

FINAL
ENVIRONMENTAL ASSESSMENT
FOR
PROPOSED REPLACEMENT OF THE SQUADRON
OPERATIONS FACILITY AT THE 140TH WING,
COLORADO AIR NATIONAL GUARD



Buckley Air Force Base, Colorado

September 2007

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14. ABSTRACT The 140th Wing (140 WG) of the Colorado Air National Guard (ANG) proposes to construct and operate an adequately sized, technologically up-to-date, and properly configured Squadron Operations Facility at Buckley Air Force Base (AFB) to accommodate the requirements of the Air Sovereignty Alert (ASA) and North American Aerospace Defense Command (NORAD) missions. The Proposed Action would provide a new Squadron Operation Facility as well as interior modifications to the existing Squadron Operations Facility (Building 700) to provide an adequate facility for the 140 Security Forces. Alternatives to the Proposed Action include two alternative site locations for the Squadron Operations Facility. This Environmental Assessment (EA) evaluates the potential environmental impacts from implementing the Proposed Action and alternatives. The EA has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action and alternatives. Under the No Action Alternative, no construction, modification, relocation, demolition, or operation of elements of the Proposed Action would occur. The environmental resources evaluated for the Proposed Action include land use, socioeconomic, air quality, noise, earth resources, water resources, biological resources, solid and hazardous materials and waste, utilities, environmental justice, and cultural resources.		
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FINDING OF NO SIGNIFICANT IMPACT
PROPOSED REPLACEMENT OF THE SQUADRON OPERATIONS FACILITY
AT THE 140TH WING, COLORADO AIR NATIONAL GUARD
BUCKLEY AIR FORCE BASE, COLORADO

AGENCY: Colorado Air National Guard, 140th Wing and United States Air Force (USAF), 460th Space Wing

BACKGROUND

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, Council on Environmental Quality (CEQ) NEPA implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), Department of Defense Directive 6050.1, and Air Force Instruction 32-7061, The Environmental Impact Analysis Process as promulgated in 32 CFR Part 989, and other applicable federal regulations, the Air National Guard Readiness Center and Buckley Air Force Base (AFB) conducted an assessment of the potential environmental consequences of the Proposed Action described below. The EA is incorporated herein by reference.

PROPOSED ACTION AND ALTERNATIVES

The 140th Wing (140 WG) of the Colorado Air National Guard (ANG) proposes to construct and operate an adequately sized, technologically up-to-date and properly configured Squadron Operations Facility at Buckley AFB to accommodate the requirements of the Air Sovereignty Alert (ASA) and North American Aerospace Defense Command (NORAD) missions. The Proposed Action will provide a new Squadron Operation Facility as well as interior modifications to the existing Squadron Operations Facility (Building 700) to provide an adequate facility for the 140 Security Forces. Alternatives to the Proposed Action include two alternative site locations for the Squadron Operations Facility.

FACTORS CONSIDERED IN DETERMINING THAT NO ENVIRONMENTAL IMPACT STATEMENT IS NEEDED

The Environmental Assessment (EA) analyzed the environmental impacts of the proposed action and alternatives taking into account all relevant environmental resource areas and conditions. Consideration of effects described in the EA and a finding that they are not significant is a necessary and critical part of this Finding of No Significant Impact (FONSI) as required by 40 CFR 1508.13. Significance criteria are defined in 40 CFR 1508.27 to consider direct, indirect and cumulative impacts and the context and intensity of impacts. The ANG and 460th Space Wing (460 SW) have examined the following resource areas in detail in the Affected Environment and Environmental Consequences section of the EA: land use, socioeconomics, air quality, noise, earth resources, water resources, biological resources, solid and hazardous materials and waste, utilities, environmental justice, and cultural resources. One known Area of Concern (Aqua Gas Area) may have released water-contaminated jet fuel within the Proposed Action area. Prior to implementation of construction, soils at the site will be adequately sampled and tested for contaminants. Should these samples reveal possible concerns within areas proposed for construction, appropriate remedial actions will be completed prior to construction activities commencing. Remediation will be coordinated with the 460 SW and appropriate state agencies.

The analyses indicated that implementing the proposed actions would have no significant direct, indirect or cumulative effects on the quality of the natural or human environment. Best

management practices described in the EA and incorporated into the proposed action, including post-construction monitoring and documentation, are generally required of the proponent by laws, regulations or USAF policies and are adopted by this decision.

PUBLIC NOTICE

NEPA, CEQ regulations, and the USAF and ANG Environmental Impact Analysis Process require public review of the EA prior to FONSI approval and implementation of the proposed action. A notice of availability for public review was published in the Denver Post on April 1, 2007, indicating a 30-day public review period. A hard copy of the Draft EA and FONSI was placed in each of the following public libraries: Aurora, Denver, and Boulder for review. The public had 30 days to review and submit comments on the EA. The public comment period ended on May 1, 2007.

FINDING OF NO SIGNIFICANT IMPACT

Based on the requirements of NEPA, 40 CFR 1500-1508, and 32 CFR 989, I conclude that the environmental effects of the proposed action are not significant; therefore, an environmental impact statement will not be prepared. The signing of this FONSI completes the ANG and 460 SW's Environmental Impact Analysis Process with respect to this proposal.

Approved:



DONALD W. McGEE, JR., Colonel, USAF
Commander, 460th Space Wing

AUG 30 2007

Date

**COVER SHEET
ENVIRONMENTAL ASSESSMENT
FOR
PROPOSED REPLACEMENT OF THE SQUADRON OPERATIONS
FACILITY AT THE 140TH WING, COLORADO AIR NATIONAL GUARD
AT BUCKLEY AIR FORCE BASE, COLORADO**

a. Responsible Agency: Colorado Air National Guard

b. Proposed Action: Construction, demolition, modification and operation of facilities for the Colorado Air National Guard at Buckley Air Force Base, Arapahoe County, Colorado.

c. Designation: Final Environmental Assessment

d. Abstract: The 140th Wing (140 WG) of the Colorado Air National Guard (ANG) proposes to construct and operate an adequately sized, technologically up-to-date, and properly configured Squadron Operations Facility at Buckley Air Force Base (AFB) to accommodate the requirements of the Air Sovereignty Alert (ASA) and North American Aerospace Defense Command (NORAD) missions. The Proposed Action would provide a new Squadron Operation Facility as well as interior modifications to the existing Squadron Operations Facility (Building 700) to provide an adequate facility for the 140 Security Forces. Alternatives to the Proposed Action include two alternative site locations for the Squadron Operations Facility.

This Environmental Assessment (EA) evaluates the potential environmental impacts from implementing the Proposed Action and alternatives. The EA has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action and alternatives. Under the No Action Alternative, no construction, modification, relocation, demolition, or operation of elements of the Proposed Action would occur.

The environmental resources evaluated for the Proposed Action include land use, socioeconomics, air quality, noise, earth resources, water resources, biological resources, solid and hazardous materials and waste, utilities, environmental justice, and cultural resources

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ACRONYMS

°F	degrees Fahrenheit
µg/kg	microgram/kilogram
µg/m ³	micrograms per cubic meter
120 FS	120 th Fighter Squadron
140 WG	140 th Wing
460 SW	460 th Space Wing
AAQS	Ambient Air Quality Standards
ACC	Air Combat Command
ACM	asbestos containing material
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFH	Air Force Handbook
AFI	Air Force Instruction
ANG	Air National Guard
ANGB	Air National Guard Base
AOC	Area of Concern
AQCR	Air Quality Control Region
ASA	Air Sovereignty Alert
ASE	Aerospace Support Equipment
AST	aboveground storage tank
AT/FP	Anti-Terrorism/Force Protection
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
dB	decibel
dBA	A-weighted decibel
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program

ACRONYMS

FONSI	Finding of No Significant Impact
Hz	Hertz
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
kWh	kilowatt
L _{dn}	Day-Night Average Sound Level
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFA	No Further Action
NO ₂	nitrogen dioxide
NORAD	North American Aerospace Defense Command
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O ₃	ozone
Pb	lead
PCB	polychlorinated biphenyl
PM _{2.5}	respirable particulate matter less than or equal to 2.5 micrometers in diameter
PM ₁₀	respirable particulate matter less than or equal to 10 micrometers in diameter
POL	petroleum, oil, and lubricant
ppm	parts per million
PSD	Prevention of Significant Deterioration
RI	Remedial Investigation
ROI	region of influence
RTD	Regional Transportation District
SF	square feet
SHPO	State Historic Preservation Office(r)
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SWPPP	Storm Water Pollution Prevention Plan
SY	square yard
TPY	tons per year

ACRONYMS

U.S.	United States
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound

1.1 INTRODUCTION

The 140th Wing (140 WG) of the Colorado Air National Guard (ANG) is located at Buckley Air Force Base (AFB) in Arapahoe County, Colorado. The 140 WG operates and maintains the airfield at Buckley AFB. The 140 WG is a tenant at Buckley AFB to the 460th Space Wing (460 SW), the host of Buckley AFB under the direction of Air Force Space Command. The current mission of the 140 WG is twofold. Its state mission is to obey the commands of the Governor of Colorado in times of natural or man-made disaster to ensure the safety of fellow citizens. On the Federal level, the 140 WG mission, in association with the 120th Fighter Squadron (120 FS) located at Buckley AFB, is to provide support for Federal, state, and community interests by providing highly trained personnel and mission ready equipment for close air support and air interdiction; protecting life and property; and preserving peace, order, and public safety. The 120 FS falls under the command of the 140 WG. The 120 FS currently flies and maintains 15 F-16 aircraft in support of its mission. Prior to the events of September 11, 2001, the 140 WG at Buckley AFB was designated as an Air Combat Command (ACC) unit and equipped accordingly. Since that date, Northern Command has tasked the 140 WG through the 1st Air Force (1AF) of the ACC with performing classified missions to include Air Sovereignty Alert (ASA), a North American Aerospace Defense Command (NORAD) mission, Noble Eagle, and other classified missions, requiring that the 140 WG be prepared to provide air-to-air support in response to national emergencies 24-hours a day, seven days per week. The 140 Operations Group, under the 140 WG, provides the capability to meet these taskings in accordance with their Design Operation Capability Tasking (DOC) per AFI 10-201. This AFI requires that adequate space be provided for the 140 Operations Group, the 140 Operations Support Squadron, and the 120 FS.

The 140 WG proposes to construct a Squadron Operations Facility at Buckley AFB to accommodate F-16 squadron operations for their ASA, NORAD, Noble Eagle, and other classified missions and to train personnel for a wartime tasking. NORAD is a bi-national United States (U.S.) and Canadian organization charged with the missions of aerospace warning and aerospace control for North America. Aerospace warning includes the monitoring of man-made objects in space, and the detection, validation, and warning of attack against North America whether by aircraft, missiles, or space vehicles, utilizing mutual support arrangements with other commands. Aerospace control includes ensuring air sovereignty and air defense of the airspace of Canada and the U.S.

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989, et seq., *Environmental Impact Analysis Process* (formerly promulgated as Air Force Instruction [AFI] 32-7061), the 140 WG is preparing this Environmental Assessment (EA) that considers the potential consequences to the human and natural environment that may result from implementation of this project.

1.2 PURPOSE AND NEED FOR THE ACTION

The purpose of the proposed action is to provide the 140 WG with an adequately sized, technologically up-to-date, and properly configured Squadron Operations Facility to accommodate F-16 squadron operations for their ASA, NORAD, Noble Eagle, and other classified missions and to train personnel for a wartime tasking. The current squadron operations function is housed in Building 700, a 17,370 square foot (SF) facility that was built to accommodate the 120 FS prior to their conversion from A-7 to F-16 aircraft. Although the 140 WG transitioned to F-16 aircraft during the early 1990s, Building 700 has not been modified to accommodate the additional missions. These missions have evolved to include digital avionics upgrades, data links suites, command and control computer systems, and many additional classified systems.

The current Squadron Operations Facility is not consistent with current mission requirements due to operations, communication, and most importantly security shortfalls. Examples include a lack of space (2,000 SF) for intelligence/weapons and command and control zone (CCZ), which requires Director of Central Intelligence Directive (DCID) 6/9 construction standards to be met. The current facility also lacks 950 SF for the 140th Operations Support Squadron (140 OSS) weather flight, as well as airfield management and flight management. These functions would have to be constructed as a separate appendage to the facility since they do not require the same levels of security, and they must be functional to the operations of the 140 Operations Group. The current layout of Building 700 requires pilots to backtrack throughout the building multiple times in order to obtain all essential information and equipment needed to prepare for a flying mission. Additionally, the number of personnel assigned to this facility has increased over the years to the extent that the assigned personnel exceed the design capacity of the building, resulting in an overcrowded work area. (The facility currently houses 25 full-time personnel during the standard workweek, including three personnel on a 24-hour basis under the ASA mission, and about 100 personnel on drill weekends). Due to the magnitude of the shortfalls of the Squadron Operations Facility, the facility is unable to adequately support mission responsibilities. Due to several factors, it is uneconomical and functionally inadequate to try to provide this required space with an addition to Building 700. First, the existing location of Building 700 does not allow for anti-terrorism/force protection (AT/FP) standoff distances from existing roads and parking lots to be met in accordance with Department of Defense (DoD) Instruction 2000.16. Second, Building 700 cannot meet exit distances per National Fire Protection Association 101 without compromising Sensitive Compartmented Information Facility (SCIF) standards in accordance with DCID 6/9. Third, Building 700 could not be modified to sufficiently connect or separate different levels of classified areas from unclassified areas.

The 140 Security Forces are also currently located within a facility (Building 706) that does not currently meet space requirements for this function that is key to the assigned missions. Upon completion of the new Squadron Operations Facility, the 140 Security Forces would be able to relocate to Building 700, which would meet their space requirements.

According to the 2003 Air National Guard Handbook (ANGH) 32-1084, *Facility Requirements*, space authorization for squadron operations facilities associated with Squadron Operations Category Code 141-753 is 27,000 SF. Because adequate space for squadron operations functions such as Base operations and parachute drying is currently provided in other facilities it would not be provided in the proposed Squadron Operations Facility. In order to meet current mission requirements, it has been determined that the 140 WG Squadron Operations Facility must include adequate space for weapons and tactics, standardization and evaluation, flight safety, flight records, physical training, life support, scheduling, unit administration, aircrew chemical warfare equipment, command post activities, operations management, mission planning, flight briefing/debriefing, intelligence briefing/debriefing, intelligence report preparation, intelligence analysis, intelligence/weapon administration, and intelligence planning systems space. As such, it has been determined that a new 22,950 SF technologically updated and properly configured facility to accommodate F-16 squadron operation for ASA, NORAD, Noble Eagle, and other classified missions and to train personnel for a wartime tasking is required for the 140 WG at Buckley AFB.

1.3 LOCATION AND DESCRIPTION OF THE 140 WG

The 140 WG of the Colorado ANG is located within the boundaries of Buckley AFB in Aurora, Colorado, in Arapahoe County (Figure 1-1). Buckley AFB occupies a total of 3,284 acres. The 140 WG currently maintains 43 permanent facilities and manages the airfield at Buckley AFB.

The 140 WG currently flies and maintains F-16 fighter aircraft in support of its mission. The main support operations performed at the 140 WG include aircraft fueling, aircraft deicing, aircraft

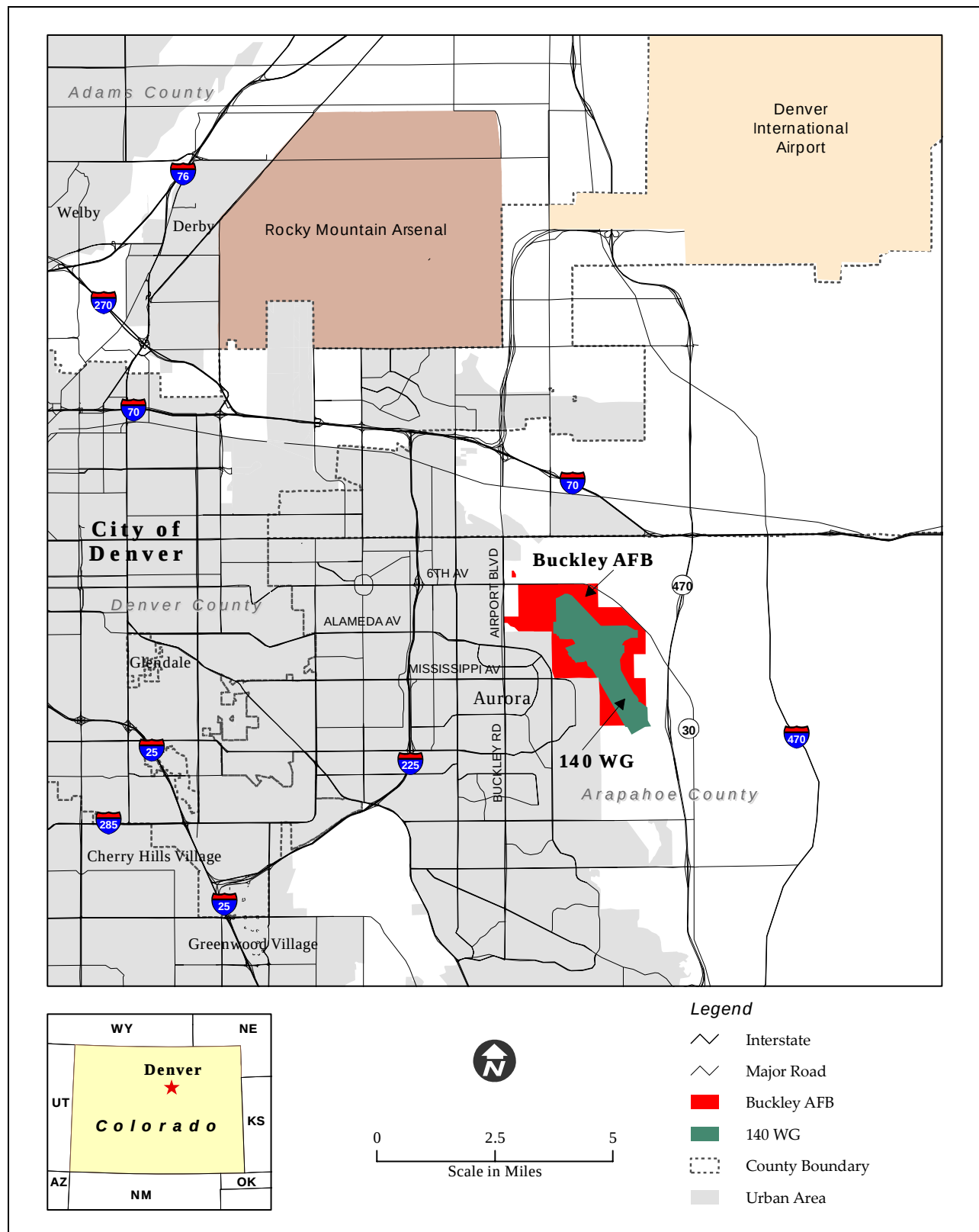


Figure 1-1. Regional Location of 140 WG, Buckley AFB, Colorado

maintenance, aerospace support equipment (ASE) maintenance, ground vehicle maintenance, fueling of ground vehicles, and facilities maintenance.

1.4 SUMMARY OF KEY ENVIRONMENTAL REQUIREMENTS

1.4.1 National Environmental Policy Act

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

- Briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).
- Aid in an agency's compliance with NEPA when an EIS is not necessary.
- Facilitate preparation of an EIS when one is necessary.

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

1.4.2 Environmental Coordination

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

2.1 INTRODUCTION

The 140 WG currently maintains 43 permanent facilities at Buckley AFB (Figure 2-4). The existing 140 WG Squadron Operations Facility (Building 700) at Buckley AFB does not adequately meet specific mission requirements due to space, operations, communications, and most importantly, security shortfalls, and as such, the facility is not consistent with current ASA and NORAD mission requirements..

The proposed action would provide the 140 WG with an adequately sized, technologically up-to-date, and properly configured Squadron Operations Facility to accommodate F-16 squadron operations associated with its assigned missions and to train personnel for a wartime tasking. As such, this EA evaluates three site location alternatives for construction of a new Squadron Operations Facility, as well as an alternative for additions and alterations to the existing Squadron Operations Facility in order to meet the purpose and need. Selection criteria for the site of the Squadron Operations Facility include: provides sufficient space to provide for an adequately sized facility; is sited in a location adjacent to the flight line; is sited in a location that meets AT/FP requirements; is sited in a location that provides sufficient adjacent parking for assigned personnel; provides additional facility space for other 140 WG functions.

2.2 PROPOSED ACTION (PREFERRED ALTERNATIVE)

Under the Proposed Action, the 140 WG would construct a new two story 22,950 SF Squadron Operations Facility that would be constructed south of Building 700 (the existing Squadron Operations Facility) (Figure 2-5). The new facility would include reinforced concrete and grade beam foundation, steel frame, masonry walls, brick and stucco exterior finish, and a sloped metal roof. All necessary exterior utilities connections, access pavements and parking, fire protection, Department of Defense (DoD) AT/FP standards for new inhabited buildings of a minimum standoff distance of 33 feet (10 meters) from parking areas and roadways, drainage features, and landscaping would also be included. This facility would provide space to accommodate F-16 squadron operations for ASA and NORAD missions and to train personnel for wartime tasking. The facility would provide adequate space for the following tasks and/or activities: weapons and tactics, scheduling, unit administration, aircrew chemical warfare equipment, command post activities, operations management, mission planning, flight briefing/debriefing, intelligence briefing/debriefing, intelligence report preparation, intelligence analysis, intelligence/weapon administration, and intelligence planning systems. A 60- to 80-foot tall stand-alone radio tower with 16 antennas would be constructed on the east side of the new facility to serve the facility's communications equipment. Building 700 would undergo minor interior modification and be occupied by the 140 Security Forces upon completion of the new Squadron Operations Facility.



Figure 2-1. The new Squadron Operations Facility would be located in this area south of Building 700 under the Proposed Action (photo taken facing northeast).

The proposed action site (Site Location 1) is located in the general vicinity of Building 700. The project site currently encompasses undeveloped land (grass and bare ground) and a paved parking lot associated with Building 700; however, modification to the parking lot would not be required and this parking lot is adequate to meet parking needs associated with the new building. Site Location 1 is the preferred site alternative due to its proximity to the flightline, underground utilities connections, and existing parking, as well as AT/FP conditions (i.e., distance from Aspen Street).

2.3 ALTERNATIVE ACTION 1: SITE LOCATION 2

Site Location 2 for the proposed Squadron Operations Facility is also located in the general vicinity of Building 700, east of Building 805 and approximately 250 feet southeast of Site Location 1. The proposed Squadron Operations Facility associated with Site Location 2 would be the same as that described under the proposed action with regard to square footage and the types of functions/activities it would serve. However, siting of the new facility at this location would also require construction of an approximately 31,500 SF parking area to accommodate 100 vehicles. The site is undeveloped and includes an existing storm water drainage ditch (see photo) that would be placed in a culvert under Alternative Action 1. Site Location 2 is sufficiently close to the flightline to meet the purpose and need of the proposed action and features adequate AT/FP features (i.e., distance from Aspen Street). Underground utilities connections are also available to this site. Building 700 would undergo minor interior modification and be occupied by the 140 Security Forces upon completion of the new Squadron Operations Facility.



Figure 2-2. Under Alternative Action 1, the new facility would be constructed in this undeveloped area east of Building 805 (photo taken facing east).

2.4 ALTERNATIVE ACTION 2: SITE LOCATION 3

Site Location 3 is located west of Building 805, approximately 200 feet south of Project Site 1. The proposed Squadron Operations Facility associated with Site Location 3 would be the same as that described under the proposed action with regard to square footage and the types of functions/activities it would serve. There are existing paved parking areas located to the north of this site that would provide adequate parking to serve the new facility. The site is generally undeveloped, although construction in this area would require placing an existing drainage ditch within a culvert. Site Location 3 would not fully address the purpose and need of the Proposed Action due to its greater distance from the flightline compared to the preferred alternative and because it is too close to Aspen Street to provide adequate AT/FP. Underground utilities connections are available to this site. Building 700 would undergo minor interior modification and be occupied by the 140 Security Forces upon completion of the new Squadron Operations Facility.



Figure 2-3. Under Alternative Action 2, the new facility would be constructed in this undeveloped area west of Building 805 (photo taken facing south).

2.5 ALTERNATIVE ACTION 3: UPGRADE EXISTING SQUADRON OPERATIONS FACILITY

Under Alternative 3, Building 700 would undergo an approximately 5,600 SF addition as well as interior renovations to make the existing layout more efficient and upgrades to the building's electric system in order to meet the current facility requirements of the 140 WG mission. As stated in Section 1.2, several factors make it uneconomical and functionally inadequate to try to provide required space with an addition to Building 700 (e.g., the existing location of Building 700 does not allow for AT/FP standoff distances from existing roads and parking lots to be met; Building 700 cannot meet exit distances per National Fire Protection Association 101 without compromising SCIF standards in accordance with DCID 6/9; and Building 700 could not be modified to sufficiently connect or separate different levels of classified areas from unclassified areas. Additionally, this alternative would not provide needed space to

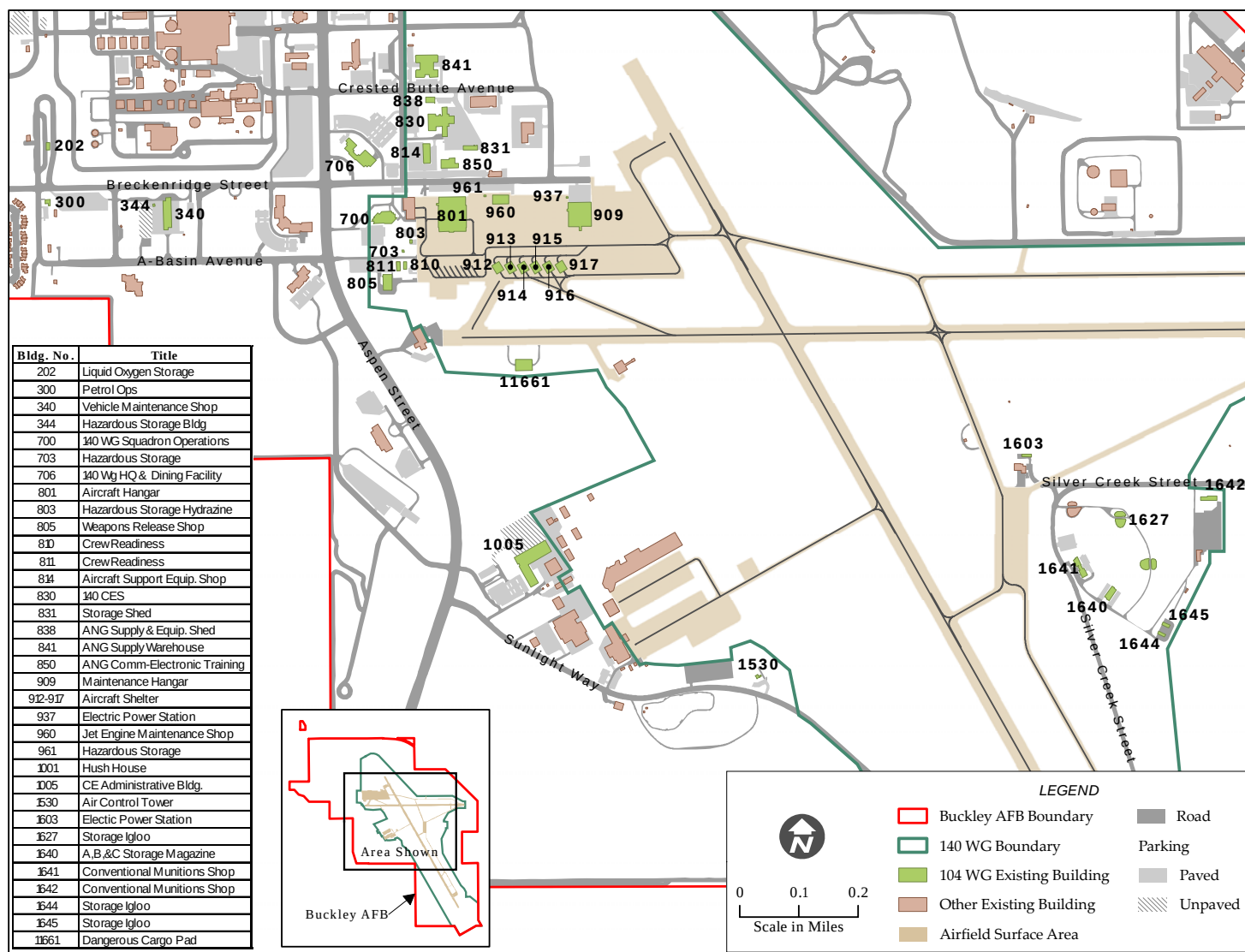


Figure 2-4. Existing Facilities at the 140 WG, Buckley AFB, Colorado

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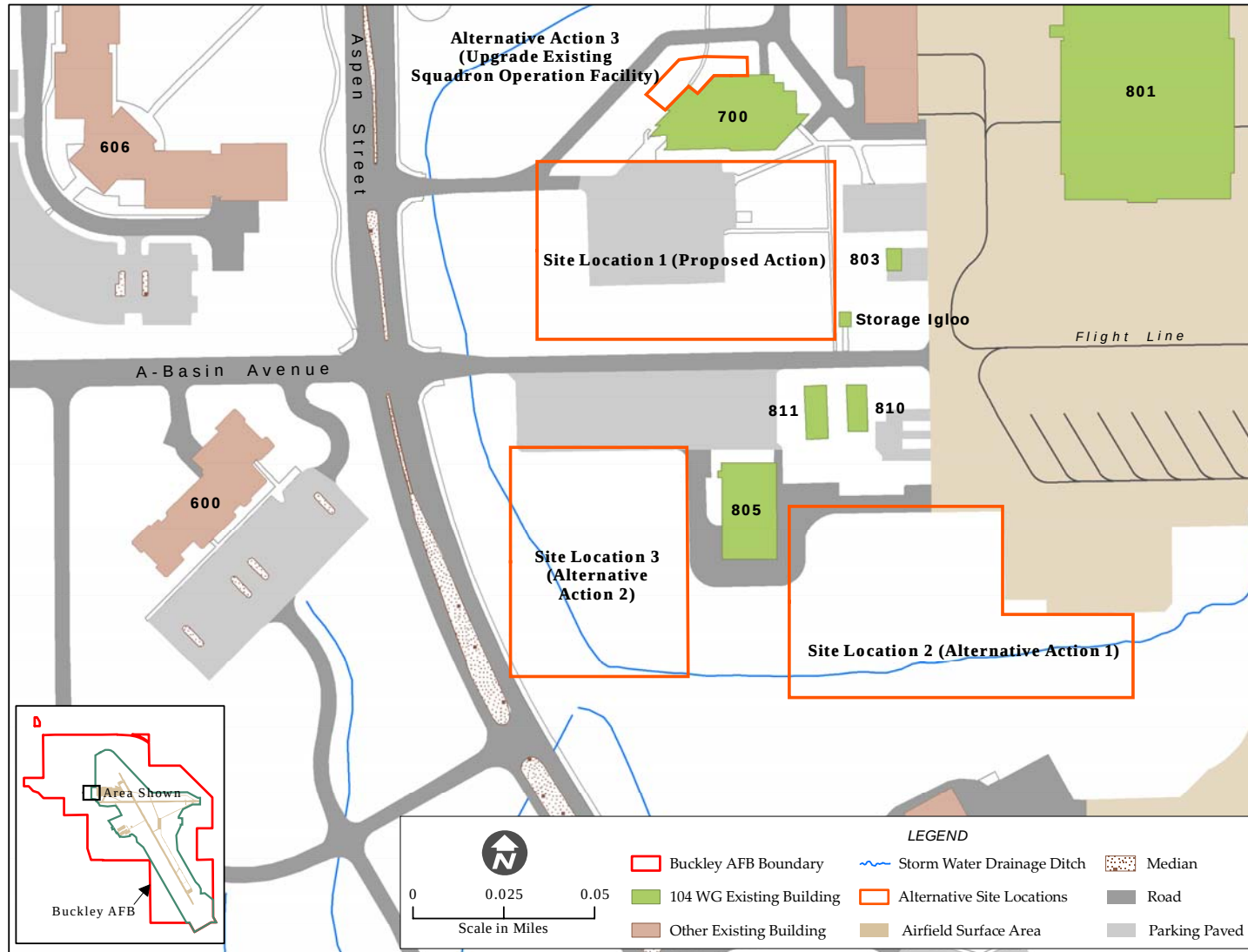


Figure 2-5. Alternative Site Locations for the Proposed Squadron Operations Facility at the 140 WG, Buckley AFB, Colorado

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the 140 WG Security Police. Although this alternative does not fully meet the purpose and need of the Proposed Action since it does not provide required space for the 140 Security Forces, it is carried forward for analysis in this EA.

