Ann Frank would have found refuge in my attic had that opportunity come to me. Little, however, is written about what Palestinians refer to as "The Catastrophe," when the world turned its back and allowed them to become refugees in the land of their birth.

When the fighting broke

out, many families fled for their lives leaving their homes and farms. When the conflict stopped they were not allowed to return, but instead their property was confiscated. Some were simply confronted with Israeli military at their door telling them to leave, as this was now Israel.

Thomas also bemoans the fact that Mahmoud Abbas, a recipient of our aid, had the gall to name a street in Ramallah after Abu Jihad who, he states, was the architect of PLO terrorism during 1965-1988. Thomas has no problem with streets in Israel being named in honor of Israeli terrorist Menachem Begin.

In 1946 Begin was the leader of the Irgun terrorist organization. Among other terrorist acts, they blew up the King David Hotel where many British families were housed along with Arabs and Jews. It is reported that 90 people were killed in the explosion and many were maimed for life.

Begin had a hefty price on his head but managed to escape capture by the British.

Americans and Cal Thomas need to look at their own history to understand that yesterday's saboteurs, terrorists, freedom fighters and revolutionaries become the folk heroes and, yes, even leaders of countries tomorrow.

I deplore the fact that any small children are being taught to hate those of another religion or ethnic background. Thank goodness the American Indians were not taught that.... They might even want their land back.

Boost Federal Funds for Land, Water

**By KARYN STOCKDALE
AND BETH BARDWELL**
Audubon New Mexico

This past weekend families from across Southern New Mexico joined elected officials, state agencies and local nonprofit organizations at the River of Birds Festival at Leasburg Dam State Park to celebrate the natural and cultural heritage of the Rio Grande.

When we are drawn to the Great River that runs the length of our state for family fun and rejuvenation, we are part of a long tradition that spans the centuries in New Mexico. The importance of the Rio Grande runs deep within our veins.

The Rio Grande is the lifeblood of southern New Mexico. Our land, water, agriculture, wildlife and local economies are all tied to the health of the Rio Grande.

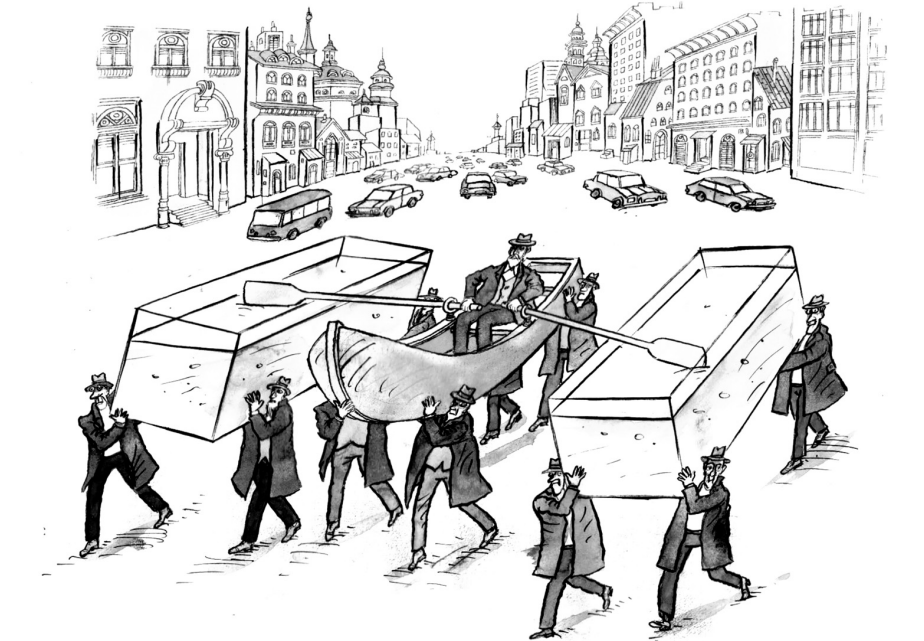
A healthy Rio Grande provides us food; supplies us drinking water; is an important amenity that draws new residents; is the anchor of the area's cultural heritage beginning with the state's Pueblos and early European settlers along El Camino Real; provides our river communities free environmental services like flood control and clean water; and is the ecological backbone that supports our native wildlife, including birds and the multi-million dollar eco-tourism industry.

Maintaining the health of the river is critical to our future.

Cooperative conservation efforts among government, nonprofit organizations and ordinary citizens will be essential to conserving the legacy of our beautiful river and reversing damage to its natural habitats and ecosystem function. In fact, millions of dollars of habitat enhancement projects already have been identified along the main stem and major tributaries of the Rio Grande.

Dedicated state dollars to programs like the River Ecosystem Restoration Initiative and Natural Heritage Conservation Act can help leverage significant federal funding from restoration programs such as the Land and Water Conservation Fund and the Rio Grande Environmental Management Program. All of these investments will keep our communities healthy and keep families and bird-watchers coming back to find the ducks, herons, hawks and songbirds.

