35-12-008

FINAL

ENVIRONMENTAL ASSESSMENT FOR A PROPOSED PARARESCUE AND COMBAT RESCUE OFFICER TRAINING CAMPUS AT KIRTLAND AIR FORCE BASE

September 2006

Prepared for
Air Education and Training Command
Air Force Materiel Command

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PRELIMINARY FINAL
FINDING OF NO SIGNIFICANT IMPACT
FOR A
PROPOSED PARARESCUE AND
COMBAT RESCUE OFFICER TRAINING CAMPUS
AT KIRTLAND AIR FORCE BASE,
ALBUQUERQUE, NEW MEXICO

The Department of the Air Force has completed an Environmental Assessment (EA) of the potential environmental consequences of the construction of a campus for training pararescue (PJ, [formerly parajumper]) candidates and Combat Rescue Officers (CROs) at Kirtland Air Force Base (AFB). The EA is incorporated by reference and this Finding of No Significant Impact summarizes the results of the evaluation of the Proposed Action.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVE

Proposed Action. The new PJ/CRO Campus would be located on 57 acres within the southeast quadrant of the present Zia Park housing area. The housing in Zia Park, bounded by Pennsylvania, Louisiana, Gibson, and Hardin Blvds. at the western edge of the developed portion of Kirtland AFB, is scheduled to begin in Spring and Summer 2006. Seven main facilities are proposed for the PJ/CRO Campus. The seven facilities addressed in this EA include:

- two (2) Dormitories;
- a Rescue and Recovery Training Center;
- a Physical Skills Training Facility;
- a Trauma Skills Training Facility; and
- a Logistics Facility
- High-Angle Training Structures

No-Action Alternative. Under the No-Action Alternative, the new campus would not be constructed and training for the PJ/CROs would continue in the current classrooms and training facilities.

This discussion focuses on those environmental resources that could be affected by the Proposed Action. No significant impacts would occur to health and safety, children, minorities, low-income populations, noise, biological resources, geological resources, water resources, cultural resources, transportation and circulation, utilities, environmental justice, or hazardous materials and wastes. Construction of the PJ/CRO Campus would have temporary insignificant effects on air quality, transportation and noise levels. Potential impacts to other resources are summarized below.

Air Quality. The Proposed Action would not significantly increase air emissions in the Albuquerque-Bernalillo County area. A potential exists for short-term impacts to local air quality from fugitive dust created by construction and carbon monoxide (CO) from construction equipment. Dust would be controlled by the application of water. The

maximum potential CO emissions from construction would be well below the de minimis level established for the Albuquerque area.

Land Use and Visual Resources. Because the Proposed Action would be located so close to the airfield, existing and future land uses must comply with construction and obstruction standards to air navigation. In order to comply with construction and obstructions standards under Title 14, Part 77, Subpart C, the construction must adhere to obstruction standards to air navigation. The surface of a takeoff and landing area of an airport or any imaginary surface established under Sec. 77.25, Sec. 77.28, or Sec. 77.29 must be considered. Imaginary surfaces are established with relation to the airport and to each runway and the site of each imaginary surface is based on the category of each runway. These surfaces include surfaces related to airport reference points and include: an inner horizontal surface, conical surface, and an outer horizontal surface. The following surfaces are related to runways and include: a clear zone surface, an approach clearance surface, and transitional surfaces. No negative impacts from implementation of the Proposed Action would occur to current land uses. The Proposed Action would have a minor beneficial impact on visual resources as modern buildings would be constructed compared to the current 1940s and 1950s housing.

Socioeconomics. Socioeconomic effects from the Proposed Action would be beneficial, but minor, in a metropolitan area the size of Albuquerque. Salaries paid to construction workers, local purchases of construction materials, and local rental of construction equipment would have minor, short-term, beneficial effects on the local economy.

Cumulative Effects. Kirtland AFB is a large, active, military installation with more than 400 organizations in facilities that were built from the 1940s to the present. As a result, demolition of old facilities, new construction, facility improvements, and infrastructure upgrades occur regularly. An analysis of the effects of the Proposed Action and alternatives, in conjunction with other present and proposed activities, concluded that no significant cumulative environmental impacts would occur.

CONCLUSION

Based on my review of the facts and analysis as summarized above and detailed in the attached EA, I find that the Proposed Action would not have a significant impact on the human environment, either by itself or in consideration with the cumulative impacts of other actions. The requirements of the National Environmental Policy Act, the President's Council on Environmental Quality regulations, and the Air Force Environmental Impact Analysis Process have been fulfilled and the issuance of a Finding of No Significant Impact is warranted. An Environmental Impact Statement is not required and will not be prepared.

Accepted By: _____ Date: 29 SEP 2006

D. BRENT WILSON
Base Civil Engineer
Kirtland Air Force Base

ACRONYMS AND ABBREVIATIONS

ABW	Air Base Wing
AETC	Air Education and Training Command
AFB	Air Force Base
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CRO	Combat Rescue Officer
EA	Environmental Assessment
EPA	Environmental Protection Agency
°F	degrees Fahrenheit
FY	fiscal year
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMAC	New Mexico Administrative Code
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
PCS	Permanent Change of Station
PJ	Pararescue (formerly parajumper)
PM_{10}	particulate matter equal to or less than 10 micrometers in diameter
PSD	Prevention of Significant Deterioration
ROI	Region of Influence
SIP	State Implementation Plan
tpy	tons per year
TRS	Training Squadron
USAF	United States Air Force
VOC	volatile organic compound
WRCC	Western Regional Climate Center

PRELIMINARY FINAL
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PARARESCUE AND COMBAT RESCUE OFFICER TRAINING CAMPUS
AT
KIRTLAND AIR FORCE BASE,
ALBUQUERQUE, NEW MEXICO

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SECTION 1
PURPOSE AND NEED FOR THE PROPOSED ACTION

This Environmental Assessment (EA) assesses the impacts of the construction and operation of a United States Air Force (USAF) Pararescue (PJ [formerly parajumper]) and Combat Rescue Officer (CRO) School Campus at Kirtland Air Force Base (AFB) in Albuquerque, New Mexico. The 342nd Training Squadron (TRS), located at Lackland AFB in San Antonio Texas, is a part of Air Education and Training Command (AETC) and is the parent squadron for the PJ/CRO School (military designation of Detachment 1, 342 TRS). Both are proponents of this action. This EA also describes any reasonable alternatives to the Proposed Action, including the No-Action Alternative. This document is part of *The Environmental Impact Analysis Process* set forth in Title 32, Code of Federal Regulations (CFR), Part 989, which incorporates Air Force Instruction 32-7061 and implements the National Environmental Policy Act (NEPA) and the regulations implementing NEPA promulgated by the President's Council on Environmental Quality as Title 40, *Protection of Environment*, CFR Parts 1500-1508. In addition, Executive Order 12372, *Intergovernmental Review of Federal Programs*, directs federal agencies to consult with and solicit comments from state and local government officials whose jurisdiction would be affected by federal actions. NEPA procedures and USAF policies are intended to ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. This EA describing the potential impacts of the Proposed Action will be made available to the public for 30 days prior to the decision on whether to proceed with the action.

The mission of the PJ/CRO School is "to produce the highest quality PJ and CRO personnel capable of deploying anywhere in the world to provide combat rescue and recovery."

1.1 BACKGROUND

Kirtland AFB is located just southeast of Albuquerque, New Mexico in Bernalillo County at the foot of the Manzanita Mountains (Figure 1-1). Kirtland AFB encompasses over 52,000 acres of East Mesa with elevations ranging from 5,200 feet to almost 8,000 feet above mean sea level (US Geological Survey 1990 a, b, c; 1991 a, b, c). The base was originally established in the late 1930s as a training base for the Army Air Corps, and grew rapidly with US involvement in World War II. After the war, Kirtland AFB shifted from a training facility to a test and evaluation facility for weapons delivery. Kirtland AFB and its adjoining neighbor to the east, Sandia Army Base, were combined in 1971. The PJ School moved to Kirtland AFB between November 1975 and January 1976 as part of an Air Force initiative to reassign missions in order to make space for redeploying Air Force operational flying units returning from the Vietnam War.