2.6 NO ACTION ALTERNATIVE

Under the No Action Alternative, the 140 WG would continue to use the existing Squadron Operations Facility (Building 700) to accommodate F-16 squadron operations for ASA and NORAD missions and to train personnel for a wartime tasking. This would result in continued degradation of the 140 WG's mission effectiveness due to the inadequacies of Building 700 including:

- Inconsistencies with current ASA and NORAD mission requirements due to substantial operations, security, and communication shortfalls.
- An inefficient layout that requires pilots to back track throughout the building multiple times in order to obtain all essential information and equipment needed to prepare for a flying mission.
- An overcrowded work area due to the number of assigned personnel exceeding the design capacity of the building.

2.6.1 SELECTION OF THE PREFERRED ALTERNATIVE

Based on the selection criteria provided in Section 2.1, as well as the analysis provided in Chapter 3 of this EA, the Site Location 1 has been selected as the Preferred Alternative to implement construction of the Squadron Operations Facility. Site Location 1 meets all of the selection criteria for the Proposed Action, which includes the following:

- provides sufficient space to provide for an adequately sized facility
- is sited in a location that meets AT/FP requirements
- is sited in a location adjacent to the flight line
- is sited in a location that provides sufficient adjacent parking for assigned personnel.

Although there are no major differences between the three site alternatives (i.e., all are generally located in the same general area of the Base within approximately 300 feet of each other), Site Location 1 does not present any unique constraints. Site Alternative 2 would require construction of a parking lot, which would increase the magnitude of adverse impacts associated with short-term air quality, long-term water quality, and long-term loss of wildlife habitat (although these impacts would still be minor). Site Alternative 3 would present unique impacts associated with the potential for contaminated soils due to Environmental Restoration Program Site 6 (which is closed). Although Alternative Action 3 (Improvements to Existing Squadron Operations Facility) would result in a smaller magnitude of impacts compared to the other action alternatives due to the smaller construction footprint, it would not provide needed space for other 140 WG functions (under each of the other action alternatives, it is anticipated that the 140 Security Forces would occupy the existing Squadron Operations Facility, Building 700). Additionally, due to land constraints in the vicinity of Building 700, necessary additions to the building would not be in compliance with AT/FP setback criteria. In consideration of all the factors above, Site Location 1 is considered the Preferred Alternative.

2.7 COMPARISON OF ALTERNATIVES

Table 2-1 compares the impacts to resources analyzed in this EA for the proposed action, Action Alternatives 1, 2, and 3, and the No Action Alternative.

Table 2-1. Comparison of Alternatives

Resource	Proposed Action	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Land Use	No impact to land use as facility conforms with Buckley AFB General Plan.	No impact to land use as facility conforms with Buckley AFB General Plan.	No impact to land use as facility conforms with Buckley AFB General Plan.	No impact to land use as facility use would not change.	No impacts.
Socioeconomics	Minor, short-term beneficial impacts due to construction expenditures.	Minor, short-term beneficial impacts due to construction expenditures.	Minor, short-term beneficial impacts due to construction expenditures.	Minor, short-term beneficial impacts due to construction expenditures.	No impacts.
Air Quality	Minor, short-term adverse impacts from dust emissions due to soil removal and site grading, and from criteria pollutant emissions from construction equipment.	Minor, short-term adverse impacts from dust emissions due to soil removal and site grading, and from criteria pollutant emissions from construction equipment. Slightly increased emissions due to construction of parking area.	Minor, short-term adverse impacts from dust emissions due to soil removal and site grading, and from criteria pollutant emissions from construction equipment.	Minimal, short-term adverse impacts from dust emissions due to soil removal and site grading, and from criteria pollutant emissions from construction equipment. Lower emissions as compared to other action alternatives.	No impacts.
Noise	Minor, short-term adverse impacts due to construction noise.	Minor, short-term adverse impacts due to construction noise.	Minor, short-term adverse impacts due to construction noise.	Minor, short-term adverse impacts due to construction noise.	No impacts.
Earth Resources	Minor, short-term adverse impacts due to grading and excavating soils during construction.	Minor, short-term adverse impacts due to grading and excavating soils during construction.	Minor, short-term adverse impacts due to grading and excavating soils during construction.	Minor, short-term adverse impacts due to grading and excavating soils during construction.	No impacts.
Water Resources	Minor, long-term adverse impacts due to increase in impervious surface.	Minor, long-term adverse impacts due to increase in impervious surface. Slightly increased water quality impacts due to runoff from construction of parking area.	Minor, long-term adverse impacts due to increase in impervious surface.	Minor, long-term adverse impacts due to increase in impervious surface.	No impacts.

Table 2-1. Comparison of Alternatives

Resource	Proposed Action	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Biological Resources					
Vegetation	Minor, long-term adverse impacts due to loss of approximately 11,500 SF of non-native grass.	Minor, long-term adverse impacts due to loss of approximately 43,000 SF of non-native grass.	Minor, long-term adverse impacts due to loss of approximately 11,500 SF of non-native grass.	Minor, long-term adverse impacts due to loss of approximately 5,600 SF of non-native grass.	No impacts.
Wetlands	Minor, long-term indirect adverse impacts due to increase in surface water flows.	Minor, long-term indirect adverse impacts due to increase in surface water flows.	Minor, long-term indirect adverse impacts due to increase in surface water flows.	Minor, long-term indirect adverse impacts due to increase in surface water flows.	No impacts.
Wildlife	Minor, short-term adverse impacts due to construction noise.	Minor, short-term adverse impacts due to construction noise.	Minor, short-term adverse impacts due to construction noise.	Minor, short-term adverse impacts due to construction noise.	No impacts.
Threatened and Endangered and Other Sensitive Species	Minor, long-term adverse impacts due to loss of potential Black tailed Prairie Dog and burrowing owl habitat. Surveys for prairie dogs and burrowing owls and other migratory birds will occur prior to construction if construction is scheduled any time during the nesting season (March through September).	Minor, long-term adverse impacts due to loss of potential black tailed prairie dog and burrowing owl habitat. Surveys for prairie dogs and burrowing owls and other migratory birds will occur prior to construction if construction is scheduled any time during the nesting season (March through September).	Minor, long-term adverse impacts due to loss of potential black tailed prairie dog and burrowing owl habitat. Surveys for prairie dogs and burrowing owls and other migratory birds will occur prior to construction if construction is scheduled any time during the nesting season (March through September).	Minor, long-term adverse impacts due to loss of potential black tailed prairie dog and burrowing owl habitat. Surveys for prairie dogs and burrowing owls and other migratory birds will occur prior to construction if construction is scheduled any time during the nesting season (March through September).	No impacts.
Solid and Hazardous Materials and Waste	Minor, short-term adverse impacts due to solid and hazardous waste generation during construction. Minor, long-term adverse impacts due to generation of hazardous materials.	Minor, short-term adverse impacts due to solid and hazardous waste generation during construction. Minor, long-term adverse impacts due to generation of hazardous materials.	Minor, short-term adverse impacts due to solid and hazardous waste generation during construction. Minor, long-term adverse impacts due to generation of hazardous materials.	Minor, short-term adverse impacts due to solid and hazardous waste generation during construction. Minor, long-term adverse impacts due to generation of hazardous materials.	No impacts.

Table 2-1. Comparison of Alternatives

Resource	Proposed Action	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Transportation	No impacts.	Minor, long-term beneficial impact due to construction of parking area	No impacts.	No impacts.	No impacts.
Utilities	Minor, long-term adverse impacts due to increased demand.	Minor, long-term adverse impacts due to increased demand.	Minor, long-term adverse impacts due to increased demand.	Minor, long-term adverse impacts due to increased demand..	No impacts.
Environmental Justice	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.
Cultural Resources	No adverse impacts.	No adverse impacts.	No impacts.	No impacts.	No impacts.

3.1 LAND USE

This section describes existing land use on the Base and project area and presents information pertaining to the proposed action and alternatives and their affect, if any, on land use.

3.1.1 Affected Environment

The 140 WG of the Colorado ANG is located at Buckley AFB adjacent to the city of Aurora in Arapahoe County. Buckley AFB occupies approximately 3,284 acres (1,328 hectares) within the Denver Metropolitan Area. Existing and proposed land uses adjacent to the Base include: industrial and open space (conservation area) to the north; agricultural to the east; a Regional Park and Open Space designations for the area immediately south of the base; the East Toll Gate Creek 100-year Floodplain to the southwest; residential development to the southwest; and residential development and the Airport Boulevard Gateway Area, a growing business center, to the west and northwest (Air Force Center for Environmental Excellence [AFCEE] 2005).

Land use at Buckley AFB is predominantly industrial in nature, with notable land uses comprising the airfield and the large radomes (i.e., dome like structures housing radar equipment) in the northwest portion of the base. Facilities associated with the Colorado ANG are generally concentrated in the northern portion of the base, east of Aspen Street. Active duty facilities are generally located west of Aspen Street. Land uses on the Base are divided into 14 categories according to the Buckley AFB General Plan: Administrative, Aircraft Operations and Maintenance, Airfield, Airfield Pavements, Community Commercial, Community Service, Housing – Accompanied, Housing – Unaccompanied, Industrial, Medical, Mission Operations and Maintenance, Open Space, Outdoor Recreation, and Water (Buckley AFB 2005).

The project areas associated with the proposed action and alternatives are concentrated within an area near Building 700 immediately east of Aspen Street and west of the flightline. Building 700 and the site of the preferred alternative are located within an area designated as Administrative. Site Location 2 is located within an area designated Aircraft Operations and Maintenance, Open Space, and Airfield, and Site Location 3 is designated Aircraft Operations and Maintenance and Open Space (Buckley AFB 2005). The Preferred Alternative Site includes a paved parking lot, while Site Locations 2 and 3 are generally undeveloped with the exception of the drainage ditch(es) on those sites.

3.1.2 Impacts

3.1.2.1 Preferred Alternative

Construction of the new 22,950 SF Squadron Operations Facility and minor interior renovations to Building 700 to accommodate the 140 Security Forces at the Preferred Alternative Site would result in land use impacts. It would result in a long-term, minor increase in the intensity of development within the base. Facility construction would be completed in accordance with DoD minimum antiterrorism standards for habitable buildings, including a minimum of 33 feet from parking areas and roadways. Siting of the 60- to 80-foot radio antenna would be compatible with surrounding land use, and would be located outside of the runway object free and safety areas. This scenario does not introduce any new or incompatible land uses within the project area and is compatible with adjacent land uses and the Buckley AFB General Plan.

3.1.2.2 Alternative Action 1: Site Location 2

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior renovations to Building 700 associated with Alternative Action 1 would result in no land use impacts. The only difference under this alternative is the inclusion of a 31,500 SF vehicle parking area. This

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scenario is compatible with surrounding land uses and does not introduce any new land uses in the general area.

3.1.2.3 *Alternative Action 2: Site Location 3*

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior renovations to Building 700 associated with Alternative Action 2 would result in no land use impacts. This scenario is compatible with surrounding land uses and does not introduce any new land uses in the general area.

3.1.2.4 *Alternative Action 3: Addition/Alteration to Building 700*

Under Alternative Action 3, additions and alterations to Building 700 would result in no land use impacts, and would only serve to slightly increase the intensity of land use development at the base.

3.1.2.5 *No Action Alternative*

Under the No Action Alternative, no change to land use would occur and conditions would remain as described under section 3.1.

3.2 SOCIOECONOMICS

3.2.1 Affected Environment

3.2.1.1 *Population and Employment*

Arapahoe County was the fourth most populous county in Colorado in 2000 with a population of 487,967 (U.S. Census Bureau 2000a). The 2000 Census indicates that there were 190,909 households in Arapahoe County in 2000 with an average household size of 2.53 persons. There were 196,835 housing units in Arapahoe County with a vacancy rate of 3.0 percent. The City of Aurora, in which Buckley AFB is located, is the largest city in Arapahoe County with a 2000 population of 276,393, which represents 56.6 percent of Arapahoe County's population (U.S. Census Bureau 2000a).

The civilian labor force of Arapahoe County totaled 264,408 workers in 2002 (U.S. Census Bureau 2000b). The average annual unemployment rate in Arapahoe County was 5.0 percent in 2005, compared to 5.0 percent in Colorado and 5.1 percent in the nation for the same year (U.S. Bureau of Labor Statistics 2005a, 2005b). In 2000, Arapahoe County had a per capita personal income of \$28,147, compared to the state and national averages of \$24,049 and \$21,587, respectively (U.S. Census Bureau 2000c).

In Arapahoe County, the educational, health and social services industry was the largest employer in the county in 2000, accounting for 15.7 percent of civilian employment. Professional, scientific, management, administrative, and waste management services trade accounted for 13.2 percent, followed by retail trade with 12.1 percent of civilian employment (U.S. Census Bureau 2000c). Armed Forces employment represented 0.5 percent of county employment in 2000, accounting for 1,805 workers (U.S. Census Bureau 2000c).

Current manpower associated with the 140 WG at Buckley AFB comprises approximately 1,000 personnel, including approximately 350 full-time members and about 1,400 part-time, traditional guardsmen who drill one weekend per month (personal communication, Hawkins 2006). Total personnel employed by Buckley AFB was 12,709 in FY 2005. This total includes: 2,712 active duty personnel (all services); 1,716 ANG and Air Force reserve personnel; 2,497 Army/Navy/Marine Reserve personnel; 2,724 appropriated fund civilians; 249 civilian non-appropriated, and Base exchange personnel.

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3.2.2 Impacts

3.2.2.1 Preferred Alternative

Construction of the new 22,950 SF Squadron Operations Facility and minor interior renovations to Building 700 to accommodate the 140 Security Forces at the Preferred Alternative site would result in minor, beneficial socioeconomic impacts. Construction activities associated with the proposed action would be completed during Fiscal Year 2007 and involve expenditures on labor and materials. Potential beneficial impacts would include the creation of construction jobs over the entire construction period, associated direct earnings, expenditures on materials and fuels, as well as secondary effects leading to the creation of additional jobs and earnings. These potential impacts would be short-term, occurring for the duration of the construction period only, and are generally perceived as beneficial. No permanent or long-lasting socioeconomic impacts would result from implementation of the proposed action (e.g., there would be no changes in assigned personnel). The small number of jobs created is not expected to stimulate population increases in the region.

3.2.2.2 Alternative Action 1: Site Location 2

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior renovations to Building 700 associated with Alternative Action 1 would result in any minor socioeconomic impacts, although the creation of construction jobs and associated direct and indirect effects would result in short-term, beneficial impacts. The only difference under this alternative is the inclusion of a 31,500 SF vehicle parking area, which may contribute slightly to the expenditures on labor and materials.

3.2.2.3 Alternative Action 2: Site Location 3

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior renovations to Building 700 associated with Alternative Action 2 would result in minor socioeconomic impacts, although the creation of construction jobs and associated direct and indirect effects would result in short-term, beneficial impacts.

3.2.2.4 Alternative Action 3: Addition/Alteration to Building 700

Under Alternative Action 3, additions and alterations to Building 700 would result in minor socioeconomic impacts, although the creation of construction jobs and associated direct and indirect effects would result in short-term, beneficial impacts.

3.2.2.5 No Action Alternative

Under the No Action Alternative, the 140 WG would maintain their existing outdated facilities and would not build any of the new facilities proposed. Failure to implement the proposed improvements would not generate any of the beneficial construction-related employment or earnings impacts associated with the proposed action. Implementation of the No Action Alternative would result in no adverse or beneficial socioeconomic or environmental justice impacts.

3.3 AIR QUALITY

3.3.1 Affected Environment

Under the authority of the Clean Air Act (CAA), the United States Environmental Protection Agency (USEPA) has established nationwide air quality standards to protect public health and welfare, with an

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adequate margin of safety. These Federal standards, known as the National Ambient Air Quality Standards (NAAQS), represent the maximum allowable atmospheric concentrations and were developed for the following set of criteria pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), respirable particulate matter less than or equal to 10 micrometers in diameter (PM₁₀), respirable particulate matter less than or equal to 2.5 micrometers in diameter (PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb).

Regional Air Quality. Federal regulations at 40 CFR 81 delineate certain air quality control regions (AQCRs), which were originally designated based on population and topographic criteria closely approximating each air basin. The potential influence of emissions on regional air quality would typically be confined to the air basin in which the emissions occur. Therefore, the region of influence (ROI) for the proposed action is the Metropolitan Denver Intrastate Air Quality Control Region (AQCR 36), which includes Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, Gilpin, and Jefferson Counties in Colorado (40 CFR 81.16; 40 CFR 81, Appendix A). The State of Colorado refers to this AQCR as Region 2 for air quality regulatory purposes. Table 3-1 presents air emissions estimated for AQCR 36 for year 2006 (VOC, CO, and NO_x), and 2005 (PM₁₀ and SO_x) (Colorado Air Quality Control Commission [CAQCC] 2001a, 2001b, and 2003).

Table 3-1. Estimated 2006 Emissions Inventory for AQCR 36

Air Basin Location	Annual Emissions (tons)					
	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
AQCR 36	167,900	678,170	112,785	69,350	32,156	-

Note: PM_{2.5} emissions were not included in the inventory estimates.

Source: (CAQCC 2001a, 2001b, and 2003).

Attainment Status. A review of federally published attainment status for the Denver metropolitan area region in 40 CFR 81.306 indicated that this region is designated as moderate nonattainment for the Federal 8-hour ozone standard. The area is currently operating under an Early Action Compact, which allows additional time to demonstrate compliance with the 8-hour ozone standard. Meanwhile, the Denver metropolitan area is designated as attainment and is in maintenance status for the old 1-hour ozone standard. The region is required to meet and attain the 8-hour ozone NAAQS in June 2010. The Denver region is designated as attainment (i.e., meeting national standards) for all other criteria pollutants, including CO, NO₂, SO₂, PM₁₀, PM_{2.5}, O₃, and Pb. The Denver metropolitan area was designated as attainment for CO as of 14 January 2002 (66 FR 64751, 14 December 2001), and attainment for PM₁₀ as of 16 October 2002 (67 FR 58335, 16 September 2002). The region currently operates under maintenance plans for CO and PM₁₀ to ensure continuing good air quality. Therefore, although the county is designated attainment for CO and PM₁₀, conformity requirements apply for these two criteria pollutants (and ozone) due to its maintenance status.

PSD Class I Areas. Section 162 of the CAA established the goal of prevention of significant deterioration (PSD) of air quality in all international parks; national parks which exceeded 6,000 acres; and national wilderness areas and memorial parks which exceeded 5,000 acres if these areas were in existence on August 7, 1977. These areas were defined as mandatory Class I areas. The nearest PSD Class I areas to Buckley AFB is Rocky Mountain National Park, located 56 miles northwest of the Base. Two other PSD Class I areas are located within 100 miles, including the Eagles Nest Wilderness Area, 80 miles to the west, and the Rawah Wilderness Area, 92 miles to the northwest of the Base.

Climate. The Denver region experiences a semi-arid climate with dry, cold winters and warm summers. The average daily temperatures range from 60 to 90 degrees Fahrenheit (°F) in the hottest month (July) and 15 to 45°F in the coldest month (January). The region experiences an average of 156 days per year with temperatures below freezing, and 34 days per year with temperatures above 90°F. Denver skies are typically clear or partly cloudy 245 days per year on average. Winds average 8 to 10 miles per hour and typically come from the south. The Rocky Mountains to the west tend to block winter storms, resulting in

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relatively low precipitation, approximately 15 inches per year, in the metropolitan area. Snowfall averages approximately 60 inches per year (Western Regional Climate Center 2006a, 2006b).

Current Emissions. Air emissions at Buckley AFB and the 140 WG include stationary and mobile sources. Title V of the CAA requires states to issue Federal Operating Permits for major stationary sources. A major stationary source is a facility (e.g., plant, base, or activity) that emits more than 100 tons per year (TPY) of any criteria air pollutant; 10 TPY of a hazardous air pollutant (HAPs); or 25 TPY of any combination of HAPs (CDPHE 2006). The purpose of the permitting rule is to establish regulatory control over large, industrial activities and to monitor their impact upon air quality. The 140 WG operates within Buckley AFB, which has agreed to certain facility-wide emission limits in their Title V operating permit in order to be classified as a minor source under Colorado's permitting programs (Permit # 95OPAR118). Specifically, the Base is subject to a 249.9 TPY limit for SO₂ and NO_x, and a 99.9 TPY limit for particulate matter (PM), PM₁₀, VOC, and CO. The Base is required to demonstrate compliance with these limits by estimating 12-month rolling totals for criteria pollutants emitted from "significant sources," including No. 2 distillate-fired fuel burning equipment, emergency generators powered by diesel fuel internal combustion engines greater than 600 horsepower, the jet engine test cell, fuel storage in specified tanks, the Base exchange service station, and solvent degreasers. The Base must also report facility-wide total criteria pollutant and hazardous air pollutant emissions from all stationary sources per calendar year. Emissions from stationary sources are reported in the 2005 Emissions Inventory for Buckley AFB (Golder Associates 2006). Mobile source emissions are reported in the 2003 Emissions Inventory (URS 2004).

In the following table, NO_x includes NO₂ and other nitrogen compounds, and sulfur oxides (SO_x) include SO₂ and other sulfur compounds. Because VOCs and NO_x are precursors to the formation of O₃ in the atmosphere, control of these pollutants is the primary method of reducing O₃ concentrations in the atmosphere. Table 3-2 summarizes the results of emissions inventories for mobile and stationary sources at Buckley AFB for calendar years 2003 and 2005, respectively.

Table 3-2. Baseline Emissions at Buckley AFB

Source Type - Year	Annual Emissions (tons)					
	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Mobile Sources - 2003	56.9	204.5	40.6	2.1	5.0	-
Stationary Sources - 2005	26.4	21.8	52.0	1.5	6.1	-

Note: PM_{2.5} emissions were not included in the inventories.

Sources: For mobile sources (URS 2004) and stationary sources (Golder Associates 2006).

3.3.2 Impacts

3.3.2.1 Preferred Alternative

Construction Emissions. Emissions during the construction period were quantified to determine the potential impacts on regional air quality. Factors needed to derive construction source emission rates were obtained from the EPA MOBILE6 emissions model for on-road vehicles (EPA 2006a) and the EPA NONROAD emissions model for off-road equipment (EPA 2006b). Appendix B includes data and assumptions used to calculate emissions from construction of the Preferred Alternative (as well as the action alternatives). Emissions include contributions from engine exhaust (i.e., construction equipment and material handling) and fugitive dust (e.g., from grading activities). Estimated emissions that would occur from construction under the Preferred Alternative are presented in Table 3-3 (detailed air quality calculations are provided in Appendix B). The emissions shown would occur over the duration of the construction period. For the most conservative analysis, it was assumed that all construction activities would occur during one year.

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Table 3-3. Proposed Construction Emissions at Buckley AFB

Project Scenario	Emissions (tons)					
	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Preferred Alternative	0.1	0.5	0.8	0.1	0.4	0.2
Alternative 1	0.1	0.5	0.9	0.1	0.4	0.2
Alternative 2	0.1	0.5	0.8	0.1	0.4	0.2
Alternative 3	<0.1	0.1	0.2	<0.1	0.1	<0.1
NEPA Significance Thresholds	100	100	100	100	100	100
Conformity Thresholds	100	100	100	-	100	-
10% of AQCR 36 Emissions	16,790	67,817	11,279	6,935	3,216	-

Emissions generated by construction projects are temporary in nature and would end when construction is complete. The emissions from fugitive dust (PM₁₀) shown in Table 3.3-3 were reduced by 50 percent from unmitigated levels due to the proposed implementation of control measures in accordance with standard Best Management Practices (BMPs) (note that even without standard BMPs these emissions would still be well below thresholds). For instance, frequent spraying of water on exposed soil during construction, proper soil stockpiling methods, and prompt replacement of ground cover or pavement are standard landscaping procedures that could be used to minimize the amount of dust generated during construction. Using efficient practices and avoiding long periods where engines are running at idle may reduce combustion emissions from construction equipment. Vehicular combustion emissions from construction worker commuting may be reduced by carpooling.

Project construction would emit HAPs that could potentially impact public health. HAPs generally are minor subsets of VOC and PM₁₀ emissions. Review of Table 3.3-3 shows that the Preferred Alternative would produce a maximum annual total of 0.1 tons of VOC and 0.4 tons of PM₁₀. Therefore, emissions from construction of the Preferred Alternative would not exceed 10 tons per year of any HAP or 25 tons per year of combined HAPs.

