FINAL
ENVIRONMENTAL ASSESSMENT



FAMILY CAMP FACILITY
BUCKLEY AIR FORCE BASE, COLORADO

Prepared for:
460 CES/CEV

February 2008

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14. ABSTRACT
The US Air Force proposes to construct and operate a new Family Camp (FamCamp) facility adjacent to William?s Lake at BAFB, Colorado. Construction of the FamCamp facility will provide outdoor recreational opportunities for the military and civilian workforce stationed at Buckley AFB, retirees, and their families. It will offer camping, fishing, picnicking, trails, playgrounds, and other outdoor activities.

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COVER SHEET
FINAL DRAFT ENVIRONMENTAL ASSESSMENT
FOR THE PROPOSED CONSTRUCTION AND OPERATION OF A FAMILY CAMP FACILITY AT BUCKLEY AIR FORCE BASE, COLORADO

a. **Responsible Agency:** U.S. Air Force, 460th Space Wing

b. **Proposed Action:** Construct and operate a Family Camp (FamCamp) facility at Buckley Air Force Base (BAFB), Colorado.

c. **Written comments and inquiries regarding this document should be directed to:** Ms. Elizabeth Meyer 460 CES/CEV, 660 S. Aspen Way (Stop 86), Bldg. 1005, Room 178, BAFB, Colorado 80011-9551; telephone (720) 847-7245.

d. **Privacy Advisory**: Comments on this Draft Environmental Assessment (EA) were requested. Letters or other written or oral comments are presented in the appendices of this EA. Addresses were compiled to develop a mailing list for those requesting copies of the Final EA. However, only the name of individuals making specific comments will be disclosed. Personal home addresses and phone numbers were not published in this EA.

e. **Designation:** Draft Environmental Assessment (EA)

f. **Abstract:** The US Air Force proposes to construct and operate a new Family Camp (FamCamp) facility adjacent to William's Lake at BAFB, Colorado. Construction of the FamCamp facility will provide outdoor recreational opportunities for the military and civilian workforce stationed at Buckley AFB, retirees, and their families. It will offer camping, fishing, picnicking, trails, playgrounds, and other outdoor activities.

g. This EA has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of constructing and operating a FamCamp facility at BAFB. The Proposed Action and four alternatives, including the no action alternative, and three alternate construction locations were analyzed. Several environmental resources were reviewed but not analyzed in detail in the EA because either the resources are not present at or adjacent to the project area or because implementation of accepted engineering or design techniques would ensure no significant impacts. These resources include cultural resources, environmental justice, occupational safety and health, noise, aesthetics, airspace, farmland, floodplains, geology and soils, and PCBs. The following resources were analyzed in detail in the EA: air quality, water resources including storm water, biological resources, including vegetation, wildlife, and threatened and endangered species, land use, socioeconomics, transportation, utilities, hazardous materials, including radon, solid waste and pollution, and asbestos, wetlands, and environmental restoration program sites (ERPs). The USAF has concluded that there would be no significant effects to these resources as a result of implementing the Proposed Action or alternatives.

h. **Comments were received by:** July 24, 2007

FINAL DRAFT
FINDING OF NO SIGNIFICANT IMPACT
PROPOSED CONSTRUCTION AND OPERATION OF A FAMCAMP FACILITY
BUCKLEY AIR FORCE BASE, COLORADO

Agency: U.S. Air Force, 460th Space Wing

Background: The United States Air Force (USAF) prepared an Environmental Assessment (EA) to assess the potential environmental consequences of activities associated with constructing and operating a Family Camp (FamCamp) facility at Buckley Air Force Base (BAFB), Colorado. This EA was prepared in accordance with requirements of the National Environmental Policy Act (NEPA) and the corresponding NEPA-implementing regulations of the Council on Environmental Quality (40 Code of Federal Regulations [CFR] 1500) and the USAF (32 CFR 989).

Proposed Action and Alternatives: The Proposed Action is to construct and operate a new FamCamp facility adjacent to William's Lake at BAFB. In addition to the Proposed Action, four alternatives were considered, including the no action alternative and constructing the facility at three alternate locations on BAFB. Three alternatives were dismissed as they were more likely to conflict with adjacent land uses and had potentially higher construction costs. The Proposed Action and No-Action alternatives were analyzed in detail for impacts.

Factors Considered in Determining That No Environmental Impact Statement is Required: The EA, which is incorporated by reference, analyzed the environmental impacts of implementing the Proposed Action and four alternatives by taking into account all relevant environmental resource areas and conditions. The following resources were eliminated from detailed analysis in this draft EA due to the absence of these resources at or adjacent to the project area or because accepted engineering or design techniques would ensure no significant impacts: cultural resources; environmental justice; occupational safety and health; noise; aesthetics; airspace; farmland; floodplains; geology and soils; and polychlorinated biphenyls (PCBs). The USAF has examined the following resource areas and found that implementing the Proposed Action would not result in any significant impacts: air quality; water resources including storm water; biological resources including vegetation, wildlife, and threatened and endangered species; land use; socioeconomics; transportation; utilities; hazardous materials, including radon; solid waste and pollution prevention; asbestos; wetlands; and environmental restoration program sites (ERPs).

Public Notice: NEPA, 40 CFR §1500-1508, and 32 CFR §989 require public review of the EA before approval of the finding of no significant impact (FONSI) and implementation of the Proposed Action. A notice of availability for public review was published in the Denver Post, the Rocky Mountain News, and the Aurora Sentinel, on or after 24 June 2007 indicating a 30-day review period. A hard copy of the Draft EA and

Draft FONSI was placed in the Denver, Aurora, and Boulder public libraries for dissemination. The public review was conducted and concluded on 24 July 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 implementing the Proposed Action or alternative are not significant, and therefore, an environmental impact statement will not be prepared. The signing of this FONSI completes the USAF Environmental Impact Analysis Process.

DONALD W. McGEE, JR., Colonel, USAF
Commander

7 FEB '08
Date

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

This section describes the purpose of and need for the Proposed Action, summarizes the scope of the environmental review and applicable regulatory requirements and presents an overview of the organization of the document.

This EA has been prepared in accordance with U.S. Air Force (USAF) Environmental Impact Analysis Process (EIAP), which complies with the regulations under National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321 to 4370d), the Council on Environmental Quality's (CEQ) NEPA implementing regulations (40 Code of Federal Regulations [CFR] Part 1500-1508), and the Department of Defense (DoD) and USAF NEPA implementing regulations (32 CFR 989). The principle objective of these regulations is to ensure the careful consideration of environmental aspects of Proposed Actions in federal decision-making and allow public participation in that process. This Environmental Assessment (EA) analyzes the potential environmental impacts resulting from constructing and operating a new Family Camp (FamCamp) facility near William's Lake at Buckley Air Force Base (AFB), Colorado. The FamCamp is intended to improve the quality of life for military and civilian employees, retirees, and their families. This EA provides Buckley AFB, and the public, with the information required to understand the potential environmental consequences of the proposed FamCamp project and to support a finding of no significant impact (FONSI) or an environmental impact statement (EIS). While this EA provides information to make better decisions about Proposed Actions, it does not imply project approval or authorization, which will obtained through the 460th Space Wing (460 SW) Facilities Board.

1.1 BACKGROUND

Buckley Air Force Base (BAFB) is located in the Denver metropolitan area on the northeast side of the city of Aurora in Arapahoe County, Colorado. It covers approximately 3,283 acres (ac) (1,328 hectares [ha]) and is surrounded by the City of Aurora (Figure 1-1).

The 460 SW is the current host of the installation and their mission is to provide combatant commanders with superior global surveillance, worldwide missile warning, expeditionary forces, and support to homeland defense missions. The installation houses diverse missions; military services; and components that include active-duty, National Guard, Coast Guard, and Reserve personnel from the Air Force, Army, Navy, and Marine Corps to accomplish satellite support operations, fighter operations, installation support, and other important missions. Currently, there are approximately 2,712 active-duty personnel, approximately 4,213 Guard and Reserve personnel, approximately 2,973 civilian employees, and approximately 2,811 contract employees at the base (Buckley AFB, 2004a). In addition, Buckley AFB serves approximately 77,000 retirees and approximately 16,363 military dependents.

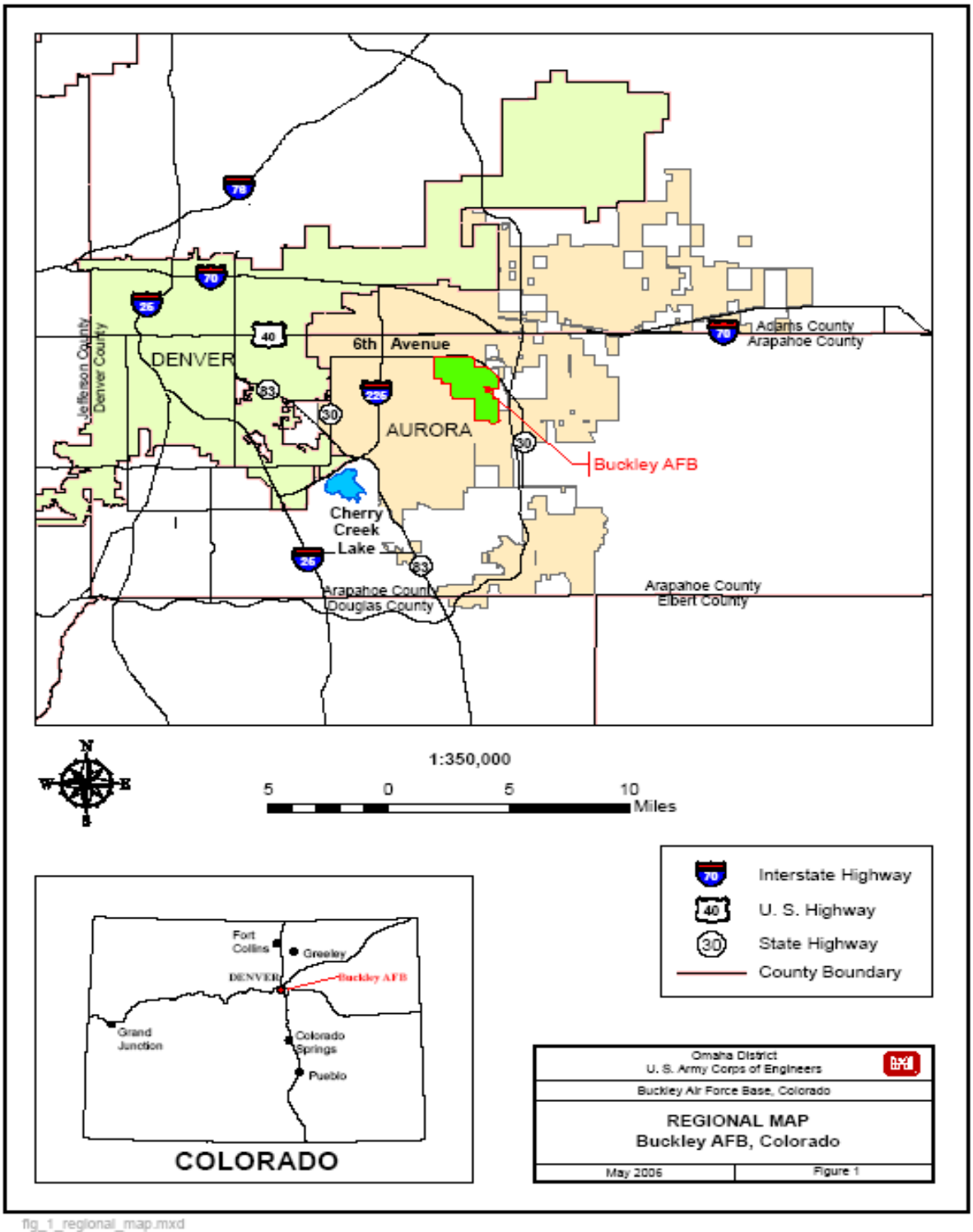


Figure 1-1: Regional Map

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the FamCamp is to provide additional recreational opportunities for the military and civilian workforce stationed at Buckley AFB, retirees and their families. No camping facility is currently available at Buckley AFB, and many requests have been received from military personnel to provide camping opportunities at the base. Buckley AFB currently has some recreational facilities, with a limited number of small pavilions scattered across the installation. But with the continuing growth at BAFB, the need for additional outdoor recreational facilities is apparent.

While approximately ten off-site camping facilities are available near Buckley AFB, campsites are limited, less convenient, and more expensive for users than having a FamCamp at Buckley. Other advantages to having a FamCamp on base include providing more security to campers and elevating community morale.

The FamCamp facility would offer more diverse outdoor activities and support the requirements to maintain fitness and health established within AFI 40-501 Air Force Fitness Program. The FamCamp will also be focused to offer amenities that make it a desirable place for families. Outdoor recreational activities proposed include camping, fishing, picnicking, hiking/walking, playgrounds, etc.

The FamCamp was included in BAFB's *General Plan*, updated and approved in 2005. The *General Plan* for BAFB was produced to guide the development of BAFB to meet military facility and infrastructure needs while maintaining the look and feel of a singular, well planned military installation integrated into its natural environment (BAFB 2005a).

This EA will provide Buckley AFB with the information required to understand the potential environmental consequences of the construction and operation of a new FamCamp facility.

1.3 SCOPE OF THE DOCUMENT

The USAF has prepared numerous EAs for construction projects on BAFB and many environmental plans and permits have been developed to support activities on the base. Consequently, much is known about the environmental resources and potential impacts of construction activities on BAFB. Copies of recent Draft EAs are available in the government documents collections at the main Aurora, Denver and Boulder public libraries located at 14949 East Alameda Parkway, 10 West Fourteenth Avenue and 1720 Pleasant Street, respectively.

1.3.1 RESOURCES TO BE ANALYZED IN THIS DOCUMENT

This EA considers the potential impacts of the Proposed Action and alternatives to the following environmental resources:

- air quality;
- geology and soils;
- water resources, including stormwater;
- biological resources, including vegetation, wildlife, and threatened and/or endangered species;
- land use;

- socioeconomics;
- transportation;
- public utilities, including wastewater;
- hazardous materials, including radon;
- solid waste and pollution prevention issues;
- asbestos;
- wetlands; and
- Environmental Restoration Program (ERP).

The draft EA will be made available for public and agency review and comment. After reviewing the environmental impact and analysis, and public and agency comments, the USAF will decide whether to issue a finding of no significant impact (FONSI) or to proceed with the development of an environmental impact statement (EIS) to further analyze the potentially significant impacts resulting from implementation of the Proposed Action.

1.3.2 RESOURCES ELIMINATED FROM THIS ANALYSIS

As noted in 40 CFR 1500.1(b), "…NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail." In this spirit, potential impacts to several environmental resource areas were initially considered but determined not to be relevant to the Proposed Action or alternatives. In these instances, either the environmental resources were not present or the project would not present a negligible potential impact to these environmental resources. Consequently, they have been eliminated from detailed analysis. The following summarizes these issues and the basis for eliminating them from further consideration in the document.

- **Cultural Resources**—The National Historic Preservation Act, as amended (16 USC 470 et seq.) and NEPA require the consideration of impacts on cultural resources listed on or eligible for listing on the National Register of Historic Places (NRHP). Ninety-five percent of BAFB land area has been inventoried for cultural resources, and the State Historic Preservation Office has concurred with all survey results (GeoMarine 2004; Foothills Engineering 2002). No NRHP-eligible archaeological sites have been identified on BAFB. Six historic structures relating to BAFB's World War II and Cold War legacies have been determined to be eligible for inclusion to NRHP. The Base has determined that the area of potential effects for the Proposed Action and alternatives do not include any of these six structures. Should any cultural material be uncovered during construction, work would stop and the site would be evaluated prior to continuation of the projects.
- **Environmental Justice**— Environmental justice is a concept involving race and ethnicity data and the poverty status of populations within the region of influence (ROI). On February 11, 1994, President Clinton enacted EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. The purpose of this order is to avoid the disproportionate placement of any adverse environmental or economic impacts from federal policies and actions on minority and low-income populations. Environmental justice analysis is performed to identify potential disproportionately high and adverse impacts from a Proposed Action and to identify

alternatives that might mitigate these impacts. The Environmental Justice for the state of Colorado, the county of Arapahoe, and the ROI is given in by Table 1-1. The Proposed Action would not have an adverse impact to the surrounding community. As a result, it was determined that the Proposed Action would not have an overall disproportionately adverse environmental or human health effect on the minority population (USAF 2001).

Table 1-1: Race and Poverty Characteristics

Characteristic	Colorado	Arapahoe County	ROI
Total Population	4,301,261	487,967	12,323
Percent White	82.8	79.9	82.3
Percent Black or African American	3.8	7.7	5.8
Percent American Indian, Eskimo, or Aleut	1.0	0.7	0.8
Percent Asian	2.2	3.9	3.6
Percent Native Hawaiian and Other Pacific Islander	0.1	0.1	0.1
Percent other	7.2	4.5	4.0
Percent reporting 2 or more races	2.8	3.2	3.5
Percent below poverty	6.2	4.2	3.1

Source: U.S. Census Bureau 2000

- **Occupational Safety and Health**—Worker safety and health would be unchanged under all of the alternatives. Both the existing and proposed new facilities would be managed in accordance with federal, state, and USAF health and safety regulations and instructions. No additional hazards would be encountered as part of the operation of the facility. The construction contractor will be required to develop and implement a health and safety plan for construction of the new facility to ensure worker safety during construction.
- **Noise**— The Proposed Action and alternatives are located in air installation compatible use zone (AICUZ). The Noise from the runway would not exceed 80 dBs at any of the proposed locations, which is below the steady-state A-weighted Sound Exposure Level (ASEL) of 85 decibels (dB) or more, or impulse noise of 140 dB or more regardless of duration in which hearing protection is required. The FamCamp is not expected to be a major source of traffic or operational noise, particularly in context of the ambient noise levels at the base. Because the FamCamp is one of the Capital Improvement Projects (CIP), it has been assessed under separate cover (Final Environmental Assessment for Capital Improvement Projects, March 2006); and that the activities associated with them would not produce noise above 65 dB DNL at sensitive receptors on a regular basis. Therefore, noise effects have been eliminated from the detailed analysis.
- **Aesthetics**—The proposed FamCamp facility is consistent with Outdoor Recreational uses on BAFB, and would not change the visual character of the base. The proposed support/service building is low profile and would not affect views of the FamCamp facility, BAFB or offsite. Therefore, there would be no impact to visual resources from the Proposed Action or alternatives.
- **Airspace**—The proposed project does not involve any flying missions. Therefore, there would be no effect to airspace resulting from any of the project alternatives.

- **Farmland**—There is no suitable farmland on BAFB (Natural Resource Conservation Service [NRCS] 2001). Therefore, farmlands would not be affected. The USDA wrote BAFB a letter, dated January 12, 2001, pertaining to this issue, see Appendix A.
- **Floodplains**—The proposed project area and alternatives are located outside of the 100-year floodplain identified at BAFB. Therefore, floodplain development is not a concern for the Proposed Action or alternatives.
- **Polychlorinated biphenyls (PCBs)**—PCBs are carcinogens that have significant toxic effects on human health. They were regularly used in transformers as a fire retardant until 1977. There are no transformers at Buildings #1100 or #1104. Therefore, it is not likely that PCBs would be encountered during construction of the Proposed Action or alternatives.

1.4 APPLICABLE REGULATORY REQUIREMENTS AND COORDINATION

This EA was prepared in accordance with NEPA, CEQ Regulations, and the Air Force guidance regulations. A brief summary of the laws, regulations, Executive Orders (EOs), Federal permits, and licenses that may be applicable to the proposed project is provided in the following paragraphs.

Solid waste from construction and operation must be managed in accordance with the Buckley AFB Facilities Excellence Plan (dumpsters), EOs 13101 (recycling) and 13148 (landscape mulching), and Affirmative Procurement Plan (purchasing recycled materials, including fly ash).

Implementing sustainable development strategies will help BAFB meet the requirements under EO 13123, *Greening the Government through Efficient Energy Management*, which is the clearest directive on the use of sustainable building design (see https://www.usgbc.org/LEED). Agencies subject to EO 13123 must optimize life-cycle costs, pollution prevention, and other environmental and energy costs associated with the construction, operation, and decommissioning of the facility. EO 13123 also requires Federal agencies to meet Energy Star building criteria and to select Energy Star and other energy efficient products to the maximum extent practicable.

In addition to implementing sustainable design, the DoD Green Procurement Program mandates the purchase of environmentally preferable products (EPP) and services as well as purchasing Affirmative Procurement (AP) products. These can be found at these websites: EPP at http://www.epa.gov/oppt/epp/ and AP at http://www.epa.gov/cpg/products.htm.

1.4.1 ENVIRONMENTAL POLICY

NEPA (42 United States Administrative Code [U.S.C.] --4321 et seq.) established a national policy to encourage harmony between man and his environment, and to promote efforts to prevent, mitigate, or eliminate damage to the environment and stimulate the health and welfare of man. NEPA procedures ensure that environmental information related to Federal action is made available to public officials and citizens, and that the environmental information, along with public input, is considered in the Federal decision-making process.

EO 11514, Protection and Enhancement of Environmental Quality, as amended by EO 11991, sets policy for directing the Federal government in providing leadership in protecting and enhancing the quality of the Nation's environment. The CEQ Regulations (40 Code of Federal Regulations [CFR] - 1500 to 1508) implement the procedural provisions of NEPA.

1.4.2 STORMWATER GENERAL PERMIT

The owner and/or operator of the project will need to file a Notice of Intent to obtain a Construction General Permit (CGP) from USEPA for construction of the FamCamp. The CGP requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) and design of stormwater drainage controls and best management practices (BMPs) in accordance with the CGP. Additionally, per USAF Engineering Technical Letter (ETL) 03-1: Stormwater Construction Standards (USAF 2003), the project must develop a stormwater control site plan and staff the construction project with a stormwater professional during construction to oversee implementation of the site plan. The ETL 03-1 plan requires completion of a declaration statement regarding the applicability of the construction regulations based on the total area of disturbance. The plan required by ETL 03-1 can be met by the SWPPP required under the CGP.

BAFB also must comply with the Federal Facility Small Municipal Separate Storm Sewer Systems (MS4) requirements for construction and post-construction stormwater treatment under BAFB's MS4 permit (Tracking No. COR04208f). The CGP requires the implementation of post- construction BMPs. Post-construction BMPs will be included in the facility design to treat any stormwater runoff generated by the facility.

1.4.3 BIOLOGICAL RESOURCES

The Endangered Species Act (16 U.S.C. --1531 to 1544) requires Federal agencies to determine the effects of their actions on threatened and endangered species of fish, wildlife, and plants, and their critical habitats, and to take steps to conserve and protect these species. EO 11990, Protection of Wetlands, requires Federal agencies to take action to avoid or minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

1.4.4 PUBLIC HEALTH

EO 12088, Federal Compliance with Pollution Control Standards, directs Federal agencies to comply with certain laws and regulations. Compliance must be at Federal, state, and local levels and involves air pollution, water pollution, noise pollution, hazardous materials (HAZMAT), and hazardous substances. Federal agency compliance must be to the same extent as any private party.

1.4.5 FLOODPLAIN MANAGEMENT

EO 11988, Floodplain Management, requires Federal agencies to determine the effects of their actions upon the natural and beneficial values of floodplains.

1.4.6 PROTECTION OF CHILDREN

President Clinton enacted EO 13045 entitled "Protection of Children from Environmental Health Risks and Safety Risks" in 1997. This Executive Order directs Federal agencies to "make it a high priority to identify and assess environmental health risks and safety risks that may

disproportionately affect children" and "ensure that its policies, programs, activities, and standards address disproportionate risks."

1.5 ORGANIZATION OF THE EA

This document follows the format established in 32 CFR 989 implementing the CEQ regulations (40 CFR 1502). The document consists of the following sections:

Section 1.0 – Purpose and Need for the Action: provides background information about the installation; the purpose and need for the Proposed Action; the scope of the environmental review; applicable regulatory requirements; and a brief description of how the document is organized.