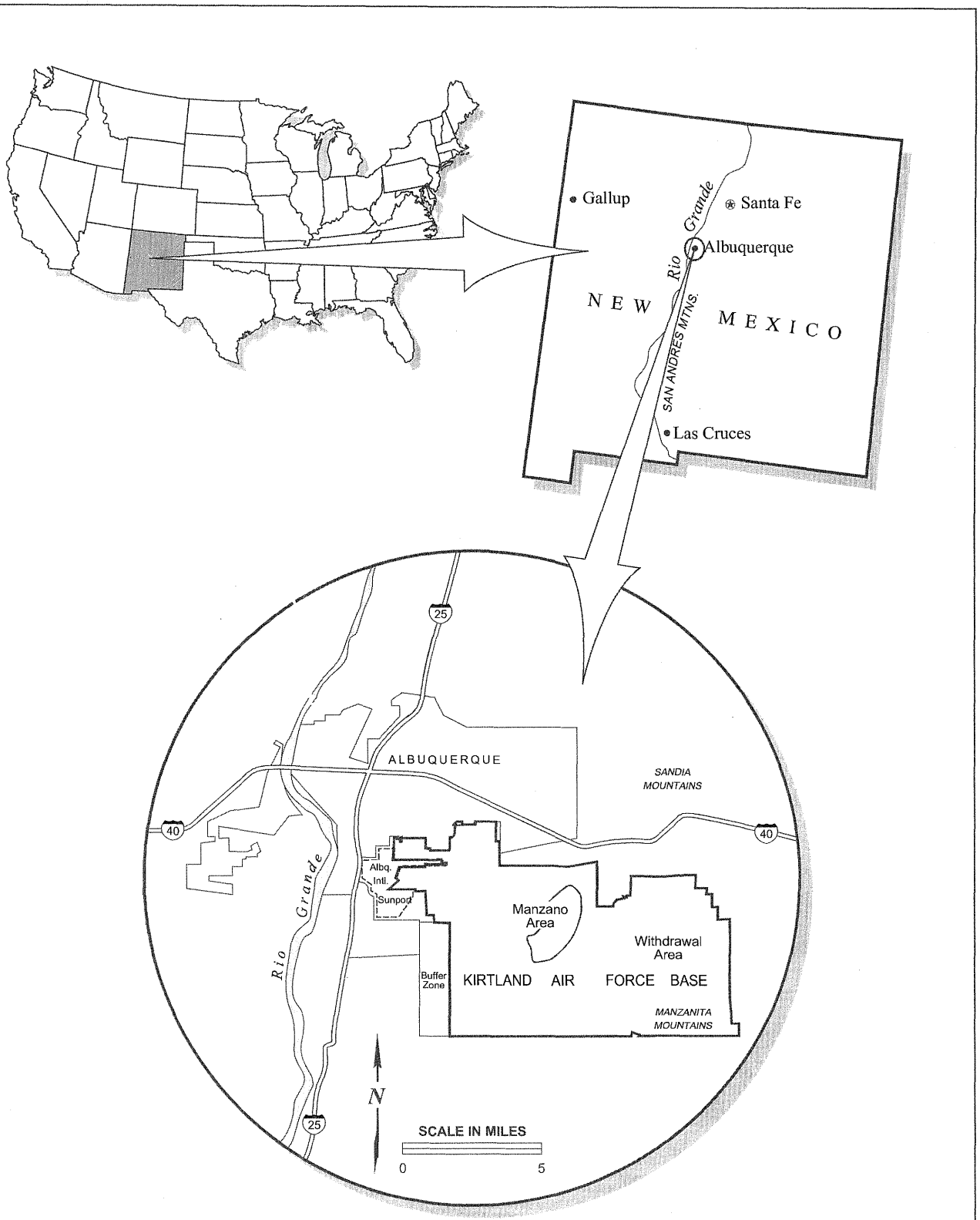

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FIGURE

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Kirtland Air Force Base Location

1-1

Kirtland AFB is operated by the 377th Air Base Wing (377 ABW) of Air Force Materiel Command. The 377 ABW's prime mission as the host unit at Kirtland AFB is munitions storage, readiness, and base operating support for approximately 76 federal government and 384 private sector tenants and associate units (Kirtland AFB 2004).

1.2 Purpose and Need for the Proposed Action

Recent world events have highlighted the need for well-trained PJs and CROs for the USAF. In response to this need, Air Force requires PJ/CRO production to increase from 88 to 190 students per fiscal year (FY) starting in FY 2009. For the long-term growth and quality of the program, AETC has set a priority on developing this campus area plan for the school to better address functional requirements for preparing future PJ and CRO Airmen. The primary goals for the new PJ/CRO School Campus are to provide the capacity needed to handle the increased student population, improve the training and educational environment, gain efficiencies through minimizing travel between multiple locations on base, eliminate some of the remote travel within the region, and provide a stronger school identity associated with Kirtland AFB.

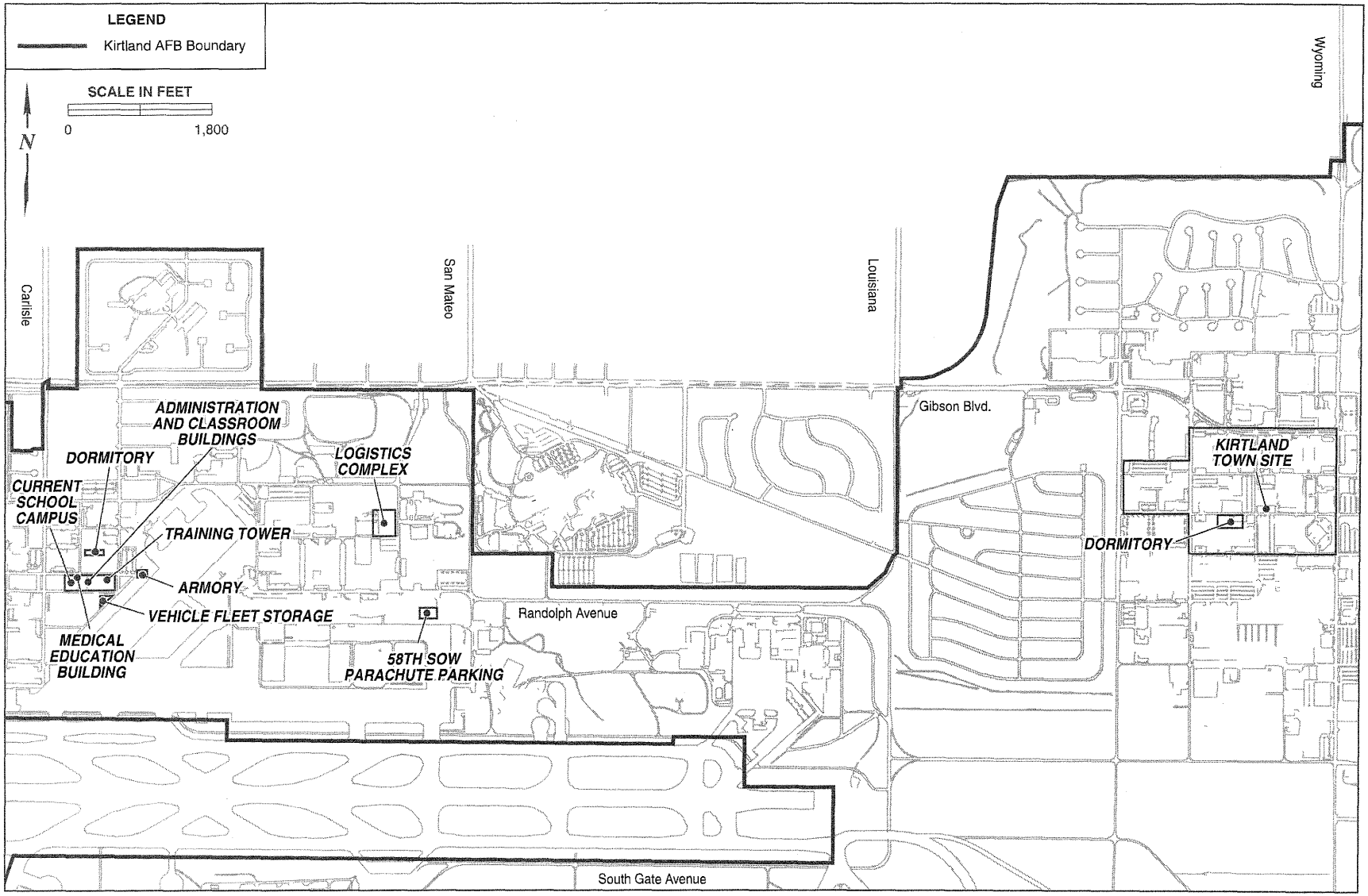
The PJ/CRO School at Kirtland AFB currently trains PJs and CROs in most of the required portions of the course syllabus, although certain aspects of the course are taught at other locations. These include regularly scheduled training with local fire departments and ambulance services from Belen to Santa Fe, high-angle rescue training in Soccorro, and tactical training in Magdalena, New Mexico. In July 2000, AETC/Director of Operations directed that all PJ students be home based at Kirtland AFB after graduation from their PJ Indoctrination and Combat Dive training. At that time, students would make a Permanent Change of Station (PCS) to Kirtland AFB for the remainder of their training. After their PCS to Kirtland, students would attend their other pre-requisite training at other locations in a Temporary Duty status. The final three courses are all located on Kirtland AFB. This directive forced Kirtland AFB to house students for longer than the normal 100 days of Apprentice training and pre-course causal time, if any. As training production increased, the population at Kirtland AFB began to increase as a result of the home basing concept. The numbers of students trained annually since 2000 and the estimated need for future classes are shown in Table 1-1. In addition to the additional student load, the number of instructors is estimated to increase from the current 33 to 78 to accommodate the increase in students.

Table 1-1. Student Increase and Estimate of Future Requirements

Year	# of Students	Months in Residence	Number of beds Required
2000	66	8	44
2001	88	8	82
2002	88	16-20	121
2004	64	16-20	121
2005	96	16-20	176
Out-years	*156+	14-16	200

Note: *AF Board findings/recommendations, Mar 05

The current training campus will not support the number of students and instructors required by AETC. The new campus would allow for the required increase in numbers of students to be trained and provide office space required for increased instructor staff. It would also allow for more efficient training which would decrease the length of residency requirements for the course and decrease the overall costs per student trained. These changes have been mandated by Headquarters AETC to fulfill the manpower requirements of Pacific Air Forces, USAF Europe, Air Force Special Operations Command, the Air National Guard, and the Air Force Reserve. The current PJ/CRO training facilities are shown in Figure 1-2.



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Existing Pararescue and Combat Rescue Officer Facility Locations

FIGURE **1-2**

SECTION 2
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The 342nd Training Squadron and the Pararescue (PJ [formerly parajumper]) and Combat Rescue Officer (CRO) School propose to construct a new PJ/CRO Campus at Kirtland Air Force Base (AFB) in Albuquerque, New Mexico. The following section describes the construction and operational activities that would result from implementation of the Proposed Action and alternatives to this action.