In general, combustive and fugitive dust emissions would produce localized, short-term elevated air pollutant concentrations, but would remain well below all NEPA and conformity significance thresholds and would result in adverse, less than significant impacts on the air quality in the Denver metropolitan region and AQCR 36. The temporary construction-related emissions of PM₁₀ and SO_x would result in adverse, minor impacts to the air quality or visibility in Denver or any PSD Class I area.

Operational Emissions. Air emissions from stationary and mobile sources after construction of the Preferred Alternative are expected to be only slightly greater than current operations. Operation of the new building would include two new boilers rated at 1,000,000 British Thermal Units (BTUs) per hour. No changes to other operations (stationary or mobile sources) are included in the Preferred Alternative, so operational emissions from sources other than external combustion boilers would not increase.

Table 3-4 displays estimates of the nominal increase in emissions that would occur from operation of the Preferred Alternative. Review of these data shows that the Preferred Alternative would produce a minimal amount of HAPs, as the maximum annual VOC and PM₁₀ emissions would not exceed 0.1 tons. Therefore, operational emissions from the Preferred Alternative would not exceed any NEPA or conformity significance threshold; thus long-term impacts on the air quality of the Denver region and AQCR 36 would be adverse and minor.

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Table 3-4. Proposed Operational Emissions at Buckley AFB

Project Scenario	Emissions (tons)					
	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Preferred Alternative	0.1	0.7	0.4	<0.1	0.1	0.1
Alternative 1	0.1	0.7	0.4	<0.1	0.1	0.1
Alternative 2	0.1	0.7	0.4	<0.1	0.1	0.1
Alternative 3	<0.1	0.2	0.1	<0.1	<0.1	<0.1
NEPA Significance Thresholds	100	100	100	100	100	100
Conformity Thresholds	100	100	100	-	100	-
10% of AQCR 36 Emissions	16,790	67,817	11,279	6,935	3,216	-

Indirect Emissions. No additional indirect emissions, such as increases in commuting activities at the 140 WG would occur as a result of the Preferred Alternative.

Conformity. The total projected annual emissions from construction of the Preferred Alternative and then operation of the Preferred Alternative are well below the *de minimis* thresholds for conformity and are much less than 10 percent of the regional emissions. Therefore, a conformity determination is not required for this action.

3.3.2.2 Alternative Action 1: Site Location 2

This alternative would involve construction of a new 22,950 SF, two story, Squadron Operations Facility and minor interior modifications to Building 700 at the 140 WG, plus construction of a 31,500 SF vehicle parking area. Emissions would come from combustive sources (e.g., construction equipment and haul trucks for delivery of supplies) and fugitive sources (e.g., grading). As shown in Table 3.3-3, construction emissions under Alternative Action 1 would be only slightly higher than those for the Preferred Alternative. Table 3.3-4 shows that operational emissions would be identical to those from the Preferred Alternative. There would be no new indirect emissions.

Emissions from both construction (short-term, adverse impacts) and then operation (long-term, adverse impacts) of Alternative 1 would not exceed any NEPA or conformity significance threshold. Thus, implementation of Alternative 1 would result in adverse, minor impacts on the air quality of the Denver region and AQCR 36.

3.3.2.3 Alternative Action 2: Site Location 3

This alternative would involve construction of a new 22,950 SF, two story, Squadron Operations Facility and minor interior modifications to Building 700 at the 140 WG. Construction and operational emissions would be identical to those described in Section 3.3.2.1 for the Preferred Alternative. There would be no new indirect emissions.

As shown in Tables 3.3-3 and 3.3-4, emissions from both construction (short-term) and operation (long-term) of Alternative 2 would not exceed any NEPA or conformity significance threshold. Thus, implementation of Alternative 2 would result in adverse, less than significant impacts on the air quality of the Denver region and AQCR 36.

3.3.2.4 Alternative Action 3: Addition/Alteration to Building 700

Alternative Action 3 would involve construction of a 5,600 SF addition to Building 700 at the 140 WG. Construction emissions from this Alternative would be less than those for the Preferred Alternative and

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Alternatives 1 and 2, due to the smaller scope of work. Alternative 3 also would produce lower operational emissions compared to the other project alternatives, as a smaller boiler would be installed in the new addition or the boiler(s) currently operating in Building 700 would provide the increased heat demand for this alternative. Tables 3.3-3 and 3.3-4 display the estimated emissions from construction and operation of Alternative 3. There would be no new indirect emissions.

As shown in Tables 3.3-3 and 3.3-4, emissions from both construction (short-term) and operation (long-term) of Alternative 3 would not exceed any NEPA or conformity significance threshold. Thus, implementation of Alternative 3 would result in adverse, less than significant impacts on the air quality of the Denver region and AQCR 36.

3.3.2.5 No Action Alternative

Under the No Action Alternative, emissions would be identical to current baseline presented in Section 3.3.1 and no impact would occur.

3.4 NOISE

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses, e.g., housing tracts or industrial plants. Transient noise sources move through the environment, either along relatively established paths (e.g., highways, railroads, and aircraft flight tracks around airports), or randomly. There is wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source, but also according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal).

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

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

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

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As a basis for comparison when noise levels are considered, it is useful to note that at distances of about 3 feet, noise from normal human speech ranges from 63 to 65 dB, operating kitchen appliances range from about 83 to 88 dB, and rock bands approach 110 dB.

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

Day-night average sound level (L_{dn}) is a metric that sums the individual noise events and averages the resulting level over a specified length of time. Thus, it is a composite metric which considers the maximum noise levels, the duration of the events, the number of events that occur, and the time of day during which they occur. This metric adds 10 dB to those events that occur between 10:00 p.m. and 7:00 a.m. to account for the increased intrusiveness of noise events that occur at night when ambient noise levels are normally lower than during the daytime. This cumulative metric does not represent the variations in the sound level heard. Nevertheless, it does provide an excellent measure for comparing environmental noise exposures when there are multiple noise events to be considered.

Public annoyance is the most common concern associated with exposure to elevated noise levels. When subjected to L_{dn} levels of 65 dBA, approximately 12 percent of the persons so exposed will be “highly annoyed” by the noise. At levels below 55 dBA, the percentage of annoyance is substantially lower (less than 3 percent), and at levels above 70 dBA, it is substantially higher (greater than 25 percent) (Finegold et al. 1994). Table 3-5 shows the percentage of the population expected to be highly annoyed at a range of noise levels.

Table 3-5. Percentage of Population Highly Annoyed By Elevated Noise Levels

Noise Exposure (L_{dn} in dBA)	Percent Highly Annoyed
< 65	< 12
65 – 70	12 – 21
70 – 75	22 – 36
75 – 80	37 – 53
80 – 85	54 – 70
> 85	> 71

3.4.1 Affected Environment

Noise levels at Buckley AFB are predominantly influenced by the operational activities of aircraft and by aircraft engine runups during testing. According to noise contours associated with the Buckley AFB Air Installation Compatible Use Zone (AICUZ), noise levels within the project area range between L_{dn} 65 and 70 dBA (Buckley AFB 2003a). Proximity of the project area to the flightline is the primary noise source, while vehicle traffic on Aspen Street also contributes to area noise levels. There are no sensitive receptors in the vicinity of the project area. A sensitive receptor is any person or group of persons in an environment where low noise levels are expected, such as schools, day care centers, hospitals, and nursing homes (AFCEE 2005).

3.4.2 Impacts

Noise levels below L_{dn} 65 dB are not considered constraints to development. However, once the noise level meets or exceeds the 65 dB level, different functions, such as residential, administrative, commercial, and recreational, have different thresholds at which Noise Level Reduction measures are recommended for facility design or at which no construction is permitted. Impacts would be considered adverse if there are long-term increases in the number of people highly annoyed by the noise

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environment, noise-associated adverse health effects to individuals, or unacceptable increases to the noise environment for sensitive receptors.

3.4.2.1 Preferred Alternative

Construction of the new 22,950 SF Squadron Operations Facility and minor interior modifications to Building 700 to accommodate the 140 Security Forces at the Preferred Alternative Site would result in short-term and temporary increases in noise levels in the general area. Typical sound levels associated with construction activities are estimated to be 85 dB at 50 feet (15.2 meters) from the center of the project site. Noise levels at 50 feet (15.2 meters) for some construction and demolition equipment include 80 dB for bulldozers, 83 dB for cranes, 85 dB for backhoes, and 91 dB for trucks. Noise impacts would vary depending on the activities occurring on a particular day or time, and these noise impacts would cease once construction is completed. Nearby receptors (e.g., within Building 805) may experience noise impacts. However, construction noise impacts from the proposed action would not greatly increase ambient levels, would be short-term, and would discontinue after construction is complete. (AFCEE 2005).

Operation of the new Squadron Operations Facility and relocation of the 140 Security Forces to Building 700 would have a long-term, minor adverse impact on ambient noise levels.

3.4.2.2 Alternative Action 1: Site Location 2

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior modifications to Building 700 would result in short-term, temporary noise impacts due to construction activities. The construction of a parking area under this alternative would contribute to these adverse, temporary noise impacts; however, these impacts would be minor.

3.4.2.3 Alternative Action 2: Site Location 3

Noise impacts associated with Alternative Action 2 would be essentially the same as those described under the Preferred Alternative.

3.4.2.4 Alternative Action 3: Addition/Alteration to Building 700

Under Alternative Action 3, interior renovations to Building 700 would result in adverse, minor short-term, temporary noise impacts.

3.4.2.5 No Action Alternative

Under the No Action Alternative, no noise impacts would occur and noise conditions would be as described in Section 3.4.1.

3.5 EARTH RESOURCES

3.5.1 Affected Environment

3.5.1.1 Topography

The primary topographic features in the vicinity of the Base are the nearly level floodplains and gently sloping terraces associated with the South Platte River (U.S. Department of Agriculture [USDA] 1971). The topography of the Base is generally flat, with the average elevation being 5,300 feet above mean sea level (MSL).

3.5.1.2 Geology

Buckley AFB lies within the Denver Basin east of the Rocky Mountains and the Colorado Piedmont section of the Great Plains province. This region is characterized by several sedimentary formations containing shales, sandstones, and arkosic rocks.

3.5.1.3 Soils

The dominant surface soils at the Base are loamy soil and rock outcrop. There are two predominant soil types found within the airfield fence; these include the Fondis silt loam at 1 to 3 percent slopes and the Renohill-Buick loam at 3 to 9 percent slopes (Figure 3-1).

Fondis silt loam 1 to 3 percent slope – This is a nearly level soil that is deep and well drained. It is generally found in the uplands of the county. The surface layer is generally dark grayish-brown silt loam about 7 inches thick. The subsoil is dense clay about 20 inches thick. The substratum consists of layers of yellowish-brown clay loam to a depth of about 90 inches. This soil has moderate runoff and slow water intake. The hazard of erosion of this soil is slight to moderate (USDA 1971).

Renohill-Buick loam 3 to -9 percent slope – This is a nearly level soil that is moderately deep and well drained. It is found in the western three-fourths of the state. The surface layer is grayish-brown, noncalcareous loam about 5 inches thick. The subsoil is loose, single-grained brown and light-olive brown calcareous clay loam about 14 inches thick. The substratum consists of alternate layers of light grayish-brown clay loam to a depth of about 26 inches. Permeability of this soil is slow to moderately slow, while available water capacity is moderate. The hazard of erosion of this soil is slight (USDA 1971).

Rock Outcrop – Rock Outcrop is sloping to nearly level. It includes lands that have been stripped of soils until the interbedded shale and sandstone are exposed at the surface. Permeability of rock outcrop is extremely slow. The hazard of erosion is severe (USDA 1971).

3.5.2 Impacts

3.5.2.1 Preferred Alternative

Under the Preferred Alternative, the construction would occur on the Fondis Silt loam soil type. This soil is well suited to construction activities. Any construction activities on this soil unit would require construction techniques that would facilitate the specific requirements of the given project. It is likely that the site would be graded to specific needs prior to construction. Given that the vast majority of the construction proposed would occur on a previously developed land, continued development of these parcels should not be problematic.

The grading of existing soil and placement of structural fill for new facilities would not substantially alter existing soil conditions at the 140 WG at Buckley AFB because much of this land has been previously disturbed. There are no special qualities associated with the soils or geologic resources at these sites. Implementation of construction best management practices (BMPs) would minimize minor short-term, adverse impacts associated with erosion. These BMPs would include, but not be limited to installation of silt fencing and sediment traps, application of water sprays to keep soil from becoming airborne, and revegetation of disturbed areas as soon as possible, as appropriate. No long-term impacts to earth resources would occur. Therefore, potential impacts to earth resources as a result of the proposed action would be minimal.

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3.5.2.2 *Alternative Action 1: Site Location 2*

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior renovations to Building 700 associated with Alternative Action 1 would result in minimal short-term, adverse impacts to earth resources. The only difference under this alternative is the area of rock outcrop under the new proposed building. There would be a greater potential for short-term soil erosion from the building construction at Site Location 2 than the other site locations. No long-term impacts would occur.

3.5.2.3 *Alternative Action 2: Site Location 3*

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior renovations to Building 700 associated with Alternative Action 2 would result in minor short-term, adverse impacts to earth resources. Site Location 3 would have very similar conditions and soils as the Preferred Alternative location and little erosion would be expected. No long-term impacts would occur.

3.5.2.4 *Alternative Action 3: Addition/Alteration to Building 700*

Under Alternative Action 3, additions and alterations to Building 700 would result in minor short-term, adverse impacts to earth resources due to soil disturbance during construction. The site for this alternative would have similar conditions and soils as the Preferred Alternative location and little erosion would be expected, although impacts would be of a smaller magnitude given the smaller construction footprint under this alternative. No long-term impacts would occur.

3.5.2.5 *No Action Alternative*

Under the No Action Alternative, none of the proposed construction activities would occur and therefore, there would be no new impacts to earth resources. Conditions would remain as described in Section 3.5.1.

3.6 WATER RESOURCES

Water resources include both surface and ground resources. The availability, volume, and quality of water resources affect many other resources, including but not limited to riparian areas, wildlife, recreation, and human consumption of water. The planning area only encompasses a portion of a storm water drainage ditch.

3.6.1 Affected Environment

3.6.1.1 *Surface Water*

The drainage area at Buckley AFB comprises 3,200 acres, of which 515 acres (14.8 percent) are impervious surface (Buckley AFB 2004). The Base has extensive natural and man-made surface drainage, as well as underground storm drainage lines, classified in the following types:

- Storm water drainage ditches
- Streams
- Lakes

Portions of two storm water ditches are located within Site Location 3, while a portion of one of these ditches is located within Site Location 2. Storm water runoff from Buckley AFB drains into one of three streams adjacent to the base. East Tollgate Creek receives flows from the western side of the base. Sand and Murphy Creeks receive flows from the eastern side of the base. All three are intermittent streams in

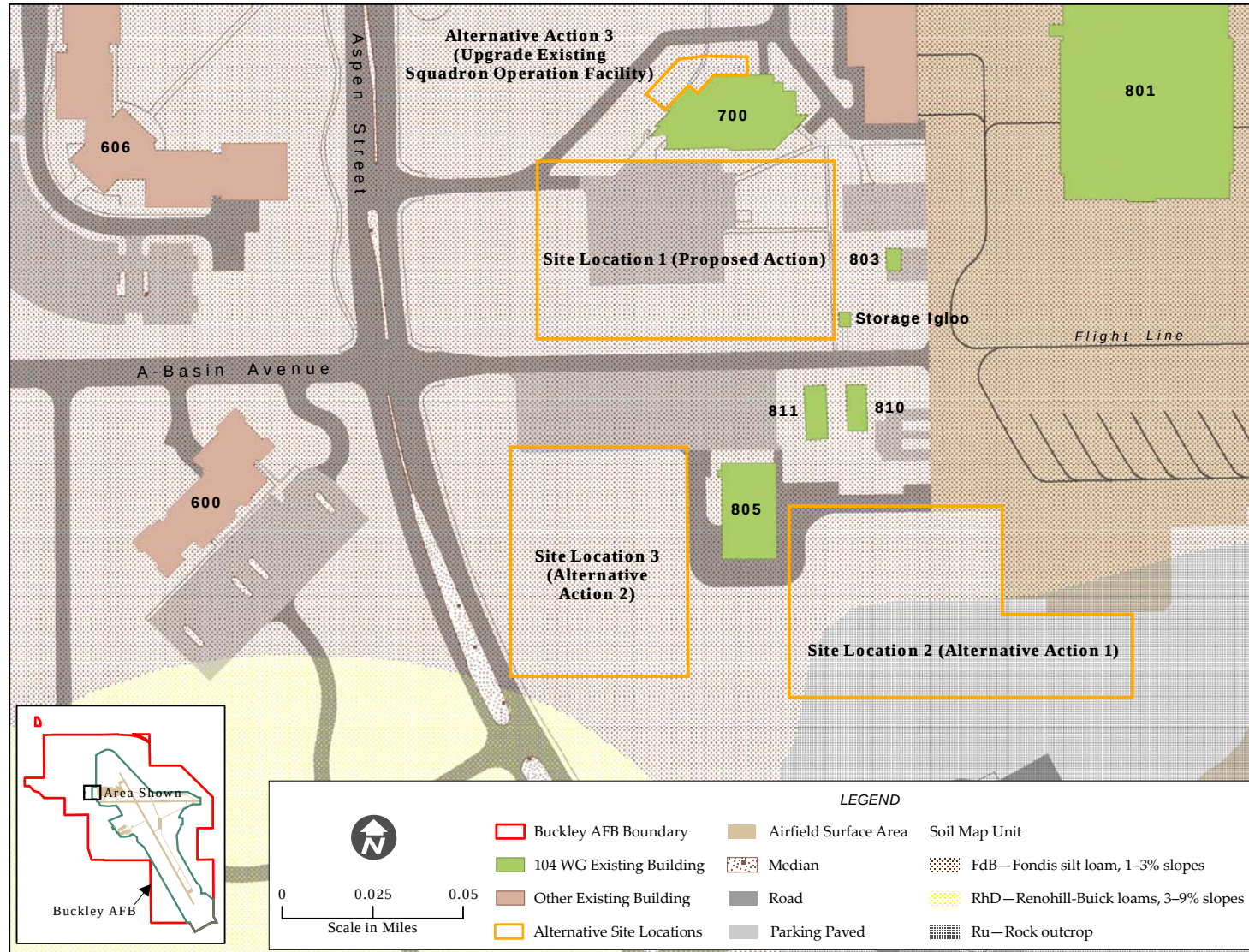


Figure 3-1. Soils in the Vicinity of the Proposed Action, Buckley AFB, Colorado

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the vicinity of the Base and flow predominately in the spring and summer. Sand Creek is perennial downstream from the base. The streams are tributaries to the South Platte River which is located approximately 15 miles northwest of the Base and is the primary surface water drainage system in the region (AFCEE 2005). Additionally, the project sites are within the watershed approximately 1,500 feet upstream of wetlands (see Section 3.7.1.4 for more information on these wetlands).

Williams Lake, the largest surface water body on Buckley AFB, is located in the northeast portion of the Base and was created by damming a minor tributary to Murphy Creek in 1961. It occupies approximately 10 acres. Additionally, surface alluvial deposits near Tollgate Creek and Sand Creek also provide water to the lake. The lake holds runoff and is used strictly for fire-fighting or recreational purposes (Buckley Air National Guard Base 2002).

Specific watershed protection measures used by Buckley AFB include spill cleanup equipment at industrial locations, integrated pest management to reduce pesticide use, and reduction of fertilizer applications. To control the discharge of floating pollutants resulting from accidental spills, the Base maintains oil containment boom systems and absorbents. Wastewater generated at the 140 WG is discharged to the sanitary sewer.

3.6.1.2 Storm Water

Storm water on Buckley AFB is regulated under the National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities (COR05A13F). The NPDES permit considers industrial activities associated with airfield operations and the abandoned landfill to be covered under the industrial permit. The permit recognizes the potential for runoff contamination, authorizes the discharge of storm water associated with specific industrial activities, and requires monitoring activities. Buckley AFB also operates under the NPDES General Permit for Storm Water Discharges from a Federal Facility Small Municipal Separate Storm Sewer System (MS4), Permit No. COR04208F. Buckley AFB currently protects its watershed through compliance with a number of Federal, state, local, and USAF environmental regulations that require the facility to have detailed spill control and response procedures and to implement storm water pollution prevention BMPs (AFCEE 2005). In order to ensure compliance with storm water requirements, Buckley AFB has implemented a Storm Water Pollution Prevention Plan (SWPPP) and Storm Water Management Program (SWMP) to ensure that storm management is maintained and that runoff contact with pollutants is minimized. Additionally, any construction activity that disturbs one or more acres of land will require coverage under the General Permit for Storm Water Discharges From Construction Activities, also known as the Construction General Permit (CGP). The Air Force mandates compliance with Engineering Technical Letter 03-01: Stormwater Construction Standards (personal communication, Farrington 2006).

3.6.1.3 Groundwater

Buckley AFB is underlain by the four aquifers within the Denver Basin (Robson 1987): the Arapahoe, Dawson, Denver, and Laramie Fox-Hills aquifers. These aquifers are separated by beds of shale with low permeability and are located in zones of sandstones and siltstones. The Denver Aquifer is the uppermost aquifer and is approximately 1,000 feet thick. It is classified as a tributary in the area surrounding Buckley AFB because it comes in contact with surrounding surface water systems and their alluvium. It is approximately 175 feet thick in the area under the base. The deepest of the aquifers is the Laramie Fox-Hills and is underlain by the Pierre Shale. The Base of the Denver Aquifer is the Laramie Fox-Hills sandstone formation, which is relatively thick and has a low permeability. There are also surface alluvial deposits near Tollgate Creek and Sand Creek that provide water to Lake Williams.

The Denver and Arapahoe aquifers meet USEPA drinking water standards. The Denver Basin aquifer system is a secondary source of drinking water for suburban Denver and nearby rural communities.

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Groundwater flow beneath Buckley AFB is generally to the northwest, following the trend of stream drainages toward the South Platte River (Buckley Air National Guard Base 1998).

Six wells are located on base, although the Base receives its potable water from the city of Aurora. Four of the wells are not operational and one well augments Williams Lake (Buckley Air National Guard Base 1998, 2000).

3.6.1.4 Floodplains

The Federal Emergency Management Act has designated the East Tollgate Creek drainage as being within a 100-year floodplain. This floodplain is located approximately 2,000 feet east of the project area. No elements of the proposed action are located within the 100-year floodplain (Buckley AFB 2003b).

3.6.2 Impacts

3.6.2.1 Preferred Alternative

Under the proposed action, construction of the Squadron Operations Facility would create approximately 11,500 SF of new impervious surface for the building footprint. The primary concerns associated with the Preferred Alternative are the adverse short-term effect on water quality during construction activities, and adverse long-term changes to the surface water drainage. Generally, increases in impervious surfaces act to increase peak discharge volumes and speed delivery of water to nearby waterways, which ultimately increases the potential for flooding as well as the transport of pollutants to surface water. In undeveloped land, rainfall is collected and stored in vegetation, in the soil column, or in topographic depressions. Water is then utilized by plants and respired, or it moves slowly into groundwater and/or eventually to water bodies where it slowly moves through the hydrologic cycle. Removal of vegetation and/or soil compaction decreases infiltration into the soil column and thereby increases the quantity and timing of runoff. Replacement of vegetation with an impervious surface, such as concrete, eliminates any potential for infiltration and also speeds up delivery of the water to nearby drainage channels. With less storage capacity in the soil column and vegetation, urban streams rise more quickly during storm events and have higher peak discharge rates, both of which increase the potential for flooding downstream and damage to infrastructure.

Construction and operations associated with the Preferred Alternative at Buckley AFB would be in accordance with the provisions of NPDES General Permit for Storm Water Discharges from Construction Activities (Permit No. COR10000F) and the NPDES General Permit for Storm Water Discharges from Federal Facility Small Municipal Separate Storm Sewer Systems in Colorado (Permit No. COR042000). Measures to manage and control storm water runoff, including curbing to direct flows to nearby drainage ditches and updates to the SWPPP, would be implemented to minimize impacts associated with the proposed action.

The rate of groundwater recharge of the uppermost aquifer would experience adverse long-term, minor impact due to the creation of new impervious surface under the Preferred Alternative. Aquifers associated with the Denver Basin would not be affected due to the impermeable layers that exist between the surface and these deeper aquifers.

None of the proposed construction projects are located within the 100-year floodplain; therefore, construction activities under the proposed action would not directly affect the predicted 100-year flood elevations.

3.6.2.2 Alternative Action 1: Site Location 2

Impacts to water resources under Alternative 1 are similar to the proposed action with the addition of a 31,500 SF vehicle parking area, resulting in 43,000 SF (approximately 1 acre) of additional impervious

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surface at the base. The primary concerns associated with Alternative Action 1 are the short-term effect on water quality during construction activities, and long-term changes to the surface water drainage. This would result in a slight long-term increase in the amount of surface runoff and a decrease in the ground water recharge, compared to that under the Preferred Alternative.

3.6.2.3 *Alternative Action 2: Site Location 3*

Impacts to water resources under Alternative Action 2 are similar to the proposed action in that the building footprint of the proposed facility is the same. The primary concerns associated with Alternative Action 2 are the short-term adverse effect on water quality during construction activities, and long-term changes to the surface water drainage. However, under this alternative an existing drainage ditch would have to be placed within a culvert. The proposed culvert would result in a long-term increase in the speed with which surface water is conveyed through this area, however the overall impact is expected to be adverse and minor due to its short distance.

All other impacts are the same as described under the proposed action.

3.6.2.4 *Alternative Action 3: Addition/Alteration to Building 700*

Under Alternative 3, construction required to add/alter 5,600 SF of the existing Squadron Operations Facility is would have minor short-term and long-term impacts on water resources. Similar to the other alternatives, the primary concerns associated with Alternative Action 3 are the short-term effects on water quality during construction activities, and long-term changes to the surface water drainage. However, these impacts would be much smaller in nature compared to the other alternatives due to the smaller construction footprint under this alternative.

3.6.2.5 *No Action Alternative*

Under the No Action Alternative, the proposed action would not be implemented, and thus no impacts to water resources at the Buckley AFB would occur. Conditions would remain as described in Section 3.6.1.

3.7 BIOLOGICAL RESOURCES

Discussion of the affected biological resources falls into four categories: vegetation communities and wildlife habitat; wildlife; threatened, endangered, and other sensitive species; and wetlands and riparian areas.

3.7.1 Affected Environment

3.7.1.1 *Vegetation Communities and Wildlife Habitat*

Buckley AFB is located in the Great Plains-Palouse Dry Steppe Province Ecoregion, in the shortgrass prairie ecosystem (Bailey 1995; Stoddart et al. 1975). Vegetation communities at Buckley AFB can be broadly classified into the following types (Buckley AFB 2002):

- blue grama/western wheatgrass mixed grass prairie
- crested wheatgrass prairie
- bottomland meadows,
- cottonwood/ willows
- weedy disturbed areas
- landscaped areas

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The prairie communities are the most diverse plant habitats and occur primarily on upland areas. The mixed grass prairie is characterized by blue grama grass interspersed with forbs such as scarlet globe mallow, prickly pear, and snakeweed, and other common grasses including tumble grass (*Schedonnardus paniculatus*) and three-awn (*Aristida fendleriana*, *Aristida longiseta*). Areas that receive slightly more moisture (e.g., depressions or gullies) are dominated by fringed brome grass (*Bromus ciliatus*). Crested wheatgrass prairies are uniform and have few other species associated with them, are the dominant vegetation type on Buckley AFB, and are the only vegetation communities characterizing the project area (Buckley Air National Guard Base 2002). Crested wheatgrass is a non-native species in Colorado.

Bottomland meadows, generally wide and flat, may exhibit wetland characteristics with a dominance of fringed brome grass, a facultative wetland species in the western Great Plains. The cottonwood/willows vegetation community characterizes parts of the riparian corridor that are moister and steeper than areas with fringed brome. Additional information on riparian areas and wetlands is provided below.

Weedy disturbed areas at Buckley AFB consist of locations that have been disturbed by demolition of World War II facilities and areas that were disturbed during construction activity. These disturbed areas are often the source of noxious weeds for the entire base. State-listed noxious weed species characterizing disturbed areas include:

- cheatgrass (*Bromus tectorum*)
- field bindweed (*Convolvulus arvensis*)
- Canada thistle (*Cirsium arvense*)
- Russian thistle (*Salsola kali*) tumbleweed
- Dalmation toadflax (*Linaria genistifolia* ssp. *dalmatica*)
- leafy spurge (*Euphorbia esula*)

The landscaped areas of Buckley AFB are characterized by turf grasses, the predominant type of vegetation. Grass varieties consist of common introduced species, including Kentucky bluegrass (*Poa pratensis*), common Bermuda grass (*Cynodon dactylon*), wintergrass (*Poa annua*), and Alta fescue mixes (*Festuca* spp.). A variety of shrubs and trees are also present in landscaped areas on Buckley AFB, including green ash (*Fraxinus pennsylvanica*), honeylocust (*Gleditsia triacanthos*), Colorado spruce (*Picea pungens*), ponderosa pine (*Pinus ponderosa*), Siberian elm (*Ulmus pumila*), Gambel's oak (*Quercus gambelii*), and buffalo juniper (*Juniperus sabina*).

