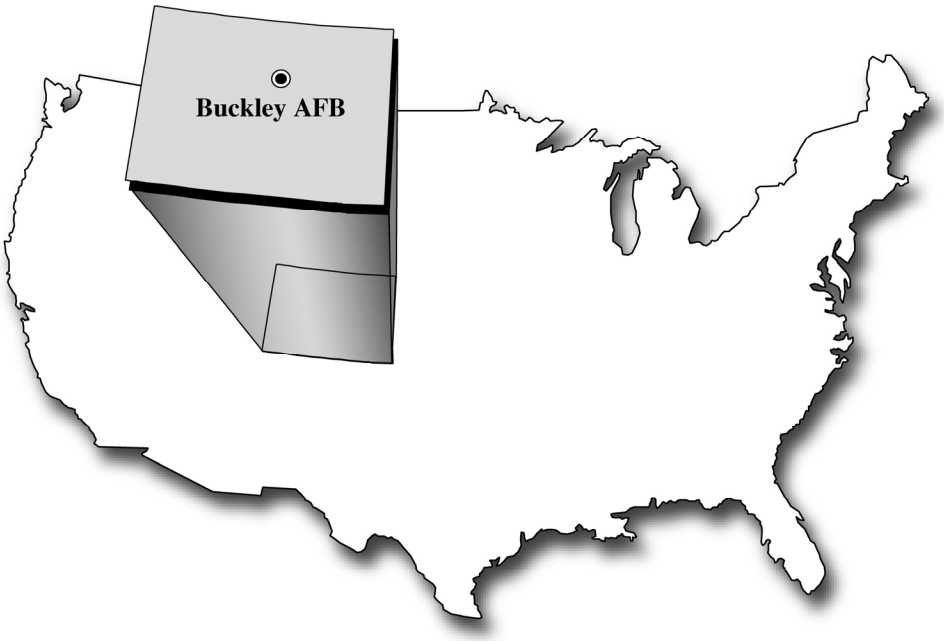
DRAFT
ENVIRONMENTAL ASSESSMENT
March 2008



PROPOSED UPGRADES AT THE 6TH AVENUE, MISSISSIPPI, AND TELLURIDE ENTRY CONTROL FACILITIES BUCKLEY AIR FORCE BASE, COLORADO

DRAFT
FINDING OF NO SIGNIFICANT IMPACT
PROPOSED UPGRADES AT THE 6TH AVENUE, MISSISSIPPI,
AND TELLURIDE ENTRY CONTROL FACILITIES
BUCKLEY AIR FORCE BASE, COLORADO

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

Background: The United States Air Force has prepared an Environmental Assessment (EA) to analyze the potential for impacts to the environment as a result of implementing proposed upgrades at the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado, and is incorporated by reference. The EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code Section 4321 et seq.), the Council on Environmental Quality regulations implementing the procedural provisions of NEPA, 40 Code of Federal Regulations (CFR) Parts 1500-1580, and Air Force policy and procedures (32 CFR Part 989).

Purpose and Need: The upgrades are being proposed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence. All upgrades are being proposed in support of, and consistent with, prevailing Unified Facilities Criteria (UFC), Air Force Instructions (AFIs), and the Buckley AFB General Plan.

Proposed Action: Upgrades at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be used. Proposed upgrades are consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The proposed upgrades specific to each gate location include:

- **6th Avenue/Main Gate** – demolition of the existing Visitor Center, gatehouse, and associated infrastructure; re-route of Aspen Street at the ECF to allow adequate queuing distance; construction of a new Visitor Center (with parking), gatehouse, and privately-owned vehicle (POV) inspection facility; implementation of traffic calming measures; construction of a canopy, crash protection devices, cameras, and lighting at identification (ID) check station(s); and construction of an overwatch and final barrier and containment system (vehicle arresting system).

- **Telluride Gate** – demolition of the existing gatehouse and associated infrastructure; re-route of Telluride Street at the ECF to allow adequate queuing distance; construction of a new gatehouse and POV inspection facility; implementation of traffic calming measures; construction of a canopy, crash protection devices, cameras, and lighting at ID check station(s); and construction of an overwatch and final barrier and containment system.

- **Mississippi Gate** – demolition of the existing gatehouse and associated infrastructure; re-route of South Aspen Street at the ECF to align with Biscay Street south of Mississippi Avenue and allow adequate queuing distance, construction of a new gatehouse and POV inspection facility; implementation of traffic calming measures; construction of a canopy, crash protection devices, cameras, and lighting at ID check station(s); construction of an overwatch and final barrier and containment system.

Alternatives Considered: Because of prevailing installation security and anti-terrorism UFCs and AFIs related to ECFs, there are no “no build” alternatives to the Proposed Action. There are, however, several site specific designs/infrastructure layouts for each of the three ECF locations that were initially developed and considered. The infrastructure components specific to each of the alternatives and ECP operations are the same as those described as part of the Proposed Action. Specific alternatives to the Proposed Action, including alternative designs/infrastructure layouts included:

- No-Action Alternative
- Two Alternative Design/Infrastructure Layouts for the 6th Avenue/Main Gate
- One Alternative Design/Infrastructure Layout for the Telluride Gate
- Two Alternative Design/Infrastructure Layouts for the Mississippi Gate

The No-Action Alternative does not fully satisfy the purpose and need criteria; however, pursuant to NEPA, the No-Action Alternative is carried forward as the baseline to which potential impacts of the Proposed Action can be measured. The alternative actions (i.e., alternative design/infrastructure layouts) did not fully satisfy the purpose and need criteria developed for the project. As a result, only the No Action Alternative and the Proposed Action were carried forward for detailed analysis in the EA.

Summary of Anticipated Environmental Consequences: Consideration of impacts described in the EA and a finding that they are not significant is a necessary and critical part of this Finding of No Significant Impact (FONSI) as required by 40 CFR 1508.13. Initial analysis indicated that proposed upgrades would not result in short or long-term impacts to cultural resources, geology and soils, air space, utilities, socioeconomics, environmental justice, noise, pollution prevention, Military Munitions Response Program, radon, lead-based paint, and polychlorinated biphenyls, thus, these resources were dismissed from detailed analysis.

The potential impacts of the proposed project have been analyzed and are documented in the Affected Environment and Environmental Consequences sections of the EA for the following issues: air quality (including hazardous air pollutants), land use, traffic, water resources, visual quality, occupational safety and health, asbestos, Environmental Restoration Program sites, hazardous substances and waste sites/storage facilities, and biological resources. The analyses indicate that implementing the Proposed Action would have no significant impact on the quality of the natural or human environment.

Public Involvement: The Draft EA was made available for a 30-day public review and comment period through publication of a notice of availability in local newspapers. Copies of the Draft EA and Draft FONSI were distributed to individuals on the project mailing list and to various Federal, state, and local agencies, and a hard copy of the Draft EA and Draft FONSI was placed in the Aurora, Boulder, and Denver public libraries for dissemination. The public comment period closed on XX 2008. The Air Force received comment on the project from XX agencies and XX individuals.