The contribution of the Land and



Water Conservation Fund to our state's outdoor way of life and restoring the Rio Grande can't be underestimated. Since 1965, more than 1,000 federal grants totaling nearly \$41 million have been spread across every New Mexico county for parks, ballfields and trails.

The Land and Water Conservation Fund also has benefited projects along the Rio Grande such as the Mesilla Valley Bosque Park, Broad Canyon Ranch and the Rio Grande Trail. But for almost a decade the Land and Water Conservation Fund had been chronically short-changed in the annual federal appropriations process. It is time to change this and bring more money home to New Mexico for parks and wildlife refuges.

This year we are urging Congress to provide \$600 million to the Land and Water Conservation Fund program in 2011.

We also support an \$8 million dollar appropriation for the U.S. Corps of Engineers Rio Grande Environmental Management Program to provide federal funding and technical expertise to plan, construct and evaluate enhancement of fish and wildlife habitat and develop a basin-wide monitoring program.

Rio Grande Basin states can use federal funding to help secure the health of Rio Grande just like the Mississippi basin states are drawing on federal funding to restore the Mississippi River and Florida is drawing on federal funding to restore the Everglades. And Rio

Grande Environmental Management Program is the authority to deliver it, whether it is monitoring and mitigating salinity issues in surface flows or enhancing fish and wildlife habitat.

A report on River Ecosystem Restoration Initiative put out earlier this year by Audubon New Mexico found that the state's investment in our rivers and watersheds directly benefits New Mexico's economy and leverages federal and private funds to conserve our state resources. The initiative has created 222 full-time, part-time or temporary restoration-related jobs in the private sector while state River Ecosystem Restoration Initiative dollars have been matched dollar for dollar by other grants and in-kind contributions, doubling the state's investment of \$6.8 million.

Conserving the Rio Grande really means protecting our way of life here in southern New Mexico. Our land, water, agriculture, wildlife and local economies are tied to the health of the Rio Grande.

Now is the time to start investing in conservation of the Rio Grande. Every dollar put towards habitat restoration programs is a dollar invested in our local communities, in our state economy and our children's future.

Karyn Stockdale is executive director and Beth Bardwell is director of Freshwater Conservation for Audubon New Mexico.

TO ADVERTISE 823-3300

Find a great new employee to join your
team with the newly enhanced
ABQcareermarketplace.com

PLACE AN AD TODAY

New features include:

- Use of company logos, color, bolding & highlighting of type
- Featured & spotlight ads
- Preferred employer listings

Call 823-4444 for information.

Write us

Journal, P.O. Drawer J,
Albuquerque, NM 87103

PUBLIC NOTICE MILITARY PERSONNEL SUPPORT FACILITIES KIRTLAND AIR FORCE BASE

The 377th Air Base Wing, Kirtland Air Force Base, has prepared an Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) for DEMOLITION AND CONSTRUCTION OF MILITARY PERSONNEL SUPPORT FACILITIES (MPSF).

THE ASSESSMENT EVALUATES THE POTENTIAL IMPACTS ASSOCIATED WITH DEMOLITION AND CONSTRUCTION OF MPSF LOCATED IN THE NORTHWESTERN PORTION OF THE BASE. THE PROJECT INCLUDES PARTIAL OR COMPLETE DEMOLITION OF 21 FACILITIES AND CONSTRUCTION OF 8 FACILITIES. FACILITIES INCLUDE VISITING OFFICERS QUARTERS, OFFICES, DORMITORIES, FITNESS/GYMNASIUM, AND OTHERS.

The EA indicates that the proposed action would not have a significant impact on the quality of the human environment. The EA and FONSI are open for public review and comment. These documents are available at CNMCC Montoya Campus, 4700 Morris NE, Albuquerque NM 87102; KAFB Library, Bldg 20204, Kirtland AFB NM 87117; and on the Kirtland web site, <http://www.kirtland.af.mil/environment.asp> The comment period ends June 6, 2010.

For additional information or to make comments, contact:
National Environmental Policy Act Program Manager, 377 MSG/CEANQ,
2050 Wyoming Blvd SE, Kirtland AFB, NM 87117-5270 or
email NEPA@kirtland.af.mil

Appendix F

Public Comments

CITY OF ALBUQUERQUE



June 15, 2010

Program Manager, KAFB
National Environmental Policy Act
377 MSG/CEANQ
2050 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5270

Certified Mail No. 7007 1490 0003 5645 3039

Re: Military Personnel Support - Proposed Building Demolition Activities & Construction at Kirtland AFB

KAFB NEPA Program Manager:

Thank you for providing the Air Quality Division (Division) the opportunity to review the KAFB preliminary EA (EA) which proposes the demolition of up to 21 buildings and construction of 8 new buildings at KAFB over a 5 year time period. Based on review of the preliminary EA, dated March 2010, the Division has concluded that activities associated with this type of operation may require notifications and permit application submittals to the Division. KAFB base must ensure that all appropriate notifications and applications are submitted as required by 20.11 NMAC.