The project areas associated with the proposed action and alternatives are concentrated within an area near Building 700 immediately east of Aspen Street and west of the flightline. All of the elements of the proposed action are sited in areas characterized as weedy and disturbed from previous development, landscaped, or maintained (mowed).

The mixed grass prairie, crested wheatgrass prairie, bottomland meadows, and cottonwood/willows vegetation communities provide a diversity of habitats that support several wildlife species on Buckley AFB.

3.7.1.2 Wildlife

A variety of wildlife species, including several types of mammals, birds, reptiles, and amphibians are found on Buckley AFB. No ungulates are found within the Base due to the perimeter fencing surrounding the base. Table 3-6 lists the wildlife species known to occur on Buckley AFB, which are all typical of the Colorado high plains.

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Table 3-6. Partial List of Wildlife Species Known to Occur on Buckley AFB

Amphibians and Reptiles	
North American Bullfrog (<i>Rana catesbeiana</i>)	plains spadefoot toad (<i>Scaphiopus bombifrons</i>)
Bullsnake (<i>Pituophis melanoleucus sayi</i>)	prairie rattlesnake (<i>Crotalus viridis viridis</i>)
northern leopard frog (<i>Rana pipiens</i>)	western hognose snake (<i>Heterodon nasicus</i>)
plains garter snake (<i>Thamnophis radix</i>)	
Avian Species	
American Coot (<i>Fulica americana</i>)	House Finch (<i>Carpodacus mexicanus</i>)
American Kestrel (<i>Falco sparverius</i>)	House Sparrow (<i>Passer domesticus</i>)
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Killdeer (<i>Charadrius vociferus</i>)
Barn Owl (<i>Tyto alba</i>)	Mallard (<i>Anas platyrhynchos</i>)
Black-Billed Magpie (<i>Pica hudsonia</i>)	Northern Harrier (<i>Circus cyaneus</i>)
Blackbird (<i>Agelaius phoeniceus</i>)	Northern Shoveler (<i>Anas clypeata</i>)
Black-Crowned night heron (<i>Nycticorax nycticorax</i>)	Pigeon (<i>Columba livia</i>)
Buffleheads (<i>Bucephala albeola</i>)	Pintails (<i>Anas acuta</i>)
Burrowing Owl (<i>Athene cunicularia</i>)	Redheads (<i>Aythya americana</i>)
Canada Goose (<i>Branta canadensis</i>)	Red-Tailed Hawk (<i>Buteo jamaicensis</i>)
Double-Crested Cormorant (<i>Phalacrocorax auritus</i>)	Rough-legged Hawk (<i>Buteo lagopus</i>)
Eastern Kingbird (<i>Tyrannus tyrannus</i>)	Spotted Sandpiper (<i>Actitis macularia</i>)
Ferruginous Hawk (<i>Buteo regalis</i>)	Starling (<i>Sturnus vulgaris</i>)
Golden Eagle (<i>Aquila chrysaetos</i>)	Swainson's Hawk (<i>Buteo swainsoni</i>)
Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	Western Kingbird (<i>Tyrannus verticalis</i>)
Great Blue Heron (<i>Ardea herodias</i>)	Western Meadowlark (<i>Sturnella neglecta</i>)
Great Horned Owl (<i>Bubo virginianus</i>)	Western Sandpiper (<i>Calidris mauri</i>)
Herring Gull (<i>Larus argentatus</i>)	White Pelican (<i>Pelecanus erythrorhynchos</i>)
Horned Lark (<i>Eremophila alpestris</i>)	
Fish	
common carp (<i>Cyprinus carpio</i>)	fathead minnow (<i>Pimephales promelas</i>) ¹
brook stickleback (<i>Culaea inconstans</i>) ¹	white sucker (<i>Catostomus commersoni</i>) ¹
Small Mammals	
blacktailed jackrabbit (<i>Lepus californicus</i>)	fox squirrel (<i>Sciurus carolinensis</i>)
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	long-tailed weasel (<i>Mustela frenata</i>)
deer mouse (<i>Peromyscus maniculatus</i>)	meadow vole (<i>Microtus pennsylvanicus</i>)
desert cottontail (<i>Sylvilagus auduboni</i>)	pocket gopher (<i>Geomys bursarius</i>)
eastern cottontail (<i>Sylvilagus floridanus</i>)	
Large Mammals	
American badger (<i>Taxidea taxus</i>)	raccoon (<i>Procyon lotor</i>)
coyote (<i>Canis latrans</i>)	Red fox (<i>Vulpes vulpes</i>)
mule deer (<i>Odocoileus hemionus</i>) ²	striped skunk (<i>Mephitis mephitis</i>)
Pronghorn antelope (<i>Antilocapra americana</i>) ²	

Notes: 1. In Tollgate Creek west of Buckley AFB.

2. Found historically on Buckley AFB; have been excluded through installation of the perimeter fencing along the Base boundary.

3.7.1.3 Threatened, Endangered, and Other Sensitive Species

Federal and state listed threatened or endangered species and state special concern species could potentially occur on Buckley AFB; however, many of the potentially occurring species would not be expected to be present on Buckley AFB because of the lack of suitable habitat. Only one Federally-listed species occurs on Buckley AFB, the Bald Eagle. The state-listed species occurring at Buckley AFB is the Burrowing Owl, a state threatened species (Colorado Division of Wildlife 2006). Federal and state-listed threatened and endangered species, and Colorado Division of Wildlife state special concern species, occurring in the vicinity of Buckley AFB are shown in Table 3-7.

Partially because of its status as a keystone species, Black-tailed Prairie Dog have been classified as a state special concern species (not a statutory species). In February 2000, the U.S. Fish and Wildlife Service (USFWS) designated the black-tailed prairie dog as a candidate species (or a species warranted but precluded from listing on the threatened and endangered species list) but it is no longer considered a candidate species.

Potential suitable habitat has also been identified for the Federally threatened Preble's Meadow Jumping Mouse (Preble's) (*Zapus hudsonius preblei*), Colorado Butterfly Plant (*Gaura neomexicana* ssp. *coloradoensis*) and Ute Ladies'-tresses (*Spiranthes diluvialis*) along riparian corridors of Tollgate Creek, Williams Lake, and other wetland areas existing on Buckley AFB. Surveys on Buckley AFB for Preble's and Ute ladies' tresses have been conducted, but none have been found. The USFWS has provided written concurrence of the survey results, and stated that a population of Preble's is not likely present within Buckley AFB, and no direct adverse effects to Preble's would be expected from activities on Buckley AFB (USFWS 2002). The USFWS has designated the Buckley AFB area as being within a "block clearance zone" that does not support the black-footed ferret (*Mustela nigripes*); therefore, it is assumed that this species does not occur on the base. No suitable habitat for Preble's, Colorado Butterfly Plant, or Ute Ladies'-tresses occurs in the project area.

The occurrence of protected species has not been identified in or near the project area. However, based on the results of recent surveys, Black-tailed Prairie Dogs and burrowing owls may occur near the proposed action area (EDAW 2003).

3.7.1.4 Wetlands and Riparian Areas

Six wetlands are identified on Buckley AFB by the USFWS National Wetlands Inventory (NWI) maps (USFWS 1989a, 1989b). Wetland classifications include palustrine emergent and palustrine scrub/shrub. However, a survey of Buckley AFB conducted in 2001 identified 23 wetlands (Buckley AFB 2002). The discrepancy between the NWI maps and the field survey is not unusual because NWI maps are based on aerial photograph review and do not normally have the resolution that can be achieved during a field survey. In May 2001, a U.S. Army Corps of Engineers (USACE) representative made a jurisdictional determination that Williams Lake and its associated streams and drainage areas are isolated and not under the jurisdiction of Section 404 of the Clean Water Act (Buckley AFB 2002). Although not jurisdictional wetlands, these areas would still be protected under AFI 32-7064, which requires monitoring, restoration, and enhancement of wetland habitats. Species within the riparian areas include sandbar willows (*Salix interior* [= *Salix exigua*]), peach leaf willows (*Salix amygdaloides*), shining willows (*Salix lucida*), and plains cottonwood (*Populus deltoids* [= *Populus sargentii*]). All four woody species are indicators of wetland conditions (obligate, facultative wet, facultative wet, and facultative, respectively) (Buckley AFB 2004c). No elements of the proposed action are located within wetlands or waters of the U.S., although the project sites are within the watershed approximately 1,500 feet upstream of wetlands.

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**Table 3-7. Threatened, Endangered, and Other Sensitive Species
Occurring within and in the vicinity of Buckley AFB**

Common Name	Scientific Name	Status		Potential for Occurrence on Sites
		Federal	State	
Mammals				
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	--	SC	Present.
Black-footed Ferret	<i>Mustela nigripes</i>	E	E	Not present; Buckley AFB is within Block Clearance Zone in Colorado.
Swift Fox	<i>Vulpes velox</i>	--	SC	Unlikely; occurs on eastern plains of Colorado in areas of native prairie. No observations at Buckley AFB.
Preble’s Meadow Jumping Mouse	<i>Zapus hudsonius preblei</i>	T	T	Not present; Buckley AFB is within the Denver Metropolitan Block Clearance Zone.
Birds				
Burrowing Owl	<i>Athene cunicularia</i>	--	T	Present. Nesting locations in vicinity of the proposed action and action alternatives.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	T	Occasional visitor; no known nest or roost locations within base.
Ferruginous Hawk	<i>Buteo regalis</i>	--	SC	Potentially present; no known nesting locations
Plains Sharp-tailed Grouse	<i>Tympanuchus phasianellus jamesii</i>	--	E	Potentially present; no known nesting locations.
Amphibians				
Northern Leopard Frog	<i>Rana pipiens</i>	--	SC	Potentially present in association with permanent water sources. No permanent water sources in any proposed or alternative sites.
Plant Species				
Colorado Butterfly Plant	<i>Gaura neomexicana ssp. coloradensis</i>	T	--	Unlikely; survey conducted in 2004 with none found.
Utes Ladies’-tresses	<i>Spiranthes diluvialis</i>	T	--	Unlikely; surveys conducted in 2001 with none found.

E – Endangered

T – Threatened

SC – State Special Concern (not a statutory category)

3.7.2 Impacts

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

3.7.2.1 Preferred Alternative

Vegetation Communities and Wildlife Habitat

Construction of the new 22,950 SF Squadron Operations Facility would directly impact approximately 11,500 SF of the crested wheatgrass community, resulting in long-term loss of this community due to building construction and paving. The majority of the land at this site is disturbed and does not support native vegetation. Land clearing, excavation, and construction staging areas that disturb site vegetation are anticipated to result in adverse, minor short-term impacts. These disturbed areas would have an increased susceptibility to noxious weed invasion. Buckley AFB has made efforts to combat noxious weed invasion. These efforts include development and implementation of an Invasive Plant Species Management Plan, which includes the use of a native grassland seed mix to be used in restoration areas after construction. Reclamation of disturbed areas after construction is completed would minimize short-term impacts.

Wildlife

Given the fragmented nature of the habitat and the amount of human activity in the project area, most wildlife is unlikely to occur within the project area. Temporary, indirect adverse impacts to wildlife, as a result of increased noise and particulate matter in the air, are expected to be minor given the proximity to the airstrip, where noise levels are already high on a daily basis. If construction is to begin during the nesting season (March through September), surveys for migratory bird species would occur. Potential delays in construction may occur if a nest is documented within a 75-foot radius of the construction site boundary (Buckley AFB 2004c).

Threatened, Endangered, and Other Sensitive Species

Long-term adverse impacts to Federal and state listed threatened or endangered species, or species of concern are not anticipated due to no known occurrences of these species in the project area. Short-term adverse indirect impacts from increased noise and particulate matter in the air as a result of construction are anticipated to be minimal due to the project areas proximity to the airstrip, where noise levels are high on a daily basis. Burrowing Owls and Bald Eagles are not known to occur in the project area and are not expected to be impacted. However, Buckley AFB construction procedures include performing surveys for Western Burrowing Owls and other migratory birds prior to construction if construction is planned to occur any time during the nesting season (March through September) (personal communication, Hatch 2006). If these species are identified nesting within a 75-foot radius of the project area, delays in starting construction may occur (Buckley AFB 2004c). During the site survey, no prairie dogs or prairie dog burrows were observed in the project area. Although not a statutory species, if Black-tailed Prairie Dogs move into the construction area prior to or during construction, the 140 WG will notify the 460th Environmental Office to determine the appropriate means of addressing the situation.

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Wetlands and Riparian Areas

No wetlands or riparian areas are located in the vicinity of the project area; therefore no direct long-term or short-term adverse impacts to wetlands or riparian areas would occur as a result of the proposed action. Potential indirect short-term minor adverse impacts to wetlands and riparian areas downstream of the project areas include increases in seasonal flows to all three streams adjacent to the base. East Tollgate Creek, Sand Creek, and Murphy Creek are intermittent streams in the vicinity of the Base and flow predominately in the spring and summer. Other potential long-term adverse impacts from the proposed action to wetlands and riparian areas may include runoff of sediments from nearby construction activities and the invasion of noxious weeds from construction/disturbed areas into wetland habitat. As identified in the Water Resources section of this document, measures to manage and control storm water runoff, including curbing to direct flows to nearby drainage ditches and updates to the SWPPP, would be implemented to minimize impacts associated with the proposed action. Also, a detention facility would be considered among storm water management features if determined necessary.

3.7.2.2 *Alternative Action 1: Site Location 2*

Short- and long-term adverse impacts to biological resources under Alternative 1 are similar to the Preferred Alternative in that the square footage of the proposed facility is the same. However, under this alternative a 31,500 SF vehicle parking area would be constructed, resulting in additional long-term loss of the crested wheatgrass vegetation community. This area is undeveloped, but disturbed, and is not considered to be native vegetation.

3.7.2.3 *Alternative Action 2: Site Location 3*

Short- and long-term impacts to biological resources under Alternative 2 are similar to those described under the Preferred Alternative. The placement of the existing drainage ditch within a culvert would increase the speed at which surface water is conveyed through this area, ultimately increasing the rate at which surface water enters downstream wetland and riparian areas. However, the overall impact to downstream wetland and riparian areas is expected to be adverse but minor due to the short length of the culvert.

3.7.2.4 *Alternative Action 3: Addition/Alteration to Building 700*

Under Alternative 3, construction required to add/alter 5,600 SF of the existing Squadron Operations Facility would have similar types of long- and short-term impacts as described under the Preferred Alternative; however, the intensity of these impacts would be less due to the smaller footprint for construction. Thus, short-term and long-term impacts to vegetation, wildlife and wildlife habitat, threatened, endangered, and other sensitive species, and wetlands and riparian areas would be adverse and minor.

3.7.2.5 *No Action Alternative*

Under the No Action Alternative, the Proposed Action would not be implemented, and thus no impacts to biological resources at Buckley AFB would occur. Conditions would remain as described in Section 3.7.1.

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3.8 SOLID AND HAZARDOUS MATERIALS AND WASTES

3.8.1 Affected Environment

3.8.1.1 *Hazardous Materials*

With regard to solid and hazardous materials and waste, the region of influence (ROI) has been designated as the entire Buckley AFB. Operations at Buckley AFB require the use and storage of hazardous materials. Hazardous materials management is the responsibility of each individual or organization.

Approximately 61 operations base-wide use hazardous materials. Hazardous materials on Base include various paints; pesticides; adhesives; batteries; hydrazine; propylene glycol; and petroleum, oils, and lubricants (POLs). Buckley AFB uses the Environmental Management Information System to track hazardous materials brought on base. Each organization is responsible for ordering the hazardous materials they use.

There are 57 aboveground storage tanks (ASTs) at Buckley AFB to store JP-8 jet fuel, glycol, fuel oil, gasoline, and diesel. Two 210,000-gallon floating internal roof ASTs store JP-8 at the POL storage facility. According to the Environmental Office, all historic underground storage tanks (USTs) were removed from the base. The work was completed in 1997-1998. The Base was granted a waiver to install three 120,000-gallon USTs to store gasoline and diesel at the Army & Air Force Exchange Services Station that is part of the new Base Exchange.

Emergency response to spills or releases of hazardous materials is governed by the requirements of the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA), EO 12580, and the Emergency Planning and Community Right to Know Act. Under CERCLA, the resident agencies at Buckley AFB and contractors are responsible for reporting release of reportable quantities to the National Response Center within 24 hours.

3.8.1.2 *Hazardous Wastes*

Two classifications of wastes are generated at Buckley AFB: nonhazardous solid waste and hazardous waste. Nonhazardous solid waste is removed by a contractor for off-site disposal. Recyclables are also removed from the Base by a contractor.

Buckley AFB is a small quantity generator of hazardous waste and a large quantity generator of universal waste (Buckley AFB 2005). Hazardous wastes generated at Buckley AFB include waste paint-related materials, washer sludge, paint chips, sealant, waste fuel, solvent, and epoxy resin. In accordance with the Hazardous Waste Management Plan, the responsibility for managing hazardous waste lies with the generating organization in coordination with Base Environmental Flight and the Hazardous Waste Manager. Universal waste generated on Base includes fluorescent light bulbs, high pressure sodium lamps, and several types of batteries. Universal wastes are wastes that would otherwise be considered hazardous waste but that can be recycled. The Defense Reutilization and Marketing Office at Fort Carson in Colorado Springs provides a contract-based hazardous and universal waste disposal service to the 140 WG. A contractor transports the waste to the treatment, storage, and disposal location.

3.8.1.3 *Environmental Restoration Program Sites*

The USAF established the Environmental Restoration Program (ERP) to identify, characterize, and evaluate past disposal sites and remediate contamination on its installations as needed to control the migration of contaminants and potential hazards to human health and the environment in accordance with CERCLA requirements. Ten ERP sites exist on Buckley AFB, of which two have received No Further

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Action (NFA) letters from the state environmental agency. One of the closed ERP sites (Site 6) is within the boundary of Alternative Actions 1 and 2 as shown in Figure 3-2.

Site 6 was identified by a Preliminary Assessment conducted in 1982 and consists of drains, pipes, culverts, and ditches used to direct storm water runoff from the West Ramp and Hangars 801 and 909. The site is located in the southwest corner of the West Ramp and was likely impacted by Colorado ANG operations from 1942 to 1982. The apron was used for aircraft painting and washing operations and was routinely rinsed with water which was discharged to a nearby unlined drainage system. This rinse water infiltrated into the soils or discharged to Tollgate Creek via the storm water drainage system. In 1995, a Remedial Investigation (RI) reported that fuel, cleaning compounds, ethylene glycol, paints and strippers were used on the apron and also concluded that the contamination was localized and did not pose a significant risk. Soil contamination included xylene at 4,630 micrograms/kilograms (µg/kg) and ethyl benzene at 141µg/kg. The RI concluded that there is no significant risk associated with the site and that a Decision Document be generated recommending NFA. The Colorado Department of Public Health and Environment concurred to NFA status for ERP Site 6. (Spangler 2005)

In addition to the ERP site, two Areas of Concern (AOCs) were identified within the ROI during the Buckley AFB *Preliminary Assessment Report* (Buckley AFB 2006). One AOC (Aqua Gas Area) is within the boundary of the Proposed Action and another AOC (Apron Runoff) is within the boundary of Alternative Action 1. These two AOCs are shown in Figure 3-2 and described below:

- **Aqua Gas Area AOC**—This AOC was identified during the 2006 *Preliminary Assessment Report*. An aqua gas tank, USTs, and fuel transfer stand (with associated tanks and piping) were present in this area. According to the 2006 *Preliminary Assessment Report*, the 50,000-gallon aqua gas tank reportedly leaked water-contaminated jet fuel prior to closure of the tank, although quantities and types of releases are unknown (Buckley AFB 2006). Based on this information, the Preliminary Assessment Report recommended soil and groundwater sampling for petroleum products, solvents, and metals (Buckley AFB 2006). However, soil samples collected in this area in November 1991 for volatile organic hydrocarbons did not detect any contaminants (Buckley ANGB 1991).
- **Apron Runoff AOC**—This AOC was identified during the 2006 Preliminary Assessment Report. Fighter aircraft stored on the apron contain small quantities of hydrazine for mid-flight engine restarts. Although no releases of hydrazine have been reported on the apron, the Preliminary Assessment Report recommended sampling the soil for hydrazine (Buckley AFB 2006).

3.8.1.4 Asbestos

The current USAF Policy is to manage or abate asbestos containing material (ACM) in active facilities and remove ACM in accordance with regulatory requirements before facility demolition. ACM is abated when there is a potential for asbestos fiber release that would affect the environment or human health.

The Buckley AFB Asbestos Management Plan identifies procedures for management and abatement of asbestos and includes an ACM survey that covers 179 buildings on base, including the building in the proposed action (Building 700). Samples of potential ACM were collected in 2004 from Building 700 but no asbestos fibers were found. The USAF requires that, prior to renovations or demolition of existing non-residential buildings, asbestos sampling be performed by a contractor to determine the percent and type of asbestos in the material.

Infrastructure, including asbestos lined pipes, was left in place during some demolition projects conducted in the 1950s and 1960s (Buckley AFB n.d.). Therefore, the potential exists for either finding asbestos lined pipes or asbestos contaminated soil during construction at the proposed action location or Alternative Action Sites 1 or 2.

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3.8.1.5 *Lead-Based Paint*

USAF Policy (1993) ensures that lead-based paint hazards are avoided or abated during building modifications. The DoD banned the use of lead-based paint in 1978. The Base Engineer assumes that all structures constructed prior to 1985 potentially contain lead-based paint. A lead-based paint survey is in process for Buckley AFB facilities, but the results are unavailable at this time. However, based on the construction date of Building 700 (1993), the presence of lead-based paint is unlikely.

3.8.1.6 *Polychlorinated Biphenyls*

Toxic Substance Control Act, 15 USC Section 2601, et seq., as implemented by 40 CFR Part 761, regulates polychlorinated biphenyls (PCBs). According to the Buckley AFB Environmental Office, all transformers had been tested and any containing PCBs had been removed by 1996. By 1998, the Base no longer had any PCB-containing electrical transformers.

3.8.1.7 *Pesticides*

Pesticides routinely are applied throughout Buckley AFB, with the majority of applications coordinated by the Public Health Officer. Pesticides are stored at the Entomology Facility in Building 1019. Buckley AFB practices integrated pest management that seeks to limit pesticide applications by applying treatments when an outbreak has occurred or prior to any training exercise. Integrated pest management utilizes four basic pest control methods: mechanical/physical control; habitat control; biological control; and chemical control. Pesticide applications include their use to control roaches in food service areas, and the spraying of herbicides for weed control along Base boundaries, aircraft parking aprons, runways, and taxiways.

3.8.2 Impacts

3.8.2.1 *Preferred Alternative*

Solid Waste

The proposed action would result in the generation of minor amounts of solid waste as a result of interior renovation of Building 700 and construction of the new Squadron Operations Facility. These impacts would be adverse, long-term, but minor.

Hazardous Materials

Limited amounts of hazardous materials (e.g., isopropyl alcohol to clean the masks in Life Support) are used in Building 700. These hazardous materials are stored in a flammables locker and this management would continue in the new building and be overseen by the 460th Hazardous Materials Program Manager.

Hazardous materials used and managed during the construction and renovation activities of the proposed action would include various paints; pesticides; adhesives; batteries; propylene glycol; and POLs. All hazardous materials required for construction and renovation activities of the proposed action would be managed in accordance with existing plans and procedures for Buckley AFB. Buckley AFB maintains an Oil and Hazardous Materials Spill Prevention and Response Plan; therefore, any spills potentially occurring during construction or renovation activities of the proposed action would be managed to minimize environmental impacts. Thus, implementation of the proposed action would result in short-term, adverse minor impacts from hazardous materials.

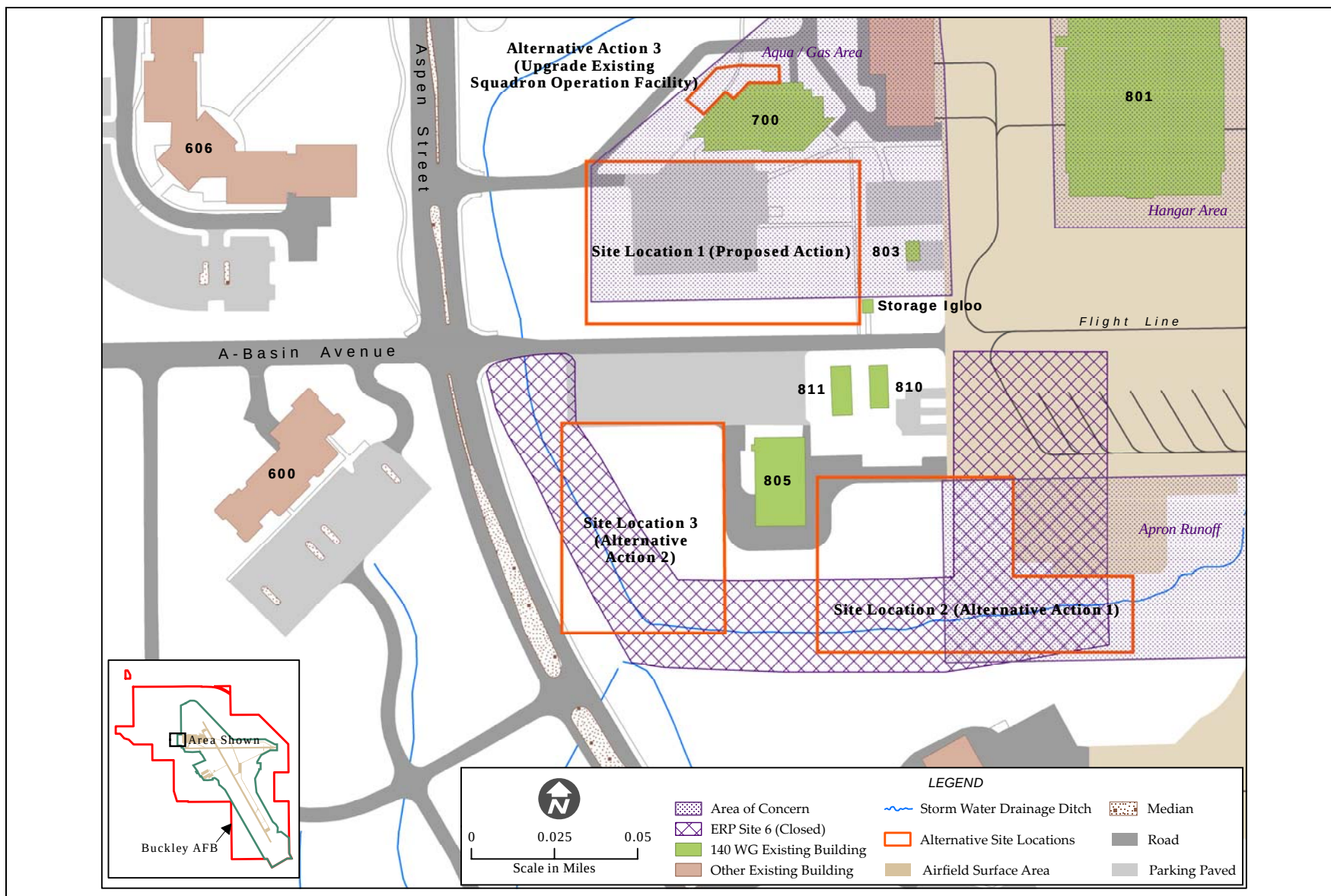


Figure 3-2. Environmental Restoration Program Sites in the Vicinity of the Proposed Action

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Hazardous Waste

Impacts from the proposed action relative to hazardous materials and waste would be significant if the storage, use, transport, or disposal of these substances resulted in a substantial increase in the environmental or human health risk. Universal waste from used radio batteries in the Life Support shop is generated in Building 700. The same volume of universal waste from used batteries would continue to be generated under the proposed action. The management of this universal waste would not change under the Proposed Action.

Hazardous wastes that would be generated during construction and renovation activities for the proposed action include: paint-related materials, used oil, waste fuel, sealant, and solvent. All hazardous wastes generated during construction and renovation activities of the proposed action would be identified and managed effectively under the Buckley AFB Hazardous Waste Management Plan by the Hazardous Waste Manager. Thus, implementation of the proposed action would result in long-term, adverse minor impacts from hazardous wastes.