Conclusion: As a result of the analysis of impacts in the EA, I conclude that the proposed activities would not have a significant effect on human health or the natural environment; therefore, an environmental impact statement will not be prepared. The proposed upgrades at the 6th Avenue, Mississippi, and Telluride ECFs would be constructed as approved by the Facilities Board. This concludes the EIAP process.

_____ _____

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

DRAFT

ENVIRONMENTAL ASSESSMENT

PROPOSED UPGRADES AT THE 6TH AVENUE, MISSISSIPPI, AND TELLURIDE ENTRY CONTROL FACILITIES

BUCKLEY AIR FORCE BASE, COLORADO

MARCH 2008

COVER SHEET

ENVIRONMENTAL ASSESSMENT
PROPOSED UPGRADES AT THE 6TH AVENUE, MISSISSIPPI, AND TELLURIDE ENTRY CONTROL FACILITIES
BUCKLEY AIR FORCE BASE, COLORADO

a. Lead Agency: U.S. Air Force

b. Proposed Action: Upgrade the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs), Buckley Air Force Base (AFB), Colorado.

c. Written comments and inquiries regarding this document should be directed to: Chief of Environmental Management, 460 CES/CEVP, 660 S. Aspen Street, Stop 86, Building 1005, Buckley AFB, CO 80011.

d. Designation: Draft Environmental Assessment (EA)

e. Abstract: This EA has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of proposed upgrades at the 6th Avenue, Mississippi, and Telluride ECFs. The proposed upgrades would improve security force safety, maximize traffic flow, reduce congestion, and improve the aesthetic quality of the base ECFs.

The Proposed Action involves the upgrade of the 6th Avenue, Mississippi, and Telluride ECFs. Alternatives to the Proposed Action involved varying the specific design/infrastructure layouts at each of the ECF locations. However, none of the alternative designs fully satisfied the purpose and need criteria developed for the project; therefore, they were not carried forward for further evaluation. The No-Action Alternative involves the continued use of the existing ECFs at Buckley AFB; no ECF improvements would be implemented.

All environmental resources were analyzed in this EA; however, only the environmental resources potentially affected by the Proposed Action and No-Action Alternative were analyzed in-depth, including air quality, land use, traffic, water resources, visual quality, occupational safety and health, asbestos, environmental restoration program sites, hazardous substances and waste sites/storage facilities, and biological resources. Based on the analysis of the Proposed Action and No-Action Alternative, the Air Force has determined that no significant impacts would occur.

Privacy Advisory

Your comments on this draft environmental assessment (EA) are requested. Letters or other written or oral comments provided may be published in the final EA. As required by law, comments will be addressed in the final EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the final EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the final EA. However, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and telephone numbers will not be published in the final EA.

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LIST OF ACRONYMS/ABBREVIATIONS AND GLOSSARY

ACAM	Air Conformity Applicability Model
ACM	asbestos-containing material
ADP	Area Development Plans
AFB	Air Force Base
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone
APZ	Accident Potential Zone
AQCR	Air Quality Control Region
AST	aboveground storage tank
BMP	best management practice
BX	Base Exchange
CAA	Clean Air Act
CAAQS	Colorado Ambient Air Quality Standards
CCR	Code of Colorado Regulations
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and the Environment
CEQ	Council of Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan
CNHP	Colorado Natural Heritage Program
CO	carbon monoxide
CWA	Clean Water Act
dB	decibel
EA	environmental assessment
ECF	Entry Control Facility
EIS	environmental impact statement
ELUA	Existing Land Use Area
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ERP	Environmental Restoration Program
FEMA	Federal Emergency Management Agency
FONSI	finding of no significant impact
FPCON	Force Protection Condition
FY	fiscal year
HAP	hazardous air pollutant
ID	identification
JP-8	jet propulsion fuel, grade 8
LBP	lead-based paint
$\mu g/m^3$	micrograms per cubic meter
MBTA	Migratory Bird Treaty Act
MMRP	Military Munitions Response Program
mph	miles per hour

LIST OF ACRONYMS/ABBREVIATIONS AND GLOSSARY
(Continued)

MS4	Municipal Separate Storm Sewer System
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOI	Notice of Intent
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
ODS	ozone-depleting substance
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
pCi/l	picocuries per liter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
POV	privately owned vehicle
ppm	part per million
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROI	region of influence
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SW	Space Wing
SWPPP	storm water pollution prevention plan
tpy	tons per year
TSCA	Toxic Substances Control Act
TSP	total suspended particles
UFC	Unified Facilities Criteria
U.S.C.	United States Code
U.S. DOT	U.S. Department of Transportation
U.S. EPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound

GLOSSARY

Ambient Air Quality Standards. Standards established on a state or federal level that define the limits for airborne concentrations of designated "criteria" pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, total suspended particulates, ozone, and lead), to protect public health with an adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards).

Asbestos. A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.

Attainment Area. A region that meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act.

Commissary. A store that sells food and supplies to military personnel and their dependents, usually located on a military installation.

Cumulative Impacts. The combined impacts resulting from all activities occurring concurrently at a given location.

Environmental Restoration Program. An Air Force program to identify, characterize, and remediate environmental contamination on its installations.

Forb. Any broad-leaved herbaceous plant that is not a grass, especially one that grows in a prairie or meadow.

Hazardous Material. Generally, a substance or mixture of substances that has the capability of either causing or significantly contributing to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or posing a substantial present or potential risk to human health or the environment. Use of these materials is regulated by Department of Transportation, Occupational Safety and Health Administration (OSHA), and Superfund Amendments and Reauthorization Act (SARA).

Hazardous Waste. A waste, or combination of wastes, which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Regulated under the Resource Conservation and Recovery Act (RCRA).

Impacts/Effects. An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured using a qualitative and nominally subjective technique. In this EA, as well as in the Council on Environmental Quality regulations, the word impact is used synonymously with the word effect.

Irretrievable Impact. Can be reversible over an extended period of time such as restoring habitat after land being developed (20 or more years to fully restore), reusing of building materials, etc.

Irreversible Impact. Cannot be reversed regardless of time such as expenditure of energy, labor, etc.

Long-Term Impact. Relating to or affecting a time long into the future (e.g., impact continues after construction activities are completed).

Major Impact. Impact would occur and be noticeable even by a casual observer; mitigation is needed for the environment to absorb adverse impacts without long-term deterioration.

Minor Impact. Impact would occur but are unlikely to be noticed even by a careful informed observer familiar with the area or resources affected; adverse impacts can easily be absorbed by the natural or human environment without mitigation and long-term consequences.

Mitigation. A method or action to reduce or eliminate program impacts.

Moderate Impact. Impact would occur and be noticeable by an informed observer familiar with the affected area or resources; mitigation may be needed for the environment to fully absorb adverse impacts without long-term consequences.