Section 2.0 – Alternatives Including the Proposed Action: provides the alternatives selection criteria; a detailed description of the Proposed Action, other action alternatives, No Action Alternative; and comparison of the alternatives.

Section 3.0 – Affected Environment and Environmental Consequences: provides a description of the existing conditions of the areas potentially affected by the Proposed Action and alternatives and an analysis of potential direct, indirect, and cumulative impacts to environmental resources resulting from the Proposed Action and alternatives.

Section 4.0 – Cumulative Impacts: Cumulative impacts on environmental resources result from individually minor, but collectively substantial actions undertaken over a period of time.

Section 5.0 – List of Preparers: provides a list of the document preparers and contributors.

Section 6.0 – Distribution List and Agencies and Individuals Contacted: provides a list of persons/agencies contacted in the preparation of this EA.

Section 7.0 – References: provides a list of references used in the preparation though not necessarily cited, within the text of this EA.

Section 8.0 – Acronyms and Abbreviations: provides a list of applicable acronyms and abbreviations used throughout the text.

Appendices – provide background and supporting information to this EA, as necessary.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section provides a detailed description of the Proposed Action, other alternatives and the No Action Alternative. The EA will analyze the potential environmental consequences of constructing and operating a FamCamp facility at BAFB. The project is proposed for the year 2008. The Proposed Action and four alternatives, include the no action alternative and three alternate construction locations. The proposed location and three alternative locations are presented in Figure 2-1.

2.1 DESCRIPTION OF THE PROPOSED ACTION

The 460 SW proposes to construct and operate a FamCamp facility at Williams Lake, Buckley AFB, Colorado. The FamCamp should provide a desirable place for families to enjoy outdoor lifestyle in a rural setting that is still very close to a large metropolitan area. The FamCamp is designed with amenities for families such as RV camping that accommodates recreational vehicles and camping trailers, as well as day use recreational activities, such as picnics, playgrounds, fishing, etc. The FamCamp would be open year-round with peak season from June to August and two secondary seasons, one from March to May and the other from September to November.

2.1.1 LOCATION

The preferred location for this FamCamp is adjacent to the southwest site of William's Lake, as shown in Figures 2-1 and 2-2, and is approximately 12 acres in size. This location incorporates the natural amenity of the only water feature located on BAFB, and is in conformance with the BAFB General Plan's for future development. Figure 2-2 shows the view looking out across the proposed site location (William's Lake behind). The site is accessed by gravel drives and has several paths. The pedestrian path along Steamboat Avenue currently is asphalt paved.

The proposed site has two existing facilities in the area, buildings #1100 and #1104, both made of wood. Building #1100, built in 2002, (Figure 2-3) has both men's and women's restroom facilities (ADA compatible). Building #1104 (Figure 2-4) is located adjacent to William's Lake, serves as a lake side meeting room, and includes a wood deck. Even though the existing, 604-square foot restroom facility is located in the area of the proposed FamCamp site and in good condition, a new facility is recommended because the potential increased use associated with the FamCamp (see Section 2.2.2 for further facility information). The existing facility is not adequate to serve the needs of the proposed FamCamp due to limited size, insufficient sewer capacity, and the fact that it currently serves the small existing recreational/picnic area located adjacent the proposed FamCamp.

As planned, check-in and administration offices for the proposed FamCamp would be housed in the existing, adjacent, lakefront building (Building #1104). This facility would also have a limited amount of rental equipment for outdoor recreational use at the lake.



Figure 2-1: Proposed FamCamp Locations



Figure 2-2: Preferred location facing southwest from William's Lake



Figure 2-3: Building #1100 – Current Restroom Facility



Figure 2-4: Building #1104 – Lake Building

2.1.2 DESIGN

The proposed FamCamp includes 38 new RV campsites and assorted support facilities. Each RV campsite is to be provided with a picnic table, grill, water, sewer and 20/30/50-amp electrical services. All drinking water supply lines will contain proper back-flow prevention with proper isolation from sewer lines. Roadways are to be constructed, and all electrical is to be underground with aboveground lighting provided at key locations. Also proposed is a new support/service building of 1044 gross square feet (GSF)/ 97 gross square meters (GSM), for support to the FamCamp. See Table 2-1 for details. This will provide restrooms, showers, and laundry facilities. The proposed FamCamp originally included ten new tent sites. However, the tent sites were determined to not be necessary or cost effective due to the large amount of adjacent outdoor recreational area and open space land that can accommodate that activity, if necessary. In addition, the FamCamp facility is to include a central sanitary sewer and sewer connections at each site. A conceptual layout of the preferred location is shown in Figure 2-5.

Table 2-1: Description of the New Service Building

Area/ Function	Description
General Building	The building shall be type II masonry, noncombustible, one-story, 10' eave height with a prefinished, metal roof and spit face concrete masonry unit (CMU) wall construction.
Laundry Room	A small room for three washer/dryer stack units, with one laminate work table.
Men's Room	The men's room shall provide three sinks, one urinal, and two toilets with one of the toilet stalls being ADA compliant. Two shower stalls will be provided, one of which meets ADA requirements. The interior finishes will consist of ceramic tile floor, epoxy paint on 8" CMU to 10'-0" high. The ceiling will be suspended ½" gypsum wallboard (gypsum is fire and moisture resistant). Two floor drains with trap primers, and recessed fluorescent fixtures will be provided.
Women's Room	The women's room shall provide three sinks and three toilets with one of the toilet stalls being ADA compliant. Two shower stalls will be provided, one of which meets ADA requirements. The interior finishes will consist of ceramic tile floor, epoxy paint on 8" CMU to 10'-0" high. The ceiling will be suspended ½" gypsum wallboard (gypsum is fire and moisture resistant).
Breezeway	The open-air, slab area adjacent to the mens/womens areas will be tinted concrete scored at 4' x 4' intervals. The ceiling height will be 10' and consist of painted aluminum panels.
Mechanical room/ Storage room	The mechanical room houses air handling equipment and domestic (natural gas) hot water heaters (40 gallon and 100 gallon) for hand washing, laundry and showering. The walls to be 8" CMU to 10'-0" A.F.F. with painted epoxy finish over CMU." Floor is to be painted concrete and lighting is to be suspended fluorescent lights.
RV Sites	Each campsite will consist of a 15' x 40' parking pad with a connecting 10' x 12' picnic table pad accessed by drives. Water and electrical connections will be provided via a utility pedestal, which is compliant with the BAFB Facilities Excellence Plan. A ground mount sewer connection will be provided at each RV site.

Source: FamCamp PVA, July 2005

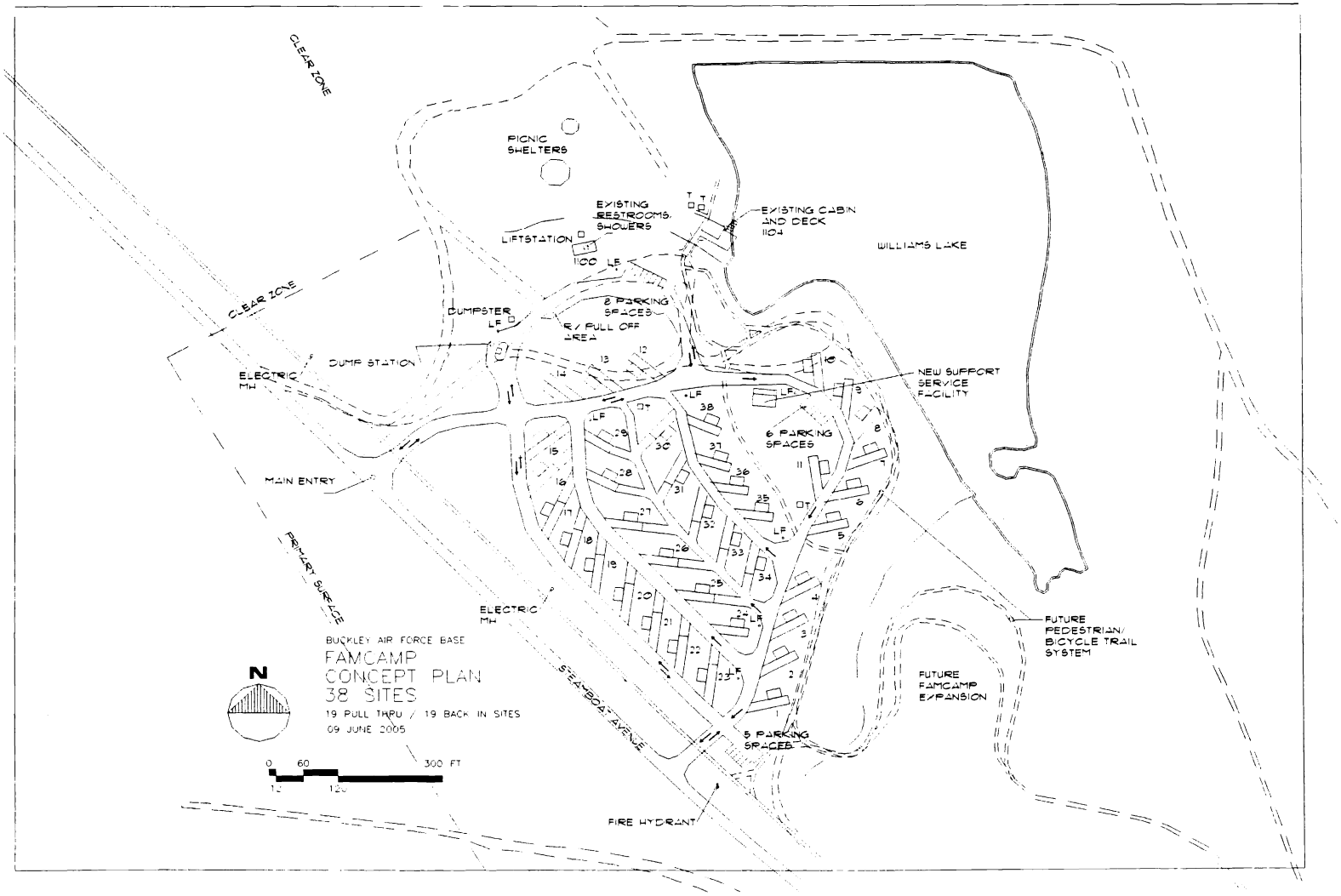


Figure 2-5 Preferred Location and Conceptual Layout of FamCamp

2.1.3 CONSTRUCTION AND SITE PREPARATION

The estimated ground disturbance at the Proposed Action location is expected to be contained within the facility footprint. The construction site is easily accessible from paved roads, so site preparation activities would be minimal. The proposed site provides good access for construction equipment and utility connections, as well as sufficient paved and gravel areas for construction staging areas, material stockpiling, and other construction needs. Generally, ground disturbance related to utility connections would also occur within this footprint, with the exception of natural gas. Electric, water, and sewer line connections currently exist along the surrounding roadways to nearby buildings #1100 and #1104. If natural gas is desired, a line may be connected to the nearest access point at the Naval Reserve facility. It is estimated that full construction of the FamCamp would take approximately 15 months.

2.1.4 OPERATIONAL ACTIVITIES

Check-in and administration offices for the proposed FamCamp would be housed in the existing, adjacent, lakefront building (Building #1104) that would also function as a satellite location for the Outdoor Recreation Department's equipment rental center. Only a limited amount of outdoor equipment for lake activities would be kept at this location. Labor operations for this facility and the rest of the FamCamp are estimated to be $15,000 per year. Other annual costs include $9,600 for utilities, $500 for entertainment, and $6000 year for paper products and cleaning supplies.

2.2 ALTERNATIVES TO THE PROPOSED ACTION

The alternatives to the Proposed Action include moving the FamCamp to other considered locations or not constructing the FamCamp altogether. Each of the alternative locations included had minimal acreage to accommodate the construction of the FamCamp facility. The preferred and three alternative locations are presented in Figure 2-1.

2.2.1 ALTERNATIVE 1 - LOCATING THE FAMCAMP DIRECTLY WEST OF WILLIAM'S LAKE (WEST)

Under this alternative, the FamCamp would be located directly west of William's Lake and north of the current buildings #1100 and #1104. This location can be found on Figure 2-1. This location is less desirable than the preferred location due to the fact that Alternative 1 is smaller (approximately 8.8 acres compared to the 12 acre preferred location) and slopes more severely. Utilities are also not as accessible at this location than the preferred location. Alternative location 1 also overlaps the Airfield Clear Zone and is near a munitions response site (IA112).. As such, this alternative has been eliminated from further study within the EA.



Figure 2-6: Standing on Steamboat Avenue looking northeast toward Alternative 1.

2.2.2 ALTERNATIVE 2 – LOCATING THE FAMCAMP DIRECTLY SOUTH OF WILLIAM'S LAKE (SOUTH)

Under this alternative, the new location of the FamCamp would be directly south of William's Lake, shown on Figure 2-1 and 2-6. This location is less desirable because it is closer to two constraint areas: wetlands along the southern portion of Williams Lake, and an ERP site. The physical features of the area are also less desirable because it slopes more severely than the preferred location, requiring additional grading work to make the area compatible for the RV campsites. As noted, this location is in closer proximity to an existing ERP site formerly known as FTA-1, a former fire training area (ERP Site no. 5). No remedial work has been performed and monitoring has been discontinued pending determination of need for any further action at the site.

Another reason the Alternative 2 location is less desirable is that it is generally less accessible than the preferred location. There are no access roads to this location; therefore, additional construction work would be needed. Access distance to utilities is also greater than the preferred location, increasing costs for construction and materials. Because of the proximity of Alternative 2 to wetlands and an ERP site, this alternative has been eliminated from further study within this EA.



Figure 2-7: Near Steamboat Road looking northwest toward Alternative 2

2.2.3 ALTERNATIVE 3 – LOCATING THE FAMCAMP ON THE HILL TO THE NORTH OF WILLIAM'S LAKE (NORTH)

The new location of the FamCamp under this alternative would be on the Hill north of William's Lake. This location is shown on Figure 2-1 and 2-7. This location is less desirable because the FamCamp would have to share and coordinate use of the land with the readiness training exercises that are already taking place there. These land uses are not compatible. Having both, the FamCamp and the training facility, in the same area would not be desirable for several reasons. First, the noise from the generators would not be pleasant for the campers and the razor wire would be a hazard to all visitors, especially children. Second, night training becomes an issue. The trainees would be distracted by noise and light from the campers. The campers would also be bothered by the noise produced by the night training. For these reasons, no camping would likely be allowed during these training activities. Sharing the area between the two activities to accomplish the Proposed Action would restrict the usefulness of the area.

The Alternative 3 location is immediately up slope from wetlands. Best management practices would need to be implemented during construction and operation to prevent silt and other contaminants from the FamCamp from entering the wetlands.

Alternative 3 is less desirable than the proposed location because it is generally less accessible than the preferred location. There are no access roads to this location; therefore, additional construction work would be needed. The distance to access utilities is greater than the preferred location, increasing costs for construction and materials.

Due to the readiness training currently using this alternative location, which would conflict with the FamCamp, Alternative 3 has been eliminated from further study within this EA.



Figure 2-8: On Steamboat Road looking east toward Alternative 3.

2.2.4 NO ACTION ALTERNATIVE

Under the No Action Alternative, the FamCamp would not be constructed and this amenity would not be available to military and civilian personnel at Buckley AFB. There are approximately 10 RV campgrounds with approximately 1250 total RV individual camping sites in the Denver Area. Table 2-2 shows the comparison in user fees at those 10 facilities and another FamCamp located in Colorado Springs, CO. With the No Action Alternative the military personnel would have to rely on existing facilities within the surrounding area, continue to pay more to camp and have less security. This is an important factor when much of the on-base community has a fixed income. There would also be a substantial loss of revenue to the Morale, Welfare, and Recreation (MWR) activity if the FamCamp were not built. According to the Project Validation Assessment, the FamCamp will have paid for itself and be making a profit by 2012 if constructed in 2008. The FamCamp would also pay for its own operation and maintenance (O&M) costs.

Table 2-2 Comparison in User Fees

Name	No. of Sites (Hook-up type)	No Hook-up		Full Hook-up		Club Assn.	Misc. Info
		$ Per Day	$ Per Week	$ Per Day	$ Per Week		
Cherry Creek State Park	25 (No) 100 (Full)	12	84	20	140	No	$6 daily pass $0.50 for showers
Chatfield State Park	119 (Full) 81 (Electric)	16	112	20	140	No	$5 daily pass
Golden Clear Creek RV Park	119 (Full) 81 (Electric)	28.10	196.70	32.12	224.84	No	$3/day extra person
Prospect RV Park	47 (Full) 23 (Partial)	26	118	28	196	ARVC	Rate +16% tax $3 extra person
Deluxe RV Park	45 (Full)	N/A	N/A	33	231	No	$4 extra person
Golden Terrace South RV Resort	84 (Full)	N/A	N/A	30.04	180.25	No	$4 per pet
Dakota Ridge RV Park	141 (Full)	N/A	N/A	36	239	No	$2.50 50 amp; $2 cable tv; $2.25 phone; $4 extra person
Barr Lake RV Park	90 (Full) 18 (Partial)	28	196	30	210	ARVC	
Flying Saucer RV Park	150 (Full)	N/A	N/A	28.04	177.95	No	$2 extra person
Denver Meadows RV Park	287 (Full)	N/A	N/A	33	210	No	$3 extra person
Peregrine Pines FamCamp, Colorado Springs, CO	140 (Full)	N/A	N/A	17 (military) 22 (sponsored civilian)	N/A	No	

2.3 COMPARISON OF ALTERNATIVES

Due to the elimination of Alternatives 1, 2 and 3, only the Proposed Action and the No Action Alternative are carried forward within this EA.

Section 3.0 compares the impacts to environmental resources analyzed in this EA for the Proposed Action and the No Action Alternative. As noted in Section 1.3.2, the following resource areas were eliminated from detailed evaluation because either the resources were not

present in any of the alternative locations or effects to the resources would be negligible: cultural resources, environmental justice, occupational safety and health, noise, aesthetics, airspace, farmland, floodplains, and PCBs.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section of the EA provides a description of the existing environment of the proposed project. Also discussed are the potential environmental impacts from implementing the Proposed Action or the no action alternative.

Implementing the Proposed Action considered in this EA could potentially result in cumulative impacts to the environment. Cumulative impacts can become an important issue when the chosen activity (i.e., construction and operation of a FamCamp) interacts either directly or indirectly with other unrelated actions (past, present, or reasonably foreseeable future). Cumulative impacts are discussed in Section 4.

3.1 AIR QUALITY

3.1.1 AFFECTED ENVIRONMENT

BAFB is located in Arapahoe County, Colorado, within the Metropolitan Denver Air Quality Control Region (AQCR). The Denver AQCR is currently in attainment for all six criteria ambient air pollutants regulated by the Clean Air Act: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead (Colorado Air Quality Control Commission 2001a, 2001b, 2001c; CDPHE 2005). Because the region previously has been in nonattainment status for carbon monoxide, ozone, and particulate matter with a diameter of 10 micrometers or less (PM_{10}), maintenance plans have been developed for the pollutants to ensure that standards are not violated in the future. Due to violations of the both the 1-hour and the 8-hour ozone standards during the summer of 2003, an Ozone Early Action Compact with USEPA is in place to ensure attainment of the 8-hour ozone standard by 2007 (CAQCC 2004).

BAFB operates under a Title V permit, modified November 1, 2005, which regulates stationary source air emissions at the facility. The Title V operating permit requires BAFB to review and update the inventory of all the stationary emission units at the end of each calendar year and calculate the total of criteria pollutant and hazardous air pollutant emissions.

Toxic air pollutants are those pollutants listed by the Clean Air Act Amendments of 1990 that are hazardous to human health or the environment, but are not specifically covered under another part of the Act. The National Emissions Standards for Hazardous Air Pollutants and Colorado State regulations regulate several toxic air pollutants including arsenic, asbestos, benzene, beryllium, mercury, and vinyl chloride. BAFB currently emits hazardous air pollutants during the course of base activities such as storing fuel, using paints, and running generators. These emissions are estimated annually in the Buckley AFB Air Emission Inventory. The 2005 Air Emissions Inventory indicates that all regulated air emissions are well below the permit limits (Golder Associates, 2006).

Table 3-1 BAFB Air Emission Inventory [1]

Pollutant Emission Sources	CO (tpy)[2]	VOC (tpy)[3][5]	SOx (tpy)	NOx (tpy)[4][5]	PM_{10} (tpy)
Buckley AFB 2003 Mobile Emissions[6]	204.5	56.9	2.1	40.6	5.0
Buckley AFB 2005 Point and Fugitive Stationary Source Emissions[7]	21.8	26.4	1.5	52.04	6.08
Total 2003 Mobile and 2005 Stationary Buckley AFB Emissions	226.3	83.3	3.6	92.6	11.1
AQCR 36 Emission Inventory[8]	678,170	167,900	69,350	112,785	32,156
Conformity Rule De Minimis Threshold[9]	100	100	100	100	100
10 percent of AQCR 36 Emission Inventory (Significant Threshold Values)	67,817	16,790	6,935	11,279	2,316

(1) The Buckley AFB 2003 Air Emission Inventory did not assess lead or $PM_{2.5}$ emissions.

(2) tpy – tons per year.

(3) VOC - volatile organic compounds.

(4) NOx - nitrogen oxides.

(5) VOCs and NOx contribute to the formation of ground-level ozone.

(6) Source: URS Group, 2004. Mobile emission inventories are not conducted annually.

(7) Source: Golder Associates, 2006. CY 2005 Air Emissions Inventory, Buckley AFB.

(8) Colorado Air Quality Control Commission (CAQCC), 2003 (CO-2006 Interim Year Inventory), 2001a, (VOC and NO_x 2006 Inventory), and 2001 b (PM_{10} and SO_x 2005 Maintenance Inventory).

(9) 40 CFR 93.153(b) - These limits are applicable to non-attainment and maintenance areas, and therefore, apply to Buckley AFB.

3.1.2 IMPACTS

3.1.2.1 No Action Alternative

The No Action Alternative would have no impact on Air Quality because there would be no change in operational air emissions associated with the FamCamp. There would also be no impacts resulting from construction-related fugitive dust emissions under the No Action Alternative because no construction would occur.

3.1.2.2 Proposed Action

There would be negligible change in operational air emissions resulting from implementation of the Proposed Action. A minor and temporary increase in fugitive dust emissions would result from ground disturbing activities associated with construction of the Proposed Action. A minor and temporary increase in emissions from construction equipment and possible generators would also result from construction of the FamCamp. These air quality impacts would disperse with distance from the project area and are considered local and not regional. There would be a long-term beneficial impact due to users not having to drive as far to a camp ground.

Construction Emissions: The following are the sources taken into account when calculating the estimated emissions from constructing the FamCamp:

- Grading Equipment;
- Stationary Equipment;
- Mobile Equipment;
- Generated Fugitive Dust;
- Architectural Coatings; and
- Asphalt Paving.

A summary of the emissions from the construction of the FamCamp can be found in Table 3-2. These emission levels could have a minor impact on the air quality; however construction activities are considered short-term.

Table 3-2: Summary of Annual Emission Estimates from the Construction of the FamCamp

	Grading Equipment	Stationary Equipment	Mobile Equipment	Fugitive Dust	Coatings	Asphalt Paving	Total (ton/yr)
CO	0.101	290	42.8	N/A	N/A	N/A	332.90
VOCs	0.0405	10.85	9.32	N/A	0.0263	0.00541	20.24
NOx	0.381	7.51	101.9	N/A	N/A	N/A	109.79
SOx	0.0387	0.384	12.6	N/A	N/A	N/A	13.02
PM_{10}	0.0313	0.219	8.22	11.18	N/A	N/A	19.65

N/A – Not Applicable

Best Management Practices (BMPs) to control fugitive dust emissions would be implemented during all construction activities. These measures are consistent with Colorado Air Quality Control Commission Regulation 1 could include:

- Use of water or other stabilizers on unpaved roads and in disturbed areas to suppress dust
- Low speeds maintained when driving vehicles and equipment.
- Use of gravel entry way to prevent tracking of mud and dirt onto paved roads.
- Housekeeping activities, such as street sweeping vehicle/ equipment washing, etc.
- Timely Re-vegetation of disturbed area.
- Establish wind breaks whenever possible.