Environmental Restoration Program Sites

Although no ERP sites are located within the Proposed Action area, one AOC (Aqua Gas Area) may have released water-contaminated jet fuel within the Proposed Action area. However, soil samples for volatile organic petroleum hydrocarbons did not detect any contaminants in 1991. Nevertheless, prior to implementation of construction, soils at the site will be adequately sampled and tested for contaminants. Should these samples reveal possible concerns within areas proposed for construction, appropriate remedial actions will be completed by the construction contractor prior to construction activities commencing. Remediation will be coordinated with Buckley AFB and appropriate state agencies. Therefore, assuming proper identification and management of potential issues from the AOC, implementation of the proposed action would result in negligible, short-term, adverse impacts and long-term minor, beneficial impacts associated with the AOC.

Asbestos

Results of the asbestos survey for Buckley AFB indicate that Building 700 does not contain asbestos based on sampling various locations within the building. Therefore, the renovation portion of the proposed action would result in no impacts related to asbestos.

As discussed in Section 3.8.1, some soils on Buckley AFB have tested positive for ACM from destruction of World War II-era structures in the 1950s and 1960s. Therefore, the proposed action locations would be tested for ACM prior to construction. If ACM is identified in soils, management and abatement procedures would be implemented in accordance with the Buckley AFB Asbestos Containing Material in Soils Management Plan. Impacts associated with the management and abatement of ACM would be adverse, short term and minor.

Lead-Based Paint

Waste generated during removal of Building 700 does not have the potential to contain lead-based paint based on the age of the building. The building was constructed in 1993, and buildings constructed after 1985 do not need to be tested for lead-based paint prior to demolition. Therefore, no impacts associated with lead-based paint would occur.

Polychlorinated Biphenyls

No PCB-containing transformers or other equipment exist within Building 700 or on Buckley AFB. Therefore, no impacts relative to PCBs would result from implementation of the proposed action.

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Pesticides

Implementation of the proposed action is not expected to result in an increase in pesticide applications because it would increase the amount of developed area. Assuming proper labeling instructions and management procedures would be followed, no impacts from pesticides would result from the proposed action.

3.8.2.2 *Alternative Action 1: Site Location 2*

Under Alternative Action 1, the solid and hazardous material and waste impacts would be the same as under the proposed action with the exception of the closed ERP Site 6 and the Apron Runoff AOC. This alternative would require construction in the West Ramp runoff area (Site 6) and the Apron Runoff AOC. Elevated concentrations of soil contaminants were identified in ERP Site 6 (up to 4,620 ug/kg of xylenes and 141 ug/kg of ethyl benzene). In addition, hydrazine residue may be present in the Apron Runoff AOC (although no confirmatory soil samples have been collected). If visible contamination were discovered during construction in ERP Site 6, Buckley AFB would reopen Site 6 for renewed characterization and cleanup in accordance with all applicable Federal, state, local, and USAF regulations. Additionally, soil and/or groundwater samples of the Apron Runoff AOC site will be taken prior to implementation of construction activities. Should investigations reveal that remediation of either of these sites is necessary, appropriate remedial actions will be completed by the construction contractor prior to construction activities. Remediation activities will be coordinated with Buckley AFB and appropriate state agencies. If soils are determined to be non-RCRA, then they would likely be disposed off site at the Denver Arapahoe Disposal Site, which is a regional solid waste disposal site owned by the City and County of Denver. This landfill has a capacity of 300 million cubic yards and an estimated life of 90 years, and accepts petroleum contaminated soils. If the soils are determined to be RCRA hazardous waste then they would be removed and transported in accordance with RCRA requirements, likely to the Deer Trails hazardous waste landfill, a RCRA approved landfill in Adams County, Colorado. As such, hazardous materials impacts would be adverse, short-term, and minor under this alternative.

3.8.2.3 *Alternative Action 2: Site Location 3*

Impacts would be similar to those described under Alternative Action 1.

3.8.2.4 *Alternative Action 3: Addition/Alteration to Building 700*

Under Alternative Action 3, hazardous materials and waste impacts would be the same as the Proposed Action.

3.8.2.5 *No Action Alternative*

Under the No Action Alternative, the demolition, construction, and renovation associated with the Proposed Action would not occur. No impacts would result from the No Action Alternative, and baseline conditions for hazardous waste and materials would remain unchanged.

3.9 UTILITIES

3.9.1 Affected Environment

3.9.1.1 *Water System*

The city of Aurora provides potable water to Buckley AFB via two connections. The primary connection is along 6th Avenue, where a water main connects to the City's water line. A water main along Mississippi Avenue provides emergency backup water supplies in the event that the primary connection

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experiences a failure. The Base does not have a contractual limit on the amount of water it uses (AFCEE 2005). According to the most recent data available, water usage at Buckley AFB was 131,094,000 gallons in Fiscal Year 2005 (FY05).

3.9.1.2 *Sanitary Sewer*

Wastewater generated at Buckley AFB is conveyed through the Base sanitary sewer system to the city of Aurora's wastewater collections system, and is then transported to one of two wastewater treatment facilities. The base's sanitary sewer system was installed during the 1940s and 1950s and is composed of vitrified clay pipe, while portions of the system that have been installed more recently are composed of polyvinyl chloride (PVC) pipe (PVC is now used for all sewer system upgrades at the base). The primary wastewater treatment facility is the city of Denver's Metro Wastewater Reclamation District, which is located at 64th Avenue and York Street, while the city of Aurora's Sand Creek Treatment Facility is the secondary treatment facility (AFCEE 2005). According to the most recent available data (2003), Buckley AFB discharged 1.4 million gallons of wastewater per day and 511 gallons per year.

3.9.1.3 *Storm Drainage*

Storm water generated at Buckley AFB is primarily collected and conveyed through a system of surface ditches and channels, while an underground storm drainage system has been constructed around the runways, portions of the taxiways, and the hangars and buildings located north of the Main Ramp (AFCEE 2005). Portions of two storm water ditches are located within Site Location 3, while a portion of one of these ditches is located within Site Location 2. A detailed description of the storm drainage system at Buckley AFB is provided in Section 3.6, Water Resources.

3.9.1.4 *Electrical System and Natural Gas*

Xcel Energy provides electrical power and natural gas for facilities at Buckley AFB (AFCEE 2005). According to the most recent data available, electricity usage at Buckley AFB was 131,681,354 kilowatt hours (kWh) in FY05. Natural gas usage at Buckley AFB for 2005 was 1.3 million cubic feet.

3.9.2 Impacts

Issues and concerns regarding infrastructure are related to creating stress on infrastructure systems, such that the existing infrastructure must be updated or changed. Assessing the impacts to infrastructure entails a determination of infrastructure that would be used as a result of the proposed action or action alternatives.

3.9.2.1 *Preferred Alternative*

Utilities systems are located in the vicinity of Site Location 1 along Aspen Street. Tie-ins to these utilities would be required; however, extension of utilities systems is not anticipated. The new facility would result in a small increase in utilities demand.

During construction, water would be used for soil compaction and dust suppression. Using an estimate of 500 gallons/day/acre and an estimated construction period of 90 days, it is anticipated that 22,500 gallons of water (assuming conservatively that the construction footprint would be 0.5 acre) or less than .02 percent of the annual total water usage at Buckley AFB would occur during construction. During operation, using an estimate of 100 gallons/day/individual for a 24 hour, seven day a week operation, water consumption is estimated to be 500,000 gallons (for the purpose of this analysis, the number of individuals was determined to be equivalent to approximately 50 based on the 25 fulltime personnel, as well as 100 personnel on drill weekends, that are assigned to the facility). This represents an increase of about .04 percent of the annual total water usage at the Base. Assuming conservatively that 100 percent

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of this water (500,000 gallons) would eventually be discharged as wastewater, or less than 1 percent of the annual wastewater discharged at Buckley AFB annually. With regard to electrical use, using a conservative estimate (due to the proposed facility's large amount of computer equipment, etc.) of 100 kilowatt hours of electricity per square foot annually (Buckley AFB currently averages about 50 kilowatt hours of electricity per square foot basewide), the Squadron Operations Facility would consume about 2,295,000 kilowatt hours of electricity annually. This represents an increase of about 1.7 percent annually compared to current levels. Therefore, impacts associated with utilities usage would be adverse, long-term and less than significant under the Preferred Alternative.

3.9.2.2 *Alternative Action 1: Site Location 2*

During construction an estimated 45,000 gallons of water would be used due to construction of the parking area. This represents an approximately .04 percent of the annual total water usage at the Base. Long-term impacts under Alternative Action 1 would be the same as those described for the Preferred Alternative. Impacts associated with utilities usage would be adverse, long-term and less than significant under the Preferred Alternative.

3.9.2.3 *Alternative Action 2: Site Location 3*

Impacts under Alternative Action 2 would be the same as those described for the Preferred Alternative.

3.9.2.4 *Alternative Action 3: Addition/Alteration to Building 700*

Impacts under Alternative Action 3 would be substantially lower than those described for the Preferred Alternative, and therefore would be long-term and adverse but less than significant.

3.9.2.5 *No Action Alternative*

Under the No Action Alternative, no change to utilities infrastructure or demands would occur and conditions would remain as described under Section 3.9.

3.10 ENVIRONMENTAL JUSTICE

3.10.1 Affected Environment

Sensitive groups within the ROI, including low-income and minority communities, are specifically considered in order to assess the potential for disproportionate occurrence of impacts. For the purposes of this analysis, sensitive groups are defined as follows:

- *Minority Population:* Persons of Hispanic origin of any race, Blacks, American Indians, Eskimos, Aleuts, Asians, or Pacific Islanders.
- *Low-Income Population:* Persons living below the poverty level, according to income data collected in U.S. Census 2000.

In addition, to determine the potential for disproportionate health and safety risks to children, the percentage of people under the age of 18 years within Arapahoe County, as well as locations at Buckley AFB where concentrations of children may occur (e.g., schools) was determined.

Based on 2005 American Community Survey data provided by the U.S. Census Bureau, the incidence of persons incomes below the poverty level within Aurora (13.1 percent) is higher than that of Arapahoe County (9.4 percent) and the state of Colorado (11.1 percent) (U.S. Census Bureau 2005). Minority persons represent 49.4 percent of the Aurora population, compared to 32.7 percent for Arapahoe County and 28.1 percent for the state. Black or African Americans accounted for the largest non-Hispanic

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minority group at the city, county, and state level, respectively, comprising 14.9, 9.1, and 3.5 percent of the population at each geographic level. Hispanic or Latino persons account for 27.3 percent of the city population, and 16.2 and 19.5 percent of the county and state populations, respectively (U.S. Census Bureau 2005).

The youth population, which comprises children under the age of 18, accounts for 26.5 percent of Arapahoe County, compared to 25.8 percent at the state level (U.S. Census Bureau 2005). Buckley AFB contains no on Base housing (however, Base housing is currently under construction), and areas that are likely to be frequented by youth populations (e.g., schools, day care facilities, playgrounds) do not occur in the project area. Several schools fall within 5 miles of Buckley AFB, generally to the west (Google Maps 2006).

3.10.2 Impacts

3.10.2.1 Preferred Alternative

Under the proposed action, the 140 WG would implement the construction projects described in detail in Section 2. Construction activities associated with the proposed action would be completed over the period of the next year and involve expenditures on labor and materials. Potential direct impacts would include the creation of construction jobs over the entire construction period, associated direct earnings, expenditures on materials and fuels, as well as secondary effects leading to the creation of additional jobs and earnings. These potential impacts would be temporary, occurring for the duration of the construction period only and are generally perceived as beneficial. No permanent or long-lasting socioeconomic impacts would result from implementation of the proposed action (e.g., there would be no changes in assigned personnel). The small number of jobs created is not expected to stimulate population increases in the region.

Low-income populations do not represent a disproportionate segment of the ROI population, and the minority population in the ROI is comparable to state levels. The youth population in the ROI is similarly comparable to state levels. The proposed action evaluated in this EA would not create adverse environmental or health effects. Consequently, no disproportionately high and adverse human health or environmental effects on minority and low-income populations have been identified. In addition, there are no known environmental health or safety risks associated with the proposed action that may disproportionately affect children.

3.10.2.2 Alternative Action 1: Site Location 2

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior renovations to Building 700 associated with Alternative Action 1 would result in no impacts to minority or low-income populations.

3.10.2.3 Alternative Action 2: Site Location 3

Similar to the Preferred Alternative, construction of the new Squadron Operations Facility and interior renovations to Building 700 associated with Alternative Action 2 would result in no impacts to minority or low-income populations.

3.10.2.4 Alternative Action 3: Addition/Alteration to Building 700

Under Alternative Action 3, additions and alterations to Building 700 would result in no impacts to minority or low-income populations.

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3.10.2.5 No Action Alternative

Implementation of the No Action Alternative would result in no environmental justice impacts.

3.11 CULTURAL RESOURCES

3.11.1 Affected Environment

3.11.1.1 Historical Setting

Named for 1st Lt. John Harold Buckley, the construction of Buckley Field began in early 1942. It was built to respond to the need for more training bases for Lowry Army Air Field. The project involved the construction of more than 700 buildings, communications facilities, and nearly 17,000 feet of railroad track and cost \$7.5 million. The Colorado ANG assumed control over Buckley in 1946 and the 120th Fighter Squadron of the Colorado ANG became the first unit in the U.S. to be activated under the umbrella of the modern adaptation of the ANG. In 1947, the Department of the Navy took charge of Buckley Field and it was renamed Naval Air Station – Denver. Its purpose was to house veterans and their families during their transition back to civilian life following World War II. These families lived in “towns” on the Base that eventually elected councilmen and mayors and published town newspapers. These towns closed in 1951 when all of the veterans and their families were fully transitioned back to civilian life. The USAF resumed ownership of the Base in 1959 and it was officially Buckley ANG Base in 1960. It was the first stand-alone ANG Base in the nation (Buckley AFB 2006).

3.11.1.2 Identified Cultural Resources

The ROI for cultural resources is Buckley AFB. With the exception of limited, heavily developed areas, the entirety of Buckley AFB has been surveyed for cultural resources.

Archaeological Resources, Traditional Cultural Resources, and Sacred Sites

No known significant archaeological sites, Traditional Cultural Resources, or sacred sites exist at Buckley AFB (Buckley AFB 2004b). Thirty-nine archaeological sites and 25 isolated finds were identified during the comprehensive survey of the base, however, none of these have been recommended as eligible for inclusion in the National Register of Historic Places (NRHP) and the Colorado State Historic Preservation Office (SHPO) has concurred with this recommendation (Buckley AFB 2004b). According to the Buckley AFB 2004 Integrated Cultural Resources Management Plan, the potential for any sacred sites or Traditional Cultural Properties is low.

Architectural Resources

Six architectural resources are eligible for listing in the NRHP based on individual merit (i.e., not as a historic district). Buildings 402, 403, 404, and 405 are all NRHP-eligible geodesic domes, or radomes, located in a high security area some distance from the alternatives. Buildings 801 and 909 are both NRHP-eligible maintenance hangars located on the flightline. Building 801 is approximately 300 feet east-northeast of the Squadron Operations Facility alternatives locations, with Building 909 located some 500 feet farther away, to the east of Building 801.

3.11.2 Impacts

Impacts of the proposed action on cultural resources would be significant if important cultural resources were not preserved.

3.11.2.1 Preferred Alternative

Construction of the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any eligible historic structure. The project site for the proposed action currently encompasses undeveloped land (grass and bare ground) and a paved parking lot associated with Building 700, located to the north. Under the proposed action, Building 700 would undergo minor interior modifications. Building 700 was constructed in 1993 and is not of sufficient age to be evaluated for potential historical significance. No known historical or archaeological resources are directly associated with the elements of the new construction site. Review of the proposed construction footprint for the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any historic property (i.e., any NRHP-eligible archaeological or architectural resource).

Under the proposed action, Building 700 would undergo minor interior modifications. Building 700 was constructed in 1993 and is not of sufficient age to be evaluated for potential historical significance. Building 801 (eligible for listing in the NRHP) is located about 300 feet east-northeast of the proposed location for the new Squadron Operations Facility. Because of the Preferred Alternative's proximity to Building 801, consideration should be given to the potential effect of the construction on Building 801's viewshed. Building 801 is presently surrounded by several modern structures that are visible from the hangar, including the current squadron operations building. The new construction's two-story height is consistent with other buildings nearby and will not overwhelm the hangar's own architectural presence, nor impact its significant architectural characteristics. The probable inclusion of communications equipment (e.g., antennae) would also have no visual impact when viewed from the distance of the historic hangar. Furthermore, because the hangar's immediate setting has already changed from its historic period of significance (through the removal of a neighboring hangar to the east), and the hangar remains an integral part of an active military installation, the hangar's historic setting will not be adversely affected, nor will its NRHP eligibility. Activities associated with the proposed action would not affect the historic setting of this building. Review of the proposed construction footprint for the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any eligible historic structure. However, in compliance with Section 106 of the NHPA and the guidance proposed by the draft ICRMP, the 460 SW will consult with the Colorado SHPO to ensure that the architecture of the new construction will be consistent with the Secretary of the Interior's Standards and Guidelines, and the general architectural standards of Buckley AFB.

A slight potential exists for currently buried, unknown archaeological resources to be uncovered during ground-disturbing activities associated with construction. If archaeological resources are uncovered during construction, activities would be suspended until the 140 WG complies with Section 106 of the NHPA, including consultation with the Colorado SHPO should the resource be determined to be eligible for the NRHP.

Impacts to traditional cultural resources and sacred sites are not expected under the proposed action. Contact has been initiated with interested tribes (Cheyenne-Arapaho, Comanche, Kiowa, Northern Ute, Northern Arapaho, Shoshone, Southern Ute, Ute Mountain, and Northern Cheyenne) through the IICEP process to identify any potential concerns associated with the proposed action.

3.11.2.2 Alternative Action 1: Site Location 2

Potential impacts to cultural resources under Alternative Action 1 would be similar to those described under the Preferred Alternative. This site for the Squadron Operations Facility lies south-southeast of Building 801. As with the Preferred Alternative, this project site consists of undeveloped land (grass and bare ground). Building 700 would undergo minor interior modifications; because its construction date is 1993, Building 700 is not of sufficient age to be evaluated for potential historical significance. No known historical or archaeological resources are directly associated with the elements of the new construction

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site. Review of the proposed construction footprint for the Squadron Operations Facility under this alternative indicates that this action would not directly affect any eligible historic structure.

Building 801 (eligible for listing in the NRHP) is located about 500 feet north-northeast of this alternative location for the new Squadron Operations Facility. Because of the proximity of this site to Building 801, consideration should be given to the potential effect of the construction on Building 801's viewshed. Building 801 is presently surrounded by several modern structures that are visible from the hangar, including the current Squadron Operations facility to the west and other buildings to the southwest. The new construction's two-story height is consistent with other buildings nearby and would not overwhelm the hangar's own architectural presence, nor impact its significant architectural characteristics. The probable inclusion of communications equipment (e.g., antennae) would also have no visual impact when viewed from the distance of the historic hangar. Furthermore, because the hangar's immediate setting has already changed from its historic period of significance (through the removal of a neighboring hangar to the east), and the hangar remains an integral part of an active military installation, the hangar's historic setting would not be adversely affected, nor will its NRHP eligibility. However, in compliance with Section 106 of the NHPA and the guidance proposed by the draft ICRMP, the 460 SW will consult with the Colorado SHPO to ensure that the architecture of the new construction will be consistent with the Secretary of the Interior's Standards and Guidelines, and the general architectural standards of Buckley AFB.

As with the Preferred Alternative, a slight potential exists for currently buried, unknown archaeological resources to be uncovered during ground-disturbing activities associated with construction. If archaeological resources are uncovered during construction, activities would be suspended and the ANG would comply with Section 106 of the NHPA, including consultation with the Colorado SHPO to determine a course of action if the resource should be eligible for the NRHP.

Impacts to traditional cultural resources and sacred sites are not expected under this alternative. Contact has been initiated with interested tribes (Cheyenne-Arapaho, Comanche, Kiowa, Northern Ute, Northern Arapaho, Shoshone, Southern Ute, Ute Mountain, and Northern Cheyenne) through the IICEP process to identify any potential concerns associated with the proposed action or alternatives.

3.11.2.3 Alternative Action 2: Site Location 3

Potential impacts to cultural resources under Alternative Action 2 would be similar to those described under the Preferred Alternative. Potential impacts to cultural resources under Alternative Action 2 would be similar to those described under the Preferred Alternative and Alternative Action 1. This site for the Squadron Operations Facility lies west of Building 805, and southwest of NRHP-eligible Building 801. As with the Preferred Alternative, the project site consists of undeveloped land (grass and bare ground). Building 700 would undergo minor interior modifications; because its construction date is 1993, Building 700 is not of sufficient age to be evaluated for potential historical significance. No known historical or archaeological resources are directly associated with the elements of the new construction site. Review of the proposed construction footprint for the Squadron Operations Facility under this alternative indicates that this action would not directly affect any eligible historic structure.

Building 801 (eligible for listing in the NRHP) is located about 750 feet northeast of this alternative location for the new Squadron Operations Facility. Although Alternative Action 2/site Location 3 is some distance from Building 801, consideration should still be given to the potential effect of the construction on Building 801's viewshed. Building 801 is presently surrounded by several modern structures that are visible from the hangar, including the current squadron operations building to the west and other buildings to the southwest. The new construction's two-story height is consistent with other buildings nearby, will be partially blocked by building 805, and will not overwhelm the hangar's own architectural presence, nor impact its significant architectural characteristics. The probable inclusion of communications equipment (e.g., antennae) would also have no visual impact when viewed from the

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distance of the historic hangar. Furthermore, because the hangar's immediate setting has already changed from its historic period of significance (through the removal of a neighboring hangar to the east), and the hangar remains an integral part of an active military installation, the hangar's historic setting will not be affected, nor will its NRHP eligibility. However, in compliance with Section 106 of the NHPA and the guidance proposed by the draft ICRMP, the 460 SW will consult with the Colorado SHPO to ensure that the architecture of the new construction will be consistent with the Secretary of the Interior's Standards and Guidelines, and the general architectural standards of Buckley AFB.

As with the Preferred Alternative, a slight potential exists for currently buried, unknown archaeological resources to be uncovered during ground-disturbing activities associated with construction. If archaeological resources are uncovered during construction, activities would be suspended and the ANG would comply with Section 106 of the NHPA, including consultation with the Colorado SHPO to determine a course of action if the resource should be eligible for the NRHP.

Impacts to traditional cultural resources and sacred sites are not expected under this alternative. Contact has been initiated with interested tribes (Cheyenne-Arapaho, Comanche, Kiowa, Northern Ute, Northern Arapaho, Shoshone, Southern Ute, Ute Mountain, and Northern Cheyenne) through the IICEP process to identify any potential concerns associated with the proposed action or alternatives.

3.11.2.4 Alternative Action 3: Addition/Alteration to Building 700

Proposed additions and alterations to Building 700 under Alternative Action 3 would not impact cultural resources. The view of the addition from historic maintenance hangar Building 801 would be masked by existing building 700 and other structures that lie between Building 700 and Building 801, so that there would be no effect to Building 801's viewshed or on its NRHP eligibility. The probable inclusion of communications equipment (e.g., antennae) would also have no visual impact when viewed from the distance of the historic hangar. COANG should ensure that the new construction adheres to the Secretary of the Interior's Standards and Guidelines, and the installation's overall architectural standards. Similar to the other alternatives, a slight potential exists for currently buried, unknown archaeological resources to be uncovered during ground-disturbing activities associated with construction. If archaeological resources are uncovered during construction, activities would be suspended until the COANG complies with Section 106 of NHPA, including a determination of the significance of the resource and consultation with the Colorado SHPO to determine a course of action.

3.11.2.5 No Action Alternative

Under the No Action Alternative, the demolition, construction, and operation associated with the proposed action or the other action alternatives would not occur. No impacts would result from the No Action Alternative, and baseline conditions for cultural resources would remain unchanged.

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

Buckley AFB and the 140 WG update facilities on a continual basis, as necessary. While it is not practical to catalog all minor projects that could occur over the short-term, the major projects in the ROI have been analyzed for the potential to create cumulative environmental impacts. Planning efforts in the ROI include the actions described within this EA, as well as those other projects that are ongoing, or planned over the short-term. Additional projects within the ROI are discussed below.

4.1 IMPACT ANALYSIS

Other projects evaluated in the cumulative impact analysis include planned or reasonably foreseeable projects both on Buckley AFB and off base. Planned or reasonably foreseeable projects were identified through a review of public documents and coordination with multiple agencies, and include both on- and off-Base activities. The following discussion of cumulative projects and impacts was adopted from the recently completed *Final EA for Proposed Construction III Projects, Buckley AFB* (AFCEE 2005) and modified as necessary to address the proposed action that is the subject of this EA.

Table 4-1 describes past, present, and future actions, as well as the Proposed Action, and their associated cumulative effects by resource. The Proposed Action is generally used in this cumulative analysis to represent any of the four action alternatives assessed in Chapter 3 of this EA. This is done because: a) all of the action alternatives are located in the same general area and the alternatives generally would not have impacts outside of the immediate project area (with the exception of minor adverse impacts associated with air quality and water quality, as well as minor, beneficial impacts associated with socioeconomics; b) in a NEPA context, there are no substantial differences in impacts from the four action alternatives (i.e., all impacts are either minor and adverse or minor and beneficial); and c) all action alternatives would contribute only minor, incremental impacts towards the larger, cumulative impacts in the ROI.

Off-Base Activities. The land adjacent to Buckley AFB is split between developed, agricultural, and grassland conservation areas. The city of Aurora's 2003 *Comprehensive Plan* identifies three planning areas near the base, each with its own identity and planned development pattern (AFCEE 2005).

Colfax Corridor East of I-225. This area is adjacent to the northern boundary of Buckley AFB. The properties along Colfax Avenue tend to include older commercial uses, while many are vacant. The Northeast Colfax Area also includes the neighborhoods that are north and south of the corridor. Strategies identified in the 2003 *Comprehensive Plan* by the city of Aurora for development in this area include:

- Working to enhance open space corridors through additional dedications or other means.
- Confining non-residential uses to the corridor and to planned industrial areas, with the exception of neighborhood commercial or neighborhood institutional uses.
- Locating multi-family and attached housing in appropriate areas, including adjacent to major streets, similar existing housing types, and other corridor properties.
- Promoting infill development in residential neighborhoods, maintaining the overall average residential density close to the current benchmarks.

- Encouraging and supporting the consolidation of parcels in the corridor to allow well-planned businesses or mixed-use projects.

Active development proposals within the Colfax Corridor East of I-225 include:

- Monterrey Point – an approved, but not currently constructed, residential community containing approximately 354 units located near East Colfax and Sable Road.
- Colfax Mini Mall – an approved, but not currently constructed, project located on East Colfax near I-225.
- Eastpark 70 – a 110-acre industrial park, currently being constructed at Smith Road and Sky Ranch.
- Cottage Grove – a residential development with approximately 104 units, currently under construction at Chambers Road at East 17th Avenue.
- Cadence Retail – currently under construction, located at East Colfax and Eagle.

I-225 Corridor and City Area. This area is west of Buckley AFB and is associated with I-225 and the Aurora City Center. The I-225 corridor is the geographic center of the city of Aurora, and on the east side of the highway, the Aurora Mall, Aurora City Place, and Abilene power corridors comprise a regional retail location. Midway in the corridor lies the Aurora City Center, historically planned as the city's "downtown." Strategies identified by the city of Aurora for development in this area include:

- Continuing to work for transportation improvements including improvements to interchanges and Park-n-Ride locations.
- Developing a strategy to encourage adaptive reuse of empty big box retail buildings.
- Encouraging additional retail and medical-related office development in the corridor.
- Working to expand the restaurant node at Iliff Avenue.

Important development associated with the City Center includes the Aurora Municipal Center (completed), Arapahoe County administrative annex (complete), new ADT company office building, a 355-unit townhouse and elevator apartment complex (The Village), a 225-residential unit project (The Retreat at City Center), and a revitalization of the Aurora Mall. Additionally, the Regional Transportation District (RTD) purchased property for and began construction on a new bus transfer facility at the City Center. The RTD plans to relocate its bus transfer facility here, and a light rail station could be constructed in the future. Finally, a much smaller single-family housing development comprising 36.5 acres (14.8 hectare) is under construction approximately 0.5 mile (0.8 kilometer) west of Buckley AFB (Buckley AFB 2004c).