National Environmental Policy Act. Public Law 91-190, passed by Congress in 1969. The National Environmental Policy Act (NEPA) established a national policy designed to encourage consideration of the influences of human activities (e.g., population growth, high-density urbanization, industrial development) on the natural environment. NEPA also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made. Information contained in NEPA documents must focus on the relevant issues in order to facilitate the decision-making process.

No-Action. In reference to the No-Action Alternative in which no change in the existing conditions at the entry control facilities will occur; existing practices, policies, management, and operations will remain the same.

No Impact. No change to existing conditions.

Nonattainment Area. An area that has been designated by the U.S. Environmental Protection Agency or the appropriate state air quality agency, as exceeding one or more National or California Ambient Air Quality Standards.

Prime Farmland. Environmentally significant agricultural lands protected from irreversible conversion to other uses.

Short-Term Impact. Lasting for or affecting a relatively short period of time (e.g., during construction activities).

State Historic Preservation Officer. The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as liaison for purposes of implementing the National Historic Preservation Act.

U.S. Environmental protection Agency (EPA). The independent federal agency, established in 1970, that regulates federal environmental matters and oversees the implementation of federal environmental laws.

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1.0 PURPOSE OF AND NEED FOR ACTION

This environmental assessment (EA) evaluates the potential environmental impacts associated with the proposed upgrade of the 6th Avenue, Mississippi, and Telluride Gates at Buckley Air Force Base (AFB), Colorado.

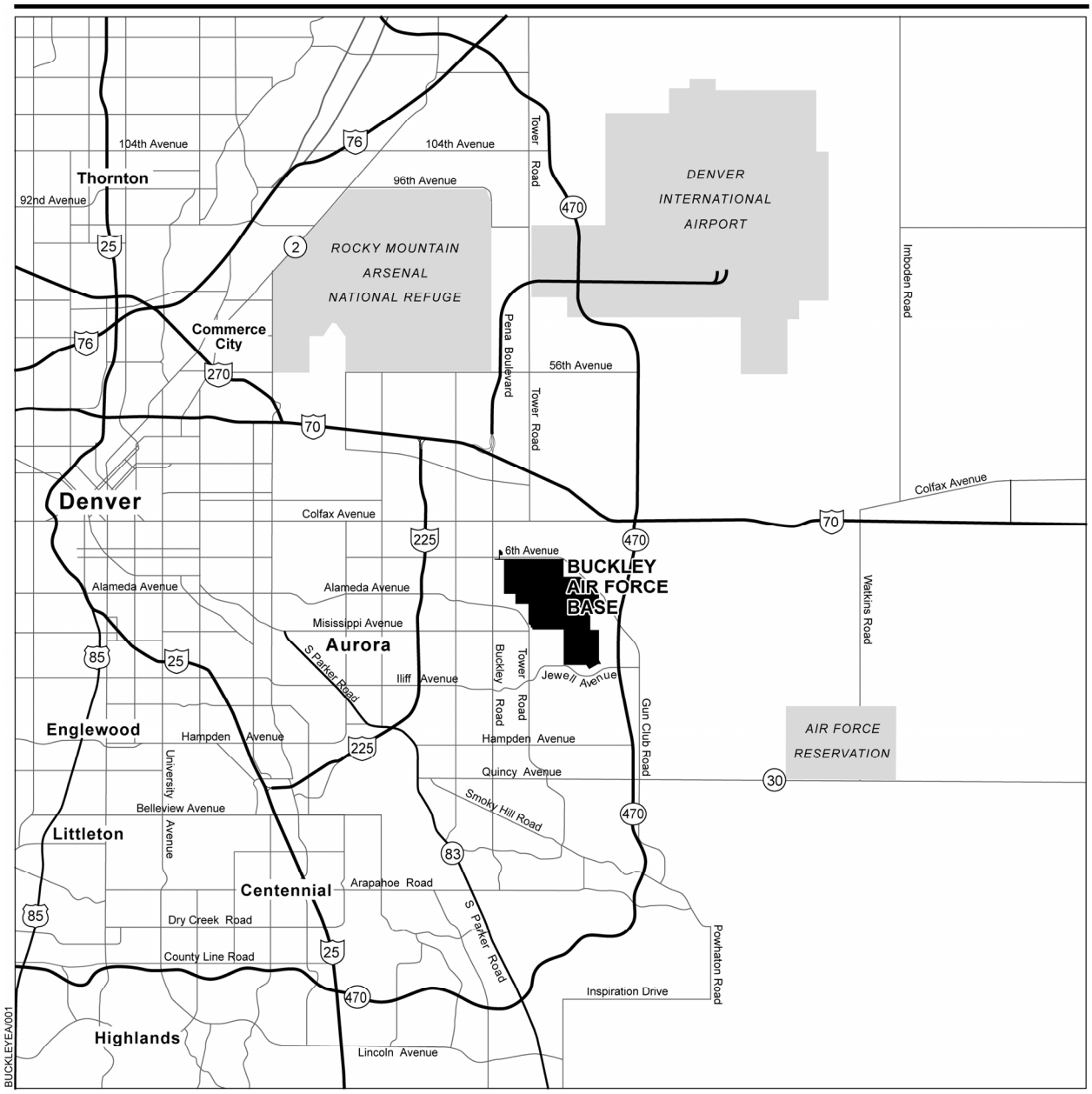
This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code [U.S.C.] 4321, et seq.), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and Air Force policy and procedures (32 CFR Part 989).

1.1 BACKGROUND AND INTRODUCTION

Buckley AFB occupies approximately 3,283 acres adjacent to the City of Aurora, Arapahoe County, Colorado, within the Denver metropolitan area (Figure 1-1). Buckley AFB is transforming from a minimally developed installation for weekend influxes of Reserve and Guard personnel into a fully developed, active-duty AFB. The 460th Space Wing (SW) is the host of the installation and their mission is to provide combat commanders with expeditionary warrior airmen, and deliver global infrared surveillance, tracking, and missile warning for theater and homeland defense. The 460th SW hosts 77 tenant organizations with a wide range of missions from flight training to support for transient military aircraft, Navy and Marine Corps training, and a number of space-related initiatives. Currently there are over 2,700 active-duty personnel, over 4,200 Guard and Reserve personnel, over 2,900 civilian employees, and more than 2,800 contract employees at the base (Buckley AFB, 2006b). In addition, Buckley AFB serves more than 77,000 retirees and over 16,000 dependents.