The EA states building demolition will occur as a result of this project. Inspection, notification requirements and asbestos removal will need to be done in accordance with 20.11.20.22 NMAC – Demolition and Renovation Activities; Fugitive Dust Control Construction Permit and Asbestos Notification Requirements and Title 40 CFR Subpart M—National Emission Standard for Asbestos §61.145 – Standard for demolition and renovation.

The EA reports that the planned demolition will result in a surface disturbance of approximately 38 acres. As correctly cited in the EA report, surface disturbance of $\frac{3}{4}$ of an acre or more will require a Fugitive Dust Permit. I was unable to calculate the volume of buildings to be demolished, but it appears the total will exceed the 75,000 ft³ threshold for requiring a fugitive dust permit. However, planned surface disturbance will exceed $\frac{3}{4}$ of an acre, so the required fugitive dust permit for surface disturbance will cover both of these actions. A Fugitive Dust Construction Permit application shall be submitted to the Division pursuant to 20.11.20 NMAC. Surface disturbance shall not occur before Division staff sign and issue a fugitive dust permit. Fugitive dust emissions resulting from this project must be mitigated and controlled as cited in 20.11.20 NMAC.

The EA states that concrete and asphalt construction debris will result from the project. The EA report does not state whether KAFB plans to use any crushing and screening equipment to further process on site, or if all will be disposed off site. If KAFB plans to crush and screen this material, KAFB must ensure that the appropriate permits are in place, and/or relocation requests have been approved before constructing crushing/screening equipment. Under section C.2 Operation Emissions, it states that emergency engine emissions were not calculated due to minimal usage. The owner/operator, when calculating emission rates in order to determining applicability to 20.11 NMAC, must calculate emissions based on the stationary source(s) potential-to-emit.

PO Box 1293

Albuquerque

NM 87103

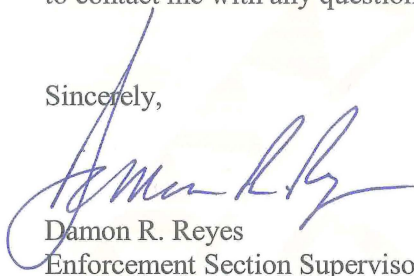
www.cabq.gov

Program Manager
June 15, 2010
Page 2

Those engines, not defined as a "Nonroad engine" under Title 40 CFR Part 89 or 90, and applicable to 20.11.41 NMAC, shall obtain a permit pursuant to Part 41. If applicable to 20.11.40 NMAC, the owner/operator shall obtain a Certificate of Registration pursuant to Part 40.

Thank you for the time and the opportunity to review the EA Draft Report. Many of the items listed above have been referenced in the draft report, and are added here for further clarification. Please do not hesitate to contact me with any questions or concerns you may have (dreyes@cabq.gov or 505-768-1958).

Sincerely,



Damon R. Reyes
Enforcement Section Supervisor
Air Quality Division
Environmental Health Department
City of Albuquerque

Xc: Mary Lou Leonard, Director, Environmental Health Department
Isreal Tavarez, Environmental Engineering Manager, Air Quality Permitting Section
William Gallegos, Environmental Health Manager, Environmental Service Department

GOVERNOR
Bill Richardson



DIRECTOR AND SECRETARY
TO THE COMMISSION
Tod Stevenson

Robert S. Jenks, 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
For information call: 505/476-8000
To order free publications call: 1-800-862-9310

STATE GAME COMMISSION

JIM McCLINTIC, Chairman
Albuquerque, NM

SANDY BUFFETT, Vice-Chairwoman
Santa Fe, NM

DR. TOM ARVAS, Commissioner
Albuquerque, NM

GARY W. FONAY, Commissioner
Hobbs, NM

KENT A. SALAZAR, Commissioner
Albuquerque, NM

M.H. "DUTCH" SALMON, Commissioner
Silver City, NM

THOMAS "DICK" SALOPEK, Commissioner
Las Cruces, NM

June 29, 2010

NEPA Program Manager
377 MSG/CEANQ
2050 Wyoming Blvd. SE, Suite 125
Kirtland AFB, NM 87117

Re: Demolition and Construction of Military Personnel Support Facilities Draft Environmental
Assessment (EA); NMDGF Doc. No. 13346

To Whom It May Concern:

The Department of Game and Fish has reviewed the above-referenced document. We believe that the mitigation measures committed to in the EA will preclude significant adverse effects to burrowing owls and other migratory birds from implementation of the proposed project.

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,

Matt Wunder, Ph.D.
Chief, Conservation Services Division

MW/mlw

xc: Wally Murphy (Ecological Services Field Supervisor, USFWS)
Brian Gleadle (Northwest Area Operations Supervisor, NMDGF)
Hira Walker (Conservation Services Ornithologist, NMDGF)