E-470 Corridor Area. This area is adjacent to the eastern and extreme southern boundary of Buckley AFB and includes the prairie areas east of the developed portion of the city where development is expected through 2020. The major feature of this area is the E-470 corridor from Denver International Airport in the north to Douglas County in the south. E-470 is a major interstate running north-south near the eastern boundary of Buckley AFB. The 1999 completion of the E-470 segment serving the Buckley AFB area, and the subsequent Jewell Avenue Extension, provides the Base with major highways on both its east and west sides with access to both the north and south gates. The E-470 toll road also provides a major regional beltway connecting the northern and southern limits of the metropolitan area and linking Denver International Airport with the I-25 corridor, opening substantial amounts of vacant land for development. The city of Aurora *E-470 Corridor Land Use Study* identifies regional activity centers and the following theme areas within the corridor:

- Airport Corporate
- Airport Commercial/Distribution
- Regional Retail/Commercial
- Light Industrial/Flex Office
- Buckley Research and Development
- Residential
- Regional Park and Open Space
- Recreation/Entertainment

Strategies identified by the city of Aurora for development in the E-470 Corridor Area include locating a major office park, retail centers, and airport-related activities in the corridor and working with the counties to ensure that critical, undeveloped enclaves of land in the corridor are annexed into Aurora. One of the more prominent proposed developments within the E-470 Corridor area is the Horizon City Center, a 503-acre mixed use commercial, retail, and residential project located on the southwest corner of I-70 and E-470, within approximately one mile of Buckley AFB.

Planned land use for the entire area abutting the eastern boundary of Buckley AFB is to incorporate the Buckley Research and Development theme. Small-scale office development is allowed to complement the Research and Development land use, and limited industrial and commercial services are permitted. Regionally, a residential development comprising 435 acres is currently under construction within 0.5 mile of the southern limits of Buckley AFB. Just east of this development, a 490-acre residential development is also under construction (Buckley AFB 2004c).

On-Base Activities. Land use planning at Buckley AFB follows a rational and sequential decision-making process to reach a consensus for future growth while ensuring the efficient and compatible use of available land. The land use planning process establishes long-range goals and provides starting points to discuss land acquisition or disposal actions and siting of new facilities. This planning helps to define the best layout of land uses and transportation corridors to support functional effectiveness, efficiency, and compatibility. Both on- and off-Base factors are considered. Land use planning guides infill development on currently vacant land, functional consolidation, and redesignation of land uses to accommodate doubling of the base's current population.

There are several existing and planned Capital Improvement Projects to support Buckley AFB's recent transition from an ANG Base to an AFB and to facilitate future growth. The following provides a summary of recent past, present, and future projects at Buckley AFB; however, because of the high volume of project activity at Buckley AFB, a comprehensive list of past, present, and future projects at Buckley AFB is provided in Appendix C.

In November 2003, Buckley AFB completed an EA on the third phase of a four-phase, multi-year infrastructure upgrade and expansion program. Proposed activities included upgrades to the base's natural gas and electrical distribution systems, water and wastewater systems, and the roadway and circulation system. Other activities that were scheduled for 2004 included 13 projects totaling approximately 999,000 SF. These projects included adding to or altering access roads to the airfield and repairing parking lots. Activities that were scheduled for 2005 included 16 projects totaling approximately 380,000 SF. These projects included athletic fields, Army Aviation Support Facility, and Vail Street improvements. In December 2005, Buckley AFB completed the EA for Proposed Construction III projects that included construction of a Small Arms Range Complex, a Logistics Readiness Complex, a Consolidated Services Facility, and a Communications Center. Activities scheduled for 2006 include 19 projects totaling approximately 158,000 SF. These projects include an operations facility, youth center, and the demolition of Warehouse 1011. Table 4-1 presents potential

cumulative effects on resources from the proposed action combined with other past, present, and future activities as described above. As indicated in Table 4-1, significant impacts to resources are not expected.

Table 4-1. Cumulative Impacts on Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Land Use	Development of Aurora and Buckley AFB has extensively modified land use.	Military installations, commercial, residential, light industrial land uses.	Construction of new Squadron Operations Facility consistent with the Buckley AFB General Plan.	Expansion of Aurora east of Buckley AFB.	Cumulative impacts to land use within the ROI are generally adverse, moderate, and long-term due to increases in intensity of land use. Changes to existing land use associated with the Proposed Action would have negligible effect on Base or non-military lands surrounding Buckley AFB, and would be adverse, minor, and incremental in a cumulative context.
Socioeconomics	Buckley AFB contributes to local economic community.	Continued support of local economic community.	Minor contribution to local construction industry.	Continued development of Buckley AFB would impact local economy and services.	Long-term and beneficial stimulation of local economy, including schools and housing, in context of increased development of Buckley AFB. Proposed Action contributes minor, short-term beneficial impacts to cumulative effects.

Table 4-1. Cumulative Impacts on Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Air Quality (see Table 4-2 below for detailed cumulative air quality emissions data)	Non-attainment area for CO and maintenance area for O ₃ and PM ₁₀ .	Emissions from aircraft, vehicles, and buildings.	Minor short-term emissions due to construction activities	Growth at Buckley AFB and Aurora will result in increased traffic and emissions.	Cumulative impacts are adverse, long-term and moderate. The region will continue to be a maintenance area for CO, O ₃ and PM ₁₀ . The Proposed Action's contributions would be adverse and minor both in the short-term (construction) and long-term (operations).
Noise	Aircraft activities are dominant noise source.	Aircraft activities are dominant noise source.	Short-term noise from construction activities.	Base growth will result in increased traffic and noise.	Aircraft activities would be dominant noise source in the ROI and are adverse, long-term and moderate. The Proposed Action's contribution would be adverse, long-term and negligible.
Earth Resources	Past urban and Buckley AFB development has modified soils.	None.	Grading, excavating, and soil recontouring would result in further minor impacts associated with soil disturbance.	Continued development of Buckley AFB would locally impact soils.	Impacts would be adverse, long-term and minor. The Proposed Action's contributions to these impacts would be small.

Table 4-1. Cumulative Impacts on Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Water Resources	Surface water quality moderately impacted by development and past disposal practices.	Surface water quality moderately impacted by development.	Potential sedimentation from construction and minor increase in impervious surface area.	Continued development of Buckley AFB would result in sedimentation from construction and increase in impervious surface areas.	Increased impervious area due to construction (e.g., paving, structures) would have adverse, long-term moderate impacts on storm water discharges and water quality (e.g., runoff, erosion) as well as groundwater recharge both on and off base.
Biological Resources	Degraded historic habitat of sensitive and common wildlife species.	Buckley AFB and Aurora operations and development impact wildlife and their habitat.	Minor disturbance of vegetation by construction (approximately 11,500 SF). Potential temporary, minor impacts to wildlife due to noise.	Continued development of Buckley AFB would impact vegetation communities and wildlife habitat.	Moderate impact due to permanent loss of vegetation and low-quality habitat, as well as permanent loss of Black-tailed Prairie Dogs and their habitat. Proposed Action's contribution is minor.
Solid and Hazardous Materials and Waste	Past activities have led to the creation of ERP and other contaminated sites, as well as the presence of ACM, radon, and other concerns.	Current activities at Buckley AFB result in the use of hazardous materials and generation and disposal of hazardous and solid waste.	Potential minor short- and long-term impacts due to generation of hazardous waste during construction and operations.	Continued development of Buckley AFB would incur use or generation of hazardous materials and wastes.	Cumulative effects are moderate. Negligible effect due to Proposed Action since all hazardous materials and wastes used or generated during project implementation would be used and disposed of according to all applicable regulations.

Table 4-1. Cumulative Impacts on Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Utilities	Increases in development and activity have increased the demand for and infrastructure of utilities services.	Current activities at Buckley AFB create demand for utilities services.	Minor long-term increase in utilities demand and utilities tie ins.	Continued development of Buckley AFB and Aurora would result in a continued increase in utility demands.	Increased demand for public utility services have a moderate impact to regional or local energy supplies. Proposed Action's contribution is minor.
Environmental Justice	Environmental Justice populations have been dependant on resource areas impacted by past projects.		No adverse impacts are anticipated to low-income or minority populations.	No adverse impacts are anticipated to low-income or minority populations.	Potential minor, adverse impacts to low-income or minority populations. No adverse impacts associated with Proposed Action.
Cultural Resources	With the exception of limited, heavily developed areas, the entirety of Buckley AFB has been surveyed for cultural resources.	Current activities result in ground disturbing activities that could unearth unknown resources.	No adverse impacts are anticipated to cultural resources.	No adverse impacts are anticipated to cultural resources.	Building 801's immediate setting has changed from its historic period. Activities associated with the Proposed Action would incrementally, adversely affect the long-term historic setting of this building.

As displayed in Table 4-2, emissions from construction and operation of the Preferred Alternative, in comparison to previously planned emissions, would produce long-term, adverse less than significant air quality impacts. This is the case, as each project activity would individually produce less than 1 ton per year of any air pollutant. As a result, the proposed action would produce less than significant cumulative air quality impacts.

Table 4-2. Cumulative Air Quality Impacts

Source	Total Emissions (tons)					
	VOC	CO	NOx	SOx	PM ₁₀	PM _{2.5}
2007						
Planned Construction (1)	6	82	31	3	43	*
Planned Operations (1)	6.3	88.7	32.3	3.0	6.3	*
Total Planned Emissions	12.3	170.7	63.3	6.0	49.3	*
Proposed Construction - Preferred Alternative	0.1	0.5	0.8	0.1	0.4	0.2
Proposed Operations - Preferred Alternative	0.0	0.7	0.4	0.0	0.1	0.1
Total Proposed Emissions	0.1	1.2	1.3	0.1	0.5	0.2
2008						
Planned Construction (1)	10	144	50	5	26	*
Planned Operations (1)	10.1	146.8	50.5	5.0	6.6	*
Total Planned Emissions	20.1	290.8	100.5	10.0	32.6	*
Total Proposed Emissions (2)	0.0	0.7	0.4	0.0	0.1	0.1
2009						
Planned Construction (1)	6	82	30	3	60	*
Planned Operations (1)	6.4	91.0	31.7	3.0	7.7	*
Total Planned Emissions	12.4	173.0	61.7	6.0	67.7	*
Total Proposed Emissions (2)	0.0	0.7	0.4	0.0	0.1	0.1
2010						
Planned Construction (1)	3	36	15	1	8	*
Planned Operations (1)	3.1	38.9	15.5	1.0	8.1	*
Total Planned Emissions	6.1	74.9	30.5	2.0	16.1	*
Total Proposed Emissions (2)	0.0	0.7	0.4	0.0	0.1	0.1

Notes: (1) Data obtained from Buckley AFB. Values for PM_{2.5} were not included.

(2) Assuming all construction is completed in 2007, implementation of the Preferred Alternative will only contribute operational emissions from 2008 on.

4.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA CEQ regulations require environmental analyses to identify "...any irreversible and irretrievable commitments of resources that would be involved in the proposed action should it be implemented" (40 CFR Section 1502.16). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects the uses of these resources have on future generations.

Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Building construction material such as gravel and gasoline usage for construction equipment would constitute the consumption of non-renewable resources.

The proposed action would have irreversible impacts on energy, labor, materials and funds, in that a relatively small amount of these finite resources would be consumed in the development of this project,

and once consumed, they cannot be regained. The only irretrievable impact would involve the conversion of some lands from an undeveloped condition through the construction of buildings and facilities. This action could be reversed in the future if deemed necessary. The sites could be used for alternative uses in the future, ranging from natural open space to urban development. No loss of future options would occur as a result of the proposed action. Direct losses of biological productivity and the use of natural resources from these impacts would be inconsequential.

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National Guard Bureau

Robert L. Dogan, NGB/A7CVN

140th Wing, Colorado Air National Guard

Dee Hawkins, 140th CES/CEV

460th Space Wing, U.S. Air Force

James R. Bruce, 460th CES/CEV

Major Tony Chen, 460th

Floyd W. Hatch, 460th CES/CEVP

Virginia Lightsey, 460th CES/CEVP

Jeff Lindquist, 460th SW/JA

Elizabeth Meyer, 460th CES/CEV

Corwin Oldweiler, 460th CES/CEV

Elise Sherva, 460th CES/CEVC

Mark Spangler, 460th CES/CEVR

John Spann, 460th SW/PA

Capt. Dan Sweeney, 460th MDC/SGPB

Science Applications International Corporation

Kate Bartz, Environmental Specialist, SAIC

M.S., Landscape Architecture & Environmental Planning, 1994

B.S., Environmental Studies, 1987

Years of Experience: 20

Shina duVall, Staff Archaeologist/Cultural Resource Specialist, SAIC

M.A., Anthropology, in progress

B.A., Anthropology, 1999

Years of Experience: 4

Heather Gordon, GIS Specialist, SAIC

B.A., Environmental Studies and Planning, 1996

B.A., Liberal Studies, 1996

Years of Experience: 7

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B.A., Anthropology, 1975

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B.S., Political Science, 2001
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B.S., Mechanical Engineering, 1990
Years of Experience: 16

Kimberly Wilson, Document Production Manager, SAIC
Years of Experience: 20

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Appendix A – IICEP

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DISTRIBUTION LIST AND AGENCIES AND INDIVIDUALS CONTACTED

Mr. Dan Beley
Colorado Dept. of Public Health & Environment
Water Quality Control Division
WQCD-OQ-B2
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State Historic Preservation Officer
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Colorado Division of Wildlife
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Manager, Environmental Planning
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Colorado Field Supervisor
US Fish & Wildlife Service
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DEPARTMENT OF THE AIR FORCE
AIR NATIONAL GUARD

MAR 29 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Dan Beley
Colorado Department of Public Health & Environment
Water Quality Control Division
WQCD-OQ-B2
4300 Cherry Creek Drive, South
Denver, CO 80246-1530

Dear Mr. Beley

The Colorado Air National Guard (COANG) at Buckley Air Force Base, Colorado, has prepared a Draft Environmental Assessment (EA) for a proposal to replace their Squadron Operations Facility (Attachment 1).

The environmental analysis for the Proposed Action is being conducted by the COANG in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your participation by reviewing this Draft EA, and solicit your comments concerning the proposal and any potential environmental consequences of the action. Section 4.0 of this EA analyzes the cumulative impacts of this and other actions in the region of influence (ROI). If there are other known actions in the ROI that are not included in Section 4.0 please list those actions in your comments. A listing of Federal and state agencies that have been contacted is attached (Attachment 2). If there are any additional agencies that you feel should review and comment on the Draft EA, please indicate these in your response to us.

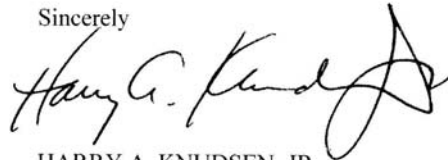
Any questions concerning the proposal should be directed to our consultant, Science Applications International Corporation (SAIC). The point of contact is Ms. Kate L. Bartz. She can be reached at (520) 616-2506 if you have any questions or concerns. Please forward your

MAR 29 2007

Page 2

written comments to Ms. Bartz, in care of SAIC, 333 North Wilmot, Suite 400, Tucson, Arizona 85711, within 30 days of the date of this letter. Thank you for your assistance.

Sincerely

A handwritten signature in black ink, appearing to read "Harry A. Knudsen, Jr.", with a stylized flourish at the end.

HARRY A. KNUDSEN, JR.
Chief, Natural Infrastructure Management
Branch

Attachments:

1. Draft Environmental Assessment for Proposed Replacement of Squadron Operations Facility
2. Distribution list



DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

Mr. Bruce James
Environmental Flight
460th Civil Engineering Squadron
660 South Aspen Street
Buckley AFB, CO 80011-9551

21 February 2007

Mr. Bruce Rosenlund
Colorado Field Supervisor
US Fish and Wildlife Service
134 Union Blvd., Suite 675
Lakewood, CO 80228-1807

Dear Mr. Rosenlund,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for the relocation and construction of a new Squadron Operations Facility at the 140th Wing Colorado Air National Guard. The purpose of the proposed action is to provide the 140 WG with an adequately sized, technologically up-to-date, and properly configured Squadron Operations Facility to accommodate F-16 squadron operations for their ASA, NORAD, Noble Eagle, and other classified missions and to train personnel for a wartime tasking. The current squadron operations function is housed in Building 700, a 17,370 square foot (SF) facility that was built to accommodate the 120 FS prior to their conversion from A-7 to F-16 aircraft. Although the 140 WG transitioned to F-16 aircraft during the early 1990s, Building 700 has not been modified to accommodate the increase for current missions. These missions have evolved to include digital avionics upgrades, data links suites, command and control computer systems, and many additional classified systems.

The Air Force is requesting initiation of Section 7 consultation per the Endangered Species Act for the Environmental Assessment of the 140th Squadron Operations Facility project. We have assessed the potential effects of the proposed projects on federally listed and candidate species and determined that the proposed actions are not likely to adversely affect federally listed and candidate species.

If you have any questions please feel free to contact Floyd Hatch at 720-847-6937/
floyd.hatch@buckley.af.mil, Virginia Lightsey-Ceehorne at 720-847-6158/
virginia.lightsey@buckley.af.mil, or Bruce James at 720-847-7245/ Bruce.James@buckley.af.mil.

A handwritten signature in black ink, reading "Bruce James", is positioned above the printed name.

BRUCE JAMES
Chief, Environmental Planning & Conservation

— GUARDIANS OF THE HIGH FRONTIER —



COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

March 16, 2007

Mr. Bruce James
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Re: Section 106 of the National Historic Preservation Act Review for the Environmental Assessment for the Construction and Operate a new Squadron Operations Facility for the 140 Wing. (CHS #49768)
Dear Mr. James:

Thank you for your correspondences dated March 7, 2007 and received by our office on March 8, 2007 regarding the above-mentioned projects. After review of the provided information, we concur with the finding of *no adverse effect* under Section 106 of the National Historic Preservation Act for the proposed two alternatives.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CFR 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

for 
Georgianna Contiguglia
State Historic Preservation Officer

cc: Floyd Hatch, Buckley Air Force Base



DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

MAR 7 2007

Bruce James
460th Civil Engineer Squadron
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Georgianna Contiguglia
State Historic Preservation Officer
Colorado History Museum
1300 Broadway
Denver CO 80203-2137

Dear Ms. Contiguglia

The Air Force is preparing an Environmental Assessment for the construction and operation of a new Squadron Operations Facility for the 140 Wing (WG). The proposed action analyzed in the Squadron Operations Environmental Assessment (EA) is to construct and operate a Squadron Operations Facility at Buckley Air Force Base (AFB) planned for Fiscal Year 2007. In addition, the existing Squadron Operations Facility (Bldg 700) would have the interior renovated for use by the 140 Security Forces. Under the No Action Alternative, the Squadron Operations Facility would not be built. The execution of the 140 WG mission would remain unchanged. The No Action Alternative would not support the expanding missions at Buckley AFB and does not meet the project purpose and need. A figure that shows the proposed action and alternative locations is attached.

In compliance with Section 106 of the National Historic Preservation Act, Buckley Air Force Base has determined that the proposed action, and alternatives, would not have an adverse affect on historic properties. Cultural resources on Buckley AFB have been inventoried and analyzed for historic significance (Historic Building Inventory and Evaluation dated June 2004). No known archaeological resources are in, or near, the proposed sites. Known historic structure resources occur near the proposed sites. Building information, with the dates of construction in parenthesis, is outlined below.

Proposed Action Site:

- Building: 801 5AH2274) (1953): Hangar Maintenance was determined to be eligible for inclusion on the National Register of Historic Places per formal consultation with your office dated 21 May 2004. Construction of the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any eligible historic structure. The project site for the proposed action currently encompasses undeveloped land (grass and bare ground) and a paved parking lot associated with Building 700, located to the north. Building 801 is located about 300 feet east-northeast of the proposed location for the new Squadron Operations Facility. Because of the Preferred Alternative's proximity to Building 801, consideration was be given to the potential effect of the construction on Building 801's viewshed. Building 801 is presently surrounded by several modern structures that are visible from the hangar, including the current squadron operations building. The new

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construction's two-story height is consistent with other buildings nearby and will not overwhelm the hangar's own architectural presence, nor impact its significant architectural characteristics. The probable inclusion of communications equipment (e.g., antennae) would also have no visual impact when viewed from the distance of the historic hangar. Furthermore, because the hangar's immediate setting has already changed from its historic period of significance (through the removal of a neighboring hangar to the east), and the hangar remains an integral part of an active military installation, the hangar's historic setting will not be adversely affected, nor will its NRHP eligibility. Activities associated with the proposed action would not affect the historic setting of this building. Review of the proposed construction footprint for the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any eligible historic structure. However, in compliance with Section 106 of the NHPA and the guidance proposed by the draft ICRMP, the 460 SW will consult with the Colorado SHPO to ensure that the architecture of the new construction will be consistent with the Secretary of the Interior's Standards and Guidelines, and the general architectural standards of Buckley AFB.

- Buildings 800 (HAH2308) (1980) - were constructed after 1970. Therefore, they are not eligible for inclusion on the National Register of Historic Places.
- Building 700 (1993), 805 (1996), 806 (1996), 810 (2002), and 811 (2002) were constructed or in place after 1990. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

Alternative #1:

- Building: 801 5AH2274) (1953): Hangar Maintenance was determined to be eligible for inclusion on the National Register of Historic Places per formal consultation with your office dated 21 May 2004. Construction of the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any eligible historic structure. The project site for the proposed action currently encompasses undeveloped land (grass and bare ground) and a paved parking lot associated with Building 700, located to the north. Building 801 (eligible for listing in the NRHP) is located about 500 feet north-northeast of this alternative location for the new Squadron Operations Facility. Because of the proximity of this site to Building 801, consideration was be given to the potential effect of the construction on Building 801's viewshed. Building 801 is presently surrounded by several modern structures that are visible from the hangar, including the current Squadron Operations facility to the west and other buildings to the southwest. The new construction's two-story height is consistent with other buildings nearby and would not overwhelm the hangar's own architectural presence, nor impact its significant architectural characteristics. The probable inclusion of communications equipment (e.g., antennae) would also have no visual impact when viewed from the distance of the historic hangar. Furthermore, because the hangar's immediate setting has already changed from its historic period of significance (through the removal of a neighboring hangar to the east), and the hangar remains an integral part of an active military installation, the hangar's historic setting will not be adversely affected, nor will its NRHP eligibility. Activities associated with the proposed action would not affect the historic setting of this building. Review of the proposed construction footprint for the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any eligible historic structure. However, in compliance with Section 106 of the NHPA and the guidance proposed by the draft ICRMP, the 460 SW will consult with the Colorado SHPO to ensure that the architecture of the new construction will be consistent with the

Secretary of the Interior's Standards and Guidelines, and the general architectural standards of Buckley AFB.

- Buildings 800 (HAH2308) (1980) - were constructed after 1970. Therefore, they are not eligible for inclusion on the National Register of Historic Places.
- Building 700 (1993), 805 (1996), 806 (1996), 810 (2002), and 811 (2002) were constructed or in place after 1990. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

Alternative #2:

- Building: 801 5AH2274) (1953): Hangar Maintenance was determined to be eligible for inclusion on the National Register of Historic Places per formal consultation with your office dated 21 May 2004. Construction of the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any eligible historic structure. The project site for the proposed action currently encompasses undeveloped land (grass and bare ground) and a paved parking lot associated with Building 700, located to the north. Building 801 (eligible for listing in the NRHP) is located about 750 feet northeast of this alternative location for the new Squadron Operations Facility. Although Alternative Action 2/site Location 3 is some distance from Building 801, consideration was still be given to the potential effect of the construction on Building 801's viewshed. Building 801 is presently surrounded by several modern structures that are visible from the hangar, including the current squadron operations building to the west and other buildings to the southwest. The new construction's two-story height is consistent with other buildings nearby, will be partially blocked by building 805, and will not overwhelm the hangar's own architectural presence, nor impact its significant architectural characteristics. The probable inclusion of communications equipment (e.g., antennae) would also have no visual impact when viewed from the distance of the historic hangar. Furthermore, because the hangar's immediate setting has already changed from its historic period of significance (through the removal of a neighboring hangar to the east), and the hangar remains an integral part of an active military installation, the hangar's historic setting will not be adversely affected, nor will its NRHP eligibility. Activities associated with the proposed action would not affect the historic setting of this building. Review of the proposed construction footprint for the Squadron Operations Facility under the proposed action indicates that this action would not directly affect any eligible historic structure. However, in compliance with Section 106 of the NHPA and the guidance proposed by the draft ICRMP, the 460 SW will consult with the Colorado SHPO to ensure that the architecture of the new construction will be consistent with the Secretary of the Interior's Standards and Guidelines, and the general architectural standards of Buckley AFB.

- Buildings 800 (HAH2308) (1980) - were constructed after 1970. Therefore, they are not eligible for inclusion on the National Register of Historic Places.
- Building 700 (1993), 805 (1996), 806 (1996), 810 (2002), and 811 (2002) were constructed or in place after 1990. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

Please provide written comments and/or concurrence to:

Floyd W. Hatch
460 CES/CEVP
660 S. Aspen Street, Mail Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact Mr. Floyd Hatch, Cultural Resources Manager 720-847-6937, email floyd.hatch@buckley.af.mil or Mr. Bruce James, Environmental Conservation and Planning Section Chief at 720-847-7245, email bruce.james@buckley.af.mil. A copy of the Draft Squadron Operations Facility Environmental Assessment will be sent for your review in the near future.

Sincerely

A handwritten signature in black ink, appearing to read "Bruce James", is written over a circular stamp. The signature is fluid and cursive.

BRUCE JAMES, YF-02
Chief, Environmental Conservation & Planning Section

Attachment
Location figure

STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

<http://www.cdphe.state.co.us>



Colorado Department
of Public Health
and Environment

April 3, 2007

Ms. Kate Bartz
c/o SAIC
333 North Wilmot, Suite 400
Tucson, Arizona 85711

Dear Ms. Bartz:

Re: Draft Environmental Assessment (EA) for Proposed Replacement of the Squadron Operations Facility at the 140th Wing, Colorado Air National Guard, Buckley Air Force base, Colorado dated March 2007

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the Division) has reviewed the above referenced document received April 2, 2007. The Division's comments follow:

Section 3.8.2.1, Preferred Alternative, Environmental Restoration Program (ERP) Sites - Per the BAFB Final Basewide Preliminary Assessment Report (2007 in press), an Area of Concern (AOC) called the Aqua Gas Area was identified in the area of the Preferred Alternative. The AOC is listed under "Highest Priority Sites" and is recommended to be investigated for petroleum products, solvents and metals in the soil and groundwater.

Section 3.8.2.2, Alternative Action 1 - Per the BAFB Final Basewide Preliminary Assessment Report (2007 in press), an Area of Concern (AOC) called the Apron Runoff was identified in the area of Alternative Action 1. The AOC is listed under "Lowest Priority Sites" because hydrazine was not investigated in the hangar apron drainages as a part of ERP Site 6 and is recommended for soil (and possibly groundwater) to be investigated in the area for hydrazine.

Please contact me at 303-692-3324 or ed.larock@state.co.us if there are any questions.

Sincerely,

Ed LaRock, P.G.
Environmental Protection Specialist
Hazardous Materials and Waste
Management Division

cc: Richard Lotz, AGO
Mark Spangler, Buckley Air Force Base
David Rathke, EPA Region 8
File D003-1.1



DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

MAY 14 2007

Bruce James
Environmental Flight, 460th Civil Engineer Squadron
660 S. Aspen St., Stop 86
Buckley AFB, CO 80011-9551

Ed LaRock
Hazardous Materials and Waste Mngt. Division
Colorado Dept. of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Mr. LaRock

Thank you for your letter, dated 3 April 2007, on the Squadron Operations Facility Environmental Assessment (EA) and Finding of No Significant Impact (FONSI).

The Aqua Gas Area and Apron Runoff Areas of Concern (AOCs) will be incorporated into the Final EA. The alternatives will be analyzed for the potential impacts the new Squadron Operations Facility may have on the recently identified AOCs.

Please contact Ms. Elizabeth Meyer, NEPA Program Manager, at 720-847-7159 or elizabeth.meyer@buckley.af.mil, if you have any questions or require further information.

Sincerely


BRUCE JAMES, YF-02
Chief, Planning and Conservation

GUARDIANS OF THE HIGH FRONTIER



COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

April 9, 2007

Harry Knudsen, Jr.
Chief, Natural Infrastructure Management Branch
NGB/A7CVN
2500 Fetchet Avenue
Andrews AFB MD 2076205157

Re: Draft Environmental Assessment (EA) for replacing the Squadron Operations Facility. (CHS #49768)

Dear Mr. Knudsen:

Thank you for your correspondence dated March 29, 2007 and received by our office on April 2, 2007 regarding the above-mentioned project.