1.2 PURPOSE AND NEED

The Air Force has prepared this EA to assess the potential environmental and social impacts resulting from the proposed upgrade of the 6th Avenue, Mississippi, and Telluride Gates at Buckley AFB. The upgrades are being proposed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and to impart an impression of professionalism and commitment to facilities excellence. Air Force Instruction (AFI) 31-101, *The Air Force Installation Security Program*, identifies specific Air Force resources that must be secure and the level of security dedicated to those resources. AFI 10-245, *Air Force Anti-Terrorism Standards*, includes additional information on the construction and protection of gates or “Entry Control Facilities” (ECFs) with the *U.S. Air Force Installation Entry Control Facilities Design Guide* (U.S. Air Force, 2003) providing specific guidance for the design of ECFs. ECF upgrades are being proposed in support of, and consistent with, the Buckley AFB General Plan (Buckley AFB, 2005). Specific issues associated with the design/layout of each existing gate locations include:



EXPLANATION

Regional Map

0 1 2 4 Miles

Figure 1-1

6th Avenue/Main Gate

- There is a lack of traffic queuing (approximately 800 feet), resulting in delays and congestion.
- Current traffic calming is conducted by offset concrete barriers.
- The Visitor Center is too small, has insufficient vehicle parking, and the overflow parking is difficult to access (safety of individuals having to cross Aspen Street to get from overflow parking lot to the Visitor Center is a concern).
- Rejected vehicles from the Visitor Center must cross inbound traffic lanes to exit the base.
- There is no gatehouse canopy, containment area, or over watch position.
- The gatehouse stand-off distance from the Visitor Center is insufficient.

Mississippi Gate

- There is traffic congestion at the South Alpine Street/Mississippi Avenue/Biscay Street intersections during peak hours.
- There are commercial vehicle and privately owned vehicle (POV) queuing/entry conflicts.
- Current traffic calming is conducted by offset concrete barriers.
- There are no commercial or POV inspection facilities.
- There is no gatehouse canopy, containment area, or over watch position.

Telluride Gate

- Based on a peak-hour traffic volume of 200-250 vehicles per hour, there is a lack of traffic queuing (less than 200 feet from 6th Avenue), resulting in delays, congestion, and conflicts. In addition, traffic engineering for gates recommends a minimum clear view of gate houses from approaching vehicles of 200 feet.
- Current traffic calming is conducted by offset concrete barriers.
- There is no gatehouse canopy, containment area, or over watch position.

1.3 SCOPE OF THIS EA

1.3.1 Issues Studied in Detail

NEPA and CEQ regulations require that the environmental effects of proposed actions and alternatives be considered in the decision-making process. Preparation of an environmental document (i.e., an EA) must precede final decisions regarding a proposed action, and the document must be available to inform decision-makers and the public of potential environmental consequences or impacts that could result. The development of this EA allows for public consideration and input concerning the proposed gate upgrades at Buckley AFB. The EA provides the decision-makers and the public with the information required to understand the potential environmental consequences or impacts of implementing the Proposed Action or No-Action Alternative.

The decision to be made, after a review of the analysis presented in the EA, would be whether to issue a finding of no significant impact (FONSI) or to proceed with the development of an environmental impact statement (EIS) to further quantify and detail the potentially significant impacts resulting from an implementation of the Proposed Action or No-Action Alternative. While an EA provides information with which to make better decisions about the Proposed Action, it does not imply project approval or authorization, which is obtained through the 460th SW Facilities Board. The EA has analyzed the potential impacts to the following resources:

- Air Quality
- Land Use
- Traffic Flow
- Water Resources
- Visual Quality
- Occupational Safety and Health
- Asbestos
- Environmental Restoration Program (ERP) Sites
- Hazardous Substances and Waste Sites/Storage Facilities
- Biological Resources.

1.3.2 Issues Eliminated from Detailed Study

CEQ regulations (40 CFR Part 1500-1508) state that an agency shall identify and eliminate from detailed study those issues which are not likely to be relevant or which have been covered by prior environmental review. In accordance with §1501.7, issues eliminated from detailed study include cultural resources, geology and soils, air space, utilities, socioeconomics (including environmental justice), noise, pollution prevention, ordnance, radon, lead-based paint (LBP), and polychlorinated biphenyls (PCBs). The reasons for not addressing these resources are briefly discussed in the following paragraphs.

- **Cultural Resources** – Implementing the Proposed Action or alternatives would have no impact to historic and/or archaeological properties/sites. AFI 32-7065, *Cultural Resources Management Program*, establishes the Air Force guidelines and policy for managing and protecting cultural resources on property affected by Air Force operations. There are no known historical and/or archaeological resources in the area of potential effect where proposed upgrades would occur; therefore, impacts to historic and/or archaeological properties/sites would not be expected. In accordance with Section 106 of the National Historic Preservation Act (NHPA), Buckley AFB will be submitting information regarding the proposed upgrades to the Colorado State Historic Preservation Officer (SHPO) (Appendix C). Because of the severe ground disturbance that occurred during the construction of the existing facilities, the potential for discovery of archaeological resources is very low. As a result, cultural resources have not been carried forward for detailed analysis in this EA. Should any cultural material be uncovered during construction, work would stop and the site would be evaluated prior to the continuation of activities.

- **Geology and Soils** – Implementing the Proposed Action or alternatives would have no impact to geology or soils. The soils at the gate locations have been highly disturbed by previous development/construction activities. The proposed upgrades are primarily surficial in nature, and as a result, the geology present at the sites would not be affected. As a result of these factors, and the fact that appropriate best management practices (BMPs) would be implemented to minimize erosion potential, geology and soils has not been carried forward for detailed analysis in this EA.

- **Prime and Unique Farmland** – No prime or unique farmlands are known to exist at Buckley AFB. The U.S. Department of Agriculture has surveyed Buckley AFB and concluded that it would not be feasible to introduce agricultural production onto the base (U.S. Department of Agriculture, 2001). Based on this, and because the gate areas are developed, prime and unique farmland is not present at the proposed ECF upgrade areas.

- **Air space** – Implementing the Proposed Action or No-Action Alternative would result in no impact on air space, air space management, or the airfield clear zones. AFI 32-7063, *Air Installation Compatible Use Zone (AICUZ) Program*, applies to Air Force installations in the U.S. (and other locations) with active runways. This instruction, in concert with AFI 32-7062, *Base Comprehensive Planning*, AFI 32-1026, *Planning and Design of Airfields*, and other related AFIs, sets forth policies and requirements for the restrictions on the uses and heights of natural and manmade objects in the vicinity of air installations to provide for safety of flight and to ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents. None of the sites are in the airfield clear zones and the proposed upgrades would be implemented consistent with relevant AFIs that establish policies and requirements on the uses and heights of structures in the vicinity of air installations. As a result, this issue has not been carried forward for detailed analysis in this EA.

- **Utilities (electricity, potable water, wastewater, and solid waste)** – Implementing the Proposed Action or No-Action Alternative would have no impact to existing utilities. The number of personnel working at the facilities would not increase and future operations would remain largely consistent with existing operations. Although a minimal increase in utility service may occur due to the increase in square footage of the new ECF structures, the Proposed Action would not result in a substantial increase in demand for electrical service or potable water. Wastewater output is not anticipated to increase and all generated solid waste/debris would be recycled or disposed at an approved landfill in accordance with AFI 32-7080, *Pollution Prevention Program*, and applicable federal, state, and local laws and regulations. Activities would take advantage (to the maximum extent possible) of existing utility service(s) in the areas and typical coordination would be conducted to ensure minimal interruption to surrounding building service. As a result of these factors, this issue has not been carried forward for detailed analysis in this EA.