2.1 DESCRIPTION OF THE PROPOSED ACTION

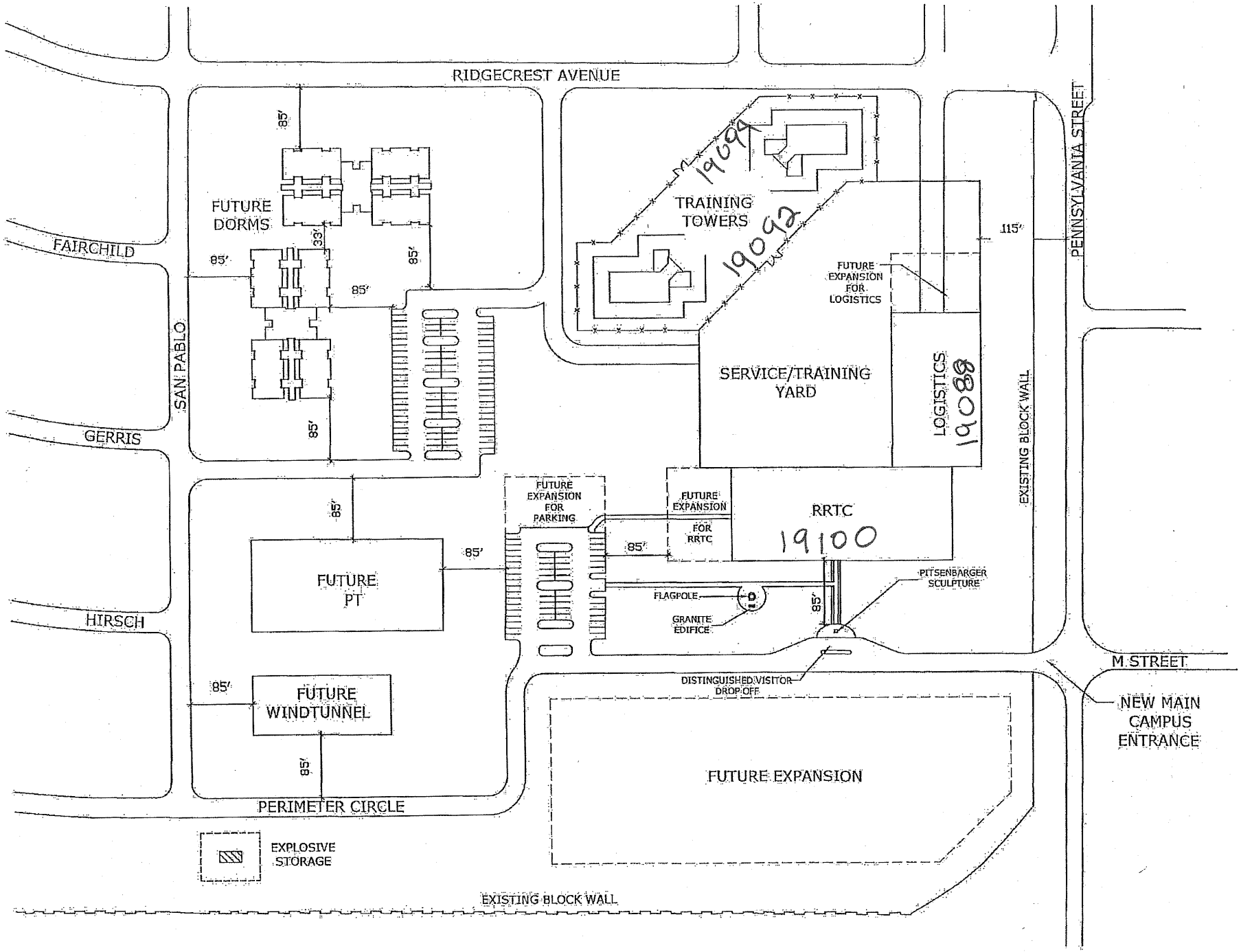
The new PJ/CRO Campus would occupy 57 acres in the southeast quadrant of the Zia Park housing area. Zia Park, which is bounded by Pennsylvania, Louisiana, Gibson, and Hardin Blvds. at the western edge of the developed area of Kirtland AFB, is scheduled to begin in Spring and Summer 2006 under the Kirtland AFB Housing Privatization Program (Kirtland AFB 2000). Seven main facilities are proposed for construction to support the PJ/CRO Campus (Figure 2-1). The following facilities are listed in the order in which they would be constructed.

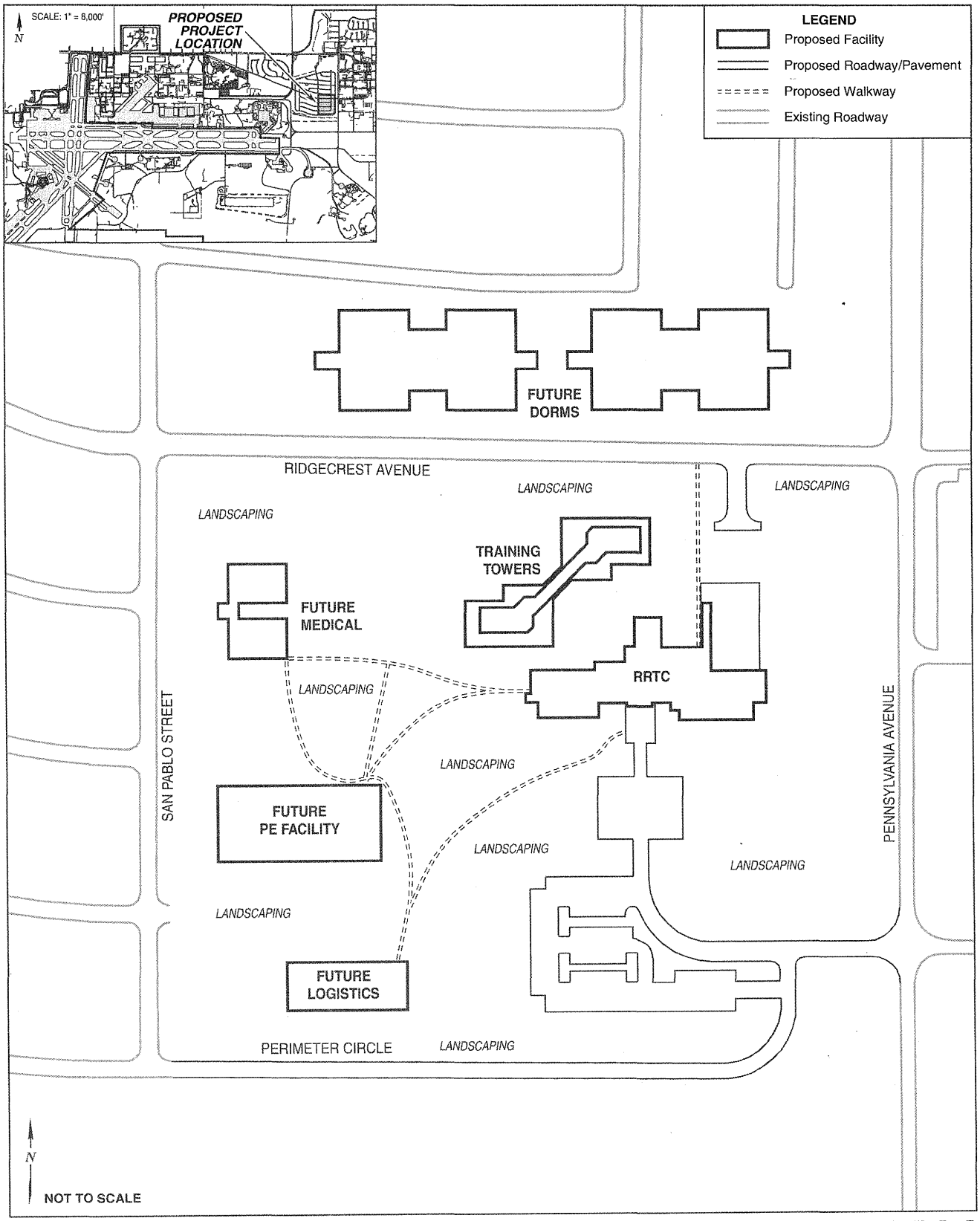
2.1.1 Dormitory A

This building is designed based on the Air Force's standard 96 person, Balcony Access Dormitory layout from the recently completed Air Force Dormitory Master Plan. The basic module provides for a private room and private bath for each resident grouped in four person pods that share social space, kitchen, and laundry facilities. The 65,000 square foot building would be three stories tall. Public areas and a central entry would be located in the middle of the building.

2.1.2 Rescue and Recovery Training Center

This 3,690 square meter building would be composed of several main functional areas: common entry and circulation; multi-purpose lecture and assembly; heritage; command and administration; classroom training (both medical and PJ/CRO apprentice); and building support space. The building would have a central, two-story mass containing the public entry, vertical circulation, and heritage area, with adjacent lecture and assembly spaces. Command and administration functions would also be located here. An adjacent western wing would house the PJ Apprentice classrooms and testing room. The classrooms would open directly to adjacent training areas. An eastern wing would mirror the west and house the medical training function. Additionally, the medical wing would anchor attached procedure rooms that in turn would open directly to exterior training spaces. Each wing can be extended in the future if needed to increase capacity and student throughput.


RIDGECREST AVENUE
FAIRCHILD
SAN PABLO
GERRIS
HIRSCH
PENNSYLVANIA STREET
FUTURE DORMS
85'
33'
TRAINING TOWERS
19099
19092
FUTURE EXPANSION FOR LOGISTICS
115'
SERVICE/TRAINING YARD
LOGISTICS
19088
EXISTING BLOCK WALL
FUTURE EXPANSION FOR PARKING
FUTURE EXPANSION FOR RRTC
RRTC
19100
FUTURE PT
FLAGPOLE
GRANITE EDIFICE
PITSENBARGER SCULPTURE
M STREET
DISTINGUISHED VISITOR DROP OFF
NEW MAIN CAMPUS ENTRANCE
FUTURE WINDTUNNEL
FUTURE EXPANSION
PERIMETER CIRCLE
EXPLOSIVE STORAGE
EXISTING BLOCK WALL



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Proposed Action Site Plan

FIGURE **2-1**

2.1.3 Physical Skills Training Facility

This 41,000 square foot building would house an "L" shaped aquatic training tank with adjacent training structure and hoist for inflatable boat training. An indoor climbing wall, a weight/fitness room, and staff and student locker and shower rooms would also included.