After review of the provided information, we concur that the preferred alternative would not have a significant effect to properties eligible for the National Register of Historic Places. On March 16, 2007 we also concurred with a finding of *no adverse effect* under Section 106 of the National Historic Preservation Act. We look forward to consultation regarding the design of the new construction.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

For Georgianna Contiguglia
State Historic Preservation Officer

cc: Kate Bartz/SAIC



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Colorado Field Office
P.O. Box 25486, DFC (65412)
Denver, Colorado 80225-0486

IN REPLY REFER TO:
ES/CO: Buckley/NLAA
TAILS: 65412-2007-I-0364

APR 24 2007

Mr. Bruce James
Environmental Flight
460th Civil Engineering Squadron
660 S. Aspen Street
Buckley AFB, Colorado 80011-9551

Dear Mr. James:

The U.S. Fish and Wildlife Service (Service) received your letter dated February 21, 2007, and a draft Environment Assessment (EA) / Finding of No Significant Impact dated March 29, 2007, for the **proposed relocation and construction of a new Squadron Operations Facility at the 140th Wing Colorado Air National Guard (ANG) at Buckley Air Force Base (AFB), Arapahoe County, Colorado.** These comments have been prepared under the provisions of the Endangered Species Act of 1973, as amended (916 U.S.C. 1531 et. seq.) and the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4327).

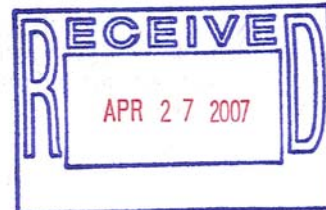
Based on the information provided in the draft EA for the proposed project, the Service concurs that the project is not likely to adversely affect any federally-listed threatened or endangered species. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

If the Service can be of further assistance, please contact Bruce Rosenlund of the Colorado Fish and Wildlife Assistance Office (303-236-4255) or this office at 303-236-4773.

Sincerely,

Susan C. Linner
Colorado Field Supervisor

cc: FWS, B. Rosenlund





DEPARTMENT OF THE AIR FORCE
AIR NATIONAL GUARD

SEP 10 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Dan Beley
Colorado Department of Public Health & Environment
Water Quality Control Division
WQCD-OI-B2
4300 Cherry Creek Drive, South
Denver, CO 80246-1530

Dear Mr. Beley

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Sincerely

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HARRY A. KNUDSEN, JR, GS-14, REM
Chief, Natural Infrastructure Mgmt Branch

Attachment:
FONSI for Squadron Operations Facility for the 140 WG



DEPARTMENT OF THE AIR FORCE
AIR NATIONAL GUARD

SEP 10 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Brent Bibles
Colorado Division of Wildlife
Wildlife Research Center
317 W. prospect Road
Fort Collins, CO 80526

Dear Mr. Bibles

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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SEP 10 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Mac Callison
City of Aurora
Planning, Traffic Division
15151 E. Alameda
Aurora, CO 80012

Dear Mr. Callison

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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SEP 10 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Nancy Chick
Colorado Department of Public Health & Environment
Air Pollution Control Division
APCD-TS-B2
4300 Cherry Creek Drive, South
Denver, CO 80246-1530

Dear Ms. Chick

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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DEPARTMENT OF THE AIR FORCE
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SEP 10 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Bette Yager
Aurora Public Library
Administrative Offices
14949 E. Alameda Pkwy.
Aurora, CO 80012

Dear Ms. Yager

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Georgianna Contiguglia
Colorado History Museum
1300 Broadway
Denver, CO 80203-2137

Dear Ms. Contiguglia

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

John Fernandez
City of Aurora
Planning, Environmental Division
15151 E.
Aurora, CO 80012

Dear Mr. Fernandez

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Jane Hann
Colorado Department of Transportation
4201 E. Arkansas Avenue
Denver, CO 80222

Dear Ms. Hann

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Cynthia Holdeman
Government Publications
Denver Public Library
10 W. Fourteenth Ave. Pkwy.
Denver, CO 80204-2731

Dear Ms. Holdeman

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Eugene Jansak
Metro Wastewater Reclamation Dist.
6450 York Street
Denver, CO 80229-7499

Dear Mr. Jansak

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Ed LaRock
Colorado Department of Public Health & Environment
Federal Facilities
HMWM 2800
4300 Cherry Creek Drive, South
Denver, CO 80246-1530

Dear Mr. LaRock

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Patricia Mehlhop
U.S. Fish & Wildlife Service
134 Union Blvd., Suite 645
Lakewood, CO 80228-1807

Dear Ms. Mehlhop

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Eliza Moore
Colorado Division of Wildlife
6060 S. Broadway
Denver, CO 80216

Dear Ms. Moore

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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DEPARTMENT OF THE AIR FORCE
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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Jim Paulmeno
Colorado Department of Transportation
4201 E. Arkansas Avenue
Denver, CO 80222

Dear Mr. Paulmeno

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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DEPARTMENT OF THE AIR FORCE
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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

David Rathke
U.S. Environmental Protection Agency
Region 8
999 18th Street, Suite 500
Denver, CO 80202

Dear Mr. Rathke

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Bruce Rosenlund
U.S. Fish & Wildlife Service
134 Union Blvd., Suite 675
Lakewood, CO 80228-1807

Dear Mr. Rosenlund

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Chief, Natural Infrastructure Mgmt Branch

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DEPARTMENT OF THE AIR FORCE
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SEP 10 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Gina Sciosca
Boulder Public Library
1000 Canyon Blvd.
Boulder, CO 80302

Dear Ms. Sciosca

Attached is a finding of no significant impact (FONSI) for an Air National Guard action for a proposal to construct a new Squadron Operations Facility for the 140th Wing of the Colorado Air National Guard at Buckley Air Force Base, Colorado. The Proposed Action has undergone thorough environmental analysis and qualifies for a FONSI under the provisions of the National Environmental Policy Act and Council on Environmental Quality rules and regulations.

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Chief, Natural Infrastructure Mgmt Branch

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SEP 10 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Larry Svoboda
U.S. Environmental Protection Agency
Region 8
999 18th Street, Suite 500
Denver, CO 80202

Dear Mr. Svoboda

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DEPARTMENT OF THE AIR FORCE
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SEP 10 2007

NGB/A7CVN
Conaway Hall
3500 Fetchet Avenue
Andrews AFB MD 20762-5157

Robert Watkins
City of Aurora
15151 E. Alameda
Aurora, CO 80012

Dear Mr. Watkins

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HARRY A. KNUDSEN, JR, GS-14, REM
Chief, Natural Infrastructure Mgmt Branch

Attachment:
FONSI for Squadron Operations Facility for the 140 WG

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Appendix B – Air Emissions Calculations

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Appendix B – Air Emissions Calculations

Table 1. Construction Activities.

Building	Area (sf)	Height (ft)	Volume (cf)
Squadron Ops Facility (Preferred/Alt 1/Alt 2)	22,950	30	688,500
Building 700 Addition (Alt 3)	5,600	30	168,000

Table 2. Paving Activities.

Area to be Paved	Area (sf)	Area (acres)
Parking Lot (Alt 1)	31,500	0.72

Round Trip Distance to:

Concrete plant	20
Building supply origination site	20
Demolition waste dump site	20
Paving supply origination site	20

Table 3. Emission Factors for the Proposed Action at Buckley AFB.

Source Type	Units	Emission Factors						References
		VOC	CO	NOx	SOx	PM10	PM2.5	
Construction/Demolition Sources								
Heavy-Duty Diesel Vehicles	Gms/Mile	0.49	2.84	10.15	0.04	0.32	0.27	(1)
Heavy Duty Diesel Vehicles - Idle	Gms/Hr	5.00	30.04	67.52	0.04	1.39	1.28	(4) (5)
Grader - 180 Hp	Gms/Hp-Hr	0.33	1.31	4.42	0.75	0.32	0.31	(2)
Scraper - 195 Hp	Gms/Hp-Hr	0.29	2.17	5.11	0.75	0.33	0.32	(2)
Roller - 165 Hp	Gms/Hp-Hr	0.40	1.73	4.94	0.75	0.39	0.38	(2)
Backhoe - 160 Hp	Gms/Hp-Hr	1.23	4.79	7.19	0.87	0.82	0.79	(2)
Paving Machine - 200 Hp	Gms/Hp-Hr	0.34	1.40	4.60	0.75	0.33	0.32	(2)
Bulldozer -165 Hp	Gms/Hp-Hr	0.38	1.57	4.68	0.75	0.38	0.37	(2)
Bulldozer - 310 Hp	Gms/Hp-Hr	0.29	2.13	5.08	0.75	0.32	0.31	(2)
Air Compressor - 50 Hp	Gms/Hp-Hr	0.51	3.21	4.77	0.83	0.62	0.60	(2)
Concrete/Industrial Saw - 84 Hp	Gms/Hp-Hr	0.69	4.53	5.59	0.83	0.76	0.74	(2)
Crane - 190 Hp	Gms/Hp-Hr	0.34	0.99	4.99	0.74	0.27	0.27	(2)
Forklift - 94 Hp	Gms/Hp-Hr	0.65	4.36	5.40	0.83	0.72	0.70	(2)
Loader - 215 Hp	Gms/Hp-Hr	1.13	4.35	6.93	0.87	0.76	0.73	(2)
Water Truck - 175 Hp	Gms/Hp-Hr	0.35	1.42	4.05	0.75	0.35	0.34	(2)
Generator - 45 Hp	Gms/Hp-Hr	0.51	3.21	4.77	0.83	0.62	0.60	(2)
Fugitive Dust	lbs/acre-day	---	---	---	---	26.90	5.59	(3) (4)
Boiler	lbs/10 ³ cf	5.50	84.00	50.00	0.60	7.60	7.60	(6)

Notes: (1) Obtained from the USEPA's MOBILE6 emissions model for a US average fleet age distribution, climate and fuel composition for the Denver Area, 2007.

(2) Obtained from the USEPA's NONROAD2005 emissions model for a US average fleet age distribution for the year 2007, assuming average conditions for Denver.

(3) Units in lbs/acre-day from section 11.2.3 of AP-42 (EPA 1995). Emissions reduced by 50% from uncontrolled levels to represent compliance with standard construction BMPs.

(4) PM2.5 fractions obtained from California Emissions Inventory Development and Reporting System (CEIDARS) Table PMSIZEPROFILE (ARB 2006).

(5) http://www.arb.ca.gov/appl/ems/in/dst/uttab/lookup/display_tab.php?frame=PMSIZEPROFILE&page=1&ecnum=123&pages=2

(6) Emission factors developed from EMFAC2002 (ARB 2003) for the year 2007. Units in grams/hour.

(7) From the USEPA's AP-42 emission factors list for a low-NOx boilers rated under 100 MMBtu/hr. All particulate matter is assumed to be smaller than one micron.

SOx is assumed the same as SO₂, and emission factor created on assumption that sulfur content of natural gas is 2,000 grains/10³ scf.

Appendix B – Air Emissions Calculations

Table 4. Emission Source Data - Construction - Preferred Alternative.

Squadron Ops Facility								
Construction Activity/Equipment Type	Hp Rating	Ave. Daily Load Factor	Number Active	Hourly Hp-Hrs	Hours/Day	Daily Hp-Hrs	Work Days (1)	Total Hp-Hrs
Air Compressor - 100 CFM	50	0.60	1	30	6	180	103	18,590
Concrete/Industrial Saw	84	0.73	1	61	6	368	103	37,997
Crane	190	0.30	1	57	6	342	103	35,320
Forklift	94	0.48	1	45	6	268	103	27,667
Generator	45	0.60	1	27	8	216	103	22,307
Concrete Trucks (2)	NA	NA	20	NA	14	280	5	1,314
Supply Trucks (2)	NA	NA	20	NA	10	200	8	1,565
Fugitive Dust (3)	NA	NA	1	NA	8	NA	25	25

Notes: (1) Work days determined by multiplying days from POLA-TraPac-DEIR (POLA 2006) project - construction of an administrative building (440,000 cf) by the ratio of the volume of building to be constructed/440,000 cf.

(2) Number Active = miles/roundtrip, Hours/Day = daily truck trips, Daily Hp-Hrs = daily miles, and Total Hp-Hrs = total miles

(3) Number Active is acres disturbed at one time and Total Hp-Hrs is acre-days for the entire activity

Table 5a. Emission Source Data - Construction - Alternative 1.

Squadron Ops Facility								
Construction Activity/Equipment Type	Hp Rating	Ave. Daily Load Factor	Number Active	Hourly Hp-Hrs	Hours/Day	Daily Hp-Hrs	Work Days (1)	Total Hp-Hrs
Air Compressor - 100 CFM	50	0.60	1	30	6	180	103	18,590
Concrete/Industrial Saw	84	0.73	1	61	6	368	103	37,997
Crane	190	0.30	1	57	6	342	103	35,320
Forklift	94	0.48	1	45	6	268	103	27,667
Generator	45	0.60	1	27	8	216	103	22,307
Concrete Trucks (2)	NA	NA	20	NA	14	280	5	1,314
Supply Trucks (2)	NA	NA	20	NA	10	200	8	1,565
Fugitive Dust (3)	NA	NA	1	NA	8	NA	25	25

Notes: (1) Work days determined by multiplying days from POLA-TraPac-DEIR (POLA 2006) project - construction of an administrative building (440,000 cf) by the ratio of the volume of building to be constructed/440,000 cf.

(2) Number Active = miles/roundtrip, Hours/Day = daily truck trips, Daily Hp-Hrs = daily miles, and Total Hp-Hrs = total miles

(3) Number Active is acres disturbed at one time and Total Hp-Hrs is acre-days for the entire activity

Table 5b. Emission Source Data - Paving - Alternative 1.

Parking Lot								
Construction Activity/Equipment Type	Hp Rating	Ave. Daily Load Factor	Number Active	Hourly Hp-Hrs	Hours/Day	Daily Hp-Hrs	Work Days (1)	Total Hp-Hrs
Paving Machine	200	0.50	1	100	8	800	0.3	227
Water Truck - 5000 Gallons	175	0.40	1	70	8	560	1.0	579
Compactive Roller	165	0.50	2	165	8	1,320	0.4	559
Scraper	195	0.50	2	195	8	1,560	0.4	661
Grader	180	0.50	1	90	8	720	0.5	338
Loader	215	0.50	1	108	8	860	0.5	404
Backhoe	160	0.50	1	80	8	640	0.3	212
Bulldozer - D6	165	0.50	1	83	8	660	0.3	218
Haul Truck - Paving (2)	NA	NA	20	NA	33	660	0.5	310
Haul Truck - Base (2)	NA	NA	20	NA	16	320	0.5	150
Semi Truck (2)	NA	NA	20	NA	16	320	0.5	150
Fugitive Dust (3)	NA	NA	1	NA	8	NA	1.0	1

Notes: (1) Work days determined by multiplying days from POLA-TraPac-DEIR (POLA 2006) project - improve/pave demolished areas (14 acres) by the ratio of area of the region to be paved/14 acres.

(2) Number Active = miles/roundtrip, Hours/Day = daily truck trips, Daily Hp-Hrs = daily miles, and Total Hp-Hrs = total miles.

(3) Number Active is acres disturbed at one time and Total Hp-Hrs is acre-days for the entire activity

Appendix B – Air Emissions Calculations

Table 6. Emission Source Data - Construction - Alternative 2.

Squadron Ops Facility								
Construction Activity/Equipment Type	Hp Rating	Ave. Daily Load Factor	Number Active	Hourly Hp-Hrs	Hours/Day	Daily Hp-Hrs	Work Days (1)	Total Hp-Hrs
Air Compressor - 100 CFM	50	0.60	1	30	6	180	103	18,590
Concrete/Industrial Saw	84	0.73	1	61	6	368	103	37,997
Crane	190	0.30	1	57	6	342	103	35,320
Forklift	94	0.48	1	45	6	268	103	27,667
Generator	45	0.60	1	27	8	216	103	22,307
Concrete Trucks (2)	NA	NA	20	NA	14	280	5	1,314
Supply Trucks (2)	NA	NA	20	NA	10	200	8	1,565
Fugitive Dust (3)	NA	NA	1	NA	8	NA	25	25

Notes: (1) Work days determined by multiplying days from POLA-TraPac-DEIR (POLA 2006) project - construction of an administrative building (440,000 cf) by the ratio of the volume of building to be constructed (440,000 cf).

(2) Number Active = miles/roundtrip, Hours/Day = daily truck trips, Daily Hp-Hrs = daily miles, and Total Hp-Hrs = total miles

(3) Number Active is acres disturbed at one time and Total Hp-Hrs is acre-days for the entire activity

Table 7. Emission Source Data - Construction - Alternative 3.

Building 700 Addition								
Construction Activity/Equipment Type	Hp Rating	Ave. Daily Load Factor	Number Active	Hourly Hp-Hrs	Hours/Day	Daily Hp-Hrs	Work Days (1)	Total Hp-Hrs
Air Compressor - 100 CFM	50	0.60	1	30	6	180	25	4,536
Concrete/Industrial Saw	84	0.73	1	61	6	368	25	9,272
Crane	190	0.30	1	57	6	342	25	8,618
Forklift	94	0.48	1	45	6	268	25	6,751
Generator	45	0.60	1	27	8	216	25	5,443
Concrete Trucks (2)	NA	NA	20	NA	14	280	1	321
Supply Trucks (2)	NA	NA	20	NA	10	200	2	362
Fugitive Dust (3)	NA	NA	1	NA	8	NA	6	6

Notes: (1) Work days determined by multiplying days from POLA-TraPac-DEIR (POLA 2006) project - construction of an administrative building (440,000 cf) by the ratio of the volume of building to be constructed (440,000 cf).

(2) Number Active = miles/roundtrip, Hours/Day = daily truck trips, Daily Hp-Hrs = daily miles, and Total Hp-Hrs = total miles

(3) Number Active is acres disturbed at one time and Total Hp-Hrs is acre-days for the entire activity

Table 8. Total Emissions - Construction - Preferred Alternative.

Construction Activity/Equipment Type	Total Emissions (pounds)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Squadron Ops Facility						
Air Compressor - 100 CFM	21	132	196	34	25	25
Concrete/Industrial Saw	58	379	468	70	64	62
Crane	27	77	389	58	21	21
Forklift	40	266	329	51	44	43
Generator	25	158	235	41	31	30
Concrete Trucks (1)	1	9	30	0	1	1
Supply Trucks (1)	2	10	36	0	1	1
Fugitive Dust	---	---	---	---	673	140
Total (lbs)	174	1,030	1,682	253	860	321
Total (tons)	0.09	0.52	0.84	0.13	0.43	0.16

Notes: (1) Included 5 minutes of idling time per round trip.

Appendix B – Air Emissions Calculations

Table 9. Total Emissions - Construction - Alternative 1.

Construction Activity/Equipment Type	Total Emissions (pounds)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Squadron Ops Facility						
Air Compressor - 100 CFM	21	132	196	34	25	25
Concrete/Industrial Saw	59	379	468	70	64	62
Crane	27	77	369	58	21	21
Forklift	40	266	329	51	44	43
Generator	25	159	235	41	31	30
Concrete Trucks (1)	1	9	30	0	1	1
Supply Trucks (1)	2	10	36	0	1	1
Fugitive Dust	---	---	---	---	673	140
Parking Lot						
Paving Machine	0	1	2	0	0	0
Water Truck - 5000 Gallons	0	2	5	1	0	0
Compactive Roller	0	2	6	1	0	0
Scraper	0	3	7	1	0	0
Grader	0	1	3	1	0	0
Loader	1	4	6	1	1	1
Backhoe	1	2	3	0	0	0
Bulldozer - D6	0	1	2	0	0	0
Haul Truck - Paving (1)	0	2	7	0	0	0
Haul Truck - Base (1)	0	1	3	0	0	0
Semi Truck (1)	0	1	3	0	0	0
Fugitive Dust	---	---	---	---	20	4
Total (lbs)	179	1,050	1,733	269	984	329
Total (tons)	0.09	0.53	0.87	0.13	0.44	0.16

Notes: (1) Included 5 minutes of idling time per round trip.

Table 10. Total Emissions - Construction - Alternative 2.

Construction Activity/Equipment Type	Total Emissions (pounds)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Squadron Ops Facility						
Air Compressor - 100 CFM	21	132	196	34	25	25
Concrete/Industrial Saw	59	379	468	70	64	62
Crane	27	77	369	58	21	21
Forklift	40	266	329	51	44	43
Generator	25	159	235	41	31	30
Concrete Trucks (1)	1	9	30	0	1	1
Supply Trucks (1)	2	10	36	0	1	1
Fugitive Dust	---	---	---	---	673	140
Total (lbs)	174	1,030	1,682	263	960	321
Total (tons)	0.09	0.52	0.84	0.13	0.43	0.16

Notes: (1) Included 5 minutes of idling time per round trip.

Table 11. Total Emissions - Construction - Alternative 3.

Construction Activity/Equipment Type	Total Emissions (pounds)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Squadron Ops Facility						
Air Compressor - 100 CFM	5	32	48	8	6	6
Concrete/Industrial Saw	14	93	114	17	16	15
Crane	7	19	95	14	5	5
Forklift	10	65	80	12	11	10
Generator	6	39	57	10	7	7
Concrete Trucks (1)	0	2	7	0	0	0
Supply Trucks (1)	0	2	9	0	0	0
Fugitive Dust	---	---	---	---	164	34
Total (lbs)	42	261	411	62	210	78
Total (tons)	0.02	0.13	0.21	0.03	0.10	0.04

Notes: (1) Included 5 minutes of idling time per round trip.

Table 12. Total Emissions - Construction - All Alternatives.

Action	Total Emissions (tons)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Preferred Alternative	0.1	0.5	0.8	0.1	0.4	0.2
Alternative 1	0.1	0.5	0.9	0.1	0.4	0.2
Alternative 2	0.1	0.5	0.8	0.1	0.4	0.2
Alternative 3	0.0	0.1	0.2	0.0	0.1	0.0
NEPA Significance Thresholds	100	100	100	100	100	100
Conformity de minimis Thresholds	100	100	100	-	100	-

Appendix B – Air Emissions Calculations

Table 13. Operational Emissions - Preferred Alternative and Alternatives 1 and 2.

Boiler	Capacity (btu/hr)	Conversion Factor (btu/cf gas) (1)	Hourly Gas Usage (cf gas/hr)	Annual Gas Usage (cf gas/yr) (2)
B-1	1,000,000	1,020	980	8,568,235
B-2	1,000,000	1,020	980	8,568,235

Note: (1) From USEPA's AP-42 - Appendix A, Miscellaneous Data and Conversion Factors.
(2) For most conservative analysis assumed boilers in operation continuously.

Emission Factors (lbs/106 cf gas)					
VOC	CO	NOx	SOx	PM10	PM2.5
5.50	84.00	50.00	0.60	7.60	7.60

Notes: See Table 3

Boiler	Gas Usage (cf gas/yr)	Annual Emissions (pounds)					
		VOC	CO	NOx	SOx	PM10	PM2.5
B-1	8,568,235	47.24	721.41	429.41	5.15	65.27	65.27
B-2	8,568,235	47.24	721.41	429.41	5.15	65.27	65.27
Total	17,176,471	94.47	1,442.82	858.82	10.31	130.54	130.54

Annual Emissions in Tons	0.05	0.72	0.43	0.01	0.07	0.07
NEPA Significance Thresholds	100	100	100	100	100	100
Conformity de minimis Thresholds	100	100	100	-	100	-

Table 14. Operational Emissions - Alternative 3.

Alternative	Building Vol (cu ft)	Annual Emissions (tons)					
		VOC	CO	NOx	SOx	PM10	PM2.5
Preferred & 1 & 2	688,500	0.05	0.72	0.43	0.01	0.07	0.07
3	168,000	0.01	0.18	0.10	0.00	0.02	0.02

Note: Emissions for Alternative 3 estimated by multiplying emissions from Preferred Alternative by ratio of building addition for Alt 3/new building volume for the Preferred Alternative.

Table 15 - Cumulative Emissions.

Source	Total Emissions (tons)					
	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
2007						
Planned Construction (1)	6	82	31	3	43	*
Planned Operations (1)	6.3	88.7	32.3	3.0	6.3	*
Total Planned Emissions	12.3	170.7	63.3	6.0	49.3	*
Proposed Construction - Preferred Alternative	0.1	0.5	0.8	0.1	0.4	0.2
Proposed Operations - Preferred Alternative	0.0	0.7	0.4	0.0	0.1	0.1
Total Proposed Emissions	0.1	1.2	1.3	0.1	0.5	0.2
2008						
Planned Construction (1)	10	144	50	5	26	*
Planned Operations (1)	10.1	146.8	50.5	5.0	6.6	*
Total Planned Emissions	20.1	290.8	100.5	10.0	32.6	*
Total Proposed Emissions (2)	0.0	0.7	0.4	0.0	0.1	0.1
2009						
Planned Construction (1)	6	82	30	3	60	*
Planned Operations (1)	6.4	91.0	31.7	3.0	7.7	*
Total Planned Emissions	12.4	173.0	61.7	6.0	67.7	*
Total Proposed Emissions (2)	0.0	0.7	0.4	0.0	0.1	0.1
2010						
Planned Construction (1)	3	36	15	1	8	*
Planned Operations (1)	3.1	38.9	15.5	1.0	8.1	*
Total Planned Emissions	6.1	74.9	30.5	2.0	16.1	*
Total Proposed Emissions (2)	0.0	0.7	0.4	0.0	0.1	0.1

Notes: (1) Data obtained from Buckley AFB. Values for PM_{2.5} were not included.