- **Socioeconomics (including environmental justice)** – There would be no socioeconomic (including environmental justice) impacts as a result of implementing the Proposed Action or No-Action Alternative. The proposed upgrades are relatively small in scope and would have no substantial affect outside the gates of Buckley AFB. Implementing the upgrades would result in no noticeable change in population, personal income, housing, or full- or part-time employment in the area. Implementing the proposed upgrades would also result in no impacts to any populations of special concern with no disproportionately high human health or environmental effects on minority populations, low income populations, or child populations. As a result, this issue has not been carried forward for detailed analysis in this EA.

- **Noise** – Implementing the Proposed Action or No-Action Alternative would result in no long-term increase in noise. The typical environment around Buckley AFB can range from 65 to 80 decibels (dB) on any given day. The three sites where the upgrades are proposed are in areas of the base generally ranging from 60 to 75 dB (Buckley AFB, 2005). Implementing the proposed upgrades would result in a temporary increase in noise at, and immediately surrounding, the three gate locations during construction activities. However, there are no sensitive receptors immediately adjacent to any of the sites, and because construction activities would typically occur between the house of 8:00 am and 5:00 pm (normal work hours), it is not anticipated that the temporary increase in noise would impact nearby building occupants or operations. As a result, noise has not been carried forward for detailed analysis in this EA.

- **Pollution Prevention** – Implementing the Proposed Action or No-Action Alternative would result in no impact to the existing Air Force pollution prevention program standing policies and guidance. AFI 32-7080, *Pollution Prevention Program*, establishes the Air Force guidelines, policy, and procedures to reduce hazardous material use and waste generation at Air Force installations as well as ensuring the proper receipt, storage, issue, labeling, transportation, and disposition of Air Force-owned hazardous substances. Upgrades

would be conducted in accordance with the management strategies and goals outlined in AFI 32-7080 as well as other pertinent federal, state, and local regulations regarding the use, storage, transportation, and/or disposition of hazardous substances. Waste/debris generated as a result of the upgrades would be recycled or disposed at an approved landfill in accordance with AFI 32-7080 and applicable federal, state, and local laws and regulations. Any potentially hazardous materials or wastes would be handled and disposed in the same manner. As a result, pollution prevention has not been carried forward for detailed analysis in this EA.

- **Military Munitions Response Program** – The scope of the Military Munitions Response Program (MMRP) is investigation and cleanup of other-than operational ranges contaminated with military munitions (e.g., unexploded ordnance, chemical residues of munitions, etc.). There are currently two MMRP sites at Buckley AFB; the abandoned outdoor range and the former skeet range. These MMRP sites are not in the vicinity of the three gate locations; therefore, ordnance has not been carried forward for detailed analysis in this EA.

- **Radon** – Implementing the Proposed Action would result in no impacts as a result of radon. Radon is a colorless, odorless, and radioactive gas found naturally in some soils and rocks. It is formed from the decay of naturally occurring radioactive materials such as uranium and thorium. The U.S. Environmental Protection Agency (U.S. EPA) and the U.S. Geological Survey (USGS) have evaluated the radon potential in the U.S. and have assigned each of the counties in the U.S. into one of three zones based on radon potential: Zone 1 – Highest Potential (greater than 4 picocuries per liter [pCi/l], Zone 2 – Moderate Potential (from 2 to 4 pCi/l), and Zone 3 – Low Potential (less than 2 pCi/l). Each zone designation reflects the average short-term radon measurement that can be expected to be measured in a building without the implementation of radon control methods. Arapahoe County has been designated as being in Zone 1. Due to the radon issue in Arapahoe County, construction would include the implementation of radon-resistant techniques as applicable (e.g., gas permeable layer, plastic sheeting, etc.). As a result, no impacts would be anticipated.

- **Lead-Based Paint** – There would be no LBP impacts as a result of implementing the Proposed Action or No-Action Alternative. LBP was commonly used in and on buildings and other structures until 1978. In good condition, LBP does not generally pose a health hazard; however, when LBP is in a deteriorated condition or damaged by renovation or maintenance activities, it can release lead-containing particles that pose a threat of contamination. The Air Force has a policy to manage LBP “in place” and to systematically eliminate it from facilities as renovations are conducted. Because the existing structures at the three gate locations were constructed in 1994 and beyond, LBP is not an issue. As a result, LBP has not been carried forward for detailed analysis in this EA.

- **Polychlorinated biphenyls** – There would be no impacts from PCBs as a result of implementing the Proposed Action or No-Action Alternative. PCBs are a mixture of individual chemicals which are no longer produced in the U.S. but can still be found in old transformers,

fluorescent lighting fixtures and electrical devices, and appliances such as television sets and refrigerators that were made 30 or more years ago. As part of its pollution prevention program and in accordance with its PCB elimination technical guidance and U.S. EPA regulations, the Air Force programs and budgets multiple measures to ensure elimination of PCBs; to ensure PCB equipment is properly labeled, inspected, and maintained; to document all inspections and transactions involving PCBs from their origin through disposal; and to ensure that PCBs and PCB equipment are systematically eliminated from Air Force installations as equipment becomes unserviceable. Because the existing structures at the three gate locations were constructed in 1994 and beyond, the presence of PCBs is not an issue. As a result, PCBs has not been carried forward for detailed analysis in this EA.

1.4 ORGANIZATION OF THE EA

Pursuant to 32 CFR Part 989 implementing the CEQ regulations (40 CFR 1502), this document consists of the following sections:

Section 1.0 – Purpose and Need for Action: provides introduction and background information about Buckley AFB, the purpose and need for the Proposed Action, the scope of the environmental review, and a brief description of how the document is organized.

Section 2.0 – Alternatives Including the Proposed Action: provides a listing of the selection criteria developed to satisfy the purpose and need for the action as well as a detailed description of the Proposed Action and alternatives. A summary comparing the Proposed Action and alternatives is also provided.

Section 3.0 – Affected Environment and Environmental Consequences: provides a discussion/description of the existing baseline environment potentially affected by implementation of the Proposed Action and alternatives and documents the likely environmental consequences associated with implementing the Proposed Action and alternatives including cumulative impacts.

Section 4.0 – List of Preparers: presents a list of those people responsible for or contributing to the preparation of this EA.

Section 5.0 – Agencies and Individuals Contacted and Document Distribution: provides a list of those persons and/or agencies that received a copy of the EA and those persons and/or agencies contacted during the preparation of the EA.

Section 6.0 – References: provides a list of references (cited and not cited) used in preparation of the EA.