2.1.4 Trauma Skills Training Facility

Split into two pavilions, this 13,000 square foot facility would lie between the Physical Training Facility and the West Dormitory and delineate the western edge of the training compound. The facility would be a collection of procedural medical rooms. Student training would consist of treating simulated battlefield injuries in a more realistic environment. Basic field medical procedures including setting broken bones, intravenous cauterization, and general first aid would also be instructed. In the event of a major accident, natural disaster, or terrorist attack in the Albuquerque area, this facility could be used for triage or trauma care.

2.1.5 Logistics Facility

This building is crucial to the mission of the PJ/CRO School due to the program's large volume and variety of training equipment and supplies. The 25,000 square foot structure would anchor the southern end of the campus, with close functional ties to the adjacent Physical Skills Training Facility and the nearby Rescue and Recovery Training Center. The proposed building would meet the functional requirements currently being met in the current logistics compound. Medical and equipment supplies and storage, student and instructor equipment storage, medical ruck packing, briefing rooms, and dedicated school armory for weapons cleaning and temporary storage for small caliber ammunition while students are training at the site would also be included in this facility.

2.1.6 High-Angle Training Structures

Two high-angle task-training facilities would be located north of the Rescue and Recovery Training Center and be surrounded with a minimum of five foot wide energy absorbing material for those areas where the potential was present for falls. The entire compound would be surrounded by an eight foot high fence topped with barbed wire to include a sliding gate large enough to accommodate vehicles and personnel Access. These training structures would be used to practice the following skills:

- high-angle rescue climbing;
- rappelling/litter evacuation;
- Tyrolean traverses;
- suspended harness parachuting emergency procedures;
- aircraft hoist infiltration/exfiltration;
- fast rope insertions; and
- rope ladder extractions.

The training structure would include (2) mock-ups of the current primarily assigned helicopters to ensure student familiarity with both aircraft types. Electricity, telephone, night/spot lighting and drinking water would be provided at both top and bottom of the training structure.

2.1.7 Dormitory B

As shown on Figure 2-1, this building would be similar to Dormitory A and would be located adjacent to and east of Dormitory A.

2.2 Information Common To Construction Projects

2.2.1 Construction Activities

The construction activities that would be required for the proposed project have many characteristics in common. Bulldozers, backhoes, and front-end loaders would be on site throughout periods of excavation and/or site preparation. Dump trucks would be on site intermittently, as would concrete-mixers and asphalt vehicles and associated machinery. Sufficient amounts of fuels, hydraulic fluids, and oils and lubricants required to support contractor vehicles and machinery would be stored on site during the project. No other hazardous fuels or solvents would be stored on site.

All material needs (e.g., steel, concrete, asphalt) would be supplied by off-site vendors. Each of the projects would require small amounts of electricity for the construction activities. No natural gas or steam would be required.

Non-hazardous construction debris would be transported to the Kirtland AFB landfill for disposal. Kirtland AFB, in an effort to meet Department of Air Force waste diversion standards, requests monthly reports by item description and weight of any materials removed for recycling or reuse by the contractor. An on-site dumpster would be provided by the contractor for other non-hazardous municipal solid waste (e.g., plastics, paper, and food waste) that could be generated by worker activity at the project sites. When the dumpster is full, the debris would be transported to a permitted Subtitle D landfill. Any cardboard waste would be separated and delivered to the base landfill or the Sandia National Laboratories, Solid Waste Transfer Station where a roll-off unit is available for cardboard recycling.

Salvageable metal debris resulting from construction activities would be removed and transported to the Defense Reutilization and Marketing Office at Kirtland AFB for recycling or to any certified recycling facility in accordance with Department of Defense Instruction 4715.4, *Pollution Prevention*, paragraph F.2.c(3)(f). If a dust nuisance or hazard occurs during construction, water, supplied by Kirtland AFB, would be used for dust control.

Adequate parking would be available for worker vehicles on locations at and adjacent to the project site. Potable water would be available to the workers in coolers furnished by

either the general contractor or individual crews. Restroom facilities would consist of portable chemical toilets. No additional potable water or disposition of wastewater would be required.

2.2.2 Permits

Permits that would be required consist of the following general and construction permits for both air quality and the National Pollutant Discharge Elimination System (NPDES).

The Proposed Action would require a Fugitive Dust Control Permit and Fugitive Dust Control Plan Application submittal to the City of Albuquerque Environmental Health Department Air Quality Control Division. Permit applications are required to be submitted at least 10 working days prior to start date of construction.

Individual construction sites (or common sites of development) that would result in the disturbance of 1 or more acres of total land area (large construction) are required to be permitted under the NPDES General Permit for Storm Water Discharges from Construction Activities (Federal Register 2003). These construction activities require the preparation of a Storm Water Pollution Prevention Plan and a Notice of Intent to discharge in accordance with the General Construction Permit. The permitting of these construction activities would be coordinated through the Kirtland AFB Environmental Management Branch, Compliance Section.

2.3 Alternatives to the Proposed Action

2.3.1 No Action Alternative

Under the No-Action Alternative, the new campus would not be constructed and training for the PJ/CROs would continue in the current classrooms and training facilities.

2.3.2 Alternatives Considered, But Not Carried Forward

Because of the area required for the campus and the location of the additional supporting facilities on base, there were no viable alternatives to the proposed location.

SECTION 3
AFFECTED ENVIRONMENT

Only resource areas that would experience either positive or negative impacts if the Proposed Action were implemented are discussed in detail below.

The following resources would not be impacted by the Proposed Action: health and safety, noise, biological resources, geological resources, water resources, cultural resources, transportation and circulation, utilities, environmental justice, and hazardous materials and wastes. The rationale for dismissing each of those resources from detailed consideration is given at the beginning of Section 4.

3.1 AIR QUALITY

3.1.1 Definition of Resource

Air quality at a given location is a function of several factors, including the quantity and dispersion rates of pollutants in the region, temperature, the presence or absence of inversions, and topographic and geographic features of the region. For purposes of this Environmental Assessment, Bernalillo County forms the region of concern for air quality.

The US Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for criteria pollutants, including ozone, carbon monoxide (CO), nitrogen dioxide, sulfur oxides, particulate matter equal to or less than ten micrograms in diameter (PM_{10}), particulate matter equal to or less than 2.5 micrograms in diameter, and lead [EPA 2004]. The Clean Air Act (CAA) requires that all states attain compliance through adherence to the NAAQS, as demonstrated by the comparison of measured pollutant concentrations and the NAAQS. States are required to establish an Implementation Plan designed to eliminate or reduce emissions exceeding the NAAQS and to ensure that air quality conditions consistently comply with the NAAQS. The CAA prohibits federal agencies from supporting any activities that do not conform to a State Implementation Plan approved by the EPA. Appendix A provides additional detail on air quality and lists the NAAQS.

The applicability criteria for the General Conformity Rule are based on net increases in emissions over the significance thresholds for criteria pollutants and their precursors (Table 3-1). In addition, even if net increases in emissions are less than the significance thresholds, a pollutant could still be considered regionally significant under the General Conformity Rule if emissions of that pollutant resulting from a proposed action represented more than 10 percent of the total emissions of that pollutant in the air quality region.

Table 3-1. Criteria Pollutant in Attainment (Maintenance) Areas de minimis Threshold Levels for Conformity Applicability Analysis

Pollutant	Threshold Emission Rate (tons/year)
Carbon monoxide: all maintenance areas	100
Ozone, oxides of nitrogen, oxides of sulfur, or nitrogen dioxide: All maintenance Areas	100
Ozone, volatile organic compounds	100
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Particulate matter equal to or less than 10 micrometers in diameter: All maintenance areas	100
Lead: All maintenance areas	25

Source: 40 Code of Federal Regulations 51.85.

3.1.2 Existing Conditions

3.1.2.1 Climate and Regional Air Quality

The climate in the Albuquerque area is mild, sunny, and dry. The State of New Mexico, as well as the City of Albuquerque can be classified as a mild, arid or semiarid continental climate with light precipitation, abundant sunshine, and low relative humidity (Western Regional Climate Center [WRCC] 2005). High temperatures at Kirtland Air Force Base (AFB) average 90 degrees Fahrenheit (°F) and low temperatures average 62°F during the summer months. Winters have an average daily low temperature of 32°F and an average daily high temperature of 58°F (October to April) (WRCC 2005). Annual average precipitation in Bernalillo County ranges from 8 inches in the county's arid valley and mesa areas to 30 inches in the mountains east of Kirtland AFB and average annual wind speed at the Albuquerque International Sunport is 8 miles-per-hour (WRCC 2005).

The Albuquerque Environmental Health Department performs air quality functions in Albuquerque, and the Albuquerque-Bernalillo County Air Quality Control Board governs them. The City of Albuquerque has been designated as being in maintenance status for CO as of 15 June 1996 and is currently in attainment for all other federally regulated pollutants (EPA 1996).

Table 3-2 displays 2002 criteria pollutant emissions data for Bernalillo County. This is the latest data sent to the EPA from Bernalillo County.

Table 3-2. Criteria Pollutant Emissions Inventory of Bernalillo County (2002)

Source Category	CO (tpy)	NO_2	$PM_{2.5}$	PM_{10}	SO_2	VOCs
Highway Vehicles[a]	129,947	16,010	229	318	434	8,966
Off-Road Vehicles[b]	51,420	2,528	249	271	240	3,355
Industrial Processes	445	607	3,225	21,489	118	345
Misc. (fugitive dust)	0	0	3,808	38,831	0	0
Waste Disposal & Recycling	83	16	32	32	0.4	125
Aircraft	1,752	326	40	48	35	103
Railroads	42	239	6	7	13	12
Area Sources[c]	3,237	3,378	484	515	589	7,576
Agriculture & Forestry	12	18	52	83	0.6	10
Storage & Transport	0	0	0	0	0	1,470
TOTAL	**186,939**	**23,123**	**8,125**	**61,593**	**1,429**	**21,960**

Source: Environmental Protection Agency 2006.