Operation Emissions: According to the FamCamp Project Validation Assessment (Draft Report dated 18 Jul 2005), only two new emission sources will be added with the Support Service Building, a hot water boiler and a gas fired unit heater. Another emission source is the propane that the RVs may use. The following are the sources taken into account when calculating the estimated emissions from future operation of the FamCamp:

- Hot Water Boiler (only), natural gas fired, 250 Thousand BTU's per Hour (MBH) (=250,000 BTU/hr);
- Gas Fired Unit Heater, 17.57 kW (50 MBH = 50,000 BTU/hr)); and
- Propane from RVs.

A summary of the emissions from the operation of the FamCamp can be found in Table 3-3. Assumptions associated with the level if use were extremely conservative to evaluate a maximum level of potential emissions that may be generated. These emission levels would have no short-term adverse impact and a negligible, long-term, adverse impact on air quality.

Table 3-3: Summary of Annual Emission Estimates from the Operation of the FamCamp

	Hot Water Boiler*	Unit Heater*	RV Propane**	Total (ton/yr)
CO	0.0904	0.0181	0.014	0.123
VOCs	0.00592	0.00118	0.000915	0.00802
NOx	0.108	0.0215	0.0166	0.146
SOx	0.000645	0.00013	0.0001	0.000875
PM_{10}	0.00818	0.00164	0.00126	0.0111

* Assuming sources run all year (potential to emit)

** Assuming all 38 sites are full and being used every day of the year

There would be negligible emissions associated with the operation of the FamCamp. Air conditioning for the proposed support/service facility would not utilize Class I or Class II ozone-depleting chemicals; however, some of the air conditioning units for the RV may contain ozone depleting chemicals. With the conservative assumptions associated with the level of FamCamp usage, the impact from ozone-depleting chemicals is considered to be minor.

In summary, short-term, minor, adverse impacts on air quality may result from the implementation of the Proposed Action. The long-term adverse impacts from operation of the FamCamp would negligible and may have a minor, beneficial impact. This would result from FamCamp users not having to travel as far and reducing emissions from cars. A summary of the estimated annual emissions from the FamCamp can be found in Table 3-4 and calculations can be found in Appendix C.

Table 3-4: Summary of the Total Annual Emission Estimates from the FamCamp

	Construction (ton/yr)	Operation	Total (ton/yr)
CO	332.90	0.123	333.02
VOCs	20.24	0.00802	20.25
NOx	109.79	0.146	109.93
SOx	13.02	0.000875	13.02
PM_{10}	19.65	0.0111	19.65

3.2 GEOLOGY AND SOILS

3.2.1 AFFECTED ENVIRONMENT

3.2.1.1 Geology and Topography

Geology, the study of the earth's composition, provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Buckley AFB is within the Denver Basin approximately 50 miles east of the Continental Divide. The Denver Basin is a structural depression that is 300 miles long and 200 miles wide. This depression was created during a mountain-building event referred to as the Laramide Orogeny.

The Denver Basin consists of geologic layers in excess of 13,000 feet thick that range in age from Late Pennsylvanian through Quaternary. Five principal stratigraphic units are present within the Denver Basin: Fox Hills Sandstone, Laramie Formation, Arapahoe Formation, Denver Formation, and Dawson Arkose (BAFB 2004a). The basal (compact) unit of the Denver Basin is the Pierre Shale that underlies the Fox Hills Sandstone (Robson 1983). Surficial material consists of several layers of unconsolidated alluvial gravels, sands, clays, and eolian material (i.e., material deposited as a result of wind processes) that were deposited in response to glacial and interglacial events (BAFB 2004a).

Coal reserves are present beneath the surface of Buckley AFB; however, these reserves are economically nonrecoverable due to their low quality and depth beneath the surface. Although mineral reserves (i.e., sand and gravel) are present in the area, economically desirable reserves do not exist on Buckley AFB (BAFB 2004a). No other significant mineral resources are present at Buckley AFB.

Topography pertains to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Buckley AFB is west of the Great Plains within the western portion of the central high plains of Colorado. The region is surrounded on three sides by higher terrain areas including the Palmer Lake Divide to the south, the Rampart Range and Rocky Mountains to the west, and the Cheyenne Ridge to the north (BAFB 2004a).

The topography of Buckley AFB comprises relatively flat land and rolling upland. Elevations range from 5,650 feet in the southeastern corner to 5,500 feet in the northwestern corner of the installation (BAFB 2004a).

3.2.1.2 Soils

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use. The major soil-mapping units present on Buckley AFB include the Fondis-Weld, Alluvial Land-Nunn, and Renohill-Buick-Litle associations (Table 3-5) (USDA/SCS 1971). Other areas on the installation have been identified as gravel pits, rock outcrop complexes, sandy alluvial land, and terrace escarpments (USDA/SCS 1971).

The Fondis-Weld association mapping unit, composed of the Fondis and Weld soil series, covers the most surface area at Buckley AFB. This association consists of deep loamy soils that formed mainly in silty material deposited by the wind (loess). The Fondis soils are gently sloping (1 to 5 percent slope), well-drained, fertile upland soils with a high water-holding capacity (0.25 inch per inch of soil) and moderately slow permeability (< 0.63 inch per hour), and are susceptible to wind and water erosion. The Weld soil series consists of deep, well-drained, level to gently sloping (0 to 3 percent slope) soils that occur mainly in uplands. The Weld soils have a moderate rate of water intake and a high available water-holding capacity (0.20 to 0.25 inch per inch of soil). The most common soils in the Buckley AFB area are the Fondis silt loam and the Fondis-Colby silt loam (USDA/SCS 1971).

The Alluvial Land-Nunn association consists of soils that have moderate permeability (0.63 inch per hour) and high water-holding capacity (0.20 inch per inch of soil), and are typically found along floodplains and terraces. On installation, these soils are found along Toll Gate Creek and Sand Creek. These soils are deep, nearly level, loamy, and sandy soils. These soils support crops well, but flood protection is needed to prevent erosion and gully formation. The most common soil types in this association are the Nunn-Bresser Ascalon and the Nunn Loam series, both of which have moderate permeability (0.63 to 6.3 inches per hour) and high water-holding capacity (0.20 inch per inch of soil). Both are typically well-drained, gently sloping soils (0 to 3 percent slope) (USDA/SCS 1971).

The Renohill-Buick-Litle association comprises moderately deep, well-drained, loamy to clayey soils. The most common soil series within this association are the Renohill-Litle complex and the Renohill-Buick loam. Renohill soils are characterized as being moderately fertile with moderate internal drainage, steep slopes (3 to 30 percent slope), moderately slow to slow permeability (less than 0.63 inch per hour), and moderate water-holding capacity (0.15 inch per inch of soil) (BAFB 2004a).

Table 3-5: Properties of the Soil Types Found on Buckley AFB

Name [a]	Type	Drainage	Properties	Slope [b] (%)
Beckton (BkB)	Loam	Moderately well and somewhat poorly drained	Soft when dry; friable when wet. Subsoil ranges from clay loam to clay, contains salt throughout, and is slightly calcareous, at least in the lower part.	0–3
Bresser (BsB)	Sandy Loam	Well-drained	Moderate available water-holding capacity. Water table is at a depth of about 10 feet for most of the year. Sandy clay loam subsoil. A zone of lime accumulation does not occur.	0–3
Bresser-Truckton (BvC)	Sandy Loam	Well-drained	Bresser soils occupy the slopes. Surface layer about 6 inches, with a sandy clay loam subsoil about 20 inches thick. Truckton soils occur at ridgetops and are susceptible to soil blowing.	3–5
Bresser-Truckton (BvE)	Loamy Sand	Well-drained	Bresser soil is on the side slopes. Truckton soils occur in the higher areas.	5–20
Buick (BxC)	Loam	Moderately well-drained	Deep, gently sloping to sloping soils that occur in uplands. Surface layer is a brown loam that is free of lime and about 6 inches thick, with a clay loam to sandy clay loam subsoil about 50 inches thick.	3–5
Fondis (FdB)	Silt Loam	Well-drained	Occurs mainly on uplands. Surface layer is approximately 7 inches thick, with an upper clay subsoil about 20 inches thick. Moderate runoff and water intake, and the hazards of soil blowing and water erosion are slight to moderate.	1–3
Fondis (FdC)	Silt Loam	Well-drained	Occurs mainly on uplands. Surface layer is approximately 6 inches thick, and rests abruptly on dense clay subsoil about 18 inches thick.	3–5
Fondis-Colby (FoC)	Silt Loam	Moderately welldrained	Fondis silt loams make up about 60–80% of this complex and Colby silt loam 20–40%. Runoff is moderate, and the available water-holding capacity is high.	3–5
Litle (LcD)	Silty Clay Loam	Well-drained	Occurs on uplands; moderately deep, welldrained, gently sloping to sloping. Runoff is moderate to rapid, and the hazards of water erosion and soil blowing are moderate.	1–9
Alluvial Land (Lv)	Loamy	Well-drained	Occurs near narrow drainageways and major streams, and is subject to flooding. Surface layer is dark, generally noncalcareous, stratified loam and sandy loam about 6 inches thick. Moderate high available water-holding capacity and generally well-drained.	NA

Name [a]	Type	Drainage	Properties	Slope [b] (%)
Nunn (NIB)	Loam	Well-drained	Deep, well-drained, level or nearly level soils that occur on uplands and terraces along major streams. The surface layer is grayish-brown, noncalcareous loam about 3 inches thick, with a 19-inch thick subsoil.	0–3
Nunn-Bresser-Ascalon Complex (NrB)	Loam	Well-drained	Deep, nearly level and undulating, loamy soils that have a clayey to loamy subsoil; developed in outwash; on uplands and terraces.	0–3
Renohill-Buick (RhD)	Loam	Well-drained	Sloping to steep, loamy soils that have a loamy to clayey subsoil; moderately deep and deep over shale or sandstone; on uplands.	3–9
Renohill-Litle-Thedalund (RtE)	Loam, Silty Clay Loam, Clay Loam	Well-drained	Renohill loam comprises 20–40% of this complex; Litle silty clay loam, 10–30%; and Thedalund loam or clay loam, 10–30%. Too shallow and steep to be cultivated. Runoff is medium to rapid, and there are a few small gullies and landslips.	9–30
Rock Outcrop (Ru)	NA	NA	Soils have been stripped so that interbedded shale and sandstone are exposed at the surface. Shale is dominant, varies in color and texture, is hard and platey, and resists water penetration. The sandstone is very hard and coarse-grained.	NA
Sandy Alluvial Land (Su)	Sandy and Fine Gravel	Moderately welldrained	Occurs as narrow areas along major drainageways and next to stream channels. Droughty and unstable, subject to yearly flooding, to deposition of sand, and to soil blowing.	NA
Terrace Escarpments (Tc)	Clayey and Sandy	Well-drained	Occurs next to streams and drainageways, and consists of areas in which vertical banks as much as 20 feet tall have been cut. Deep, clayey to sandy, and generally is stratified and calcareous. Water erosion is a severe hazard, and soil slipping and sloughing are common.	NA
Weld-Deertrail (WrB)	Silt Loam	Well-drained	Weld silt loams make up 60–90% of this complex and Deertrail silty clay loams 10–40%. Runoff is slight, and the hazard of soil blowing is moderate.	0–3

Source: USDA/SCS 1971

Notes: a These names are for soil types not soil associations; soil types can occur in multiple associations. Please see text to determine which association the soil type most commonly occurs.

b Slope is the average grade of a particular phase in a soil series. Phases are divisions of soil series defined by differences in textural class, slope degree of erosion, stoniness, or depth to bedrock.

NA = not applicable

3.2.2 IMPACTS

3.2.2.1 No Action Alternative

No impacts on geology or soils are anticipated as a result of implementing the No Action Alternative.

3.2.2.2 Proposed Action

3.2.2.2.1 Geology and Topography

No economically valuable minerals are anticipated at the Proposed Action location. In addition, the regions of proposed construction are not within areas of known or suspected seismic instability. The Proposed Action location can accommodate the FamCamp Construction with only minor re-grading of the area. Therefore, there is no impact on the geology or the topography of the site as result of implemented the Proposed Action.

3.2.2.2.2 Soils

The Proposed Action would construct the FamCamp on an area characterized as the Renohill-Buick-Litle soil association. Top layers of soils exposed during construction would be subject to erosion. Impacts to soils would occur during site grading and trenching. The Proposed Action is located on an upland area of the site away from the majority of sensitive areas such as steep slopes.

These soils are well-drained soil erosion impacts resulting from construction would be minimal if proper BMPs are practiced. Although surface water erosion accounts for only a minor portion of Colorado's total erosion due to the semi-arid climate of Colorado, there would be more soil loss due to localized wind disturbance. BMPs are encouraged, such as installation of buffer areas in and around highly erodible soils and steep slopes. Exceptions (to BMPs) should be supported by geo-technical analysis.

Construction excavations could expose small areas of expansive soils. These soils are not typically found outside of the drainages on Buckley AFB. Expansive soils such as clay, claystone, and shale would "swell" in volume when wetted and would shrink when dried. Clay properties control the degree to which the clay minerals swell.

Subsurface Colorado swelling soils tend to remain at constant moisture content in their natural state and are usually relatively dry at the outset of disturbance when constructing on them. Exposure to natural or man-caused water sources during or after development results in swelling. In many instances the soils do not regain their original dryness after construction, but remain somewhat moist and expanded due to the changed environment. This volumetric expansion and contraction can cause houses, buildings, and other structures to heave, settle, and shift unevenly. With the fairly dry climatic conditions in Colorado, however this volumetric expansion is not anticipated to be significant. With the implementation of BMPs for potential expansive soils, there would be no long-term or major short-term, impacts to soils from the Proposed Action.

With the use of best management practices, such as applying water during dry periods or covering the soils during heavy rain events and using silt barriers to restrict the erosion of

exposed soils, the effects to soil erosion can be reduced or minimized. BMP measures may include establishing limits of clearing and grading to protect and preserve riparian corridors, native grasslands, and implementing landscape plans that would stabilize soils.

Implementation of geotechnical surveys, appropriate structural designs, and appropriate building and grounds maintenance may help to minimize the risk of structural damage. The following BMP measures would be implemented in areas where there is potential for expansive soils.

- Geotechnical Survey: Geotechnical engineering methods would be used to identify expansive soil problems prior to construction
- Foundation Design: Structural foundation designs would be used to withstand the "worst possible" changing soils conditions as indicated by testing
- Building and Ground Maintenance: Building maintenance crews would be educated about the soils situation and its potential significance, especially relative to the role of water and drainage. Efforts would be made to prevent water from "ponding" around building foundations.

It can be concluded that with the proper BMPs, construction-related adverse effects to soils would be short-term, minor, and local. Therefore, impacts from increased run-off on erosive soils would not be anticipated. With the implementation of BMPs (primarily moisture control) during construction for potential expansive soils, there would be no long-term or major short-term, adverse impacts to soils from the Proposed Action.

3.3 WATER

3.3.1 AFFECTED ENVIRONMENT

The most prominent surface water feature on BAFB is William's Lake, a reservoir located directly east of the proposed site location in the northeastern section of the installation. There are wetlands along William's Lake southern shoreline and north of William's Lake. This became the basis for elimination of Alternative Action 2 from consideration, as discussed in section 2.4.

The proposed site is located in an area where the primary activities to control surface water are at a sub-watershed level. The South Platte River, located approximately 15 miles (27.8 km) northwest of BAFB, is the primary surface water drainage in the region. Several smaller intermittent tributaries located within or adjacent to BAFB feed this drainage system. Off-base tributaries include Sand Creek to the north and Murphy Creek to the east. On BAFB a named tributary, East Toll Gate Creek, is present as an intermittent stream in the western section.

In general, surface drainage on BAFB flows in a northwest direction. Stormwater is conveyed through a system of surface ditches and channels. Drainage from the northern section of BAFB, the area in which the FamCamp would be located, discharges into Murphy Creek and Sand Creek to the north and east. Runoff from the proposed site also discharges into William's Lake.

3.3.2 IMPACTS

3.3.2.1 No Action Alternative

There would be no change in stormwater runoff or impervious surface area resulting from the No Action Alternative. Therefore, there would be no impact.

3.3.2.2 Proposed Action

Potential impacts to water quality from the Proposed Action are primarily associated with erosion and sedimentation during ground-disturbing activities. These pose a risk of adverse impact only when proper stormwater management is not implemented. Minor impact can be attributed to an increase stormwater runoff due to the increases in impervious surface areas associated with the FamCamp facility.

No change in stormwater flow is anticipated due to the construction of the Proposed Action. Approximately 12 ac would be potentially disturbed during construction, which is estimated to have a 15 month duration. Therefore, the project will require application for a Construction General Permit. The permit requires filing of a notice of intent with USEPA and preparing a Storm Water Pollution Prevention Plan (SWPPP.) Additionally, per Engineering Technical Letter 3-01 (USAF 2003), the project will be required to develop a stormwater control site plan and have a stormwater professional present on-site during construction to oversee implementation of the site plan. These permits and plans require a discussion of the BMPs for erosion control, sediment control, materials handling and spill prevention, and waste management to be implemented to protect stormwater quality during construction. Proper installation and implementation of BMPs minimizes the potential for adverse effects to stormwater during construction.

The proposed site will also maintain a buffer zone of 50 feet around William's Lake, so as to ensure no adverse effects to the surface water body. The following activities would be restricted within the buffer area: excess use of fertilizers, pesticides, or other chemicals; vehicular traffic or excessive pedestrian traffic; and removal or disturbance of vegetation and litter (material animals use for bedding) that might result in increased soil erosion at the site or loss of buffers.

It is estimated that the Proposed Action will increase the amount of paved surface on BAFB approximately 4.13 ac if all roadways, paths, and pads are paved. This does not represent the final decision on this issue; but provides for the most conservation estimate of impervious area to be evaluated with this EA. The development of these impermeable surfaces would slightly increase the volume of storm drainage generated on site that would have to be managed prior to its outfall. The increase in stormwater would be the same as the reduction to recharge in groundwater (refer to SWPPP for details.)

The contamination to the surface water runoff could also increase due to the operation of the FamCamp through spills and leaks from the RVs. However, proper hazardous waste and materials handling and spill prevention and controls will be implemented to minimize the potential adverse effects from the operation of the Proposed Action.

Groundwater is generally present under BAFB at depths of 20 feet or greater below ground surface (BAFB 2004a). The building and utility foundations of the proposed FamCamp is estimated to be no greater than 5 feet below ground surface. Therefore, groundwater is not expected to be encountered during construction. No groundwater would be used for the operation of the facility. Therefore, groundwater is not anticipated to be affected by the construction of the Proposed Action and no impact analysis was undertaken for this resource. In the long-term, however, there would be a minor adverse impact to groundwater because there would be a minor reduction to recharge of the groundwater. This reduction is due to the small increase of impermeable surfaces.

In conclusion, the stormwater runoff would have negligible adverse impact in the short-term with BMPs in place. In the long-term, however, there would be minor adverse impact to stormwater runoff and groundwater due to the small increase in impervious surfaces. There would be no impact to the groundwater in the short-term. The lake would be protected by the designated buffer area and would have negligible impacts in both the short and long-term as a result of the Proposed Action.

3.4 BIOLOGICAL RESOURCES

This section describes native and non-native vegetation, wildlife, threatened and endangered species, and other sensitive species known or likely to occur at BAFB. If species do occur, implementing the Proposed Action could affect these species and their habitat through ground-disturbing activities. Potential effects to biological resources for both listed and non listed species will be estimated in this EA based on the number of acres of habitat and/or the number of individual species affected.

3.4.1 VEGETATION

3.4.1.1 Affected Environment

BAFB is located in the Great Plains-Palouse Dry Steppe Province Ecoregion (Bailey 1995), an ecoregion also classified as short grass prairie (BAFB 2004b). The *Draft Integrated Natural Resource Management Plan* (BAFB 2004b) identifies four vegetation types occurring at BAFB:

- Midgrass prairie comprising blue grama, western wheatgrass, and crested wheatgrass
- Riparian corridors consisting of bottomland meadows or cottonwood/willow habitat
- Weedy/disturbed areas
- Landscaped areas, including turfgrass

Midgrass prairie is dominated by native grass species, such as blue grama (*Bouteloua* sp.), western wheatgrass (*Agropyron smithii*), and buffalo grass (*Buchloe dactyloides*). Other common grasses include tumble grass (*Schedonnardus paniculatus*) and three-awn (*Aristida fendleriana* and *A. longiseta*). Fringed brome grass (*Bromus ciliatus*) dominates depressions and gullies within the mixed grass prairie. Areas dominated by crested wheatgrass, a nonnative grass species historically used to revegetate disturbed ground, occur throughout the base. Herbaceous species associated with mixed grass prairie are scarlet globe mallow (*Spaeralcea coccinea*), prickly pear (*Opuntia macrohiza*), rabbitbrush (*Chrysothamnus nauseosus*), and snakeweed (*Gutierrezia sarothrae*). The crested wheatgrass vegetation type is the predominately mapped type for the proposed site.

Areas dominated by weeds have been disturbed by past or current ground-disturbing construction activities or past grazing activities. Weed species observed include fringed sagewort (*Artemisia frigida*), cheatgrass (*Bromus tectorum*), field bindweed (*Convolvulus arvensis*), Canada thistle (*Cirsium arvense*), and Turssian thistle (*Salsola kali*). Noxious weeds observed at BAFB include Dalmation toadflax (*Linaria genistifolia* ssp. *dalmatica*) and leafy spurge (*Eupohorbia esula*) (BAFB 2004b).

3.4.1.2 Impacts

3.4.1.2.1 No Action Alternative

No adverse impacts to vegetation are expected under the No Action Alternative as no proposed facilities would be constructed, and no ground-disturbing activities or alteration/disturbance of existing vegetation would occur.

3.4.1.2.2 Proposed Action

Impacts to existing vegetation would occur from the utility connections and re-grading of the site to the proposed FamCamp layout. Direct impacts to vegetation would occur from the Proposed Action due to clearing and grubbing (removing of roots, stumps, and other debris) construction areas and permanently converting some of the natural areas to surfaces for parking, roads, and RV pads. Remaining area will be landscaped, planted with additional trees, and reseeded with grasses that can be supported in a natural state.

Trees near the lake would not be affected by the Proposed Action because the trees are with in the 50 ft riparian buffer that protects the lake and surrounding vegetation and wildlife. Restrictions within this buffer are discussed in section 3.3.2.2.

Water flow patterns would be an indirect impact that may affect the vegetation of the Proposed Action. Water would flow in the same direction; however it may flow faster due to the increased impervious surfaces. These impacts, however, would be negligible, adverse impacts to the vegetation.

Vegetation in the Proposed Action area would experience minor, short-term, adverse impacts during construction, and minor, long-term, adverse impacts from the loss of approximately 12 acres of prairie grasses and other vegetation and re-vegetation of non-paved, landscaped areas with desirable plant grasses that can be supported in a natural state.

3.4.2 WILDLIFE

3.4.2.1 Affected Environment

This section describes the wildlife species and their habitat associations at BAFB. No aquatic or riparian habitat occurs within the Proposed Action. The riparian habitat is associated with William's Lake, which is not part of the Proposed Action location. Therefore, animals associated with permanent water sources or riparian areas are not included in this analysis.

3.4.2.1.1 Mammals

No ungulates, or mammals with hooves, occur on the base due to the exclusion fencing around the perimeter, although pronghorn (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*) historically occurred on the base and still inhabit surrounding properties (BAFB 2004b). Carnivores inhabiting BAFB include red fox (*Vulpes vulpes*), coyote (*Canis latrans*), American badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and long-tailed weasel (*Mustela frenata).*

Small mammals observed at BAFB include rodents and lagomorphs (rabbits). The most widely observed rodent is the black-tailed prairie dog (*Cynomys ludovicianus*). Prairie dogs are considered keystone species as they support a diverse array of other plant and wildlife species within their colonies. Prairie dogs are discussed in more detail in Section 3.3.3.