Appendices: provide background and/or supporting information for the EA.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section of the EA describes the Proposed Action and reasonable alternatives to the Proposed Action. This section also describes the process used to objectively identify the reasonable alternatives carried forward for detailed environmental analysis, as well as the reasoning for elimination of alternatives (if appropriate). A comparative summary of the Proposed Action, alternatives, and how they do or do not meet the selection criteria identified in Section 2.1 is also included, as well as a comparative summary of impacts for each.

2.1 IDENTIFICATION OF PURPOSE AND NEED SELECTION CRITERIA

In accordance with 32 CFR §989.8(c), in an effort to satisfy the purpose and need for action, several selection criteria were developed to compare and contrast alternative ways of fulfilling the objectives of the Proposed Action. Those specific criteria include:

- Provide for improved base security in accordance with prevailing AFIs
- Provide for improved safety for security personnel
- Provide for maximized traffic flow and reduced congestion
- Demonstrate professionalism and commitment to facilities excellence
- Provide improvements/upgrades consistent with the Buckley AFB General Plan.

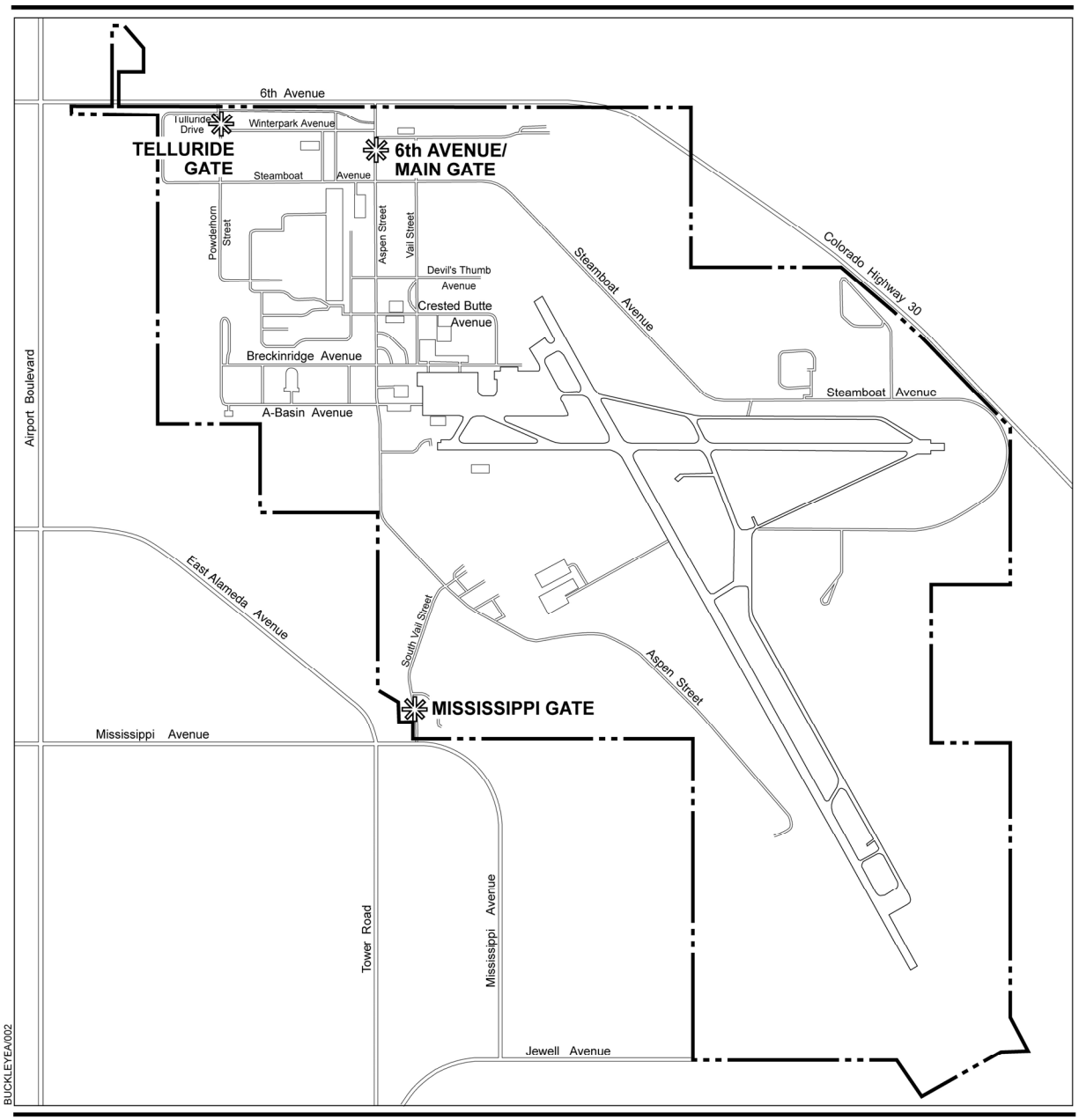
2.2 DESCRIPTION OF THE PROPOSED ACTION

Under the Proposed Action, upgrades would be implemented at the 6th Avenue/Main Gate, Telluride Gate, and Mississippi Gate. The location of the three gates is shown in Figure 2-1. The proposed upgrades specific to each location are discussed in the following sections. The architectural elevations for this project have been approved for compliance with the Buckley AFB Facilities Excellence Plan. All upgrades are consistent with the guidance provided in the *U.S. Air Force Installation Entry Control Facilities Design Guide* (U.S. Air Force, 2003).

2.2.1 6th Avenue/Main Gate

Upgrades/re-design of the 6th Avenue/Main Gate ECF would include:

- Demolition of the existing Visitor Center (1,621 square feet), gatehouse (Building 40 – 379 square feet), and associated infrastructure
- Re-route of Aspen Street at the ECF
- Construction of a new Visitor Center (with parking), gatehouse, and POV inspection facility totaling approximately 3,000 square feet.



EXPLANATION

Base Boundary

Location of Existing Gates Proposed for Upgrades

0 600 1200 2400 Feet

Figure 2-1

- Implementation of traffic calming measures
- Construction of a canopy, crash protection devices, cameras, and lighting at identification (ID) check station(s)
- Construction of an overwatch and final barrier and containment system (vehicle arresting system).

Additional upgrades and supporting infrastructure would include utility tie-ins/hook-ups, appropriate fencing, sidewalks, signage, and landscaping. In support of upgrades at the 6th Avenue/Main Gate, but as part of a separate action, Buckley AFB personnel would work with local officials in an effort to provide:

- A left-turn storage lane for the 6th Avenue/Aspen Street westbound approach
- An acceleration lane for motorists exiting the base and turning east
- A wider median opening to allow northbound motorist access to Tower Road.