Notes: [a] Highway vehicles include: motorcycles, light and heavy duty gasoline and diesel vehicles and trucks.
[b] Off Highway vehicles include non-road gasoline and diesel vehicles.
[c] Area sources include residential wood burning, natural gas combustion and propane combustion, electric utilities, solvent utilization (dry cleaning and surface coating), as well as other small stationary point sources.
CO=carbon monoxide tpy=tons per year NO_2=nitrogen dioxide
$PM_{2.5}$=particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10}=particulate matter equal to or less than 10 micrometers in diameter
SO_2=sulfur dioxide VOCs=volatile organic compounds

3.1.2.2 Air Quality In and Around the Project Area

As shown in Table 3-2, the current primary sources of emissions in Bernalillo County are highway vehicles (CO) and fugitive dust (PM_{10}). Table 3-3 shows 2004 Air Emissions for Non-Exempt Sources on Kirtland AFB. Primary emissions in the project area come from aircraft and vehicle emissions, as well as volatile organic compounds (VOCs) from nearby fuel dispensing facilities. Other mission- and non mission-related stationary sources include aircraft refueling and maintenance, explosive ordnance disposal, and corrosion control activity (surface coating-paint).

Table 3-3. Summary of Calendar Year 2004 Air Emissions for Non-Exempt Sources on Kirtland Air Force Base

Pollutant	Emissions	
	Actual[b] (tpy)	Allowable[b] (tpy)
CRITERIA POLLUTANTS AND PRECURSORS		
Carbon monoxide	13.0	124.2
Nitrogen dioxide	18.2	190.7
Particulate Matter	14.0	42.5
Particulate Matter equal to or less than 10 micrometers in diameter[a]	13.8	40.5
Sulfur dioxide	2.0	20.2
Volatile organic compounds	56.2	166.8
TOTAL HAZARDOUS AIR POLLUTANTS	3.4[c]	13.5

Source: United States Air Force 2005a.

Notes: [a] Particulate matter ≤10 µm is a subset of particulate matter.

[b] These cumulative totals include emissions from 20.11.40 New Mexico Administrative Code - Source Registration, 20.11.41 New Mexico Administrative Code (NMAC) - Authority-to-Construct permitted sources and Title V sources.

tpy = tons per year

[c] This number includes all HAP emissions for 20.11.40 NMAC and 20.11.41 NMAC registered sources, although many of these sources do not have HAP limits.

3.2 LAND USE AND VISUAL RESOURCES

3.2.1 Definition of Resource

Land use is the classification of either natural or human-modified activities occurring at a given location. Natural land use includes rangeland and other open or undeveloped areas. Human-modified land use classifications include residential, commercial, industrial, communications and utilities, agricultural, institutional, recreational, and other developed areas. Land use is regulated by management plans, policies, regulations, and ordinances (e.g. zoning) that determine the type and extent of land use allowable in specific areas and protect specially designated or environmentally sensitive areas.

In order to comply with construction and obstruction standards under Title 14, Part 77, Subpart C, construction must adhere to obstruction standards to air navigation. The surface of a takeoff and landing area of an airport or any imaginary surface established under Sec. 77.25, Sec. 77.28, or Sec. 77.29 must be considered. Imaginary surfaces are established with relation to the airport and to each runway and the site of each imaginary surface is based on the category of each runway. These surfaces include surfaces related to airport reference points and include: an inner horizontal surface, conical surface, and an outer horizontal surface. The following surfaces are related to runways and include: a clear zone surface, an approach clearance surface, and transitional surfaces.

Visual resources are defined as the natural and manufactured features that constitute the aesthetic qualities of an area. These features form the overall impression that an observer

receives of an area (i.e. its landscape character). An area's susceptibility to visual impacts is related to visual sensitivity. Highly sensitive resources include national parks, recreation areas, historic sites, wild and scenic rivers, designated scenic roads and other areas specifically noted for aesthetic qualities.

3.2.2 Existing Conditions

3.2.2.1 Kirtland Air Force Base Land Use

Current land use in the project area is Zia Park military family housing (single family residential). Land use to the west and southwest is the airfield (including runways/taxiways/apron) and aircraft ops/maintenance. To the northwest of the project area is multi-family residential. Land use to the south is open space (Kirtland AFB 2002) and is also considered developing urban (Bernalillo County 2004). To the east of the area is administration/research and industrial. Land use to the north is predominately open space and community use. Figure 3-1 shows existing land use on Kirtland AFB and the surrounding area.

Because the project area is so close to the airfield, existing and future land use must adhere to airfield imaginary surfaces in compliance with 14 Code of Federal Regulations Part 77. The project area is located within the 7:1 (slope of the transitional surface is 7 to 1 outward and upward at right angles to the runway centerline) transitional surface of the airfield. The project area has height limitations ranging from 75 feet within the southern portion of the area to 150 feet in the central portion of the project area.

3.2.2.2 Existing Visual Resources

The visual environment of the project area consists mostly of single family residential housing with some views of the mountains and airfield.

3.3 SOCIOECONOMICS

3.3.1 Definition of Resource

Socioeconomics are defined as the basic attributes and resources associated with the human environment. A Region of Influence (ROI) is defined as the geographic area or region wherein the project-induced changes to the socioeconomic environment would occur (Canter 1996). The ROI for the Proposed Action is Bernalillo County.

3.3.2 Existing Conditions

3.3.2.1 Population

The ROI had an estimated 2004 population of 593,765 (United States Census Bureau 2005). This was a 2 percent increase from 2003.

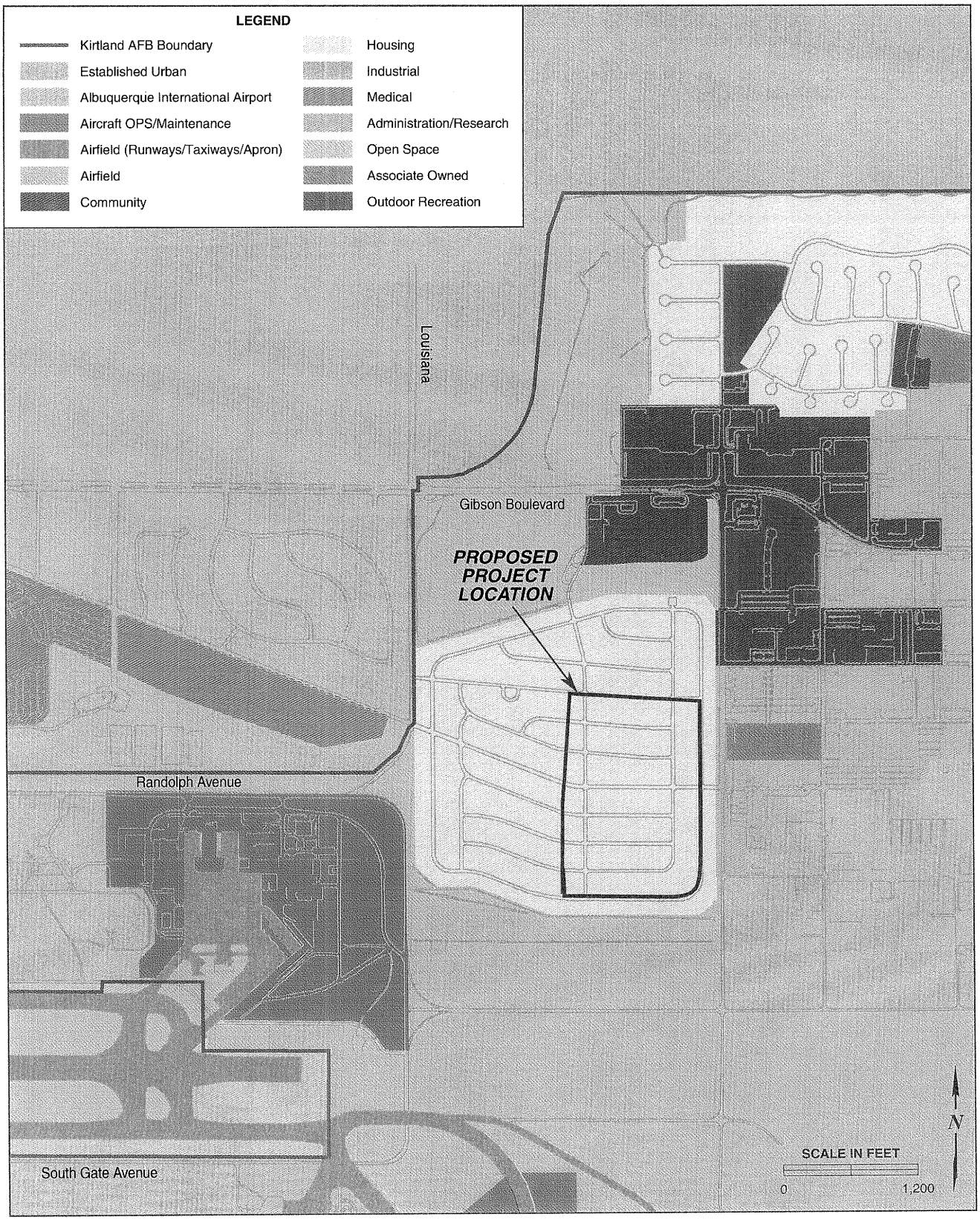

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FIGURE

EA **Existing Land Use on Kirtland Air Force Base and Surrounding Area** **3-1**

3.3.2.2 Economy within the Region of Influence

In Bernalillo County, per capita income in 2003 was estimated at $21,557 (United States Census Bureau 2003). The annual average unemployment rate at the beginning of 2005 within the ROI was 5.2 percent (New Mexico Department of Labor 2005).

3.3.2.3 Kirtland Air Force Base

Kirtland AFB had approximately 25,600 employees in fiscal year (FY) 2004 (United States Air Force [USAF] 2005b). The goods and services purchased by base employees in the local area create secondary jobs and wages, further adding to Kirtland's total economic importance to the local area. Kirtland AFB expenditures in FY 2004, including payroll, totaled over $2.4 billion. The economic contribution (dollar impact) of Kirtland AFB to the local economy in FY 2004 was estimated at just over $3.3 billion (USAF 2005b).