Other rodents known to inhabit BAFB include plains pocket gopher (*Geomys bursarius*), thirteen lined ground squirrel (*Spermophilus tridecemlineatus*), fox squirrel (*Sciurus niger*), deer mouse (*Peromyscus maniculatus*), and prairie vole (*Microtus ochragaster*). Common lagomorphs include black tailed jackrabbit (*Lepus californicus*), white-tailed jackrabbit (*Lepus townsendi*), eastern cottontail (*Sylvilagus floridanus*), and desert cottontail (*Sylvilagus auduboni*).

3.4.2.1.2 Birds

The midgrass prairie community supports numerous bird species, many of which are ground-nesters. The most common songbirds inhabiting prairie include western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), lark bunting (*Calamospiza melanocorys*), killdeer (*Charadrius vociferous*), black billed magpie (*Pica pica*), mourning dove (*Zanaida macroura*), western kingbird (*Tyrannus verticalis*), and eastern kingbird (*Tyrannus tyrannus*).

Raptor species known or likely to occur at BAFB include burrowing owl (*Athene cunicularia*; discussed further in Section 3.3.3), swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamacensis*), prairie falcon (*Falco mexicanus*), and American kestrel (*Falco sparverius*). Additionally, bald eagles (*Haliaeetus leucocephalus*), ferruginous hawks (*Buteo regalis*) and rough-legged hawks (*Buteo lagopus*) may be observed in winter.

3.4.2.1.3 Reptiles

A variety of reptile species inhabit BAFB; some of the more commonly observed species include northern prairie lizard (*Sceloporus undulates garmani*), bullsnake (*Pituophis catenifir*), western hognose snake (*Heterodon nasicus*), plains garter snake (*Thamnophis radix*), and prairie rattlesnake (*Crotalus viridis viridis*) (BAFB 2004b).

3.4.2.2 Impacts

This section analyzes potential impacts to wildlife species from implementation of the Proposed Action. Black-tailed prairie dogs and burrowing owls are discussed separately under the Threatened and Endangered Species section. The basis for impact analysis includes the area of direct ground disturbance and their habitats.

3.4.2.2.1 No Action Alternatives

No impacts to wildlife are expected under the No Action Alternative, as no proposed FamCamp facility would be constructed or operated.

3.4.2.2.2 Proposed Action

The proposed site is suitable habitat for ground-nesting birds, raptors, mammals and reptiles. The Migratory Bird Treaty Act (MBTA) protects all migratory birds (e.g., ground nesting birds, raptors, etc.) by prohibiting taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior (USFWS, 2007). The large trees along William's Lake are an excluded area, minimizing the impact to nesting sites of birds in this area. Ground nesting birds and other species within the construction areas would experience minor, short-term adverse impacts because they would be displaced to other areas. In the long-term, however, they would experience negligible, adverse impacts because they can stay in the relocated areas. Direct impacts from mortality of smaller, less mobile species could occur during construction if those species are present. Noise, human presence, and heavy equipment present during construction activities are likely to displace wildlife that may be present on or near the Proposed Action site. The duration and distance an animal is displaced are generally dependent on the individual or species, and an individual's response to disturbance may change with time. Disturbance to wildlife is expected to be minor; BAFB is an active military installation, and the Proposed Action site is located in an existing Outdoor Recreational area of the base. Any animals residing in or near the Proposed Action site have adapted to noise and human activity associated with an active military installation.

Water flow patterns would be an indirect impact that may affect the wildlife of the Proposed Action. Water would flow in the same direction; however it may flow faster due to the increased impervious surfaces. These impacts, however, would not impact the wildlife because their main source of water would be the lake and the lake is not affected by the Proposed Action. The riparian habitat is associated with William's Lake and would be protected from the construction of the FamCamp by a 25 foot buffer around the lake. Wildlife may have to find new routes to get to the lake during construction, but they would not have to find a new water source. This impact would be negligible.

Wildlife within and around the Proposed Action area would encounter minor, short-term, adverse impacts due to construction of the FamCamp, but in the long-term there would be only negligible adverse impact from the presence of campers and other FamCamp visitors.

3.4.3 THREATENED, ENDANGERED, AND OTHER SENSITIVE SPECIES

3.4.3.1 Affected Environment

Threatened and endangered plant and animal species are protected under the Endangered Species Act (ESA) or Colorado State law. An endangered species is defined as any species in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. Other sensitive species include those listed by the Colorado Division of Wildlife (CDOW) as of "special concern," meaning that they receive no formal protection, but are still considered when assessing potential project impacts.

These Federal and Colorado state listed species, as well as CDOW species of special concern are shown in Table 3-6. Of theses species in Table 3-6, the black-footed ferret, swift fox, Preble's meadow jumping mouse, bald eagle, ferruginous hawk, plains sharp-tailed grouse, northern leopard frog, Ute ladies'tresses orchid, and Colorado butterfly plant, are unlikely to occur at BAFB. Therefore, the FamCamp will have no affect on these species, and these species will not be discussed further in this section. The two species that are known to occur and have resident populations on BAFB are the black-tailed prairie dog and burrowing owl; Figure 3-1 shows where both species habitats exist at BAFB.

Table 3-6 Potential Federal, State of CO, and CDOW Species Evaluation at BFAB

Common Name	Scientific Name	Status		Potential for Occurrence on Sites
		Federal	State	
Mammals				
Black-tailed prairie dog	*Cynomys ludovicianus*	--	SC	Present
Black-footed ferret	*Mustela nigripes*	E	E	Not present; BAFB is within Block Clearance Zone in Colorado
Swift fox	*Vulpes velox*	--	SC	Unlikely; occurs in native prairie of eastern most Colorado; never observed at BAFB
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	T	T	Not present; BAFB is within Denver Metropolitan Area Block Clearance Zone
Birds				
Burrowig owl	*Athene cunicularia*	--	T	Present
Ferruginous hawk	*Buteo regalis*	--	SC	Potentially present; no known nesting locations on BAFB
Bald eagle	*Haliaeetus leucocephalus*	T	T	Occasional visitor; no known nests or roosts on BAFB
Loggerhead shrike	*Lanius ludovicianus*	--	SC	Present as spring/fall migrant but not known to nest on BAFB. No nesting habitat in proximity of Proposed Action.
Plains sharp-tailed grouse	*Tympanuchus phasianellus jamesii*	--	E	Potentially present; no known nesting locations on BAFB
Amphibians				
Northern leopard frog	*Rana pipiens*	--	SC	Potentially present in/near
Plant Species				
Colorado butterfly plant	*Gaura neomexicana ssp. Coloradensis*	T	--	Unlikely; survey conducted in 2004 found no occurrences.
Utes ladie's-tresses	*Spiranthes diluvialis*	T	--	Unlikely; survey conducted in 2001 found no occurrences.

T- Threatened
E - Endangered
SC – Species Concern
CDOW - Colorado Division of Wildlife
BAFB – Buckley Air Force Base

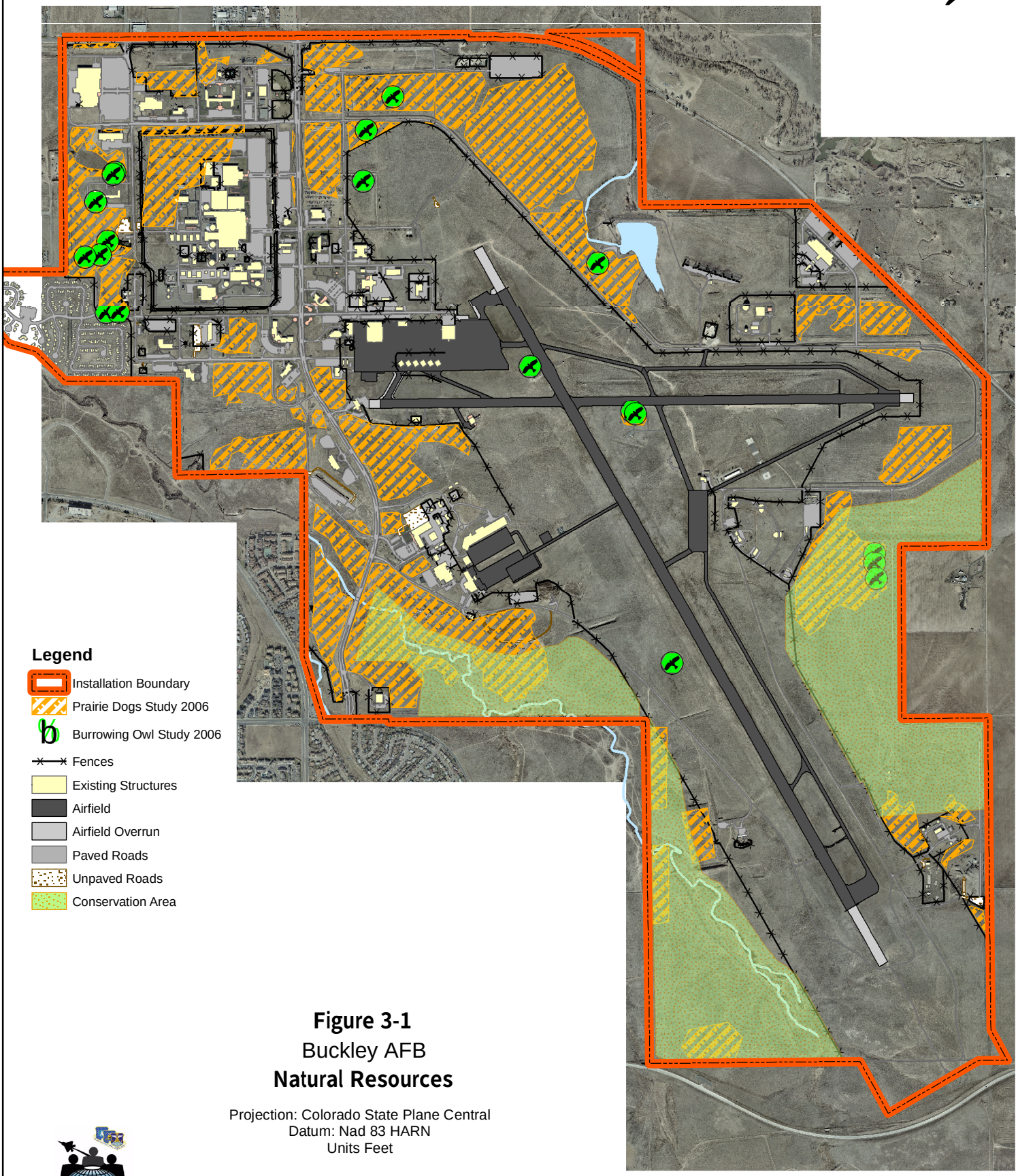


Figure 3-1
Buckley AFB
Natural Resources

Projection: Colorado State Plane Central
Datum: Nad 83 HARN
Units Feet

3.4.3.1.1 Black-tailed Prairie Dog

The black-tailed prairie dog was a Candidate for Listing under the ESA in 2000 but was removed from this status in 2004. However, black-tailed prairie dogs are still considered a Species of Special Concern by the CDOW due to their role as a keystone species and their importance to the short-grass prairie ecosystem.

Black-tailed prairie dogs occur in many areas throughout BAFB. They inhabit burrows, which form networks of tunnels, typically 3 to 6 ft (0.7 to 1.8 m) deep. Their burrows also host many other species, including burrowing owls, cottontails, other rodents, reptiles, insects, and spiders.

The *Supplement to Environmental Assessment of Proposed Prairie Dog Practices at Buckley Air Force Base* (BAFB 2001) specifies that if a prairie dog colony exists and would be impacted by a proposed construction activity, then prairie dogs would be relocated prior to construction. Since the relocation areas are limited and would not facilitate all of the prairie dogs, some of the prairie dogs may be sent to a raptor or a black-footed ferret facility. The best time for relocation is July through October. Prairie dogs should not be disturbed during the period when young are in the burrow and still nursing (March through June). Approved removal/relocation methods include soap and water capture, trapping, and the vacuum method.

3.4.3.1.2 Burrowing Owl

Burrowing owls are listed as threatened in Colorado and also receive federal protection under the Migratory Bird Treaty Act. Burrowing owls nest in abandoned prairie dog burrows and are generally present on base from late March to late October. Unlike the prairie dogs, they cannot be moved and must not be disturbed during nesting (April through July).

3.4.3.2 Impacts

This section analyzes potential impacts to black-tailed prairie dogs (Colorado species of concern) and burrowing owls (Colorado threatened) from construction and operation of the Proposed Action and No Action Alternative. A depredation permit will be needed/used should project plans change or additional information on the distribution of listed or proposed species becomes available.

Although black-tailed prairie dogs were recently delisted as a federal candidate species, the *Supplement to Environmental Assessment of Proposed Prairie Dog Management Practices at Buckley Air Force Base* (BAFB 2001) still provides black-tailed prairie dog management directive until it is revised or replaced by another EA or management directive. Prairie dogs are still considered a species of special concern in Colorado, and their burrows do support numerous other wildlife species, including nesting burrowing owls.

Burrowing owls have nested in various locations throughout BAFB where suitable prairie dog habitat occurs.

3.4.3.2.1 No Action Alternative

No adverse impacts to threatened, endangered, or other sensitive species are expected under the No Action Alternative, as no proposed FamCamp facility would be constructed or operated.

3.4.3.2.2 Proposed Action

Currently, there are prairie dogs present at the Proposed Action site (Figure 3-1). The prairie dogs will be relocated or removed before construction begins for construction activities will destroy the prairie dogs' burrows. Construction activities affecting prairie dogs will be performed in accordance with the governing document, managed with procedures outlined in the *Supplement to Environmental Assessment of Proposed and Prairie Dog Practices at Buckley Air Force Base* (BAFB 2001). Relocation to designated relocation sites would be preferred because the prairie dogs would have a new permanent home, which would be a negligible, adverse affect to the prairie dogs. However, there are not enough relocation sites on base so the prairie dogs may have to be removed to a raptor or black-footed ferret facility. This would be a minor, adverse affect to the prairie dogs; and will only be used if necessary.

Although not present at the current time, it is also possible that burrowing owls could locate on the site prior to construction. A survey will be required for all Migratory Bird Treaty Act (MTBA) species between March 1 and October 31 of 2007. From this survey, the presence of burrowing owls on the Proposed Action location will be determined. In accordance with the *Supplement to Environmental Assessment of Proposed Prairie Dog Management Practices at Buckley Air Force Base* (BAFB 2001), should construction occur during the burrowing owl spring nesting season, pre-construction surveys would need to be conducted to determine the presence or absence of nesting burrowing owls at the proposed site. If nesting burrowing owls are identified and are present; prairie dog relocation/removal would not be conducted, and a 150-ft (45.72-m) buffer would be established around active nest sites during the breeding season to protect owls from disturbances associated with construction, especially increased noise. This form of action would have no affect on the burrowing owls.

If construction does not occur during the burrowing owl nesting season or no burrowing owls are identified during the pre-construction survey, prairie dog relocation/removal would be conducted and the burrows would not be available for any anticipated burrowing owls. From past experiences, the burrowing owls may be looking for burrows in which to nest at the Proposed Action area, but sufficient numbers of other burrows in close proximity can be found in which to nest. Therefore, not having the burrows in the Proposed Action location would have negligible adverse affects on the burrowing owls.

If construction is planned to begin prior to the spring nesting season the prairie dogs should be removed the previous fall and all burrows closed while the owls have migrated south. Prairie dog fence should be installed to prevent prairie dogs from returning to site before construction.

In summary, the Proposed Action in the short-term will have a minor, adverse impact on the prairie dog population as they will be relocated or removed. However, some of the prairie dog habitat in this area will be lost permanently. The Proposed Action will have a minor, adverse impact on the burrowing owls, if the burrows are removed prior to the spring nesting season. With proper BMP's the Proposed Action of construction and operation of FamCamp will not adversely affect the prairie dogs and burrowing owls in the long-term even though this 12 acre area of habitat for these species will be lost. No Federally listed species will be impacted as part of this project.

3.5 LAND USE

3.5.1 AFFECTED ENVIRONMENT

Land use at BAFB is guided by the installation's General Plan (BAFB 2005a). The General Plan describes existing and future land uses, and includes a description of the existing and required facilities necessary to operate the military installation. Land uses within BAFB are primarily divided into fourteen categories: 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. The base land uses are divided by these land use categories to prevent incompatible sitting of facilities and/or operations. The FamCamp is considered an Outdoor Recreational use.

3.5.2 IMPACTS

3.5.2.1 No Action Alternative

Under the No Action Alternative, existing land uses (open space) would continue. The intended use for this section of land is outdoor recreation. By having open space instead of outdoor recreation, there is a minor adverse impact because the land is not being used as intended but the current use is not incompatible with the surrounding areas.

3.5.2.2 Proposed Action

The Proposed Action would have a minor, beneficial impact on land use. Under the Proposed Action, the FamCamp would be located adjacent to the southwest side of William's Lake. The BAFB General Plan (2005) defines the relationship between Williams Lake and the Proposed Action location as normally close facilities (meaning these two facilities should be located adjacent to each other whenever possible). Therefore, the Proposed Action is consistent with the goals and objectives of the General Plan and its current and planned use.

3.6 SOCIOECONOMICS

3.6.1 AFFECTED ENVIRONMENT

Table 3-7 lists industry of employment for residents in the region if influence (ROI), Arapahoe County, and Colorado. As would be expected, a larger portion of residents in the ROI are in the Armed Services than in Arapahoe County or Colorado. A larger percentage of residents in the ROI are employed in construction, retail trade, transportation and warehousing, and utilities than county or statewide averages. Lower percentages are employed in arts; entertainment; recreation; accommodation and food services; educational, health, and social services; or other services in comparison to county and statewide averages (U.S. Census Bureau 2000). As of April 2006, the Denver Metropolitan Statistical Area (MSA) had an unemployment rate of 4.4 percent compared to 4.3 percent for Colorado (BLS 2006).

The presence of Buckley AFB has had a positive impact on the Denver MSA. In 2006 Buckley AFB generated an annual payroll of $620,803,841, of which $240,669,609 was for military payroll; $168,749,176 for civilian payroll; and $211,385,056 for nonappropriated funds, contract civilians, and private businesses (BAFB 2006c). The total annual installation impact from

expenditures, services, and procurement of materials from Buckley AFB was $1,090,906,789 in 2006 (BAFB 2006c).

Table 3-7: Employment by Industry

Employment by Industry	Region of Influence [a]	Arapahoe County	State of Colorado
Percent of Employed Persons in Armed Forces	4.1	0.5	0.8
Industry of Civilian Labor Force			
Agriculture, forestry, fishing and hunting, and mining	1.6	0.7	2.0
Construction	11.5	7.2	9.1
Manufacturing	7.4	6.7	9.1
Wholesale trade	4.2	4.2	3.5
Retail trade	11.0	12.1	11.8
Transportation and warehousing, and utilities	11.5	5.6	4.9
Information	6.9	7.4	4.9
Finance, insurance, real estate, and rental and leasing	9.1	11.4	7.7
Professional, scientific, management, administrative, and waste management services	11.0	13.2	11.7
Educational, health, and social services	11.6	15.7	17.0
Arts, entertainment, recreation, accommodation, and food services	4.7	6.9	9.0
Other services (except public administration)	4.3	4.7	4.8
Public administration	5.5	4.1	4.6

Source: U.S. Census Bureau 2000
Note: a The ROI consists of the U.S. Census Tract encompassing Buckley AFB tracts 71.02 and 70.33

3.6.2 IMPACTS

3.6.2.1 No Action Alternative

Under the No Action Alternative, Buckley AFB would not implement the Proposed Action. There would be no impact on socioeconomics.

3.6.2.2 Proposed Action

No additional employees would be required to operate a new FamCamp. The personnel needed to support the facility would come from the existing facilities. The proposed construction of the new FamCamp Facility has an estimated cost of $2.4 mil which would not significantly impact employment levels or economic indicators of the ROI. Therefore, the construction and the operation of the Proposed Action would not affect the number of personnel at BAFB or the local population and would have negligible short term, direct and indirect beneficial effects on economics and employment at the ROI. The FamCamp would have minor beneficial long-term impact socioeconomics because it would make enough money to support itself with a possibility of making a profit. There are adequate construction resources within the local workforce and outside contractors to complete the construction of the Proposed Action.

3.7 TRANSPORTATION

3.7.1 AFFECTED ENVIRONMENT

Buckley AFB is located in the Denver metropolitan area, along the Front Range of the Rocky Mountains. Major vehicle routes traverse through Denver including I-70, I-25, and I-76. Branching off I-70 to the west of the base is I-225, which runs north-south through the city of Aurora. Intersecting with I-225 in the city of Aurora and running east-west are two major arteries, 6th Avenue and Mississippi Avenue. These two roads serve as the main routes into Buckley AFB through the 6th Avenue Gate and Mississippi Gate, respectively. The Proposed Action site is accessed from Steamboat Avenue.

3.7.2 IMPACTS

3.7.2.1 No Action Alternative

There would be no impact to transportation under the No Action Alternative because transportation patterns would not change.

3.7.2.2 Proposed Action

The Proposed Action location already has gravel access roads off of Steamboat Avenue that can be paved and used to access the Proposed Action location. In terms of major vehicle routes, the Proposed location is ideal for accommodating cross country travelers, retires and local military families. The impact from the construction and operation of the FamCamp facility on local traffic volume and flow is expected to vary between moderate, short term increase during construction phases and the peak summer seasons to negligible during off season.

Table 3-8: Proposed Action Traffic Impacts

	Daily Trips		AM peak Hour Trips		PM peak Hour Trips	
	ITE* Rate	Net New Trips	ITE* Rate	Net New Trips	ITE* Rate	Net New Trips
Multi-unit or family	5.86	0	0.44	0	0.54	0
Single Family	9.57	0	0.75	0	1.01	0
Administrative	40.67	0	1.24	0	1.08	0
Community Comercial	40.7	0	1.03	0	2.59	0
Community Service	10	1,347	1.32	178	1.75	236
Military Ops (Gen Light Industrial	6.97	0	0.92	0	0.98	0
Total	1,347		178		236	

CIP EA (2006)

*Institute of Transportation Engineers (ITE)

3.8 PUBLIC UTILITIES

3.8.1 AFFECTED ENVIRONMENT

Public providers supply water, gas, and electrical power to Buckley AFB. Since 2001 Buckley AFB has been proactive in increasing the capacity of its infrastructure systems (BAFB 2003).

3.8.1.1 Water Supply

Potable water is provided by the City of Aurora directly to Buckley AFB facilities without supplementary treatment. There are two connections to the City pipelines: along 6th Avenue, a water main connects to a line that provides the primary source of potable water to the installation; along Mississippi Avenue, a water main provides emergency backup should the water main on 6th Avenue fail. There are no contractual limits on the amount of water the installation may use, although BAFB has instituted water conservation measures in response to recent droughts (BAFB 2005b).

3.8.1.2 Sanitary Sewer

Wastewater flow from Buckley AFB is conveyed through an on-base sanitary sewer system to the City of Aurora's wastewater collection system, and then to one of two wastewater treatment facilities. Both of the collection facilities have excess capacity. The majority of the installation's sanitary sewer system is composed of vitrified clay pipe, which was installed in the 1940s and 1950s. The more recently installed sections of sewer main are polyvinyl chloride pipe, which is now used for all sewer upgrades on the installation (BAFB, 2005b).

3.8.1.3 Electricity and Natural Gas

Buckley AFB purchases electrical power and natural gas from Xcel Energy (BAFB, 2005b).

3.8.2 IMPACTS

3.8.2.1 No Action Alternative

Under the No Action Alternative, utility location and usage would not change.