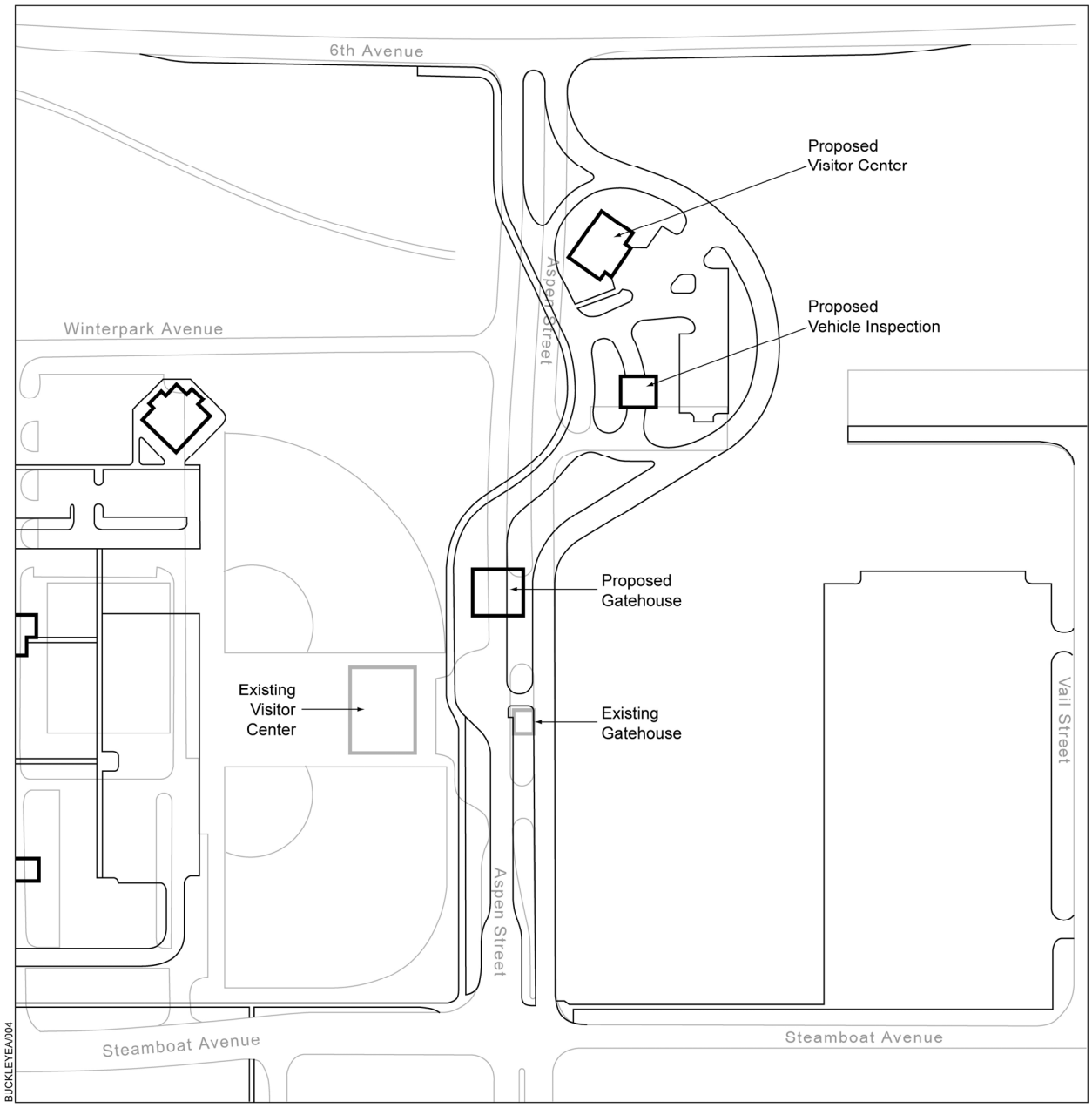
The proposed upgrades to the 6th Avenue/Main Gate are conceptually depicted in Figure 2-2.

2.2.2 Mississippi Gate

Upgrades/re-design of the Mississippi Gate ECF would include:

- Demolition of the existing gatehouse (Building 1551 – 136 square feet and associated infrastructure
- Re-route of South Aspen Street at the ECF and alignment with Biscay Street south of Mississippi Avenue
- Construction of a new gatehouse and POV inspection facility totaling approximately 2,000 square feet
- Implementation of traffic calming measures
- Construction of a canopy, crash protection devices, cameras, and lighting at ID check station(s)
- Construction of an overwatch and final barrier and containment system (vehicle arresting system).

Additional upgrades and supporting infrastructure would include utility tie-ins/hook-ups, appropriate fencing, sidewalks, signage, and landscaping. In support of upgrades at the Mississippi Gate, but as part of a separate action, Buckley AFB personnel would coordinate/communicate with local officials regarding the feasibility of constructing dual left-turn lanes into the base. The proposed upgrades to the Mississippi Gate are conceptually depicted in Figure 2-3.