SECTION 4
ENVIRONMENTAL CONSEQUENCES

4.1 SUMMARY OF ENVIRONMENTAL RESOURCES NOT AFFECTED BY THIS ACTION

The following resources would not be impacted by the Proposed Action: health and safety, noise, biological resources, geological resources, water resources, cultural resources, transportation and circulation, utilities, environmental justice, and hazardous materials and wastes. The reasons for excluding them from detailed analysis are given in the following paragraphs.

4.1.1 Health and Safety

Construction and operation of the Pararescue (PJ)/Combat Rescue Officer (CRO) Campus would not occur within any runway protection zones, clear zones or explosive safety zones. All Occupational Health and Safety regulations would be followed by Air Force employees and workers. Implementation of the Proposed Action would not have a significant impact on the current health and safety environment in the proposed location site. The Proposed Action would not have any impacts on children, as children would not be in the area of the Proposed Action during construction or operation of the facilities.

4.1.1 Noise

Noise was not analyzed because construction of the proposed facilities would be temporary and short-term. Civilian and military aircraft operations dominate the noise environment in the area and no noise-sensitive receptors are nearby.

4.1.2 Biological Resources

Biological resources include native and naturalized wildlife and vegetation and sensitive species. Sensitive species are those listed as threatened, endangered, proposed, or candidate for listing by the United States Fish and Wildlife Service; New Mexico Energy, Minerals, and Natural Resources Department; and/or the New Mexico Department of Game and Fish. The proposed location for the PJ/CRO Campus is in a housing area on base that has existed since the 1950s. Biota in the area consists primarily of introduced vegetation species such as ornamental shrubs, trees and lawn grasses and animal species that are adapted to human-modified urban environments.

There are no federally listed threatened or endangered species known to occur on Kirtland Air Force Base (AFB) and the gray vireo, a state-listed species, occurs more than 5 miles from the site of the Proposed Action. For these reasons, biological resources are not addressed in this Environmental Assessment (EA).

4.1.3 Geological Resources

No important geological formations or soils are found in the area of the Proposed Action, therefore no impacts to these resources would occur. Existing soils were stable enough to support residences for decades and are stable enough to support the proposed Campus structures. The area is flat, so water erosion is not an issue and any wind erosion during construction activities would be controlled using standard Best Management Practices. For these reasons, impacts on geological resources were not addressed in this EA.

4.1.4 Water Resources

Potential impacts to water resources were not analyzed in this EA because there are no surface water bodies in the area of the Proposed Action and there would be no impacts to either surface or ground water from the proposed operational activities.

4.1.5 Cultural Resources

Kirtland AFB has identified over 80 historic buildings that have been determined to be eligible for the National Register of Historic Places (NRHP). Over 600 archaeological sites have been located within Kirtland AFB boundaries, although only a limited number of those sites are known to be eligible for the NRHP. Kirtland AFB has fulfilled the requirements of Sec. 106 of the National Historic Preservation Act of 1966, As Amended, for military housing on 15 February 2001. The reference for this consultation is "Class III Cultural Resources Survey and Building Evaluation for Proposed Privatization of Military Housing, Kirtland AFB, Bernalillo County, New Mexico" by Sullivan, Schilz, and O'Byrne on June 15, 1999.

The site for the Proposed Action has been previously disturbed through grading, construction of the houses, construction of the roads, and the personal landscaping throughout the neighborhood since the 1950s. As a result, no intact cultural resources exist within the area and potential impacts to cultural resources were not considered in this EA. However, an archaeologist will be available if any inadvertent cultural resources are discovered.

4.1.6 Transportation and Circulation

Transportation and circulation were not analyzed in this EA because the Proposed Action would not change the demand for transportation systems or add to traffic on roads in the vicinity of the Proposed Action. The PJ/CRO campus would be located in the southeast quadrant of a housing area that previously held 244 houses. The total number of students and instructors for the Campus is expected to reach 260 in the future, but not all of the students bring cars to the base when assigned to the campus. In addition, students would reside on campus and walk to classes every day. They would not be driving during the school day and would not generate traffic on base roads until after classes are over for the day. As a result, neither traffic patterns nor circulation would be altered by the Proposed Action. Short-term, temporary traffic generated by construction worker vehicles and

equipment would occur on base roads during the construction phase, but would be much less than the traffic that was generated by the residents of the housing area.

4.1.7 Utilities

Potential impacts to utilities including water supply, electric power, natural gas, sanitary sewer, and telephone service were not addressed in this EA because no changes to utilities would occur as a result of the Proposed Action. The proposed PJ/CRO Campus would not require any additional utility connections or supplies because it is being constructed in an area that has adequate utilities to support housing. There would be a minor increase in demand of utility services from operation of the new facilities. Recent improvements to utilities systems including ongoing infrastructure upgrades and Kirtland's 5-year Utility Improvement Plan (fiscal year 2002 – 2007) would continue to update and improve utilities on Kirtland AFB and in the project area. Because of recent and ongoing utility improvements, there would be an adequate supply of utility resources to accommodate the operation of these new facilities; therefore, there would be no significant impact on utility resources.

4.1.8 Environmental Justice

Executive Order 12898, *Federal Actions to address Environmental Justice in Minority Populations and Low-Income Populations,* (February 1994) requires federal agencies to consider disproportionately high and adverse environmental effects on minority and low-income populations.

Using information from the Department of Air Force's *Guide for Environmental Justice Analysis*, potential environmental justice impacts were assessed by identifying and comparing census tracts, communities of comparison, impact footprints, aerial photographs, and using the Bernalillo County Assessor's information. Overall, minimal impacts would result from the Proposed Action. The proposed projects would be located entirely within the boundaries of Kirtland AFB and on a site that was previously disturbed by construction and maintenance of a large military housing development. The project would result in approximately 57 acres of ground disturbance and temporary construction-related air emissions. There are no surface water bodies, wetlands, threatened or endangered species, or cultural resources present in the project areas. Standard construction practices would be implemented to minimize dust and impacts to soils. Because there would be no long-term adverse environmental impacts and populations defined by environmental justice regulations would be outside of the impact footprints, an environmental justice analysis is not required.

4.1.9 Hazardous Materials and Wastes

No change in use, creation or storage of hazardous materials or wastes would occur as a result of the Proposed Action when compared to current activities. A minor increase in the bio/medical waste stream would occur from additional students receiving medical training. Most of this would consist of fake blood on medical rugs, which is not

classified as infectious waste. A minor increase in sharps, and incidental blood waste would occur from intravenous cauterization training due to the increased student load. Approximately 350 pounds of solid waste (non-hazardous) would be generated each month from the Trauma Skills Training Facility, as a result of student training.

4.2 AIR QUALITY

4.2.1 Methodology

The 1990 amendments to the Clean Air Act (CAA) require federal agencies to conform to the affected State Implementation Plan (SIP) with respect to achieving and maintaining attainment of National Ambient Air Quality Standards (NAAQS) and addressing air quality impacts. An air quality impact resulting from a proposed action would be significant if it would: (1) increase concentrations of ambient criteria pollutants or ozone precursors to levels exceeding NAAQS, (2) increase concentrations of pollutants already at nonattainment levels, (3) lead to establishment of a new nonattainment area by the governor of the state or the Environmental Protection Agency, or (4) delay achievement of attainment in accordance with the SIP.

The CAA General Conformity Rule states that nonattainment and maintenance areas must conform to the applicable SIP. Kirtland AFB is covered by a carbon monoxide (CO) maintenance plan, and the applicable de minimis level for CO is 100 tons per year (tpy). Furthermore, total CO emissions in the Albuquerque-Bernalillo County air basin for 1999 were estimated to be 190,540 tpy, the latest year for which these data are available. Therefore, CO emissions from mobile, area, and stationary, as well as construction phase emissions associated with a project at Kirtland AFB would not be considered regionally significant unless they were in excess of 19,054 tpy (10 percent of 190,540). The CAA conformity rule states that only net emissions must be considered.

4.2.2 Impacts

Estimated CO emissions from construction and privately owned vehicles and equipment are outlined in Table 4-1.

Table 4-1. Construction Emissions from Proposed Action (tons per year)

Area Source	CO	NO_X	SO_2	VOC	PM_{10}
Grading Equipment (Phase I)	2.50	9.42	0.96	1.00	0.77
Grading Operations	0	0	0	0	164.05
Acres Paved (Phase II)	0	0	0	0.01	0
Mobile Equipment	1.87	4.45	0.55	0.41	0.36
Non-Residential Architecture	0	0	0	0.07	0
Residential Arch. Ctgs.	0	0	0	0.01	0
Stationary Equipment	12.65	0.33	0.02	0.47	0.01
Worker Trips	1.41	0.09	0	0.09	0.01
Total	18.43	14.28	1.52	2.06	165.21

Source: United States Air Force 2004.
Notes: CO = carbon monoxide NO_X = nitrogen oxides SO_2 – sulfur dioxides
VOC = volatile organic compounds PM_{10} = particulate matter equal to or less than ten micrograms in diameter

4.2.2.1 Proposed Action

Construction emissions were calculated for the proposed PJ/CRO campus construction using the USAF Conformity Applicability Model. Calculations were based on construction, grading, and square footage of support facilities. Total square footage for the facilities was estimated at 276,000, and 57 acres was used for the area. Dust controls used in the calculation of emissions included soil piles and exposed (graded) surfaces watered twice daily, loads with a secure cover, and no controls for the truck hauling road. The majority of construction emissions would come from particulate matter equal to or less than 10 micrometers in diameter (PM_{10}) from fugitive dust from ground disturbance, mostly from grading operations. Calculations for construction equipment and worker trips are also shown in Table 4-1. Construction emissions from the Proposed Action may temporarily affect sensitive receptors on base. However, emissions from construction vehicles and equipment would be temporary and minor.

There would be a temporary, short-term negative impact to air quality from construction emissions of fugitive dust from ground disturbance, and from CO emissions from construction equipment emissions. Generally, concentrations of CO and PM_{10} (fugitive dust) would be greatest in the immediate project area. Depending on wind direction, speed, and other meteorological factors, air quality would create a minor impact on surrounding areas during construction. There would be no increase in vehicle emissions for operation of the PJ/CRO campus because the number of personnel and students would remain the same as the number of people who occupied the residences in the southeast quadrant of the Zia Park housing.