3.8.2.2 Proposed Action

The Proposed Action will require planning and upgrades to the sanitary sewer system, and natural gas network if necessary. All other public utilities are available in sufficient quantity as to have no adverse impact resulting from the construction and operation of the Proposed Action. Each utility is discussed further below.

3.8.2.2.1 Water Supply

A 6" underground waterline exists along the north side of the site and services the existing restrooms (Building #1100). Based on a 60% occupancy rate, water usage for the operation of the FamCamp is expected to be approximately 500 gallons/day. BAFB provides sufficient water supply source for the planned FamCamp facilities, and will, therefore have no impact.

3.8.2.2.2 Sanitary Sewer

Presently, there is a lift station north of Building #1100. However, the Proposed Action will provide sewer connections at each RV site. Based on a 60% occupancy rate, wastewater

production from the operation of the FamCamp is expected to be approximately 2,340 gallons/day. Having a sewer connection at each RV site will maintain BAFB's ability to handle the produced wastewater, thus the Proposed Action will have no impact.

3.8.2.2.3 Electricity

Within the Proposed Action location there is a principal, underground trunk-line running north-south at the east edge of Steamboat Avenue. Based on a 60% occupancy rate, electrical usage for the operation of the FamCamp is expected to be approximately 1314 kW/day. This 3-phase line connects to several manhole connections that appear to be more than adequate for the FamCamp proposed expansion. The Proposed Action will have no impact on the electricity supply.

3.8.2.2.4 Natural Gas

There is currently no existing natural gas line near Steamboat Avenue. The water heaters at the current facility run on propane. For the new facility, which will house restrooms, showers and laundry, it would be more efficient to run natural gas. Based on a 60% occupancy rate, natural gas usage for the operation of the FamCamp is expected to be approximately 95.4 kW/day. However, a gas line would have to be run from the Naval Reserve Center which is the closest gas line to the Proposed Action location. The length of the required trench for the gas line was figured to be approximately 2500 ft and was incorporated into the calculated ground disturbance for the Proposed Action. There will be no impact on the natural gas supply from the Proposed Action. If it is decided that natural gas will not be used, the new facility will use propane.

3.9 HAZARDOUS MATERIALS

3.9.1 AFFECTED ENVIRONMENT

Hazardous material (HAZMAT) is defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act, as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, or incapacitating reversible illness; or pose a substantial threat to human health or the environment. Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that pose a substantial present or potential hazard to human health or the environment. In general, both HAZMAT and wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health or welfare or the environment when released or otherwise improperly managed.

Evaluation of HAZMAT and wastes focuses on underground storage tanks (USTs) and aboveground storage tanks (ASTs) and the storage, transport, and use of pesticides and herbicides; fuels; and petroleum, oil, and lubricants (POL). Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a Proposed Action. In addition to being a threat to humans, the improper release of HAZMAT and wastes can threaten the health and well being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of

HAZMAT or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

Special hazards are those substances that might pose a risk to human health, but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos-containing material (ACM), lead-based paint (LBP), radon, polychlorinated biphenyls, and unexploded ordnance. The presence of special hazards or controls over them might affect, or be affected by, a Proposed Action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a Proposed Action.

The Civil Engineering Squadron/Environmental Flight (CES/CEV) is responsible for the hazardous material and waste plans for the installation. In conformance with the policies established by Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, the CES/CEV has developed plans to manage HAZMAT, hazardous wastes, and special hazards on the installation.

3.9.1.1 Hazardous Materials

AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of HAZMAT throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of HAZMAT; and to those who manage, monitor, or track any of those activities. Buckley AFB has an established HAZMAT pharmacy (HAZMART) in accordance with AFI 32-7086. The HAZMART is the central location for the receipt, storage, and issue of the majority of HAZMAT at most USAF installations. However, Buckley AFB implements a "virtual" HAZMART, which does not have a central location but rather electronically tracks and controls use. The HAZMART focuses on reducing USEPA's 17 industrial toxics which have a high probability of causing human health and environmental hazards (AFCEE 2005).

Prior to beginning any construction or process that will use HAZMAT, the user will receive approval from the BAFB HAZMAT Manager before bringing any hazardous material on base. The use of HAZMAT during construction should be reported to CES/CEV. A list of all HAZMAT should include a copy of each material's Material Safety Data Sheet (MSDS), an estimate of how much material will be used, amount stored, and location on the facility prior to the start of work.

3.9.1.2 Hazardous Wastes.

The CES/CEV maintains a *Hazardous Waste Management Plan* (HWMP) as directed by AFI 32-7042. This plan prescribes the roles and responsibilities of all members of Buckley AFB with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable Federal, state, and local standards for solid and hazardous waste management.

For special projects generators must coordinate with CES/CEV to obtain containers, to ensure they meet U.S. Department of Transportation (USDOT), compatibility, and air emission standards.

Also, contractors must perform the following:
• Obtain CES/CEV approval for all hazardous materials/wastes used/generated on the installation
• Ensure hazardous wastes are managed per 40 CFR and transported in accordance with 49 CFR to a certified disposal facility
• Ensure proper labeling, handling, segregation, collection, and storage of hazardous waste
• Ensure all personnel are properly trained for handling the hazardous waste they generate
• Ensure the CES/CEV is given notice when scheduling waste disposal requiring a manifest(s), before it is transported off installation.

3.9.1.3 Radon.

Radon is a naturally occurring radioactive gas found in the soil and rocks; it comes from the natural breakdown or decay of uranium. Radon has the tendency to accumulate in enclosed spaces that are usually below ground and poorly ventilated (e.g., basements). Radon is an odorless, colorless gas that has been determined to increase the risk of developing lung cancer.

USEPA's recommended mitigation "action level" is 4.0 picocuries per liter (pCi/L). The average (mean) radon levels in U.S. homes is about 1.3 pCi/L or 3 times the outdoor level of 0.4 pCi/L. Because there is no known safe level of radon exposure, USEPA recommends that Americans consider fixing their home for radon levels between 2 pCi/L and 4 pCi/L. USAF policy requires implementation of the Air Force Radon Management Plan (RAMP) to determine levels of radon exposure to military personnel and their dependents. USAF policy is to mitigate elevated levels of radon to acceptable levels and conduct follow-up sampling to validate the effectiveness of the mitigation.

Buckley AFB is within an area of the highest potential for radon gas decay (AFCEE 2005). Between 1993 and 1996, 50 samples were taken in five facilites (600, 700, 725, 730, and 841) and screened for radon. A comprehensive radon survey was performed on all facilities at Buckley with highest readings of 6.9 and 4.4 pCi/L in buildings 600 and 841, respectively (BAFB 2006a).

3.9.2 IMPACTS

3.9.2.1 No Action Alternative

No impacts would be expected under the No Action Alternative. Hazardous waste generation would remain unchanged and management and disposal of HAZMAT and wastes would continue according to procedures already in place.

3.9.2.2 Proposed Action

3.9.2.2.1 Hazardous materials.

The only HAZMAT used during the construction of the FamCamp would be paints and fuels to operate vehicles and equipment. The only HAZMAT used during the operation of the FamCamp

would be those used to run and maintain the FamCamp Service Facility. Fuel use is minimal for both construction and operation. The impact from these materials would be short-term and negligible. There would be no long-term adverse impacts. In terms of pesticides, no rodentcides will be used in the construction or operation of the FamCamp. Herbicides are not expected to be used at the FamCamp for construction or operation. If herbicides are needed, best management practices will be followed. Herbicides will be approved by the 460 SW HAZMAT Manager prior to being brought on base. All HAZMAT, regardless of quantities, must be reviewed and approved through the Hazmart before bringing onto the installation. HAZMAT Manager and POC is Sandra Ingrassia at 7-9032 or email: sandra.ingrassia@buckley.af.mil. Native vegetation will be used for landscaping to ensure very low maintenance will be needed for the vegetation's survival.

3.9.2.2.2 Hazardous Waste.

No impact on the installation's hazardous waste management program would be expected from the construction or operational activities. It is anticipated that the quantity of hazardous wastes generated from proposed construction activities would be negligible. Contractors would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations, as well as the installations's Hazardous Waste Management Plan. BMPs would be followed to ensure that contamination from a spill does not occur. If, however, a spill occurs, the Spill Prevention Control and Countermeasures Plan outlines the appropriate measures for spill situations.

3.9.2.2.3 Radon.

Radon gas is naturally occurring in soils throughout Colorado. Prolonged exposure to radon increases risks of developing lung cancer. No impacts from radon are expected assuming proper measures are taken. Radon gas is typically found in underground or enclosed spaces. Since the FamCamp is outdoors radon cannot be trapped. It might be necessary to have ventilation in the service buildings and RVs to ensure that the USEPA action level of 4 pCi/L is met.

3.10 SOLID WASTE AND POLLUTION PREVENTION

3.10.1 AFFECTED ENVIRONMENT

Solid waste generated by BAFB is collected and disposed by a private contractor. Waste is collected from dumpsters located throughout the base and routinely transported to the Denver-Arapahoe Disposal Site in Arapahoe County. As of September 2006 BAFB had generated approximately 2,851 tons of solid waste for FY06. Approximately 1,624 tons of this waste was attributed to construction and demolition activities.

BAFB participates in the USAF Pollution Prevention (P2) Program. The program encompasses a range of environmental management functions, including recycling, hazardous/toxic chemicals reduction, green (environmentally friendly) procurement, and waste minimization. All organizations on BAFB are required to participate in the P2 program in accordance with the impacts of their specific operations. The solid waste and recycled materials weights are provided to 460 CES/CEV monthly in order to identify the amount of solid waste diversion at Buckley AFB.

3.10.2 IMPACTS

3.10.2.1 No Action Alternative

Under the No Action Alternative, solid waste generation at BAFB would not increase, and the P2 program would be unaffected. Therefore, there would be no impact to solid waste or pollution prevention issues.

3.10.2.2 Proposed Action

Construction and operation of the Proposed Action and delivery of construction supplies would increase solid waste generation (e.g., concrete, building materials) during the project performance period. Certain forms of construction-related solid waste might be eligible for diversion to recycling. To the extent feasible during construction, waste materials will be recycled, recycled-content materials will be procured, use of HAZMAT will be minimized, and any unused hazardous and non-hazardous wastes will be removed at the conclusion of project performance. Construction of the FamCamp would have a minor, adverse impact on solid waste generation; however, this impact would be short-term. Long-term impacts would result from the operation of the FamCamp. Solid waste during operation of the Proposed Action would be generated by campers using their RVs and the new support/service building. This waste would be minimal and have a negligible impact.

3.11 ASBESTOS

3.11.1 AFFECTED ENVIRONMENT

Building debris and infrastructure, including asbestos-lined pipes, were left in place during some past demolition projects (1950s-1960s) at BAFB. Therefore, the potential exists for discovering asbestos-lined pipes or asbestos-contaminated soil during construction. To identify areas of potential asbestos contamination, BAFB reviewed an installation map of old World War II-era structures to determine where building materials may have been left in place. On the basis of this map, soil samples taken from eleven proposed construction sites were analyzed for asbestos in January 2003. The results were negative for asbestos. However, BAFB routinely tests soils in construction areas where WWII-era building debris may be present. The area of the Proposed Action location is not located near any of these eleven construction sites or in the vicinity of WWII-era buildings.

3.11.2 IMPACTS

3.11.2.1 No Action Alternative

No asbestos containing material (ACM) would be disturbed as a result of the No Action Alternative because no ground disturbance would occur; therefore, there would be no impact.

3.11.2.2 Proposed Action

As presented in the BAFB General Plan there is no evidence of former WWII structures being located at the Proposed Action location. Therefore, the potential for finding buried ACMs is negligible. There is no adverse impact due to asbestos resulting from the construction and operation of the Proposed Action. If unexpected ACM is identified, BMPs will be followed per base guidance. BMPs would include, terminating activities immediately, contacting 460 CES/CEV, and taking measures to secure the area and prevent the release of ACM. The base

would take the appropriate measures and ensure all local, state, and federal regulations would be followed for proper remediation and disposal.

3.12 WETLAND

3.12.1 AFFECTED ENVIRONMENT

A total of 23 wetlands were identified during a 2001 survey (BAFB 2004b). Bottomland meadow or cottonwood willows are the dominant vegetation. Wetland areas are distributed within the East Tollgate Creek channel located along the southwestern boundaries of the installation, and in the vicinity of William's Lake. Most of these wetlands have not been delineated to determine their exact size but approximately 13 of the 23 are known to be jurisdictional and qualify for protection under Section 404 of the Clean Water Act. Additional field studies are required by the U.S. Army Corps of Engineers (USACE) if any disturbance is planned within these areas.

Of the 23 wetlands identified at BAFB, only the three along William's Lake are susceptible to impacts from construction of the FamCamp. These wetlands are North Williams Lake, South Williams Lake, and Williams Lake. Both North and South Williams Lake are classified as Palustrine emergent and Williams Lake is classified as Palustrine open water.

3.12.2 IMPACTS

3.12.2.1 No Action Alternative

No impacts on wetlands would be anticipated as a result of implementing the No Action Alternative.

3.12.2.2 Proposed Action

In the short-term, construction of the FamCamp is not expected to impact the wetlands associated with Williams Lake due to the 25 foot buffer that will protect the lake and the riparian areas. Additionally, BMPs (e.g., stormwater control, sediment control) must be implemented to protect these areas. In the long-term, no adverse impacts on wetlands are anticipated as long as the FamCamp is re-vegetated and spill prevention, control, and countermeasure BMPs are in place and executed.

3.13 ENVIRONMENTAL RESTORATION PROGRAM (ERP)

3.13.1 AFFECTED ENVIRONMENT

The USAF established the 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 the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements, as amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). BAFB is not a National Priority List (NPL) site; however, it is Air Force policy to address ERP sites in a manner consistent with CERCLA guidance and policy and subject to substantive requirements of other environmental protection laws. BAFB makes every effort to consider and incorporate regulatory input in all base investigation and restoration activities.

Progress under the ERP is coordinated closely with various regulatory agencies including the CDPHE and USEPA, Region 8 (USAF 2002).

The installation currently has an ERP project manager to manage contaminated soil and groundwater sites (USAF, 2003b). An ERP site is a discrete area for which suspected contamination has been quantitatively confirmed to exceed a regulatory action level and the contamination occurred prior to 1984 (USAF, 2002). Ten designated ERP sites are located on BAFB (USAF 2003b), none of which are located within or near the Proposed Action location.

3.13.2 IMPACTS

3.13.2.1 No Action Alternative

The No Action Alternative would have no impact on the ERP for sites already identified on BAFB because monitoring and remediation would continue as planned.

3.13.2.2 Proposed Action

The Proposed Action would not be located near any of the ERP sites so it is unlikely that there is potential for contamination from an ERP site. Monitoring and remediation of the current ERP sites would continue as planned. Because the policies regarding hazardous waste and hazardous materials would continue to be adhered to, the Proposed Action would not result in additional ERP sites on BAFB. Therefore, the Proposed Action would have no impact on the ERP for sites already identified on BAFB.

3.14 SUMMARY

Table 3-9 provides a summary comparison of the anticipated environmental effects of the Proposed Action and the No Action Alternative.

Table 3-9: Comparison of Environmental Effects

Environmental Resources	**Proposed Action**		**No Action Alternative**
	Short-Term	**Long-Term**	
Air Quality	Minor Adverse	Negligible Adverse – operation of FamCamp Minor Beneficial – Users aren't driving as far to camp	No Impact
Geology & Soils			
• *Geology*	No Impact	No Impact	No Impact
• *Soils*	Minor Adverse	No Impact	No Impact
Water Resources			
• *Stormwater*	Negligible Adverse	Minor Adverse	No Impact
• *Groundwater*	No Impact	Minor Adverse	No Impact
• *Surface Water (William's Lake)*	Negligible Adverse	Negligible Adverse	No Impact
Biological Resources			
• *Vegetation*	Minor Adverse	Minor Beneficial	No Impact
• *Wildlife*	Minor Adverse	Negligible Adverse	No Impact
• *Threatened & Endangered* o *Prairie Dog*	Minor Adverse	Negligible Adverse	No Impact
o *Burrowing Owl*	Negligible Adverse	No Impact	No Impact
Land Use	Minor Beneficial	Minor Beneficial	Minor Adverse
Socioeconomics	Negligible Beneficial	Minor Beneficial	No Impact
Transportation	Moderate Adverse	Minor Adverse	No Impact
Utilities	No Impact	No Impact	No Impact
Hazardous Materials	Negligible Adverse	No Impact	No Impact
Solid Waste and Pollution Prevention	Minor Adverse	Negligible Adverse	No Impact
Asbestos	No Impact	No Impact	No Impact
Wetlands	No Impact	No Impact	No Impact
ERP	No Impact	No Impact	No Impact

Table 3-10 provides a summary of the BMPs or the plans providing BMPs identified in this EA for each resource topic.

Table 3-10 Summary of the BMPs for the FamCamp

Resources	No Action Alternative	BMP for Proposed Action
Air Quality	None	• Use of water or other stabilizers on unpaved roads and in disturbed areas to suppress dust. • Speed control exercised for all equipment and vehicular driving. • Use of gravel entry way to prevent tracking of mud and dirt onto paved roads. • Housekeeping activities, such as street sweeping vehicle/ equipment washing, etc. • Timely Revegetation of disturbed area. • Establish wind breaks whenever possible.
Geology & Soils	None	• Installation of buffer areas in and around highly erodible soils and steep slopes • Apply water during dry periods • Cover soils during heavy rain events • Use silt barriers to restrict erosion of exposed soils • Establish limits of clearing and grading to protect and preserve riparian corridors, native grasslands, and implementing landscape plans that would stabilize soils. • Use of geotechnical surveys to identify expansive soil problems prior to construction • Use structural foundation designs to withstand the "worst possible" changing soils conditions as indicated by testing • Building and grounds maintenance may help to minimize the risk of structural damage
Water Resources (including storm water)	None	• Limit stockpiling of materials onsite • Manage stockpiled materials to minimize the time between delivery and use • Cover stockpiled materials with tarps • Install snow or silt fences around material stockpiles, stormwater drainage routes, culverts, and drains. • Install hay or fabric filters, netting, and mulching around material stockpiles, stormwater drainage routes, culverts, and drains. • Develop a stormwater control site plan and have a stormwater professional present on-site during construction to oversee implementation of the site plan. • Maintain a 50 foot buffer zone around William's Lake and wetlands with fence to delineate boundary. Activities restricted within the buffer area include: excess use of fertilizers, pesticides, or other chemicals; vehicular traffic or excessive pedestrian traffic; and removal or disturbance of vegetation and litter (material animals use for bedding) that might result in increased soil erosion at the site or loss of buffers.

Resources	No Action Alternative	BMP for Proposed Action
Biological Resources (including vegetation, wildlife, and threatened and endangered species)	None	• Revegetate all disturbed areas at the proposed site prior to closing the project. • Trees near the lake would not be affected by the Proposed Action because the trees are with in the 50 ft riparian buffer that protects the lake and surrounding vegetation and wildlife. The following activities would be restricted within the buffer area: excess use of fertilizers, pesticides, or other chemicals; vehicular traffic or excessive pedestrian traffic; and removal or disturbance of vegetation and litter (material animals use for bedding) that might result in increased soil erosion at the site or loss of buffers. • Relocate/remove prairie dogs and close burrows prior to construction • Install prairie dog fence to prevent prairie dogs from returning to site before construction. • Conduct a migratory bird survey prior to construction to verify if they are occurring in the construction area. • Start construction (especially site preparation) either prior to nesting season or after most birds have fledged (March through the end of July).
Land Use	None	None
Socioeconomics	None	None
Transportation	None	None
Utilities	None	• Utility pedestal will be compliant with the BAFB Facilities Excellence Plan
Hazardous Materials	None	• Hazardous materials will be approved by the 460 SW HAZMAT Manager prior to being brought on base. • Spill Prevention Control and Countermeasures Plan will be followed in the case of a spill situation. • Obtain CES/CEV approval for all hazardous materials/wastes used/generated on the installation • Ensure hazardous wastes are managed per 40 CFR and transported in accordance with 49 CFR to a certified disposal facility • Ensure proper labeling, handling, segregation, collection, and storage of hazardous waste • Ensure all personnel are properly trained for handling the hazardous waste they generate Ensure the CES/CEV is given notice when scheduling waste disposal requiring a manifest(s), before it is transported off installation.

Resources	No Action Alternative	BMP for Proposed Action
Solid Waste and Pollution	None	• Waste materials will be recycled. • Recycled-content materials will be procured. • Use of HAZMAT will be minimized. • Any unused hazardous and non-hazardous wastes will be removed at the conclusion of project performance.
Asbestos	None	If ACM is found: • Terminate activities immediately • Contact 460 CES/CEV • Secure the area and prevent the release of ACM • The base would take the appropriate measures and ensure all local, state, and federal regulations would be followed for proper remediation and disposal.
Wetland	None	• Maintain a 50 foot buffer zone around William's Lake and wetlands with fence to delineate boundary. • Stormwater control and sediment control must be implemented to protect these areas. • Spill prevention, control, and countermeasures are in place and executed
ERP	None	None
Cultural Resources	None	If Cultural Resources are found • Terminate activities immediately • Contact 460 CB/ • Secure area

Table 3-11 summarizes required mitigation measures identified for each resource in this EA.

Table 3-11 Summary of the Mitigations for the FamCamp

Resources	No Action Alternative	Proposed Action
Air Quality	None	None
Geology & Soils	None	None
Water Resources (including storm water)	None	None
Biological Resources (including vegetation, wildlife, and threatened and endangered species)	None	None
Land Use	None	None
Socioeconomics	None	None
Transportation	None	None
Utilities	None	None
Hazardous Materials	None	None
Solid Waste and Pollution	None	None
Asbestos	None	None
Wetlands	None	None
ERP	None	None

4.0 CUMULATIVE IMPACTS

Cumulative impacts on environmental resources result from incremental effects of Proposed Actions, when combined with other past, present, and reasonably foreseeable future projects in the area. 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. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

4.1 IMPACT ANALYSIS

Other projects evaluated in the cumulative impacts analysis include planned or reasonably foreseeable projects both on-installation and off-installation. Planned or reasonably foreseeable projects were identified through a review of public documents and coordination with multiple agencies, and include both on- and off-installation activities.

4.1.1 OFF-INSTALLATION 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 installation, each of which has its own identity and planned development pattern.

Colfax Corridor East of I-225. This area occurs 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 for development in this area include

- Working to enhance open-space corridors through additional dedications or other means; confining nonresidential uses to the corridor and to the planned industrial areas with the exception of neighborhood commercial or neighborhood institutional uses
- Locating multifamily and attached housing in appropriate areas, including those adjacent to major streets, similar existing housing types, and other properties in the corridor
- 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.

There are no known developments that would occur in this strategic area at this time.

I-225 Corridor and City Center Strategic Area. This area is to the 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 compose a regional retail location. Midway in the corridor lies the Aurora City Center, historically planned as the city's "downtown."

Strategies 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 (complete), 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. In addition, the Regional Transportation District purchased property for development of a new bus transfer facility at the City Center. A light rail station could be constructed in the future. Finally, a much smaller single family housing development comprising 36.5 acres is under construction approximately 0.5 mile west of Buckley AFB (Aurora 2003, Aurora 2006).

E470 Corridor Strategic Area. This area is adjacent to the eastern and extreme southern boundary of the installation 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 E470 corridor from Denver International Airport (DIA) in the north to Douglas County in the south. E470 is a major interstate running north-south near the eastern boundary of Buckley AFB. The 1999 completion of the E470 segment serving the Buckley AFB area, and the subsequent Jewell Avenue Extension, provides the installation with major highways on both its east and west sides with access to both the north and south gates. The E470 toll road also provides a major regional beltway connecting the northern and southern limits of the metropolitan area and linking DIA with the I-25 corridor, opening significant 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 (Aurora 2003):

• 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 for development in the E-470 Corridor Strategic 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.

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 (Aurora 2003).