(2) Assuming all construction is completed in 2007, implementation of the Preferred Alternative will only contribute operational emissions from

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Appendix C – Buckley AFB Construction List

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Appendix C – Buckley AFB Construction List

Scheduled Facility Projects at BAFB

Project Number	Fiscal Year	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**
02	1		BX/Commissary (completed)			200,152
02	205		Dormitory II (144 person)	5040	54,250	57,528
02	35		Fitness Center - Completed	6308	54500	67900
02	n/a		Military Family housing = 71 acres total land (for houses, landscaping, roads etc)	66175	712298	
02	2		Telluride Gate - Completed	11	120	133
03	1030		460 ABW Headquarters	4744	51066	
03			ADAL SBIRS Mission Control (Under construction)	1672	18000	
03	725		Child Development Center 4 room Addition (Bldg	69	743	
03	1530		Control Tower (COANG)	539	5800	4949
03	25		Demolish Building 25 (demolished)		?	
03	960		Engine Shop Addition Bldg 960 (COANG)	186	2000	
03	1019		Entomology (O&M) Replace Entomology Shop	209	2255	
03	806		Fire Station Addition	2000	21531	
03	n/a		Golf Driving Range	1	12	
03	703		H-70 Fuel Storage Facility (O&M)	97	1045	178
03	n/a		New northern runway extension (COANG)	3484	37500	
03			Repair Fuel Cell/Corrosion Control, Bldg 800		Interior	
03	n/a		Repair Runway, Taxiways, Ramps (COANG)	181161	1950000	
CRWU033003	07	330	Temporary Lodging Facility (NAF) Originally 03	7839		84377
03	n/a		Two Pavilions at Williams Lake	6	60	
03	1015 and		Two Warehouses - Civil Engineering	929	10000	10000
04	n/a		ADD/Alter Access Roads (Airfield) (COANG)	41204	443520	
04	n/a		Approach Lighting (COANG)	62	672	
04	830		Civil Engineering Complex (COANG)	3470	37350	
04	306		Demolish Entomology Facility (306)	108	1160	
04	310		Demolish Hydrazine Bldg (310)	76	820	
04	1620		Demolish Radio Relay Bldg (1620)	149	1600	
04	17906		Fire Training Facility - originally 08		3,400 buildings,	
04	n/a		Impound Lot (asphalt paved)	743	8000	
04	801		Maintain Maint Hangar 801 (COANG)	Interior	Interior	
04			New East Gate (estimate based on existing	12	128	
04			New Visitor Center (estimate based on existing structure at Peterson AFB)	49	525	
04	841		Repair ANG Supply, Bldg 841 (COANG)	Interior	Interior	
04	n/a		Repair Parking Lot East of Bldg 471	12	316798	
04	n/a		Repair Parking Lots ANG wide (COANG)	12	144000	
04	n/a		Upgrade Base Infrastructure, Ph III	n/a	n/a	
05	n/a		Vail Street Improvements	8475	91200	
05	1500		Amy Aviation Support Facility (COARNG)	11148	120000	
05	n/a		Athletic Fields (two ball fields, 1 track, and 1	160 Parking Spad	Fence 3,600 meters	
05	n/a		CDCII Pre school Playground	818	8800	
05	n/a		CDCII Pretoddler Playground	486	5225	
05	n/a		CDCII Toddler Playground	599	6450	
05	316		Chapel Center	2423	26081	
05	351		Child Development Center CDCII	2248	24197	
05	n/a		Construct 2 SWS/MCS Force Protection - just			
05	802		Demolish Building 902		4428	
05	1631		Demolish Electrical Shop (1631)		3025	
05	n/a		Demolish Marine Area Foundations		Not available	
05	n/a		Demolish Reserve Forces Bldg (1632)		600	
CRWU787395	06	1025	Haz Materials Storage (Env. Level 1) HAZMART	507	5457	
CRWU787399	06	1025	Haz Waste Facility (Env. Level 1) Construction	150	1615	
CRWU051101	05		Medical Warehouse			

2/16/2007

Appendix C – Buckley AFB Construction List

Scheduled Facility Projects at BAFB

Project Number	Fiscal Year	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**
	05	600	Medical Clinic ADAL	424	4563	
CRWU041108	06		BITC Mailroom			
CRWU033009	06	1022	Outdoor Rec Equip Rental (NAF) - originally 05.	863	9288	
	07	911	Permanent Alert Crew Qtrs (COANG) - States Alert	604	6500	
	06	912-917	Permanent Alert Shelters (COANG) FY08 - request	3846	41400	
	05	n/a	Repair Taxiways A&K	Information not avail.	Information not avail.	
	06	n/a	Athletic Fields Concession (NAF)	130	1399	
	06	730	Communications Center (ADAL 730) orig 05 -	5666	60988	
	07	Multiple	Consolidated Fuels Includes Demo of existing structures, construction of POL Ops Bldg, Pump	390	4198	
	06	347	Consolidated Services Facility Admin	1407	15145	
CRWU061006	06	1011	Demolish Warehouse (1011/1012)		22949	
	06	1032	Leadership Development Center	1638	17631	
	09	1022	Logistics Readiness Complex - originally 06, now	1200	12917	
CRWU071011	06		Military Working Dog Kennel	479	5156	
	07		Replace Squadron Operations Facility			
	07	1606	Demolish Crash House (1606)		8327	
	07	200	Demolish Fuel Storage (200)		1576	
	07	200	Demolish Fuel Tanker Stands		Unavailable at th	
	07	302	Demolish Fuels Admin (302)		1185	
	07	300	Demolish Fuels Lab (300)		1503	
	07	1051	-POL Ops Building	255	2745	
	07	1054	-Pump house	93	1001	
	07	1053	-Storage Pol Bulk Ops Building	42	452	
RWU033003	07	331	Visitors Quarters	3530	38000	39568
	11		Construct Admin Facility (ADF)			
	11		SBIRS REMote Ground Station			
	11	1600	Small Arms Range Outdoor Arm Range - now indoor with outdoor grenade launcher (originally	605	6512	
CRWU073006	06	350	Youth Center (NAF) 06 MILCON project	2656	28586	
	07	940	Demolish Building 940		14758	
	07	950	Demolish Building 950		20303	
	07		Demolish Engine Test Pad		2045	
	10	345	Education Center/Library Originally 07	2045	22012	
	10	807	SF Operations Facility - was 06, then 07	2500	26910	
	08	1027	Vehicle Maintenance Facility - originally 07	1812	19504	
	07	n/a	Widen 6th Avenue (DAR Project) - was 08	1524 Meters	3 Lanes	
	07		Construc FE Maintenance Facility			
	08		NSA/CSS			
	11	1023	Consolidated Base Warehouse Originally 08	9293	100029	
	08	341	Demolish Bulding 341 (Part of consolidated fuels)		216	
CRWU033009	06	204	Car Wash (AAFES) - 06 MILCON project	186	2000	
CRWU048002	08	208	Pharmacy	557	6000	
CRWU041130	09		RV Storage Lot			
	09	31	Demolish Building 31		204	
	09		Dormitory 3 (96 PN)	n/a Expected	to be cancelled	
	09		Entry Control Facility (was 08)	Information not a	Information not avail.	
	10	806	Fire Station Additon (crash house) - 2 Originally 09 requesting FY 07. Joint ANG/AF	985	10600	

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Appendix C – Buckley AFB Construction List

Scheduled Facility Projects at BAFB

Project Number	Fiscal Year	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**
	10	35	Fitness Center Addition (estimate based on existing swimming pool at Peterson AFB) Originally 09	1175	12652	
	12+	n/a	East Parking Apron		Unknown at this time	
	12+		Spaced Based Infrared (SBIR) Operational	Information not available	Information not available	
	08	11603	Taxiway and Arm/Disarm (COANG) Includes		75 feet by	
	11	n/a	Upgrade Based Infrastructure Ph IV. Originally 09	n/a at this time	n/a at this time	
	11		6th Ave Entry Gate			
	11		Weapons Loading Facility (COANG) originally 09 -	687	7400	
	11		Youth Athletic Fields			
	13		Weapons Release Complex (COANG) orig 09 requesting 09		6000	
	10		Arts, Crafts, Auto Skills Development Ctr	1033	11119	
	10		Bowling Center and Community Activities	1858	19999	
	12+		Telluride Entry Gate			
	12+		Airmen Dining Facility			
	12+		Mississippi Entry Gate			
	TBD		Expand Bldg 700 (COANG)			
	12+		ADAL Weapons Release Complex (COANG)			
CRWU061012	08		FAMCAMP - originally 07	RV Parking Sites	Tent Sites 10 ea	
	TBD		Golf Course	n/a		
	TBD		Reroute Steamboat Ave			
			Either interior, or otherwise catexed, therefore not included in the EA - even under cumulative.			
			Paving only, no structures			
			Insufficient information to date to include in an EA			
			** Project footprint does not include disturbance due to construction; such as, laydown areas and generally doesn't include parking lots			
			Red "text" indicates a change since submitting the last table			
			Updated July 06 based on Mar 06 Facilities Board			

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Appendix C – Buckley AFB Construction List

Project Number	FY	Bldg No.	Projects	Buckley AFB Construction Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)*	Actual parking (ft ²)	ACAM
	02	1	BX/Commissary (completed)			200,152		
	02	35	Fitness Center (completed)	6308	54500	67900		Yes
	02		Gas Meter House					Yes
	02	2	Telluride Gate (completed)	11	120	133		Yes
	03	1030	460 SW Headquarters (Completed)	4744	51066		88086	
	03		ADAL SBIRS Mission Control (Under construction)	1672	18000			
	03	725	Child Development Center 4 room Addition (Bldg 725)	69	743			
	03	1530	Control Tower (COANG) (Completed)	539	5800	4949		
	03	25	Demolish Building 25 (completed)		?			Yes
	03	960	Engine Shop Addition Bldg 960 (COANG)	186	2000			
	03	1019	Entomology (O&M) Replace Entomology Shop (Completed)	209	2255			
	03	806	Fire Station Addition (Completed)	2000	21531			
	03	n/a	Remove Golf Driving Range (Completed)	1	12			
	03	703	H-70 Fuel Storage Facility	97	1045	178		
	03	n/a	New northern runway extension (COANG)	3484	37500			
	03	n/a	Repair Runway, Taxiways, Ramps (COANG)	181161	1950000			
	03	n/a	Two Pavilions at Williams Lake	6	60			
	03	1015 and 1017	Two Warehouses - Civil Engineering. Originally one warehouse.(Completed)	929	10000	10000		
	04	39	Demo Gas Meter House					X
	04	205	Dormitory II (144 person) Originally 02 (Completed)	5040	54,250	57,528		
	04	n/a	ADD/Alter Access Roads (Airfield) (COANG)	41204	443520			
	04	n/a	Approach Lighting (COANG)	62	672			
	04	830	Civil Engineering Complex (COANG)	3470	37350			
	04	17906	Fire Training Facility - originally 08 (Under Construction)		3,400 buildings, 41,112 concrete pads			
	04	n/a	Impound Lot (asphalt paved)	743	8000			
	04	801	Maintain Maint Hangar 801 (COANG)	Interior	Interior			
	04		New East Gate (estimate based on existing structure at Peterson AFB)	12	128			
	04		New Visitor Center (estimate based on existing structure at Peterson AFB)	49	525			
	04	841	Repair ANG Supply, Bldg 841 (COANG)	Interior	Interior			
	04	n/a	Repair Parking Lot East of Bldg 471	12	316798			
	04	n/a	Repair Parking Lots ANG wide (COANG)	12	144000			
	04	n/a	Upgrade Base Infrastructure, Ph III	n/a	n/a			
	04	n/a	Military Family housing = 71 acres total land (for houses, landscaping, roads etc). Total acreage includes the clubhouse/pool and playgrounds.(Under Construction)	66175	712298			Yes
	05	1500	Army Aviation Support Facility (COARNG) (Under Construction)	11148	120000			
	05	n/a	Athletic Fields (two ball fields, 1 track, and	360	Fence 3,600			Yes

Moved from '02-ok?

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Appendix C – Buckley AFB Construction List

Project Number	FY	Bldg No.	Projects	Buckley AFB Construction Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)*	Actual parking (ft ²)	ACAM
	05	n/a	CDCII Pre school Playground	818	8800			
	05	n/a	CDCII Pretoddler Playground	486	5225			
	05	n/a	CDCII Toddler Playground	599	6450			
CRWU043006	05	316	Chapel Center (Complete)	2423	26080			
CRWU043007	05	351	Child Development Center CDCII (Under Construction)	2248	24197			
	05	n/a	Construct 2 SWS/MCS Force Protection - just installing barriers					
CRWU051092	05	19	Demolish Building 19 (Camana Club) (Completed)					Yes
CRWU061006	05	1011	Demolish Warehouse (1011/1012) Was an FY 05 Project. (Completed)		22949			
	05	600	Medical Clinic ADAL (Completed)	424	4563			
	05	n/a	Repair Taxiways A&K	Unknown	Unknown at			
	05	n/a	Vail Street Improvements	8475	91200			
CRWU071007	06	n/a	Storm Water Retention Pond					new
CRWU033009	06	1022	Outdoor Rec Equip Rental (NAF) - originally 05, then awarded 06 (Under	865	9310			
CRWU051101	06		Medical Warehouse (Poss construct with '06 funds) (Under Construction)	372	4000			
CRWU033009	06	204	Car Wash (AAFES) 4 bay (Under Construction)	186	2000			Yes
CRWU787395	06	1025	Haz Materials Storage (Env. Level 1) HAZMART Pharmacy Construction	507	5457			
CRWU787399	06	1025	Haz Waste Facility (Env. Level 1) Construction initiated in 06. (Under	150	1615			
CRWU061035	06	306	Demolish Entomology Facility (306) Originally FY04, then '08, then '06 if	108	1160			
CRWU031112	06		ADF Parking Lot Mod-1					
	07	n/a	Athletic Fields Concession (NAF)	130	1399			Yes
CRWU053006	07	730	Communications Center (ADAL 730) orig 05 - moved to 07	5666	60988			
CRWU063006	07	347	Consolidated Services Facility Admin	1476	15892			14100ft*2
CRWU063003	07	1032	Leadership Development Center (Under	1638	17631			
CRWU073006	07	350	Youth Center (NAF) 06 MILCON project	2656	28586			
CRWU073005	07		Military Working Dog Kennel	325	3500			
CRWU061039	07	302	Demolish Fuels Admin (302) Construction 07, then 09, possibly '06 if funded.		1185			
CRWU052063	07		Repair Alert Taxiway L Pvs					
CRWU062002	07		Repair Taxiway "M"					
CRWU073008	07	1051	-POL Ops Building	255	2745			
CRWU073008	07	1054	-Pump house	93	1001			
CRWU073008	07	1053	-Storage Pol Bulk Ops Building	42	452			
CRWU073008	07	Mult	Consolidated Fuels Includes Demo of existing structures, construction of POL	390	4198			10000bbl
	07		Construct ADF Admin Facility	2788	30000			
CRWU083001	07		Freight Transfer Facility	1115	12000			new
	07	1606	Demolish Crash House (1606)		8327			
CRWU033003	07	332	Temporary Lodging Facility (NAF) Originally 03	6450	69434	84377		
CRWU033003	07	331	Visitors Quarters	3676	39568	39568		

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Appendix C – Buckley AFB Construction List

Project Number	FY	Bldg No.	Projects	Buckley AFB Construction Footprint (m ²)**	Actual Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**	Actual parking (ft ²)	ACAM	
CRWU059006	07	701	Squadron Ops Facility (COANG)	2132	22950				new
CRWU029003	07	911	Alert Crew Quarters (COANG)	604	6500				new
CRWU041108	08	1540	BITC Mailroom	372	4000				
CRWU041017	08		Youth Baseball Field (Originally part of						
	08		ADF Parking Lot Mod-2						
CRWU073008	08	341	Demolish Blding 341 (Part of consolidated fuels)		216				
CRWU061012	08		FAMCAMP - originally 07, RV Parking Sites 38, Tent Sites 10 each						38 Spaces
CRWU053007	08	1027	Vehicle Maintenance Facility - originally 07 (joint COANG)	3504	37717				19525 ft^2
CRWU048002	08	208	Satellite Pharmacy	557	6000			Yes	5712 ft^2
CRWU019119	08	805	ADAL Weapons Release Complex (ADAL COANG). Was '09, then '13, then '08.	372	4000				
	09		NSA CSS, was '08	46468	500000				
CRWU051014	09	902	Demolish Building 902 Originally 05 project, then '08 and possibly '09 if funded		4428				
CRWU051013	09	n/a	Demolish Marine Area Foundations Originally 05 project then '08, then '09 if		Unknown at this time	Unknown at this			
CRWU073008	09	200	Demolish Fuel Storage (200) Constuction 07, if funded		1576			Yes	
CRWU073008	09	200	Demolish Fuel Tanker Stands Construction 07	Unknown at this	Unknown at this time			Yes	
CRWU073008	09	300	Demolish Fuels Lab (300) Construction 07,		1503				
CRWU063002	09	1026	Logistics Readiness Complex - originally	2290	24650				
CRWU041130	09		RV Storage Lot (ADAL)	57700	621075				
	09		North Runway Extension (Construct, COANG)	49821	536274				new
CRWU091001	09	31	Demolish Building 31 Originally FY 09, then 10 and possibly '12 if funded.		204				
CRWU071003	10	950	Demolish Building 950 Originally FY07, then '09, possibly '07 if funded.		20303				
	10		South Runway Repair (COANG)	50047	538704				
CRWU103003	10		Bowling Center and Community Activities (Peterson)_	3307	35600			Yes	check ACAM
CRWU081002	10		Youth Soccer Field						
CRWU041017A	10		Youth Softball Field						
	11		West Parking Lot						
CRWU071002	11	940	Demolish Building 940 Originally FY07, possibly '10 if funded		14758				
CRWU033008	11		Arts, Crafts, Auto Skills Development Ctr	1033	11119				
CRWU073003	11	345	Education Center/Library Originally 07	2193	23605				
CRWU049013	11	n/a	East Parking Apron Relocation (COANG). Was FY '12	33696	362700				
CRWU051011	12	1631	Demolish Electrical Shop (1631) Originally 05 project, then '08 if funded		3025				
CRWU051013	12	n/a	Demolish Marine Area Foundations Originally 05 project then '09 if funded		Unknown at this time	Unknown at this			
CRWU041012	12	1620	Demolish Radio Relay Bldg (1620) Originally 04 then possibly '08 if funded	149	1800				

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Appendix C – Buckley AFB Construction List

Project Number	FY	Bldg No.	Projects	Buckley AFB Construction Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**	Actual parking (ft ²)	ACAM
CRWU051012	12	1632	Demolish Reserve Forces Bldg (1632) Originally 05 project then possibly '08 if		600			
CRWU071001	12		Demolish Engine Test Pad Originally		2057			
CRWU051079	12	310	Demolish Hydrazine Bldg (310) Originally FY 04 then 10 and possibly 13 if funded.	76	820			
CRWU063001	12+		Fire/Crash Rescue Station	2137	23000			
CRWU053002	12+		Telluride Entry Gate	567	6107			
CRWU053004	12+		8th Ave Entry Gate. Was '11	885	9528			
CRWU053005	12+		Mississippi Entry Gate	902	9709			
CRWU093002	12+	447	Spaced Based Infrared (SBIR) Operational Support Facility Originally 09.	8820	94940			
CRWU013001	12+	447	Spaced Based Infrared (SBIR) Remote Ground Station. Was FY'11	1900	20451			
CRWU019118	12+		Weapons Loading Training Facility (COANG) originally 09 - requesting 08	929	10000			
CRWU909724 44300 sy	13	11803	Taxiway and Arm/Disarm (COANG) Includes Demolition of existing parking		75 feet by 10,500 linear			
CRWU053009	13	35	Fitness Center ADAL (estimate based on existing swimint pool at Peterson AFB)	3345	36000			Yes
CRWU073004	13	807	SF Operations Facility - was 06, then 07	3252	35000			
CRWU061164	14		Adult Softball Field					
	15		Dormitory 3 (96 PN)	3717	40000			
CRWU051084	15		Entry Control Facility (upgrade-was 08)	1337	14391			
CRWU063011	15	806	Fire Station Additon (crash house) - 2 Originally 09 - requesting FY 07. Joint ANG/AF	985	10600			
CRWU073010	15	1023	Consolidated Base Warehouse Originally 08	4645	50000			area changes
CRWU063008	15	1600	Small Arms Range Indoor Arm Range - indoor with outdoor grenade launcher	2205	23735			
CRWU103002	15	multi	Upgrade Based Infrastructure Ph IV. Originally 09	Unknown at this	Unknown at this time			
CRWU069201	16		Upgrade Weapons Live Load Area (COANG)	929	10000			
	TBD		Expand Bldg 700 (COANG)					
Either interior, or otherwise catexed, therefore not included in the EA - even under cumulative.								
Paving only, no structures								
Insufficient information to date to include in an EA								
** Project footprint does not include disturbance due to construction; such as, laydown areas and generally doesn't include parking								
Updated 11 September based on Aug 06 Facilities Board								
(1) Community Center only								

Appendix C – Buckley AFB Construction List

Project Number	Fiscal Year	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**	Actual parking	ACAM
	07	1051	-POL Ops Building	255	2745			
	07	1054	-Pump house	93	1001			
	07	1053	-Storage Pol Bulk Ops Building	42	452			
	05	n/a	Vail Street Improvements	8475	91200			
	03	1030	460 ABW Headquarters	4744	51066			
	11		8th Ave Entry Gate					
	03		ADAL SBIRS Mission Control (Under construction)	1672	18000			
	12+		ADAL Weapons Release Complex (COANG)					
	04	n/a	ADD/Alter Access Roads (Airfield) (COANG)	41204	443520			
	12+		Airmen Dining Facility					
	04	n/a	Approach Lighting (COANG)	62	672			
	05	1500	Army Aviation Support Facility (COARNG)	11148	120000			
	10		Arts, Crafts, Auto Skills Development Ctr	1033	11119			
	05	n/a	Athletic Fields (two ball fields, 1 track, and 1 football field)	160 Parking Spaces	Fence 3,600 meters			
	06	n/a	Athletic Fields Concession (NAF)	130	1399			
CRWU041108	06		BTC Mailroom					
	10		Bowling Center and Community Activities (Peterson)	1858	19999			
	02	1	BX/Commissary (completed)			200,152		
CRWU033009	06	204	Car Wash (AAFES) - 06 MILCON project	186	2000			
	05	n/a	CDCII Pre school Playground	818	8800			
	05	n/a	CDCII Pretoddler Playground	486	5225			
	05	n/a	CDCII Toddler Playground	599	6450			
	05	316	Chapel Center	2423	26081			
	03	725	Child Development Center 4 room Addition (Bldg 725)	69	743			
	05	351	Child Development Center CDCII	2248	24197			
	04	830	Civil Engineering Complex (COANG)	3470	37350			
	06	730	Communications Center (ADAL 730) orig 05 - moved to 07	5666	60988			

Appendix C – Buckley AFB Construction List

Project Number	Fiscal Year	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**	Actual parking	ACAM
	11	1023	Consolidated Base Warehouse Originally 08	9293	100029			
	07	Multiple	Consolidated Fuels Includes Demo of existing structures, construction of POL Ops Bldg, Pump House, and Storage POL Bulk Ops Bldg - are all listed separately in this table) NOTE: 08 Construction Project, proposed NTP is Jan 07; therefore, considering 07 project.	390	4198			
	06	347	Consolidated Services Facility Admin	1407	15145			
	07		Construct FE Maintenance Facility					
	05	n/a	Construct 2 SWS/MCS Force Protection - just installing barriers					
	11		Construct Admin Facility (ADF)					
	03	1530	Control Tower (COANG)	539	5800	4949		
	03	25	Demolish Building 25 (demolished)		?			
	09	31	Demolish Building 31		204			
	05	802	Demolish Building 902		4428			
	07	940	Demolish Building 940		14758			
	07	950	Demolish Building 950		20303			
	08	341	Demolish Building 341 (Part of consolidated fuels)		216			
	07	1606	Demolish Crash House (1606)		8327			
	05	1631	Demolish Electrical Shop (1631)		3025			
	07		Demolish Engine Test Pad		2045			
	04	306	Demolish Entomology Facility (306)	108	1160			
	07	200	Demolish Fuel Storage (200)		1576			
	07	200	Demolish Fuel Tanker Stands		Unavailable at this time			
	07	302	Demolish Fuels Admin (302)		1185			
	07	300	Demolish Fuels Lab (300)		1503			
	04	310	Demolish Hydrazine Bldg (310)	76	820			
	05	n/a	Demolish Marine Area Foundations		Not available			
	04	1620	Demolish Radio Relay Bldg (1620)	149	1600			
	05	n/a	Demolish Reserve Forces Bldg (1632)		600			
CRWJ061006	06	1011	Demolish Warehouse (1011/1012)		22949			
	02	205	Dormitory II (144 person)	5040	54,250	57,528		

Appendix C – Buckley AFB Construction List

Project Number	Fiscal Year	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**	Actual parking	ACAM
	09		Dormitory 3 (96 PN)	n/a	Expected	to be cancelled		
	12+	n/a	East Parking Apron		Unknown at this time			
	10	345	Education Center/Library Originally 07	2045	22012			
	03	960	Engine Shop Addition Bldg 960 (COANG)	186	2000			
	03	1019	Entomology (O&M) Replace Entomology Shop	209	2255			
	09		Entry Control Facility (was 08)	Information not ava	Information not avail.			
	TBD		Expand Bldg 700 (COANG)					
CRWU061012	08		FAMCAMP - originally 07, RV Parking Sites 38, Tent Sites 10 each					
	03	806	Fire Station Addition	2000	21531			
	10	806	Fire Station Addition (crash house) - 2 Originally 09 - requesting FY 07. Joint ANG/AF	985	10600			
	04	17906	Fire Training Facility - originally 08		3,400 buildings, 41,112 concrete pads			
	02	35	Fitness Center - Completed	6308	54500	67900		
	10	35	Fitness Center Addition (estimate based on existing swimmint pool at Peterson AFB) Originally 09	1175	12652			
	TBD		Golf Course					
	03	n/a	Golf Driving Range	1	12			
	03	703	H-70 Fuel Storage Facility (O&M)	97	1045	178		
CRWU787395	06	1025	Haz Materials Storage (Env. Level 1) HAZMART Pharmacy Construction initiated in 06.	507	5457			
CRWU787399	06	1025	Haz Waste Facility (Env. Level 1) Construction initiated in 06.	150	1615			
	04	n/a	Impound Lot (asphalt paved)	743	8000			
	06	1032	Leadership Development Center	1638	17631			
	09	1022	Logistics Readiness Complex - originally 06, now states in clear zone	1200	12917			
	04	801	Maintain Maint Hangar 801 (COANG)	Interior	Interior			
	05	600	Medical Clinic ADAL	424	4563			
CRWU051101	05		Medical Warehouse					

Appendix C – Buckley AFB Construction List

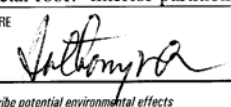
Project Number	Fiscal Year	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**	Actual parking	ACAM
	02	n/a	Military Family housing = 71 acres total land (for houses, landscaping, roads etc)	66175	712298			
CRWU071011	06		Military Working Dog Kennel	479	5156			
	12+		Mississippi Entry Gate					
	04		New East Gate (estimate based on existing structure at Peterson AFB)	12	128			
	03	n/a	New northern runway extension (COANG)	3484	37500			
	04		New Visitor Center (estimate based on existing structure at Peterson AFB)	49	525			
	08		NSA/CSS					
CRWU033009	06	1022	Outdoor Rec Equip Rental (NAF) - originally 05, contract still not awarded	863	9288			
	07	911	Permanent Alert Crew Qtrs (COANG) - States Alert Facility	604	6500			
	06	912-917	Permanent Alert Shelters (COANG) FY08 - request congressional add for FY06 (orig 05)	3846	41400			
CRWU048002	08	208	Pharmacy	557	6000			
	04	841	Repair ANG Supply, Bldg 841 (COANG)	Interior	Interior			
	03		Repair Fuel Cell/Corrosion Control, Bldg 800 (COANG)		Interior			
	04	n/a	Repair Parking Lot East of Bldg 471	12	316798			
	04	n/a	Repair Parking Lots ANG wide (COANG)	12	144000			
	03	n/a	Repair Runway, Taxiways, Ramps (COANG)	181161	1950000			
	05	n/a	Repair Taxiways A&K	Information not	Information not avail.			
	07		Rephase Squadron Operations Facility					
	TBD		Reroute Steamboat Ave					
CRWU041130	09		RV Storage Lot					
	11		SBIRS REmote Ground Station					
	10	807	SF Operations Facility - was 06, then 07	2500	26910			
	11	1600	Small Arms Range Outdoor Arm Range - now indoor with outdoor grenade launcher (originally 03)	605	6512			
	12+		Spaced Based Infrared (SBIR) Operational Support Facility Originally 09	Information not ava	Information not avail.			

Appendix C – Buckley AFB Construction List

Project Number	Fiscal Year	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**	Actual parking	ACAM
	08	11603	Taxiway and Arm/Disarm (COANG) Includes Demolition of existing parking apron and portion of Sunlight Road and taxiways F, W, X, and Y. Originally 08		75 feet by 10,500 linear feet and holding pads 225 feet by 400 LF (paved)			
	12+		Telluride Entry Gate					
	02	2	Telluride Gate - Completed	11	120	133		
CRWU033003	07	330	Temporary Lodging Facility (NAF) Originally 03	7839		84377		
	03	n/a	Two Pavilions at Williams Lake	6	60			
	03	1015 and 10	Two Warehouses - Civil Engineering	929	10000	10000		
	04	n/a	Upgrade Base Infrastructure, Ph III	n/a	n/a			
	11	n/a	Upgrade Base Infrastructure Ph IV. Originally 09	n/a at this time	n/a at this time			
	08	1027	Vehicle Maintenance Facility - originally 07	1812	19504			
RWU033003	07	331	Visitors Quarters	3530	38000	39568		
	11		Weapons Loading Facility (COANG) originally 09 - requesting 08	687	7400			
	13		Weapons Release Complex (COANG) orig 09 requesting 09		6000			
	07	n/a	Widen 6th Avenue (DAR Project) - was 08	1524 Meters	3 Lanes			
	11		Youth Athletic Fields					
CRWU073006	06	350	Youth Center (NAF) 06 MILCON project	2656	28586			

Appendix D – Form 813

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS		Report Control Symbol RCS:
INSTRUCTIONS: Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).		
SECTION I - PROPONENT INFORMATION		
1. TO (Environmental Planning Function) 460 CES/CEV	2. FROM (Proponent organization and functional address symbol) 140 CES/CEV	2a. TELEPHONE NO. 847-9042 847-9903
3. TITLE OF PROPOSED ACTION Replace Squadron Operations Facility		
4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date) The base requires an adequately sized, technologically updated, and properly configured facility to accommodate F-16 squadron operations for current Air Sovereignty Alert (ASA) & NORAD missions and to train personnel for a wartime tasking.		
5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.) Construct new Squadron Ops Facility of reinforced concrete caissons and grade beam foundation, floor slab on grade, steel frame, masonry wall, brick and stucco exterior finish, and sloped metal roof. Interior partition walls, utilities, prewired workstations,		
6. PROPONENT APPROVAL (Name and Grade) Anthony Chin, O4	6a. SIGNATURE 	6b. DATE 20041210
SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY. (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)		
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)		+ 0 - U
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)		
9. WATER RESOURCES (Quality, quantity, source, etc.)		
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)		
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)		
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, threatened or endangered species, etc.)		
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)		
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)		
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)		
16. OTHER (Potential impacts not addressed above.)		
SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION		
17.	PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____ : OR PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.	
18. REMARKS		
19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade)	19a. SIGNATURE	19b. DATE

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THIS FORM CONSOLIDATES AF FORMS 813 AND 814.
PREVIOUS EDITIONS OF BOTH FORMS ARE OBSOLETE.

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