Under the General Conformity Rule, a conformity determination is not needed for the Proposed Action because emissions would not be increased by ten percent or more for individual non-attainment pollutants or exceed de minimis threshold levels established in

40 Code of Federal Regulations 93.153(b) for individual non-attainment pollutants where an area has been redesignated as a maintenance area (refer to Table 3-3).

Emissions would be below the allowable pollutant thresholds under Kirtland's December 2002 Title V Operating Permit application. This permit application has yet to be approved by the Albuquerque Environmental Health Department. The permit threshold limits for the criteria pollutants are: 122 tpy (CO), 180 tpy (NOx), 20 tpy (SOx), 42 tpy (PM), 40 tpy (PM_{10}), 166 tpy (VOC), and 17 tpy (HAPs). An Authority-to-Construct Permit would not be needed since it is estimated that construction or operation of stationary sources would not exceed ten pounds per hour or 25 tpy of one or more regulated air contaminants, which would be PM_{10} for the Proposed Action.

Any active operations that would disturb between three-quarters of an acre (32,670 square feet) and 25 acres of total land surface require a submittal of a Fugitive Dust Control Permit and Fugitive Dust Control Plan application to the City of Albuquerque Environmental Health Department Air Quality Division. The Fugitive Dust Control Permit application and plan must be submitted at least 10 working days before the start of construction in accordance with New Mexico Administrative Code (NMAC) Title 20, Chapter 11, Part 20, (20.11.20 NMAC).

4.2.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed PJ/CRO Campus would not be built and therefore current conditions of air emissions would remain the same (refer to Tables 3-2 and 3-3).

4.3 Land Use and Visual Resources

4.3.1 Methodology

Potential impacts to land use are evaluated by determining if an action is compatible with existing land use and in compliance with adopted land use plans and policies including the Albuquerque/Bernalillo County Comprehensive Plan (City of Albuquerque 2002). In general, land use impacts would be considered significant if they would: (1) be inconsistent or noncompliant with applicable land use plans and policies, or (2) prevent continued use or occupation of an area.

In order to comply with construction and obstruction standards under Title 14, Part 77, Subpart C, construction must adhere to obstruction standards to air navigation. The surface of a takeoff and landing area of an airport or any imaginary surface established under Sec. 77.25, Sec. 77.28, or Sec. 77.29 must be considered. Imaginary surfaces are established with relation to the airport and to each runway and the site of each imaginary surface is based on the category of each runway. These surfaces include surfaces related to airport reference points and include: an inner horizontal surface, conical surface, and an outer horizontal surface. The following surfaces are related to runways and include: a clear zone surface, an approach clearance surface, and transitional surfaces.

Criteria for determining the significance of impacts to visual resources are based on the level of visual sensitivity in an area. Visual sensitivity is defined as the degree of public interest in a visual resource and concern over adverse changes in the quality of that resource. In general, an impact on a visual resource would be considered significant if implementation of an action would substantially alter a sensitive visual setting.

4.3.2 Impacts

4.3.2.1 Proposed Action

New facilities would include administrative, educational, and training land use. Land use would change from military family housing to a campus including education and administration, dormitories, physical training facilities, and a laboratory. However, the new facilities would be similar/compatible to other buildings in the surrounding area, and would comply with existing and projected land use and land use policies and plans (City of Albuquerque 2002).

Maintaining land use compatibility would include some restrictions to existing and future development of the project area. None of the buildings proposed to be constructed within the 7:1 transitional zone would exceed height limitations. No construction equipment should exceed 90 feet within the transitional surface area. Multi-story buildings, such as the dormitories and the training tower, would have to be constructed in the northern portion of the PJ/CRO Campus (Kirtland AFB 2003).

After assessing the visual character and relative sensitivity of the affected setting, changes to the landscape associated with the Proposed Action were examined in terms of their potential to noticeably alter existing viewsheds.

During construction, views of the proposed site location would include viewable construction equipment and materials. This would not result in a significant impact to the visual environment as it would be temporary and short-term. Once construction was completed, visual resources would be permanently altered by the addition of the PJ/CRO facilities. The proposed buildings would be constructed out of building blocks and earth-toned stucco walls, with accent areas at entries including sloped metal or tile roofs with accent colors. Entry canopies and overhangs would be constructed providing shade and entry identification (Kirtland AFB 2003). Most of the mature trees in the area would also be kept intact to allow for shading and screening, as well as visual enhancement.

4.3.2.2 No-Action Alternative

The No-Action Alternative would result in no change to land use or visual resources at Kirtland AFB.

4.4 SOCIOECONOMICS

4.4.1 Methodology

For this EA, impacts to socioeconomics would create an impact if there were increases or decreases in population or population distributions, economic activities; change in economic patterns, an increase or decrease in overall employment or unemployment levels, an increase or decrease in income levels. Population and expenditures were assessed by determining the action's direct effect on the economy. A socioeconomic impact could be considered significant if implementation of an action would substantially shift population trends, or adversely affect regional spending patterns.

Potential impacts to socioeconomic resources were analyzed by: (1) identifying and describing socioeconomic resources that could affect or be affected by a project, (2) examining the effects this action may have on socioeconomic resources, and (3) assessing the significance of potential impacts.

4.4.2 Impacts

4.4.2.1 Proposed Action

Socioeconomic impacts from implementation of the Proposed Action would be beneficial, but minor. Purchase of construction materials and salaries paid to construction workers would constitute a minor, temporary, beneficial impact on the local economy. Contracts for construction equipment would also have a minor temporary, beneficial impact. Beneficial impacts from creation of a few new jobs at the facilities would result in very minor long-term beneficial impacts to socioeconomics from operation of the proposed facilities. In an area the size of Bernalillo County, these impacts would be negligible.

4.4.2.2 No-Action Alternative

Selection of the No-Action Alternative would not result in any changes to socioeconomics (economy or population) in Bernalillo County.

SECTION 5
CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 CUMULATIVE EFFECTS

Council on Environmental Quality (CEQ) regulations stipulate that the cumulative effects analysis in an Environmental Assessment (EA) should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 Code of Federal Regulations 1508.7). Recent CEQ guidance (CEQ 1997) in considering cumulative effects affirms this requirement, stating that the first steps in assessing cumulative effects involves defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider other projects that coincide with the location and timetable of the proposed action and other actions. Cumulative effects analysis must also evaluate the nature of interactions among these actions.

In this EA, an effort has been made to identify all actions that are being considered and are in the planning phase at this time at Kirtland Air Force Base (AFB). To the extent that details regarding such actions exist and the actions have a potential to interact with the Proposed Action in this EA, these actions are included in this cumulative analysis. This approach enables decision-makers to have the most complete information available so that they can evaluate the environmental consequences of a proposed action in relation to other projects that may affect the same region of influence.

5.1.1 Past Actions Relevant to the Proposed Action and Alternative

Kirtland AFB is a large, active military installation that undergoes changes in mission and in training requirements. This process of change is consistent with the United States Defense policy that military installations must be ready to respond to constantly changing threats to American interests throughout the world. To assess these continuing changes, the 377th Air Base Wing at Kirtland AFB continuously prepares EAs of military construction actions every year for the past several years. Those EAs document the potential impacts of multiple proposed construction actions across the 52,000 acre base. These actions, by their nature and timing, involve activities that could have similar impacts to those addressed in this EA.

5.1.2 Present Actions Relevant to the Proposed Action and Alternative

Because of its size, number of associate and tenant organizations (over 400) and amount of activity, Kirtland AFB requires occasional demolition of old facilities, new construction, facility improvements, and infrastructure upgrades. Currently, aging base housing is being demolished and replaced with new housing. This will continue over the next decade until all of the old housing has been removed. This action, by its nature and timing, involves activities that could have similar impacts to those addressed in this EA.

5.1.3 Reasonably Foreseeable Actions that Could Interact with the Proposed Action and Alternative

This category of actions includes United States Air Force actions that have a potential to partially coincide, either in time or geographic extent, with the Proposed Action. Information on these actions is included to determine whether these actions would, if implemented, incrementally affect environmental resources. These recently proposed or currently planned actions include:

- Base Realignment and Closure beddown of Jenkins Air Force Reserve Center;
- the ongoing relocation of Truman Gate;
- the proposed construction and operation of a car wash and drive-thru coffee kiosk by the Army and Air Force Exchange Services in late 2005;
- the proposed beddown of a training wing of CV-22 Osprey tilt-rotor aircraft at Kirtland AFB would start in 2006 and end in 2011;
- the proposed construction and operation of an HC-130P Flight Simulator Facility and a Corrosion Control Facility by the 58 Special Operations Wing in late 2005 and 2006;
- the construction and operation of Phase I of the Kirtland Technology Park from 2006 to 2010;
- the planned construction and remediation activities in the Bulk Fuels Area; and
- the proposed construction and use of an Urban Training Area (site to be determined).

These actions, by their nature and timing, involve activities that could have similar impacts to those addressed in this EA.

5.2 Analysis of Cumulative Effects

An analysis was done of the potential for cumulative impacts resulting from the actions described above when combined with the Proposed Action in this EA. All the actions identified in Section 5.1 are federal actions, with the requisite National Environmental Policy Act (NEPA) analyses. The draft or final EA of each of those actions listed above have identified no significant adverse or beneficial impacts from each of the activities individually or cumulatively.

The scope of this cumulative effects analysis was limited to the resources analyzed in Section 4 of this EA. The following resources were not analyzed in this EA; health and safety, noise, biological resources, geological resources, water resources, cultural resources, transportation and circulation, utilities, environmental justice, and hazardous materials and wastes. Since the Proposed Action would have negligible impacts on these resources, it would not contribute to cumulative impacts in these areas either.