4.1.2 ON-INSTALLATION ACTIVITIES.

Buckley AFB has in place a General Plan (BAFB 2005a), one chapter of which is dedicated to land use planning to guide current and future development. 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 General Plan establishes long range goals and provides starting points to discuss land acquisition or disposal actions and siting of new facilities. This plan helps to define the best layout of land uses and transportation corridors to support functional effectiveness, efficiency, and compatibility. Both on-and off-installation factors are considered. The General Plan would guide infill development on currently vacant land, functional consolidation, and redesignation of land uses to accommodate doubling of the installation's current population (BAFB 2005a).

There are a number of recent, current, and planned Capital Improvement Projects to support Buckley AFB's continuing transition from an Air National Guard Base to an AFB and to facilitate future growth (Table 4-1). As the prioritization, initiation, and completion of construction projects are dynamic, Table 4-1 represents the current schedule at the time of this EA; priorities and schedules could change.

The *Capital Improvement Projects (CIP) EA* (2006) was written to evaluate the cumulative effects based on calculations incorporating data from projects occurring since 2002, current projects, and projects planned out to 2012. This EA and other EAs are tiered from the original CIP EA to make a dynamic document. The spreadsheet that accompanied the CIP EA has been updated to document the FamCamp, and the summary tables for the spreadsheet calculations are provided in Appendix D.

Table 4-2 presents the cumulative effects and analysis on resources from the Proposed Action when combined with other past, present, and future activities.

Table 4-1: Recent, Current, and Planned Capital Improvement Projects

Fiscal Year	Projects	Project Footprint[a] (ft^2)
02	BX/Commissary (completed)	200,152
02	Dormitory II (144 person)	54,250
02	Fitness Center (completed)	54,500
02	Military Family housing = 71 acres total land (e.g., for houses, landscaping, roads)	712,298
02	Telluride Gate (completed)	120
03	Child Development Center 4-room Addition (Bldg 725)	743
03	460 ABW Headquarters	51,066
03	ADAL SBIRS Mission Control (under construction)	18,000
03	Control Tower (COANG)	5,800
03	Demolish Building 25 (demolished)	NA
03	Engine Shop Addition Bldg 960 (COANG)	2,000
03	Entomology (O&M) Replace Entomology Shop	2,255
03	Fire Station Addition	21,531
03	Golf Driving Range	12
03	H-70 Fuel Storage Facility (O&M)	1,045
03	New northern runway extension (COANG)	37,500
03	Repair Runway, Taxiways, Ramps (COANG)	1,950,000
03	Two Pavilions at Williams Lake	60
03	Two Warehouses - Civil Engineering	10,000
04	ADD/Alter Access Roads (Airfield) (COANG)	443,520
04	Approach Lighting (COANG)	672
04	Civil Engineering Complex (COANG)	37,350
04	Demolish Entomology Facility (306)	1,160
04	Demolish Hydrazine Bldg (310)	820
04	Demolish Radio Relay Bldg (1620)	1,600
04	Fire Training Facility - Originally 08	44,512
04	Impound Lot (asphalt paved)	8,000
04	New East Gate	128
04	New Visitor Center	525
04	Repair Parking Lot East of Bldg 471	316,798
04	Repair Parking Lots ANG wide (COANG)	144,000
04	Upgrade Base Infrastructure, Ph III	NA
05	Vail Street Improvements	91,200
05	Army Aviation Support Facility (COARNG)	120,000
05	Athletic Fields (two ball fields, 1 track, and 1 football field)	Fence 3,600 meters
05	CDCII Preschool Playground	8,800
05	CDCII Pretoddler Playground	5,225
05	CDCII Toddler Playground	6,450
05	Chapel Center	26,081
05	Child Development Center CDCII	24,197

Fiscal Year	Projects	Project Footprint[a] (ft^2)
05	Demolish Building 902	4,428
05	Demolish Electrical Shop (1631)	3,025
05	Demolish Marine Area Foundations	NA
05	Demolish Reserve Forces Bldg (1632)	600
05	Medical Clinic ADAL	4,563
05	Medical Warehouse	NA
05	Repair Taxiways A&K	NA
06	Athletic Fields Concession (NAF)	1,399
06	BITC Mailroom	NA
06	Car Wash (AAFES) – 06 MILCON project	2,000
06	Communications Center (ADAL 730) -	60,988
06	Consolidated Services Facility Admin	15,145
06	Demolish Warehouse (1011/1012)	22,949
06	HAZMAT Storage (Env. Level 1) HAZMART Pharmacy	5,457
06	Haz Waste Facility (Env. Level 1)	1,615
06	Leadership Development Center	17,631
06	Outdoor Rec Equip Rental (NAF)	9,288
06	Permanent Alert Shelters (COANG) FY08	41,400
06	Youth Center (NAF) 06 MILCON project	28,586
07	Military Working Dog Kennel	5,205
07	POL Ops Building	2,745
07	Pump house	1,001
07	Storage Pol Bulk Ops Building	452
07	Consolidated Fuels Includes Demo of existing structures, construction of POL Ops Bldg, Pump House, and Storage POL Bulk Ops Bldg	4,198
07	Construct FE Maintenance Facility	NA
07	Demolish Building 940	14,758
07	Demolish Building 950	20,303
07	Demolish Crash House (1606)	8,327
07	Demolish Engine Test Pad	2,045
07	Demolish Fuel Storage (200)	1,576
07	Demolish Fuel Tanker Stands	NA
07	Demolish Fuels Admin (302)	1,185
07	Demolish Fuels Lab (300)	1,503
07	Permanent Alert Crew Qtrs (COANG) - States Alert Facility	6,500
07	Replace Squadron Operations Facility	NA
07	Temporary Lodging Facility (NAF)	NA
07	Visitors Quarters	38,000
07	Widen 6th Avenue (DAR Project)	3 Lanes
08	Demolish Bulding 341 (Part of consolidated fuels)	216
08	FAMCAMP	522,720
08	NSA/CSS	NA
08	Pharmacy	6,000

Fiscal Year	Projects	Project Footprint[a] (ft^2)
08	Taxiway and Arm/Disarm (COANG) Includes Demoliton of existing parking apron and protion of Sunlight Road and taxiways F, W, X, and Y.	877,500
08	Vehicle Maintenance Facility	19,504
09	Demolish Building 31	204
09	Entry Control Facility (was 08)	NA
09	Logistics Readiness Complex	12,917
09	RV Storage Lot	NA
10	Arts, Crafts, Auto Skills Development Ctr	11,119
10	Bowling Center and Community Activities	19,999
10	Education Center/Library	22,012
10	Fire Station Additon (crash house)	10,600
10	Fitness Center Addition	12,652
10	SF Operations Facility	26,910
11	6th Ave Entry Gate	NA
11	Consolidated Base Warehouse	100,029
11	Construct Admin Facility (ADF)	NA
11	SBIRS Remote Ground Station	NA
11	Small Arms Range Outdoor Arm Range – now indoor with outdoor grenade launcher	6,512
11	Upgrade Based Infrastructure Ph IV	NA
11	Weapons Loading Facility (COANG)	7,400
11	Youth Athletic Fields	NA
12+	Weapons Release Complex (COANG)	6,000
12+	ADAL Weapons Release Complex (COANG)	NA
12+	Airmen Dining Facility	NA
12+	East Parking Apron	NA
12+	Mississippi Entry Gate	NA
12+	Spaced Based Infrared (SBIR) Operational Support Facility	NA
12+	Telluride Entry Gate	NA
TBD	Expand Bldg 700 (COANG)	NA
TBD	Golf Course	NA
TBD	Reroute Steamboat Ave	NA

Source: BAFB 2006b.

Notes: a Project footprint does not include disturbance due to construction, such as laydown areas, and generally does not include
parking lots.

NA = Not Available

Table 4-2. Cumulative Impacts on Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Impacts
Air Quality	Region was in non-attainment for CO, O3 (1-hour standard), and PM10. Currently in attainment/maintenanc e for CO and deferred (early action compact) for 03 (8 hour standard).	Emissions from aircraft, vehicles, buildings.	Potential dust generation during soil removal, site grading and construction and increased vehicle travel.	Growth at Buckley AFB and Aurora anticipated to result in increased traffic and emissions.	Cumulative impacts to air quality at BAFB are moderate, adverse in both the short- and long-term. Proposed Action would make negligible contributions to cumulative impacts on air quality.
Geology & Soils	Past urban and Buckley AFB development has modified soils.	Current development activities continue to alter soils.	Grading excavating, and recontouring would result in further soil disturbance.	Continued development on Buckley AFB would locally impact soils.	Soils have minor, adverse cumulative impacts to at BAFB in both the short- and long-term. Permanent but localized effects of the Proposed Action would contribute only negligibly to cumulative impacts.
Water	Surface water quality moderately impacted by development.	Surface water quality moderately impacted by development.	Potential increase in sedimentation from construction would be ameliorated through use of BMPs. Small increase in area of impervious surfaces.	Continued development of Buckley AFB would result in sedimentation from construction activities, and further increase in impervious surface area.	Water resources are cumulative impacted at BAFB minor adverse in the short-term and moderate adverse in the long-term. Increased impervious surface area would have negligible impacts on stormwater discharges and water quality. Proposed Action would not induce further degradation of water quality.
Biological Resources	Degraded historic habitat of sensitive and common species.	Buckley AFB and Aurora operations and development impact plants and animals.	Minor disturbance of vegetation by construction. Permanent loss of black-tailed prairie dog and burrowing owl habitat.	Continued development of Buckley AFB would impact biological resources.	Cumulative impacts to biological resources at BAFB are moderate, adverse in both the short- and long-term. Permanent negligible loss of native prairie habitat, including habitat for black-tailed prairie dog and potentially burrowing owls. Negligible to minor loss of prairie dog population.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Impacts
Land Use	Development of Aurora and Buckley AFB has extensively modified land use.	Military installation, commercial, residential, light industrial land uses.	The Proposed Action supports the needs of the active-duty Air Force and is consistent with land uses proposed for nearby off-base areas.	Expansion of Aurora east of Buckley AFB.	Land use cumulative impacts at BAFB are minor, adverse in the short-term and moderate beneficial in the long-term. Proposed Action would have a negligible impact on further development on or around Buckley AFB.
Socioeconomics	Installation contributes to local economic community.	Continued support of local economic community.	Negligible contribution to local construction industry.	Continued development of Buckley AFB would impact local economy and services.	In both the short- and long-term, cumulative impacts to socioeconomics at BAFB are moderately beneficial. Negligible to minor stimulation of local economy through use of local laborers and materials during construction and operation.
Transportation	Transportation moderately impacted by development.	Current development activities continue to alter traffic.	Construction will significantly increase traffic in the Proposed Action location. Increases in operational traffic will be minor.	Continued development of Buckley AFB and Aurora would result in a continued increase in traffic.	Cumulative impacts to transportation at BAFB are moderate, adverse in both the short- and long-term. Negligible to minor contributions to cumulative impacts on traffic are anticipated from the Proposed Action.
Utilities	Buckley AFB has recognized the need to upgrade the potable water, electric, natural gas, and sanitary networks.	All required utilities are currently available to the Proposed Action site.	Operation of the new FamCamp facility would not significantly increase demand on utilities.	Continued development of Buckley AFB and Aurora would result in a continued increase in utility demands.	Utility at BAFB have minor, adverse cumulative impacts in the short-term and moderate, adverse cumulative impacts in the long-term. Contributions to cumulative impacts on utilities would be negligible from the Proposed Action.
Hazardous Materials	Past activities on installation including demolition and burial of hazardous substances has resulted in contamination of	Some of the current activities on the installation continue to use and generate HAZMAT and	The use or generation of HAZMAT from the Proposed Action is not anticipated.	Continued development of Buckley AFB would incur use or generation of HAZMAT and	Cumulative impacts to HAZMATs at BAFB are minor, adverse in the short-term and there is no impact in the long-term. The Proposed Action would have no significant contribution to cumulative impacts on HAZMATs and wastes management.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Impacts
	sites.	wastes.		wastes.	
Solid Waste & Pollution Prevention	Solid waste and pollution prevention issues were impacted by demolition and development.	Current activities continue to generate solid waste.	Minor impacts would result from the construction of the FamCamp. Impacts from operation of the FamCamp would be negligible.	Continued development of Buckley AFB would impact solid waste and pollution prevention issues.	In both the short- and long-term, there are minor, adverse cumulative impacts to at BAFB for solid waste. Pollution prevention has moderate, adverse cumulative impacts in the short-term and minor beneficial cumulative impacts in the long-term. Contributions to cumulative impacts on solid waste and pollution prevention would be negligible from the Proposed Action.
Asbestos	Past activities on installation including demolition and burial of ACM has resulted in contamination of sites.	Current construction materials do not contain ACMs, but some demolition projects do contain ACMs.	If any ACMs were found during the construction of the FamCamp, the ACMs would be disposed of following all applicable regulations.	Federal, state, and local laws and regulations inhibit ACMs to be contained in future construction materials.	Asbestos at BAFB has moderate, adverse cumulative impacts in the short-term and no cumulative impact in the long-term. No significant contributions to cumulative impacts on asbestos are expected from the Proposed Action.
Wetlands	Buckley AFB has identified 23 wetlands on the installation.	Current development avoids identified wetlands by implementing BMPs.	Buffers around William's Lake protect wetlands from any adverse impacts that could come from the Proposed Action.	Future development will protect identified wetlands with the use of BMPs.	Cumulative impacts to wetlands at BAFB are negligible in the short-term and moderate, adverse in the long-term. No significant contributions to cumulative impacts on wetlands are expected from the Proposed Action.
ERP	Past activities on installation including demolition and burial of hazardous substances has resulted in contamination of sites.	The installation currently has an ERP project manager to manage contaminated sites.	There are no ERPs in the vicinity of the Proposed Action.	Monitoring and managing of the ERP sites will continue until sites are closed.	Cumulative impacts to ERP sites at BAFB are negligible, adverse in both the short- and long-term. No significant contributions to cumulative impacts on ERP are expected from the Proposed Action.

4.2 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

4.2.1 GEOLOGICAL RESOURCES.

Under the Proposed Action, construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of BMPs during construction would limit potential effects resulting from construction activities. Standard erosion-control means would also reduce potential impacts related to these characteristics. Although unavoidable, impacts on soils at the installation are not considered significant.

4.2.2 ENERGY.

The use of non renewable resources is an unavoidable occurrence although not considered significant. The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small would be committed to the Proposed Action or the No Action Alternative.

4.2.3 FISHING AND BIRD/WILDLIFE AIRCRAFT STRIKE HAZARDS (BASH) PROGRAM

Impacts to the Fishing and Bird/Wildlife Aircraft Strike Hazards (BASH) program would potentially be moderate, adverse, and long-term due to Williams Lake. Williams Lake, however, is already existent on BAFB and fishing is an activity that is already in place. The implementation of the FamCamp would not impact the BASH program.

Fish at Williams Lake may attract pelicans and other water fowl. However, pelicans prefer small minnows which the larger fish the lake is stocked with also eat, so the minnow population is kept relatively small. Murphy creek is just outside the base fence near the lake which is a major attractant for birds and other wildlife. The area also has numerous athletic fields, golf courses, ponds, and agricultural fields all of which provide food and habitat for birds. The lake is not the major contributor to birds in the area. The 460 SW is working to institute pyrotechnics and other repellant actions for birds at the lake.

4.3 RELATIONSHIP BETWEEN THE SHORT-TERM USE OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Short-term uses of the biophysical components of the human environment include direct construction related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than 5 years. Long-term uses of the human environment include those impacts that occur over a period of more than 5 years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

The Proposed Action would not result in a significant intensification of land use at Buckley AFB and in the surrounding area. The Proposed Action does not represent a significant loss of open space. Therefore, it is anticipated that the Proposed Action would not result in any cumulative

land use or aesthetic impacts. Long-term productivity of this site would be increased by the development of the Proposed Action.

4.4 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Both irreversible and irretrievable resources would be used in the implementation of the Proposed Action. Irreversible resources cannot be replaced after being consumed because their use is permanent. For the Proposed Action irreversible resources consumed would be energy, labor, and funds. Irretrievable resources, however, may be recovered after they are used, even though it may take decades. Irretrievable resources for the Proposed Action would be land, materials, and biological resources. Land can be recovered by demolishing buildings and materials can be recycled. Biological resources can be recovered by recreating a suitable habitat and allowing species to migrate back.

4.4.1 MATERIAL RESOURCES.

Material resources utilized for the Proposed Action include building materials (for construction of the facility), concrete and asphalt (for access road and RV parking), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

4.4.2 ENERGY RESOURCES.

Energy resources utilized for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), natural gas, and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline would be used for the operation of private and government-owned vehicles. Natural gas and electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

4.4.3 BIOLOGICAL RESOURCES.

The Proposed Action would result in minimal loss of vegetation and wildlife habitat on the proposed construction site. The location of the proposed FamCamp has been previously disturbed. Black-tailed prairie dog habitat would be permanently lost.

4.4.4 HUMAN RESOURCES.

The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities, and is considered beneficial.

4.4.5 FLOODPLAINS.

The Proposed Action would have no impact on the 100-year floodplain.

5.0 LIST OF PREPARERS

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Mr. Mac Callison
City of Aurora
Planning, Traffic Division
1515 E. Alameda
Aurora, CO 80012

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

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado History Museum
1300 Broadway
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Mr. John Fernandez
City of Aurora
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Mr. Ed LaRock
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Federal Facilities
HMWM 2800
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Denver, CO 80246-1530

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

Ms. Eliza Moore
Wildlife Manager
Colorado Division of Wildlife
6060 South Broadway
Denver, CO 80216

Mr. Jim Paulmeno
Manager, Environmental Planning
Colorado Dept. of Transportation
4201 East Arkansas Avenue
Denver, CO 80222

Mr. David Rathke
US Environmental Protection Agency
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1595 Wynkoop Street
Denver, CO 80202-1129

Mr. Bruce Rosenlund
Colorado Field Supervisor
US Fish & Wildlife Service
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Lakewood, CO 80228-1807

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

Mr. Larry Svoboda
NEPA Unit Chief
US Environmental Protection Agency
Region 8
999 18th Street, Suite 500
Denver, CO 80202

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

Ms. Bette Yager
Central Library Reference Supervisor
Aurora Public Library
Administrative Offices
14949 E. Alameda Pkwy.
Aurora, CO 80012

7.0 REFERENCES

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8.0 ACRONYMS AND ABBREVIATIONS

460 SW	460th Space Wing
ABW	Air Base Wing
ac	acre
ACM	Asbestos Containing Material
ADA	Americans with Disabilities Act of 1990
AFB	Air Force Base
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone
APEN	Air Pollutant Emissions Notice
AQCR	Air Quality Control Region
BAFB	Buckley Air Force Base
BMP	best management practice
CAQCC	Colorado Air Quality Control Commission
CDPHE	Colorado Department of Public Health and Environment
CDOW	Colorado Division of Wildlife
CEQ	Council on Environmental Quality
CES	Civil Engineering Squadron
CEV	Environmental Flight
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CGP	Construction General Permit
CIP	Capital Improvement Projects
CMU	Concrete Masonry Unit
CO	carbon monoxide
CO	Colorado
COANG	Colorado Air National Guard
dB	decibel
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ETL	Engineering Technical Letter
FamCamp	Family Camp
FONSI	Finding of No Significant Impact
ft	foot, feet
ft^2	square feet
FY	Fiscal Year
GSF	Gross Square Foot
GSM	Gross Square Meters
ha	hectare

HAZMAT	Hazardous Materials
ITE	Institute of Transportation Engineers
kg	kilogram
km	kilometer
m	meter
m^2	square meter
MS4	Municipal Separate Storm Sewer Systems
MWR	Morale, Welfare, and Recreation
NEPA	National Environmental Policy Act
NOx	nitrogen oxides
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
O&M	Operations and Maintenance
P2	Pollution Prevention
PCB	polychlorinated biphenyl
PM_{10}	particulate matter with diameter of 10 microns or less
PVA	Project Validation Assessment
RV	Recreational Vehicle
SC	Species of Concern
SOx	Sulfur oxides
SW	Space Wing
SWPPP	Storm Water Pollution Prevention Plan
TES	Threatened and Endangered Species
tpy	tons per year
USC	U.S. Code
USAF	U.S. Air Force
USEPA	US Environmental Protection Agency
VOC	volatile organic compound
WWII	World War II

APPENDIX A

COMMUNICATION LETTERS

USDA United States Department of Agriculture

Natural Resources Conservation Service

Metro Field Office
655 Parfet Street, Rm. E300
Lakewood, CO 80215-5517

Phone: 303 236-2903 x270 E-mail: Eugene.Backhaus@co.nrcs.usda.gov Fax: 303 236-2703

January 12, 2001

Elise Sherva
821 SPPG/CEV
660 S. Aspen Stop 26
Buckley Air Force Base Colorado
Aurora, CO 80011-9559

Re: Soils Use as Potential Cropland

Dear Ms. :

After touring the facility I recognized a few areas with the potential for being converted into cropland (map enclosed) less areas of exclusion. These areas were related to soils identified as being of Statewide Importance if dry cropland (list enclosed). But the problems I saw for farming operations were related to the size of the parcels and relative accessibility for farming operations.

In the front-range of Colorado, 80+ acres is usually considered the smallest sized parcel that is economically feasible for dryland cropping depending on accessibility. On the Base there is only one parcel that is close to that size with the others being 20 acres or less. The total potential cropland is contained in three or four parcels for a maximum of about 150 acres. If cash rent is expected the price range would be from $15-25/acre depending on the accessibility.

Another concern is that the largest parcel is 50/50 for soils of Statewide Importance and soils that pose an erosion hazard. Proper farming operations would require installation of conservation practices to protect the wetlands from potential erosion from the identified field. Practices would possibly include terraces, field borders, filter strips, riparian buffer, conservation tillage, and contour farming. Of these practices, several can be installed for little cost while land is being plowed up for farming operations. The other practices will cost anywhere from $1.50/foot to $7.50/foot for installation.

We also would like to point out potential weed problems that may occur. In farming operations, presence of kochia and Russian thistle are common and most prominent after harvest through start of spring tillage operations. These weeds, better known as tumbleweed, could pose hazards for flight operations as could the chaff and straw from harvest operations. A potential solution that would reduce the weed problem is chemical application, but with the urban neighbors this could cause a public relations problem.

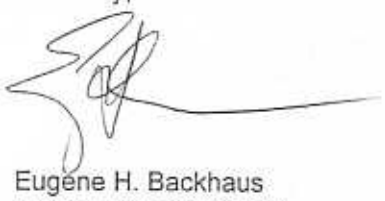
The Natural Resources Conservation Service, works hand-in-hand with the American People to conserve Natural Resources on private land

USDA IS AN EQUAL OPPORTUNITY PROVIDER AND EMPLOYER

One last point we would like to make is the potential existence of homeostasis. This state is equilibrium in the ecosystem that is only altered by disturbance or introduction into the area. The farming operation will break this and is one reason for the influx of weeds.

Based on this information, it would not be feasible to introduce agricultural production onto the base without the added cost of installing conservation practices and/or irrigation system. Also, trying to find a farmer willing to farm according to these set specifications, i.e. weed control, terraces, buffers, and contour farming, will be difficult.

Sincerely,



Eugene H. Backhaus
District Conservationist

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 construction of a Family Camp Facility (FamCamp). The FamCamp includes 38 new RV campsites and assorted support facilities. Each RV campsite is to be provided with a picnic table, grill, water, sewer and 20/30/50-amp electrical services. All drinking water supply lines will contain proper back-flow prevention with proper isolation from sewer lines. Roadways are to be constructed, and all electrical is to be underground with aboveground lighting provided at key locations. Also proposed is a new support/service building of 1044 gross square feet (GSF)/ 97 gross square meters (GSM), for support to the FamCamp. This will provide restrooms, showers, and laundry facilities. In addition, the FamCamp facility is to include a central sanitary sewer and sewer connections at each site.

The Air Force is requesting initiation of Section 7 consultation per the Endangered Species Act for the Environmental Assessment of the Family Camp Facility construction 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.

BRUCE JAMES
Chief, Environmental Planning & Conservation

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

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Mr. Mac Callison
City of Aurora
Planning, Traffic Division
1515 E. Alameda
Aurora, CO 80012

Dear Mr. Callison

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to establish a Family Camp (FamCamp) on Buckley Air Force Base, which would consist of 38 new RV campsites and assorted support facilities. The FamCamp was included in Buckley AFB's *General Plan*; and therefore, is required in order to meet military facility and infrastructure needs while maintaining the look and feel of a singular, well planned military installation integrated into its natural environment.

The FamCamp would provide a desirable place for families to enjoy outdoor lifestyle in a rural setting that is still very close to a large metropolitan area. The FamCamp is designed with amenities for families such as RV camping that accommodates recreational vehicles and camping trailers, as well as day use recreational activities, such as picnics, playgrounds, fishing, etc. The FamCamp would be open year-round with peak season from June to August and two shoulder seasons, one from March to May and the other from September to November.

The Draft EA and Draft FONSI are attached for your information, review, and comment. The public comment period for this EA is 30 days, starting on 23 June 2007. Please provide any written comments to:

Ms. Elizabeth Meyer, EIT
460 CES/CEV
660 S. Aspen St., Mail Stop 86
Buckley AFB, CO 80011-9551

If you have any questions, please feel free to contact Elizabeth Meyer at (720) 847-7159.

Sincerely

BRUCE R. JAMES
Chief, Environmental Planning & Conservation

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

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

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

Dear Mr. LaRock

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Sincerely

BRUCE R. JAMES
Chief, Environmental Planning & Conservation

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

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

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

Dear Ms. Chick

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Sincerely

BRUCE R. JAMES
Chief, Environmental Planning &
Conservation

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

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

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

Dear Mr. Beley

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to establish a Family Camp (FamCamp) on Buckley Air Force Base, which would consist of 38 new RV campsites and assorted support facilities. The FamCamp was included in Buckley AFB's *General Plan*; and therefore, is required in order to meet military facility and infrastructure needs while maintaining the look and feel of a singular, well planned military installation integrated into its natural environment.

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Chief, Environmental Planning &
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DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Ms. Eliza Moore
Wildlife Manager
Colorado Division of Wildlife
6060 South Broadway
Denver, CO 80216

Dear Ms. Moore

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Sincerely

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Chief, Environmental Planning &
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DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

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

Dear Mr. Bibles

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to establish a Family Camp (FamCamp) on Buckley Air Force Base, which would consist of 38 new RV campsites and assorted support facilities. The FamCamp was included in Buckley AFB's *General Plan*; and therefore, is required in order to meet military facility and infrastructure needs while maintaining the look and feel of a singular, well planned military installation integrated into its natural environment.

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Chief, Environmental Planning & Conservation

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

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Mr. Jim Paulmeno
Manager, Environmental Planning
Colorado Dept. of Transportation
4201 East Arkansas Avenue
Denver, CO 80222

Dear Mr. Paulmeno

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660 S. Aspen St., Mail Stop 86
Buckley AFB, CO 80011-9551

If you have any questions, please feel free to contact Elizabeth Meyer at (720) 847-7159.

Sincerely

BRUCE R. JAMES
Chief, Environmental Planning &
Conservation

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

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Ms. Jane Hann
Environmental Project Manager
Colorado Dept. of Transportation
4201 East Arkansas Avenue
Denver, CO 80222

Dear Ms. Hann

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Sincerely

BRUCE R. JAMES
Chief, Environmental Planning &
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DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

JUN 22 2007

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

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

Dear Ms. Sciosca

The Air Force is pleased to provide the Aurora Public Library a review copy of the Draft Environmental Assessment for the Family Camp (FamCamp) Facility, Buckley Air Force Base, Colorado. We appreciate the Aurora Public Library's contribution in making this document available to the public for review and comment.

Public reviewers are asked to submit written comments (referencing Section, page and line numbers to which comments apply) to the following address:

Ms. Elizabeth Meyer
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB, CO 80011-9551

The public comment period for this EA is 30 days. Public reviewers are asked to submit any written comments by 5pm on 23 July 2007.

If you have any questions please feel free to contact me at 720-847-7245.

Sincerely

BRUCE R. JAMES
Chief, Environmental Planning &
Conservation

If you have any questions, please feel free to contact Elizabeth Meyer at (720) 847-7159.

Sincerely

BRUCE R. JAMES
Chief, Environmental Planning & Conservation

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

JUN 2 2 2007

Mr. Bruce R. James
460 CES/CEV
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Buckley AFB CO 80011-9551

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

Dear Ms. Contiguglia

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460 CES/CEV
660 S. Aspen St., Mail Stop 86
Buckley AFB, CO 80011-9551

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

Mr. Bruce R. James
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

JUN 2 2 2007

Ms. Bette Yager
Central Library Reference Supervisor
Aurora Public Library
Administrative Offices
14949 E. Alameda Pkwy.
Aurora, CO 80012

Dear Ms. Yager

The Air Force is pleased to provide the Aurora Public Library a review copy of the Draft Environmental Assessment for the Family Camp (FamCamp) Facility, Buckley Air Force Base, Colorado. We appreciate the Aurora Public Library's contribution in making this document available to the public for review and comment.

Public reviewers are asked to submit written comments (referencing Section, page and line numbers to which comments apply) to the following address:

Ms. Elizabeth Meyer
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB, CO 80011-9551

The public comment period for this EA is 30 days. Public reviewers are asked to submit any written comments by 5pm on 23 July 2007.

If you have any questions please feel free to contact me at 720-847-7245.

Sincerely

BRUCE R. JAMES
Chief, Environmental Planning & Conservation

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

JUN 19 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 Family Camp (FamCamp) for Buckley Air Force Base (AFB). The proposed action analyzed in the Family Camp Environmental Assessment (EA) is to construct and operate a family camp at Buckley AFB. Under the No Action Alternative, the FamCamp would not be built. 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 is officially requesting consultation on this project. The 460th Space Wing (SW) 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 or historic structure are in, or near, the Area of Potential Effect (APE). Attached is a map referencing the buildings and proposed sites.

Proposed Action Site:

- Buildings 1100 and 1104 were constructed or in place after 1990. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

Alternative #1:

- Buildings 1100 and 1104 were constructed or in place after 1990. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

Alternative #2:

- Buildings 1103 (5AH2318) (1977), 1108 (5AH2320) (1968), 1109 (5AH2321) (1968), and 1110 (5AH2322) (1986) were constructed after 1970. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

- Buildings 1100, 1101 and 1104 were constructed or in place after 1990. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

Alternative #3:

- Buildings 1100 and 1104 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 Family Camp Environmental Assessment will be sent for your review in the near future.

Sincerely

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

Attachment
Location figure

COLORADO HISTORICAL SOCIETY

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

June 26, 2007

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

Re: Family Camp (FamCamp) Environmental Assessment, Buckley Air Force Base (CHS #50465)

Dear Mr. James

Thank you for your correspondence dated June19, 2007 and received by our office on June 22, 2007 regarding consultation of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106).

After review of the provided information, we concur that with the Area of Potential Effects (APE) for the proposed undertaking. After review of the finding of effect, we concur with the finding of *no adverse effect* under Section 105 for the proposed undertaking.

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 CRF 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,

Mark Wolfe

For Georgianna Contiguglia
State Historic Preservation Officer

cc: Floyd Hatch/Buckley AFB

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JUL 9 2007

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

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

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

Colorado Department
of Public Health
and Environment

June 27, 2007

Ms. Elizabeth Meyer
460 CES/CEVP
660 South Aspen Street (Stop 86)
Building 1005, Room 178
Buckley AFB, CO 80011-9551

Dear Ms. Meyer:

Re: Draft Environmental Assessment (EA) for Family Camp Facility at Buckley Air Force Base, Colorado dated June 2007

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the Division) has reviewed the above referenced document received June 18, 2007. The Division has no environmental concerns with the Proposed Action. Additionally, the Division notes the following on Alternatives eliminated from further study in the EA:

Alternative 1 is also possibly located within the boundary of IA112, Chemical Warfare School Area identified in the February 2007 Comprehensive Site Evaluation Phase I Report.

Alternative 2 is located near ERP Site 5. However, to date, no remedial work has been performed and monitoring has been discontinued pending determination of need for any further action at the site.

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

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JUL 9 2007

City of Aurora

Planning Department
15151 E. Alameda Parkway
Aurora, Colorado 80012
Phone: 303-739-7250
Fax: 303-739-7268
www.auroragov.org

July 11, 2007

Ms. Elizabeth Meyer
460 CES/CEVP
660 South Aspen Street, Stop 86
Building 1005, Room 178
Buckley AFB, CO 80111-9551

Subject: Draft Environmental Assessment for Family Camp Facility, Buckley Air Force Base, Colorado

Dear Ms. Meyer:

Thank you for the opportunity to comment on this document. The city has prepared the following comment relative to the Proposed Action for locating a Family Camp Facility at Buckley Air Force Base (AFB):

> This document states that runway noise would not exceed 80 dB, a level that results in eliminating noise effects from the detailed analysis. The threshold levels identified in the Environmental Assessment are appropriate for adults in an occupational setting. Because the FamCamp is designed to accommodate families with children, these threshold levels may not be protective of sensitive visitors to this facility.
>
> Although the results of studies on the effects of low-flying military aircraft are mixed, the World Health Organization has identified a potential correlation between aircraft noise and health/well-being effects in children. Because young children may sleep during daytime hours, there is additional opportunity for sleep disturbance.
>
> Please provide adequate notification to prospective FamCamp visitors about potential noise issues at the Proposed Action location.

Please contact Karen Hancock of my staff at (303) 739-7107 with any questions about this comment.

Sincerely,

John M. Fernandez
Manager of Comprehensive Planning

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JUL 16 2007

F:\shared\COMPPLAN\coordination activities\2006\Military Working Dog Kennel EA Letter.doc

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-0051

JUL 18 2007

RECEIVED
JUL 23 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 June 2007 Draft Environment Assessment (EA) / Finding of No Significant Impact (received on June 25, 2007) for the proposed construction of a new **Family Camp Facility (FamCamp) at Buckley Air Force Base (AFB), Arapahoe County, Colorado**. These comments have been prepared under the provisions of the Endangered Species Act (ESA) of 1973, as amended (916 U.S.C. 1531 et. seq.), the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4327), and the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 et. seq.).

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.

Regarding page 3-19, Section 3.4.3.2.2, paragraph 2 of the draft EA: please remember that, in addition to burrowing owls, the MBTA prohibits taking, killing, possession, transportation, and importation of *all* migratory birds (e.g., ground nesting birds, other raptors, etc.), their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. Unlike the ESA, neither the MBTA nor its implementing regulations (50 CFR Part 21) provide for permitting "incidental take" of migratory birds.

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
460TH SPACE WING (AFSPC)

JUL 2 7 2007

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

John Fernandez
Planning Department
15151 E. Alameda Parkway
Aurora, CO 80012

Mr. Fernandez

Thank you for your letter, dated 11 June 2007, on the Family Camp Environmental Assessment (EA) and Finding of No Significant Impact (FONSI).

Your comments on noise exposure from low-flying aircraft have been noted and will be passed on to the appropriate personnel.

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

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

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

JUL 2 7 2007

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 27 June 2007, on the Family Camp Environmental Assessment (EA) and Finding of No Significant Impact (FONSI).

Your comments on Alternative 1 being within the boundary of the munitions response site IA112 have been incorporated into the EA. It has been noted in the EA that Alternative 2 is located near ERP Site 5 and the status of Site 5 has been corrected.

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

APPENDIX B

DOCUMENT 813

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol RCS: A3158

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*)	2. FROM (*Proponent organization and functional address symbol*)	2a. TELEPHONE NO.
460 CES/CEV	460 MSG/SV 400 N Beavercreek ST Stop 90	7-9714

3. TITLE OF PROPOSED ACTION
Famcamp

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date*)
Currently Buckley AFB does not have a Famcamp. Services has been awarded money for Design and Environmental for a Famcamp. This will enhance the quality of life for Buckley and for retirees, military and civilians traveling to Buckley. FY 08 Project

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (*DOPAA*) (*Provide sufficient details for evaluation of the total action.*)
See Attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Nicole White NF-IV		20060111

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)	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)	☐	☐	☑	☐
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
EA Required.

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Bruce R. James, GS-12		19Jan06

AF IMT 813, 19990901, V1 — THIS FORM CONSOLIDATES AF FORMS 813 AND 814. PREVIOUS EDITIONS OF BOTH FORMS ARE OBSOLETE. — PAGE 1 OF PAGE(S)

Famcamp

A Project Validation Assessment (PVA) was done for the Famcamp June 6-10 2005 by Strategic Planning Group. The project will consist of 38 RV lots, with a picnic table, cooking grill, water and electrical hookups 20/30/50- amp at each site. A new support/service building will also be constructed. The sitting for this project is around Williams Lake.

There is no other location or existing facility on base could accommodate the Famcamp. The Williams Lake site is best suited for this project because of the large amount of space that is available and having the lake, playground and pavillions are added benifits.

Design for this project will start in FY 06 and construction will start in FY 08.

Site drawings are attached

APPENDIX C

AIR EMISSION CALCULATIONS FOR THE FAMCAMP

1. CONSTRUCTION EMISSIONS

1.1. Grading Equipment Emissions

Description: Emissions from combustion engine.

Assumptions: Equipment consists of 1Grader, 1 Wheeled and 1 Tracked Loader/Grader per 10 acres. All equipment is diesel powered; Equipment used 6 hours per day.

Parameters: Number of gross acres to be graded during Phase I construction=12.28 acres
Number of days during Phase I construction (grading phase)=30 days

Emission Factors:

Pollutant	Emission Factor (lbs/acre/day)
CO	0.55
VOC	0.22
NO_X	2.07
SO_X	0.21
PM_{10}	0.17

Source: (BAFB, 2006)

CO: $0.55\left(lb_{CO}/acre/day\right)\times 12.28 acres\times 30 days\times\frac{1 ton}{2000 lb}=1.01\times 10^{-1}\left(ton_{CO}/yr\right)$

VOC: $0.22\left(lb_{VOC}/acre/day\right)\times 12.28 acres\times 30 days\times\frac{1 ton}{2000 lb}=4.05\times 10^{-2}\left(ton_{VOC}/yr\right)$

NO_X: $2.07\left(lb_{NO_X}/acre/day\right)\times 12.28 acres\times 30 days\times\frac{1 ton}{2000 lb}=3.81\times 10^{-1}\left(ton_{NO_X}/yr\right)$

SO_X: $0.21\left(lb_{SO_X}/acre/day\right)\times 12.28 acres\times 30 days\times\frac{1 ton}{2000 lb}=3.87\times 10^{-2}\left(ton_{SO_X}/yr\right)$

PM_{10}: $0.17\left(lb_{PM_{10}}/acre/day\right)\times 12.28 acres\times 30 days\times\frac{1 ton}{2000 lb}=3.13\times 10^{-2}\left(ton_{PM_{10}}/yr\right)$

1.2. Stationary Equipment Emissions During Construction

Description: Emissions from stationary equipment occurs when gasoline powered equipment (e.g. generators, saws, etc.) is used at the construction site.

Assumptions: 2 pieces of gasoline powered equipment per 10,000 square feet; equipment used 6 hours per day; and equipment average horsepower of 10 hp each.

Parameters: Number of gross sq. ft. of non-resident units constructed in Phase II = 1044GSF
Number of days/year during Phase II (building construction phase) = 105 days

Emission Factors (using the previously stated assumptions):

Pollutant	Emission Factor (lbs/day/1000 SF)
CO	5.29
VOC	0.198
NO_X	0.137
SO_X	0.007
PM_{10}	0.004

Source: (BAFB, 2006)

CO: $1044GSF \times 5.29\left(lb_{CO}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 290.\left(ton_{CO}/yr\right)$

VOC: $1044GSF \times 0.198\left(lb_{VOC}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 10.85\left(ton_{VOC}/yr\right)$

NO_X: $1044GSF \times 0.137\left(lb_{NO_X}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 7.51\left(ton_{NO_X}/yr\right)$

SO_X: $1044GSF \times 0.007\left(lb_{SO_X}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 3.84 \times 10^{-1}\left(ton_{SO_X}/yr\right)$

PM_{10}: $1044GSF \times 0.004\left(lb_{PM_{10}}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 2.19 \times 10^{-1}\left(ton_{PM_{10}}/yr\right)$

1.3. Mobile Equipment Emissions During Construction

Description: Mobile equipment includes forklifts, dump trucks, etc., used during Phase II construction.

Assumptions: 2 pieces of diesel powered equipment per 10,000 square feet; and equipment used 6 hours per day.

Parameters: Number of gross sq. ft. of non-resident units constructed in Phase II = 1044GSF
Number of days/year during Phase II (building construction phase) = 105 days

Emission Factors (using the previously stated assumptions):

Pollutant	Emission Factor (lbs/day/1000SF)
CO	0.78
VOC	0.17
NO_X	1.86
SO_X	0.23
PM_{10}	0.15

Source: (BAFB, 2006)

CO: $1044GSF \times 0.78\left(lb_{CO}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 42.8\left(ton_{CO}/yr\right)$

VOC: $1044GSF \times 0.17\left(lb_{VOC}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 9.32\left(ton_{VOC}/yr\right)$

NO_X: $1044GSF \times 1.86\left(lb_{NO_X}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 101.9\left(ton_{NO_X}/yr\right)$

SO_X: $1044GSF \times 0.23\left(lb_{SO_X}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 12.6\left(ton_{SO_X}/yr\right)$

PM_{10}: $1044GSF \times 0.15\left(lb_{PM_{10}}/day/1000SF\right) \times 105days \times \frac{1ton}{2000lb} = 8.22\left(ton_{PM_{10}}/yr\right)$

1.4. Grading Operations Emissions (Fugitive Dust)

Description: Fugitive dust emissions from grading phase of construction, which includes both grading and truck hauling emissions

Assumptions: One Storage Pile on 1.5 of an acre per 10 acres graded, 3 pieces of Heavy Equipment used 6 hours per day per 10 acres graded.

Parameters: Number of gross acres to be graded during Phase I construction=12.28 acres
Number of days/year during Phase I construction (grading phase)=30 days

Emission Factors:

Pollutant	Emission Factor (lbs/acre/day)
PM_{10}	60.7

Source: (BAFB, 2006)

PM_{10}: $60.7\left(lb_{PM_{10}}/acre/day\right)\times 12.28 acres\times 30 days\times\frac{1ton}{2000lb}=11.18\left(ton_{PM_{10}}/yr\right)$

1.5. Architectural Coatings Emissions

Description: VOC is released through the evaporation of solvents that are contained in paints, varnishes, primers and other surface coatings.

Parameters: Square root of gross square feet of non-residential building space
$=\sqrt{1044}$

Emission Factors:

Pollutant	Emission Factor (lbs/ft)
VOC	1.63

Source: (BAFB, 2006)

VOC: $\sqrt{1044GSF}\times 1.63\left(lb_{VOC}/ft\right)\times\frac{1ton}{2000lb}=2.63\times 10^{-2}\left(ton_{VOC}/yr\right)$

1.6. Daily VOC Emissions from Asphalt Paving

Parameters: Total number of acres to be paved at the site = 4.13 acres

Emission Factors:

Pollutant	Emission Factor (lbs/acre)
VOC	2.62

Source: (BAFB, 2006)

VOC: $2.62\left(lb_{VOC}/acre\right)\times 4.13 acres\times\frac{1ton}{2000lb}=5.41\times 10^{-3}\left(ton_{VOC}/yr\right)$

1.7. Total annual construction emissions:

CO: 332.90 tons

VOC: 20.24 tons

NO_X: 109.79 tons

SO_X: 13.02 tons

PM_{10}: 19.65 tons

2. OPERATION EMISSIONS

According to Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources,* the following are the appropriate emission factors for nitrogen oxides, carbon monoxides, criteria pollutants and greenhouse gases from natural gas combustion:

Pollutant	Emission Factor (lbs/mmcf)
CO	84
VOC	5.5
NOx	100
SOx	0.6
PM_{10}	7.6

2.1. Hot Water Boiler:

Table 1.4-1 in AP-42 states that the average natural gas higher heating value is 1,020 BTU/scf.

$$250{,}000\left(BTU/hr\right)\times\frac{1scf}{1{,}020BTU}\times 8{,}784\left(hr/yr\right)=2{,}152{,}941\left(scf/yr\right)$$

Assuming that the boiler operates continuously all year (potential-to-emit):

$$\text{CO: } 2{,}152{,}941\left(scf/yr\right)\times\frac{84lb_{CO}}{10^{6}scf}\times\frac{1ton}{2000lb}=9.04\times10^{-2}\left(ton_{CO}/yr\right)$$

$$\text{VOC: } 2{,}152{,}941\left(scf/yr\right)\times\frac{5.5lb_{VOC}}{10^{6}scf}\times\frac{1ton}{2000lb}=5.92\times10^{-3}\left(ton_{VOC}/yr\right)$$

$$\text{NO}_X\text{: } 2{,}152{,}941\left(scf/yr\right)\times\frac{100lb_{NO_X}}{10^{6}scf}\times\frac{1ton}{2000lb}=1.08\times10^{-1}\left(ton_{NO_X}/yr\right)$$

$$\text{SO}_X\text{: } 2{,}152{,}941\left(scf/yr\right)\times\frac{0.6lb_{SO_X}}{10^{6}scf}\times\frac{1ton}{2000lb}=6.45\times10^{-4}\left(ton_{SO_X}/yr\right)$$

$$\text{PM}_{10}\text{: } 2{,}152{,}941\left(scf/yr\right)\times\frac{7.6lb_{PM_{10}}}{10^{6}scf}\times\frac{1ton}{2000lb}=8.18\times10^{-3}\left(ton_{PM_{10}}/yr\right)$$

2.2. Gas Fired Unit Heater:

Table 1.4-1 in AP-42 states that the average natural gas higher heating value is 1,020 BTU/scf.

$$50{,}000(BTU/hr)\times\frac{1scf}{1{,}020BTU}\times 8{,}784(hr/yr)=430{,}588(scf/yr)$$

Assuming that the heater operates continuously all year (potential-to-emit):

$$\text{CO: } 430{,}588(scf/yr)\times\frac{84lb_{CO}}{10^6\,scf}\times\frac{1ton}{2000lb}=1.81\times10^{-2}(ton_{CO}/yr)$$

$$\text{VOC: } 430{,}588(scf/yr)\times\frac{5.5lb_{VOC}}{10^6\,scf}\times\frac{1ton}{2000lb}=1.18\times10^{-3}(ton_{VOC}/yr)$$

$$\text{NO}_\text{X}\text{: } 430{,}588(scf/yr)\times\frac{100lb_{NO_X}}{10^6\,scf}\times\frac{1ton}{2000lb}=2.15\times10^{-2}(ton_{NO_X}/yr)$$

$$\text{SO}_\text{X}\text{: } 430{,}588(scf/yr)\times\frac{0.6lb_{SO_X}}{10^6\,scf}\times\frac{1ton}{2000lb}=1.30\times10^{-4}(ton_{SO_X}/yr)$$

$$\text{PM}_{10}\text{: } 430{,}588(scf/yr)\times\frac{7.6lb_{PM_{10}}}{10^6\,scf}\times\frac{1ton}{2000lb}=1.64\times10^{-3}(ton_{PM_{10}}/yr)$$

2.3. Estimated RV Propane Usage:

According to the Propane Education and Research Council, RVs use approximately 0.66 gallons of propane per day of usage, and the average heating value of propane is 2520 BTU/scf. One gallon of propane gives off 91500 BTUs/gal

Assuming that all 38 RV spots are full and being used every day of the year (potential-to-emit):

$$60{,}390(BTU/day)\times\frac{1scf}{2{,}520BTU}\times 365(days/yr)\times 38(RVs/FamCamp)=332{,}386(scf/yr)$$

$$\text{CO: } 332{,}386(scf/yr)\times\frac{84lb_{CO}}{10^6\,scf}\times\frac{1ton}{2000lb}=1.40\times10^{-2}(ton_{CO}/yr)$$

$$\text{VOC: } 332{,}386(scf/yr)\times\frac{5.5lb_{VOC}}{10^6\,scf}\times\frac{1ton}{2000lb}=9.15\times10^{-4}(ton_{VOC}/yr)$$

$$\text{NO}_\text{X}\text{: } 332{,}386(scf/yr)\times\frac{100lb_{NO_X}}{10^6\,scf}\times\frac{1ton}{2000lb}=1.66\times10^{-2}(ton_{NO_X}/yr)$$

$$\text{SO}_\text{X}\text{: } 332{,}386(scf/yr)\times\frac{0.6lb_{SO_X}}{10^6\,scf}\times\frac{1ton}{2000lb}=1.00\times10^{-4}(ton_{SO_X}/yr)$$

$$\text{PM}_{10}\text{: } 332{,}386(scf/yr)\times\frac{7.6lb_{PM_{10}}}{10^6\,scf}\times\frac{1ton}{2000lb}=1.26\times10^{-3}(ton_{PM_{10}}/yr)$$

2.4. Total annual operational emissions from three new sources:

CO: 0.122 tons

VOC: 8.02×10^{-3} tons

NO_X: 0.146 tons

SO_X: 8.75×10^{-4} tons

PM_{10}: 1.11×10^{-2} tons

Table C-1: Summary of Annual Emission Estimates from the FamCamp

	Operation (ton/yr)				Construction (ton/yr)							Total (ton/yr)
	Hot Water Boiler*	Unit Heater*	RV Propane**	Sub-Total	Grading Equip	Stationary Equip.	Mobile Equip.	Fugitive Dust	Coatings	Asphalt Paving	Sub-Total	
CO	0.0904	0.0181	0.014	0.123	0.101	290	42.8	N/A	N/A	N/A	332.90	333.02
VOC	0.00592	0.00118	0.000915	0.00802	0.0405	10.85	9.32	N/A	0.0263	0.00541	20.24	20.25
NOx	0.108	0.0215	0.0166	0.146	0.381	7.51	101.9	N/A	N/A	N/A	109.79	109.93
SOx	0.000645	0.00013	0.0001	0.000875	0.0387	0.384	12.6	N/A	N/A	N/A	13.02	13.02
PM_{10}	0.00818	0.00164	0.00126	0.0111	0.0313	0.219	8.22	11.18	N/A	N/A	19.65	19.65

* Assuming sources run all year (potential to emit)

** Assuming all 38 sites are full and being used every day of the year

APPENDIX D

Summary Tables for Cumulative Impacts Calculations

The Capital Improvement Projects (CIP) EA (2006) was written to evaluate the cumulative effects based on calculations incorporating data from projects occurring since 2002, current projects, and projects planned out to 2012. This EA and other EAs are tiered from the original CIP EA to make a dynamic document. The spreadsheet that accompanied the CIP EA has been updated to document the FamCamp, and the summary tables for the spreadsheet calculations are provided in this appendix. The table numbers in this appendix are the same as in the original CIP EA tables. This was done for quicker reference in comparing the two sets of tables.