The three resources that were analyzed in Section 4 are air quality, land use and visual resources, and socioeconomics.

5.2.1 Air Quality

Construction equipment and vehicles produce carbon monoxide, an emission monitored in the Albuquerque-Bernalillo County area. In addition, fugitive dust is created from soil disturbance during construction. Permits are required by the City of Albuquerque-Bernalillo County for construction activities that disturb ¾ acre or more. Fugitive dust at construction sites is monitored by the Albuquerque-Bernalillo County Air Quality Control Board and construction activities are restricted if air quality is being degraded. Although the construction of the PJ/CRO Campus would have a temporary negative impact on air quality from dust and construction equipment, those effects would be minor. The combined emissions from the Proposed Action in this document, when considered with potential emissions from the other actions considered, are not expected to have any significant cumulative impacts on air quality.

5.2.2 Land Use and Visual Resources

If the proposed Campus were built, land use would change from military family housing to a campus that would include a variety of functions including dormitories, a laboratory, classrooms, physical training facilities, a warehouse and administrative facilities. These facilities would be compatible with surrounding facilities and land uses and would not impact base land use. As a result, the Proposed Action, when considered with potential effects from the other proposed or ongoing actions considered, are not expected to have any significant cumulative impacts on land use.

5.2.3 Socioeconomics

The total value of Kirtland AFB's economic impact to the local community was over $3.3 billion in fiscal year 2004. Military construction on Kirtland accounted for over $17.5 million and other construction for over $15.3 million during that time (Kirtland AFB 2004). The Proposed Action, when considered with all other construction occurring at Kirtland AFB, is expected to add slightly to the overall economy of the Albuquerque metropolitan area. Most of the other proposed actions are not extensive and do not have any additional impacts on the community following construction, other than the economic benefit through any repair and maintenance which would be contracted. As a result, the cumulative effects of the Proposed Action when considered with all the proposed and foreseeable actions would add to the base's current economic contribution to the area but with no significant change expected.

5.3 Irreversible and Irretrievable Commitment of Resources

Irreversible commitment generally means material, non-material, and financial resources consumed that cannot be replaced. An irretrievable commitment of resources refers to the loss of production, harvest, or use of natural resources that occur over the life of the

proposed action. For purposes of this EA, impacts are considered irreversible and irretrievable where: uses of nonrenewable resources by implementing the proposed action are of sufficient magnitude that removal or nonuse thereafter is unlikely; and primary and secondary impacts generally commit future generations to similar uses. On this basis, the proposed action would result in the irreversible and irretrievable commitment of resources needed for construction of new facilities. These resources would be fuel, electricity, construction materials, and water. Degradation to air quality that would result from construction activities would be temporary and reversible upon completion of project construction. Air quality effects from operation of the proposed facilities would be irreversible over the life of the facilities. Although Best Management Practices have been incorporated into the Proposed Action to reduce soil erosion, the minor loss of soil during construction activities represents an irretrievable and irreversible commitment of resources. The No-Action Alternative would not create any additional irreversible or irretrievable commitment of resources.

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SECTION 8
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APPENDIX A

AIR QUALITY

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The United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for criteria pollutants. These pollutants are generated by fossil fuels and generally emit from motor vehicles and industrial operations. Criteria pollutants include: Ozone (O_3), lead, sulfur dioxide, particulate matter equal to or less than ten micrometers in diameter, particulate matter equal to or less than 2.5 micrometers in diameter, carbon monoxide, and oxides of nitrogen (NOx).

Clean Air Act. The Clean Air Act (CAA) Amendments of 1990 place most of the responsibility on the states to achieve compliance with the NAAQS. The primary vehicle for implementation is the State Implementation Plan (SIP), which the EPA requires each state to prepare. A SIP is a compilation of goals, strategies, schedules, and enforcement actions that would lead the state into compliance with all federal air quality standards. Changes to the compliance schedule or plan must be incorporated into the SIP, which outlines measures by which the state can attain the NAAQS for criteria pollutants. Areas not in compliance with a standard can be declared a nonattainment area by the EPA and/or the appropriate state or local agency.

The CAA Amendments of 1990 require federal agencies to conform to the SIP with respect to achieving and maintaining attainment of the NAAQS (see Table B-1) and addressing air quality impacts. An air quality impact resulting from a proposed action would be significant if it would: (1) increase concentrations of ambient criteria pollutants or O_3 precursors to levels exceeding NAAQS, (2) increase concentrations of pollutants already at nonattainment levels, (3) lead to establishment of a new nonattainment area by the governor of the state or the EPA, or (4) delay achievement of attainment in accordance with the SIP.

Hazardous Air Pollutants. Hazardous Air Pollutants are toxic air pollutants and are listed in Section 112(b) of the CAA. These pollutants may present a hazard to human health through inhalation, ingestion, and absorption (Air Force Center for Environmental Excellence 2004).

General Conformity Rule. The 1990 CAA amendments require a conformity analysis for actions potentially affecting air quality in nonattainment and maintenance areas. If total direct and indirect emissions are estimated to exceed emissions thresholds, a conformity determination is required. The calculation of total direct and indirect emissions does not have to make specific reference to conventional emission source categories (i.e., stationary, area, and mobile sources). The total direct and indirect emissions of criteria pollutants attributable to the proposed action (e.g., O_3 precursors) must be considered. O_3 precursors include volatile reactive organic compounds and NO_X. Indirect emissions that must be considered are limited to emissions that could be practicably controlled.

The initial step in determining applicability of the General Conformity Rule is to compare projected pollutant emissions associated with the proposed federal action with threshold limits, or de minimis emission levels to determine if a conformity determination should be accomplished. If the proposed action's emissions would not exceed the de minimis threshold for the applicable pollutant and the proposed action's emissions would be less than 10 percent of the total emissions for the region, the Conformity Rule is not applicable.

A conformity applicability analysis is required to determine whether a federally proposed action is subject to requirements for a conformity determination under EPA's General Conformity Rule. The initial step in determining applicability of the General Conformity Rule is to compare projected pollutant emissions with baseline emissions (40 Code of Federal Regulations [CFR] § 51.853[b]). Conformity determinations are conducted to ensure that NAAQS would not be exceeded and that the proposed action would comply with all federal and state air quality regulations, goals, and plans. The threshold limits to determine if a conformity determination should be accomplished are identified in 40 CFR § 93.153. If the area is designated nonattainment for a pollutant, but the proposed action's emissions would not exceed the de minimis threshold and would be less than 10 percent of the total emissions budget for the region, a record of non-applicability is prepared.

Prevention of Significant Deterioration and Title V Operating Permits. Under the CAA, new stationary sources that are proposed for areas are subject to the requirements of the Prevention of Significant Deterioration (PSD) regulations. The PSD regulations require new stationary sources with emissions of criteria pollutants above 250 tons per year (tpy), or 100 tpy for specific source categories, to conduct an air quality impact analysis and demonstrate compliance with Best Available Control Technology requirements. Under the CAA Amendments Title V Operating Permits Program, all sources in attainment areas with emissions of criteria pollutants above 100 tpy must obtain a federal operating permit. The PSD/Title V major source threshold of 100 tpy for attainment pollutants was used to evaluate the Proposed Action's significance for air quality impacts, in accordance with the requirements of 40 CFR § 51.853.

Under Section 176(c) of the CAA, a framework is provided to ensure that federal actions conform to appropriate state or federal implementation plans. Before a federal agency or department engages in, supports, finances, licenses, permits, or approves any activity, that agency must ensure that such actions conform to the applicable implementation plan. According to the 1990 CAA amendments, the purpose of an air quality implementation plan is to eliminate or reduce the severity and number of violations of NAAQS and achieving expeditious attainment of these standards. Federal actions must not conflict with the implementation plan by causing or contributing to any new violation, increasing the frequency or severity of any existing violation, or delaying timely attainment of a standard or required interim milestone. If the proposed action does not conform to the SIP, they cannot be approved or allowed to proceed.

Table A-1. National Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS Primary Standards[a]	Secondary Standards[b]
Ozone (O_3)	8-hour[1]	0.08 ppm (157 µg/m^3)	Same as Primary
	1-hour[2]	0.12 ppm (235 µg/m3)	
Carbon Monoxide (CO)	8- hour[3]	9 ppm (10 mg/m^3)	None
	1 hour[3]	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NOx)	Annual (Arithmetic mean)	0.053 ppm (100 µg/m^3)	Same as Primary
	24-hour	None	
Sulfur Oxides (SO_2)	Annual (Arithmetic mean)	0.03 ppm (80 µg/m^3)	-------
	24-hour[3]	0.14 ppm (365 µg/m^3)	-------
	3-hour[3]	-------	0.5 ppm (1300 µg/m^3)
Particulate Matter (PM_{10})	Annual[4] (Arithmetic mean)	50 µg/m^3	Same as Primary
	24-hour[3]	150 µg/m^3	
Particulate Matter ($PM_{2.5}$)	Annual[5] (Arithmetic mean)	15.0 µg/m^3	Same as Primary
	24-hour[6]	65 µg/m^3	
Lead (Pb)	Quarterly Average	1.5 µg/m^3	Same as Primary

Source: Environmental Protection Agency 2004. Title 40, Part 50 of the Code of Federal Regulations.

Notes:
[1] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average O_3 concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
[2] The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is <= 1, as determined by appendix H.
The 1-hour NAAQS will no longer apply to an area one year after the effective date of the designation of that area for the 8-hour O_3 NAAQS. The effective designation date for most areas is June 15, 2004. (40 CFR 50.9; see Federal Register of April 30, 2004 [69 FR 23996].)
[3] Not to be exceeded more than once per year.
[4] To attain this standard, the expected annual arithmetic mean PM_{10} concentration at each monitor within an area must not exceed 50 µg/m^3.
[5] To attain this standard, the 3-year average of the annual arithmetic mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.
[6] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 65 µg/m^3.
[a] Set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.
[b] Set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and ;buildings.

ppm = parts per million µg/m3 = micrograms per cubic meter mg/m^3 = milligrams per cubic meter