Annual Breakdown of Construction and Demolition Activities 2002 to 2012+

Year	Days of Demolition	Demolition Area (ft2)	Construction Demolition Days of Ground Distrubance	Ground Disturbance					
				Construction Acres/year	Construction % of total	Demolition Acres/year	Demolition % of total	Total Acres/year	Construction and Demolition % of total
2002	90	0	967	62.39	8.15%	1.38	7.36%	63.77	8.13%
2003	24	12,000	2,384	83.69	10.93%	0.55	2.94%	84.24	10.74%
2004	60	20,378	1,938	176.30	23.03%	0.94	5.00%	177.24	22.60%
2005	245	51,539	2,446	80.70	10.54%	7.23	38.66%	87.93	11.21%
2006	60	264	1,579	42.10	5.50%	0.01	0.07%	42.11	5.37%
2007	77	9,697	1,920	49.38	6.45%	0.45	2.43%	49.84	6.36%
2008	160	20,420	595	14.71	1.92%	0.94	5.01%	15.65	2.00%
2009	600	14,059	3,157	77.84	10.17%	0.65	3.45%	78.48	10.01%
2010	78	22,403	708	21.98	2.87%	3.51	18.77%	25.49	3.25%
2011	40	15,541	1,060	7.52	0.98%	0.71	3.81%	8.23	1.05%
2012	415	49,236	1,090	15.94	2.08%	2.26	12.09%	18.20	2.32%
Beyond 2012	150	1,660	4,545	132.91	17.36%	0.08	0.41%	132.98	16.96%
Totals	**1998**	**217,197**	**22,388**	**765.45**	**100.00%**	**18.71**	**100.00%**	**784.16**	**100.00%**

Table 4.27: Increased Impervious Surface Calculations

Year	Increased Impervious Surfaces Due to Construction (Acres)	Decreased Impervious Surfaces Due to Demolition (Acres)	Net Increased Impervious Surfaces (Acres)
2002	28.77	0.00	28.77
2003	41.48	0.28	41.20
2004	74.99	0.47	74.52
2005	25.27	2.10	23.17
2006	3.37	0.01	3.37
2007	5.70	0.22	5.48
2008	5.34	0.47	4.87
2009	33.25	0.32	32.93
2010	2.34	2.41	(0.06)
2011	2.38	0.36	2.02
2012	3.06	1.13	1.93
Beyond 2012	69.37	0.04	69.33
Totals	**295.33**	**7.80**	**287.53**

Table 4.28: Cumulative Increased Impervious Surface Calculations

Year	Buckley AFB Increased Impervious Surfaces (Acres)	City of Aurora Increased Impervious Surfaces (Acres)	Cumulative Increased Impervious Surfaces (Acres)
2002	29	452	481
2003	41	1,121	1,162
2004	75	1,681	1,756
2005	23	2,242	2,265
2006	3	2,802	2,805
2007	5	3,363	3,368
2008	5	3,923	3,928
2009	33	4,483	4,516
2010	0	5,044	5,044
Beyond 2010	69	6,725	6,794
Totals	**284**	**31,836**	**32,120**

Table 4.29: Cumulative Increased Stormwater Loading Calculations			
Year	Buckley AFB Increased Stormwater Loading (Million Gallons)	City of Aurora Increased Stormwater Loading (Million Gallons)	Cumulative Increase in Increased Stormwater Loading (Million Gallons)
2002	12	187	199
2003	17	464	481
2004	31	696	727
2005	10	928	937
2006	1	1,160	1,161
2007	2	1,391	1,394
2008	2	1,623	1,625
2009	14	1,855	1,869
2010	0	2,087	2,087
2011	29	2,783	2,812
Totals	**117**	**13,174**	**13,291**

Table 4.18: Cumulative Electrical Demand Increases			
Year	Buckley AFB Electrical Demand Increase (kWh)	City of Aurora Construction Electrical Demand Increase (kWh)	Total Cumulative Electrical Demand Increase (kWh)
2002	11,568,242	612,846,000	624,414,242
2003	15,516,306	1,471,284,000	1,486,800,306
2004	32,687,492	2,206,926,000	2,239,613,492
2005	14,961,468	2,942,568,000	2,957,529,468
2006	7,805,091	3,678,210,000	3,686,015,091
2007	9,155,654	4,413,852,000	4,423,007,654
2008	2,727,370	5,149,494,000	5,152,221,370
2009	14,431,262	5,885,136,000	5,899,567,262
2010	4,075,429	6,620,778,000	6,624,853,429
2011	1,393,713	7,356,420,000	7,357,813,713
2012	2,955,263	8,092,062,000	8,095,017,263
Beyond 2012	24,641,777	8,827,704,000	8,852,345,777
Totals	**141,919,068**	**57,257,280,000**	**57,399,199,068**

Table 4.19: Cumulative Natural Gas Demand Increases			
Year	Buckley AFB Natural Gas Demand Increase (kWh)	City of Aurora Construction Natural Gas Demand Increase (kWh)	Total Cumulative Natural Gas Demand Increase (kWh)
2002	17	681	698
2003	23	1,635	1,658
2004	48	2,452	2,500
2005	22	3,270	3,292
2006	12	4,087	4,098
2007	14	4,904	4,918
2008	4	5,722	5,726
2009	21	6,539	6,560
2010	6	7,356	7,362
2011	2	8,174	8,176
2012	4	8,991	8,996
Beyond 2012	36	9,809	9,845
Totals	**210**	**63,619**	**63,829**

Table 4.3 Heating and Hot Water Unit Air Emissions										
	Emissions Generated from Operation of Heating, Hot Water and Air Conditioning Units (Tons/Year)									
	Hydrocarbons		NOx		SO2		CO		PM10	
Year	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative
2002	0.05	0.05	0.85	0.85	0.01	0.01	0.72	0.72	0.06	0.06
2003	0.06	0.11	1.15	2.00	0.01	0.01	0.96	1.68	0.09	0.15
2004	0.13	0.24	2.41	4.41	0.01	0.03	2.03	3.71	0.18	0.34
2005	0.06	0.30	1.10	5.52	0.01	0.03	0.93	4.63	0.08	0.42
2006	0.03	0.34	0.58	6.09	0.00	0.04	0.48	5.12	0.04	0.46
2007	0.04	0.37	0.68	6.77	0.00	0.04	0.57	5.69	0.05	0.51
2008	0.01	0.38	0.20	6.97	0.00	0.04	0.17	5.85	0.02	0.53
2009	0.06	0.44	1.07	8.03	0.01	0.05	0.89	6.75	0.08	0.61
2010	0.02	0.46	0.30	8.34	0.00	0.05	0.25	7.00	0.02	0.63
2011	0.01	0.46	0.10	8.44	0.00	0.05	0.09	7.09	0.01	0.64
2012	0.01	0.48	0.22	8.66	0.00	0.05	0.18	7.27	0.02	0.66
TBD(3)	0.10	0.56	1.82	10.15	0.01	0.06	1.53	8.53	0.14	0.77
Cumulative Totals	**0.58**	**0.56**	**10.48**	**10.15**	**0.06**	**0.06**	**8.80**	**8.53**	**0.80**	**0.77**

Table 4.12: Construction and Demolition Water Suppression Consumption			
Year	Water Required for Construction Projects (Gallons)	Water Required for Demolition Projects (Gallons)	Total (Gallons)
2002	7,840,097	0	7,840,097
2003	10,685,207	6,612	10,691,818
2004	24,921,514	18,539	24,940,054
2005	9,824,420	61,939	9,886,359
2006	1,947,378	364	1,947,742
2007	3,625,221	5,071	3,630,291
2008	946,768	18,944	965,712
2009	10,914,491	25,035	10,939,527
2010	2,862,971	19,129	2,882,100
2011	371,944	10,180	382,124
2012	1,742,383	106,467	1,848,851
Beyond 2012	11,758,001	3,085	11,761,086
Totals	**87,440,396**	**275,364**	**87,715,760**

Table 4.13: Finished Building Operational Water Consumption		
	Water Required for Human Consumption (Million Gallons)	
Year	Annual	Cumulative
2002	1.849	1.849
2003	2.481	4.330
2004	5.226	9.556
2005	2.392	11.947
2006	1.248	13.195
2007	1.464	14.659
2008	0.436	15.095
2009	2.307	17.402
2010	0.652	18.053
2011	0.223	18.276
2012	0.472	18.749
Beyond 2012	3.939	21.993
Totals	**22.688**	**21.993**

Table 4.14: Irrigation Water Consumption			
Year	Area Requiring Irrigation	Annual Water Required for Irrigation (Million Gallons)	Cummulative Water Required for Irrigation (Million Gallons)
2002	0.924	0.990	0.990
2003	4.856	5.205	6.196
2004	1.727	1.851	8.047
2005	11.391	12.210	20.257
2006	5.289	5.669	25.926
2007	0.356	0.381	26.307
2008	2.882	3.089	29.396
2009	4.804	5.149	34.546
2010	7.530	8.071	42.616
2011	9.014	9.661	52.278
2012	0.251	0.269	52.547
Beyond 2012	2.674	2.866	55.413
Totals	**51.698**	**55.413**	**55.413**

Table 4.16: Cummulative Water Consumption			
Year	Buckley AFB Cumulative Water Increase (Million Gallons)	City of Aurora Construction Water Increase (Million Gallons)	Total Cumulative Water Increase (Million Gallons)
2002	11	842	852
2003	18	1,743	1,761
2004	32	2,614	2,646
2005	24	3,486	3,510
2006	9	4,357	4,366
2007	5	5,229	5,234
2008	4	6,100	6,105
2009	18	6,972	6,990
2010	12	7,843	7,855
2011	10	8,714	8,725
2012	3	9,586	9,588
Beyond 2012	19	10,457	10,476
Totals	**166**	**67,943**	**68,109**

Table 4.15: Construction and Demolition Waste Generation - Proposed Action		
Year	Construction and Demolition Solid Waste Generation (Tons)	Percent of Total Waste Received by Denver-Arapahoe Disposal Site Landfill
2002	8,469	0.37%
2003	20,284	0.89%
2004	509	0.02%
2005	50,030	2.19%
2006	648	0.03%
2007	16,375	0.72%
2008	798	0.04%
2009	118,544	5.20%
2010	50,298	2.21%
2011	25,477	1.12%
2012	71,653	3.14%
Beyond 2010	3,823	0.17%
Totals	**366,908**	**16.09%**

Table 4.17: Cumulative Solid Waste Generation			
Year	Buckley AFB Cumulative Solid Waste Generation Increase (Tons)	City of Aurora Construction Solid Waste Generation Increase (Tons)	Total Cumulative Solid Waste Generation Increase (Tons)
2002	10,088	110,632	120,720
2003	21,902	261,105	283,007
2004	2,128	391,657	393,785
2005	51,648	522,210	573,858
2006	2,266	652,762	655,029
2007	17,993	783,315	801,308
2008	2,416	913,867	916,284
2009	120,163	1,044,420	1,164,582
2010	51,916	1,174,972	1,226,889
2011	27,096	1,305,525	1,332,620
2012	73,272	1,436,077	1,509,349
Beyond 2012	**5,441**	**1,566,630**	**1,572,071**

Table 4.23: Construction/Demolition Debris Handling Traffic - Proposed Action			
Year	Weight of Debris Generated (tons)	Volume of Debris Generated (yd3)	Number of Truck Trips Required
2002	8,469	3,826	174
2003	20,284	11,216	510
2004	509	278	13
2005	50,030	27,692	1,259
2006	648	360	16
2007	16,375	9,054	412
2008	798	442	20
2009	118,544	55,684	2,531
2010	50,298	26,286	1,195
2011	25,477	14,103	641
2012	71,653	40,156	1,825
Beyond 2012	3,823	2,121	96
Totals	**366,908**	**191,219**	**8,692**

Table 4.25: Construction and Demolition Vehicles Entering the South Gate - Proposed Action			
Year	Construction and Demolition Contractor Employee Traffic (Vehicles/Day)	Construction and Demolition Delivery Traffic (Vehicles/Day)	Total (Vehicles/Day)
2002	10	40	50
2003	28	112	140
2004	32	128	160
2005	32	128	160
2006	14	56	70
2007	24	96	120
2008	14	56	70
2009	36	144	180
2010	10	40	50
2011	12	48	60
2012	22	88	110
Beyond 2012	46	184	230
Totals	**200**	**800**	**1,000**

Table 4.4 New Personal Vehicle Pollutant Emissions						
	Emissions Generated from New Personal Vehicles (Tons/Year)					
	Hydrocarbons		NOx		CO	
Year	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative
2002	1.59	1.59	1.59	1.59	33.45	33.45
2003	2.14	3.73	2.14	3.73	44.87	78.33
2004	4.50	8.23	4.50	8.23	94.53	172.86
2005	2.06	10.29	2.06	10.29	43.27	216.12
2006	1.07	11.37	1.07	11.37	22.57	238.69
2007	1.26	12.63	1.26	12.63	26.48	265.17
2008	0.38	13.00	0.38	13.00	7.89	273.06
2009	1.99	14.99	1.99	14.99	41.73	314.79
2010	0.56	15.55	0.56	15.55	11.79	326.58
2011	0.19	15.74	0.19	15.74	4.03	330.61
2012	0.41	16.15	0.41	16.15	8.55	339.16
TBD(3)	3.39	19.54	3.39	19.54	71.26	410.42
Cumulative Totals	**19.54**	**19.54**	**19.54**	**19.54**	**410.42**	**410.42**

Table 4.2: Construction and Demolition Project Emissions					
	Emissions Generated from Construction and Demolition Site Disturbance				
Year	**VOC**	**NOx**	**SO_2**	**CO**	**PM_{10}**
2002	1	4	0	10	13
2003	5	26	3	73	40
2004	11	37	4	112	32
2005	20	57	6	156	139
2006	11	39	4	114	32
2007	6	31	3	82	43
2008	10	50	5	144	26
2009	6	30	3	82	60
2010	3	15	1	36	8
TBD*	1	9	0	13	26
Cumulative Totals	74	298	29	822	419

APPENDIX E

Notice of Availability and Affidavit of Publication

THE Denver Newspaper Agency
DENVER, CO

PUBLISHER'S AFFIDAVIT

City and County of Denver,
STATE OF COLORADO, SS.

Jean Birch

..... being of lawful age and being first duly sworn upon oath, deposes and says:

Legal Advertising Reviewer

That he/she is the .....
Of The Denver Newspaper Agency, publisher of the Denver Post and Rocky Mountain News, daily newspapers of general Circulation published and printed in whole or in part in Denver, in the County of Denver and State of Colorado, and that said newspaper was Prior to and during all the time hereinafter mentioned duly qualified For the publication of legal notices and advertisements within the Meaning of an Act of the General Assembly of the State of Colorado,
Approved April 7, 1921, as amended and approved March 30, 1923;
And as amended and approved March 5, 1935, entitled "An Act Concerning Legal Notices, Advertisements and Publications and the Fees of printers and publishers thereof, and to repeal all acts and parts Of acts in conflict with the provision of this Act" and amendments Thereto:

That the notice, of which the annexed is a true copy, was published in The said newspaper to wit: (dates of publication)

..... June 24, 2007 .....
.....
..... Jean Birch .....
Signature

Subscribed and sworn to before me this ..... 25 ..... day

Of . . . June . . . A.D. 2007.

..... Susan Sloan .....
Notary Public.

My commission expires ..... 8/15/10 .....

SUSAN SLOAN NOTARY PUBLIC STATE OF COLORADO

Notice of Availability for Construction and Operation of a Family Camp Facility at Buckley AFB

Interested parties are hereby notified that Buckley Air Force Base (AFB) has prepared a Draft Environmental Assessment (EA) and a Draft Finding of No Significant Impact (FONSI) for the proposed construction and operation of a Family Camp (FamCamp) Facility.

Statutory Authority. This notice is being issued to interested parties in accordance with the National Environmental Policy Act (Public Law [P.L.] 91-190, 42 United States Code 4321 et seq.) as amended in 1975 by P.L. 94-52 and P.L. 94-83.

Purpose. The 460th Space Wing proposes to construct and operate a FamCamp facility at Williams Lake, Buckley AFB, Colorado. An EA has been performed for the FamCamp to determine the potential environmental and human health effects of the proposed construction and operation performed at this site. The purpose of and need for the Proposed Action is based on the requirements of the *General Plan* for Buckley AFB. The EA does not constitute approval to construct the proposed action.

Proposed Action. Under the Proposed Action, a 12 acre FamCamp Facility is proposed to be constructed and operated at Buckley AFB. The FamCamp would be designed with amenities for families such as RV camping that accommodates recreational vehicles and camping trailers, as well as day use recreational activities, such as picnics, playgrounds, fishing, etc. The FamCamp would be open year-round with peak season from June to August and two shoulder seasons, one from March to May and the other from September to November. The proposed facility will be sited adjacent to the southwest side of Williams Lake.

Alternatives. There are three alternative locations for the new FamCamp; directly west of Williams Lake, directly south of Williams Lake, and just north of Williams Lake. The footprint of the FamCamp would be the similar under either the Proposed Action or the three alternatives. Under the No Action Alternative, the FamCamp would not be built and operations would remain as currently accomplished, not allowing for future growth.

Comments. Comments on the Draft EA and Draft FONSI should be directed to Elizabeth Meyer, 460 CES/CEVP, 660 S. Aspen Street (Stop 86), Buckley AFB, Colorado 80011-9551. The comment period is open for 30 days following the publication of this notice in a general circulation newspaper. Copies of the Draft EA and Draft FONSI are available for review by the public at the Aurora Central Library, 14949 E. Alameda Parkway, Aurora, Colorado 80012; Denver Public Library, Government Documents Section, 10 West 14th Avenue, Denver, Colorado 80204; and the Boulder Public Library, 1000 Canyon Blvd., Boulder, Colorado 80302. Copies can also be obtained by writing to Buckley AFB at the address provided above.

AURORA SENTINEL
PROOF OF PUBLICATION

STATE OF COLORADO
COUNTY OF ARAPAHOE }ss.

I HARRISON COCHRAN, do solemnly swear that I am the PUBLISHER of the AURORA SENTINEL; that the same is a weekly newspaper published in the County of Arapahoe, State of Colorado and has a general circulation therein; that said newspaper has been published continuously and uninterruptedly in said County of Arapahoe for a period of more than fifty-two consecutive weeks prior to the first publication of the annexed legal notice or advertisement; that said newspaper has been admitted to the United States mails as second-class matter under the provisions of the Act of March 30, 1923, entitled "Legal Notices and Advertisements", or any amendments thereof, and that said newspaper is a weekly newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Colorado.

That the annexed legal notice or advertisement was published in the regular and entire issue of every number of said weekly newspaper for the period of 1 consecutive insertions; and that the first publication of said notice was in the issue of said newspaper dated June 28 A.D. 2007 and that the last publication of said notice was in the issue of said newspaper dated June 28 A.D. 2007.

In witness whereof I have hereunto set my hand this 28 day of June.

H. Harrison Cochran

Subscribed and sworn to before me, a notary public in the County of Arapahoe, State of Colorado, this 28 day of June A.D. 2007.

Notary Public
My Commission expires November 26, 2009

Notice of Availability for Construction and Operation of a Family Camp Facility at Buckley AFB

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Proposed Action. Under the Proposed Action, a 12 acre FamCamp Facility is proposed to be constructed and operated at Buckley AFB. The FamCamp would be designed with amenities for families such as RV camping that accommodates recreational vehicles and camping trailers, as well as day use recreational activities, such as picnics, playgrounds, fishing, etc. The FamCamp would be open year-round with peak season from June to August and two shoulder seasons, one from March to May and the other from September to November. The proposed facility will be sited adjacent to the southwest side of Williams Lake.

Alternatives. There are three alternative locations for the new FamCamp; directly west of Williams Lake, directly south of Williams Lake, and just north of Williams Lake. The footprint of the FamCamp would be the similar under either the Proposed Action or the three alternatives. Under the No Action Alternative, the FamCamp would not be built and operations would remain as currently accomplished, not allowing for future growth.

Comments. Comments on the Draft EA and Draft FONSI should be directed to Elizabeth Meyer, 460 CES/CEVP, 660 S. Aspen Street (Stop 86), Buckley AFB, Colorado 80011-9551. The comment period is open for 30 days following the publication of this notice in a general circulation newspaper. Copies of the Draft EA and Draft FONSI are available for review by the public at the Aurora Central Library, 14949 E. Alameda Parkway, Aurora, Colorado 80012; Denver Public Library, Government Documents Section, 10 West 14th Avenue, Denver, Colorado 80204; and the Boulder Public Library, 1000 Canyon Blvd., Boulder, Colorado 80302. Copies can also be obtained by writing to Buckley AFB at the address provided above.

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Reference disk is located
in pocket at back

or files are located at:
\\Filesrv-crwuc\460 buckley\Environmental
Assessments\FAMCAMP