EXPLANATION

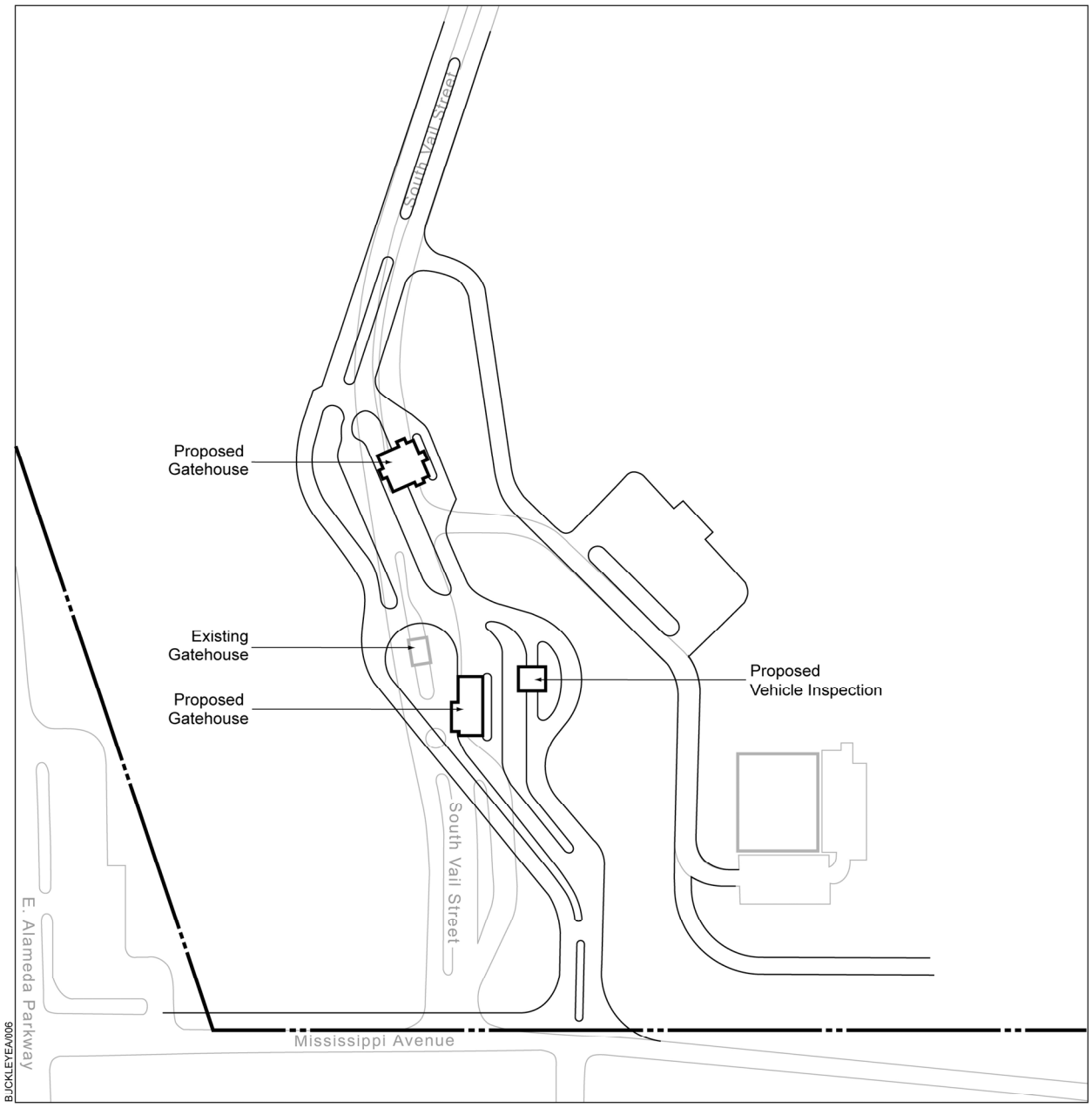
Proposed Construction

Existing Infrastructure

NOT TO SCALE

Proposed Improvements at the 6th Avenue/Main Gate ECF

Figure 2-2



EXPLANATION

Proposed Construction

Existing Infrastructure

Proposed Improvements at the Mississippi Gate ECF

NOT TO SCALE

Figure 2-3

2.2.3 Telluride Gate

Upgrades/re-design of the Telluride Gate ECF would include:

- Demolition of the existing gatehouse (Building 2 – 133 square feet) and associated infrastructure
- Re-route of Telluride Street at the ECF
- Construction of a new gatehouse and POV inspection facility totaling approximately 600 square feet
- Implementation of traffic calming measures
- Construction of a canopy, crash protection devices, cameras, and lighting at ID check station(s)
- Construction of an overwatch and final barrier and containment system (vehicle arresting system).

Additional upgrades and supporting infrastructure would include utility tie-ins/hook-ups, appropriate fencing, sidewalks, signage, and landscaping. The proposed upgrades to the Telluride Gate are conceptually depicted in Figure 2-4.

2.2.4 Activities Common to All Gates

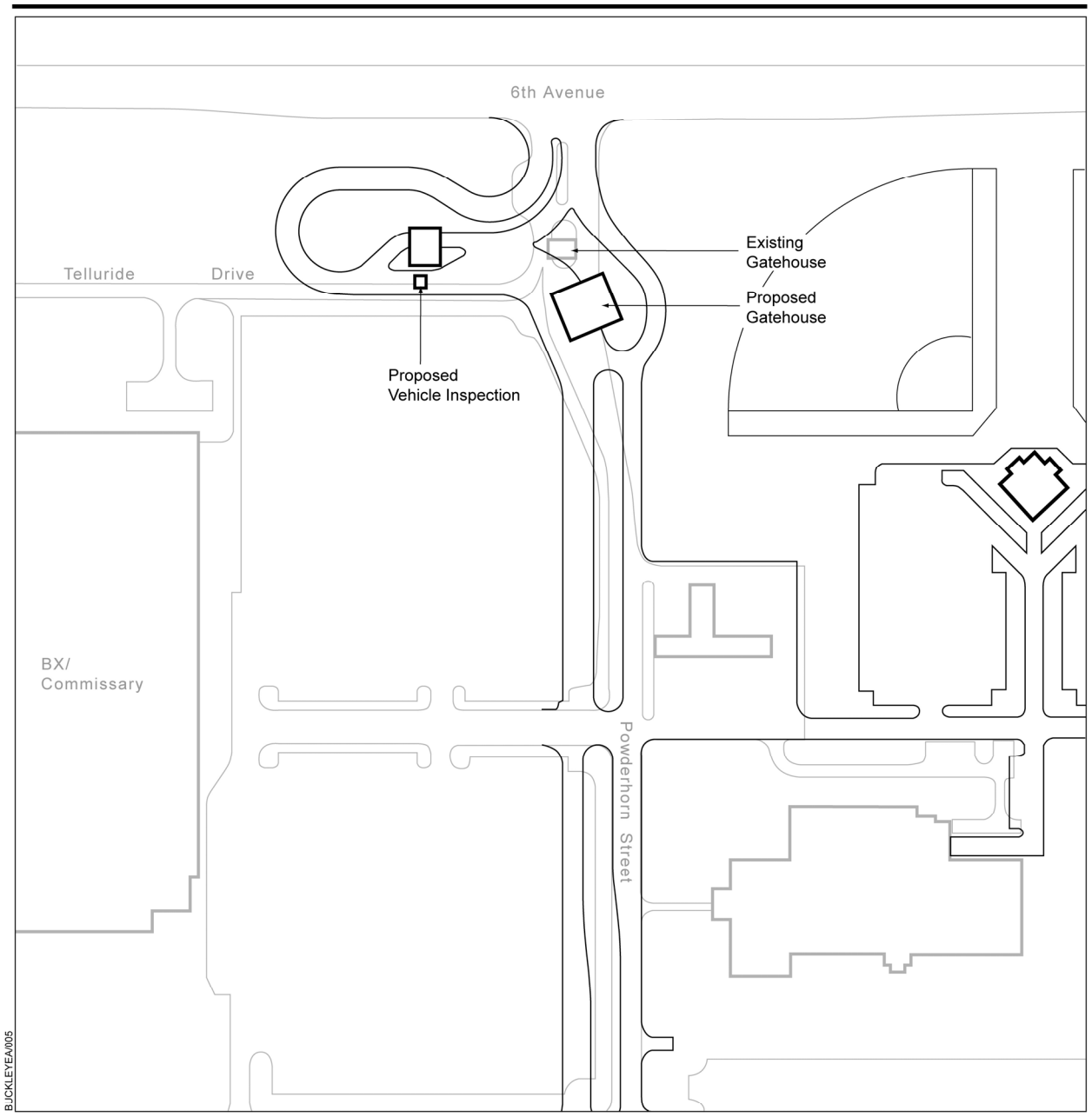
Demolition/Construction

As mentioned previously, upgrades at the three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be used. It is estimated that construction activities would encompass no more than a total of 20.0 non-contiguous acres. The timing of demolition and construction activities would occur as shown in Table 2-1. Upgrades at all three gates would be completed within a 10 month period. Activities would typically occur between the hours of 8:00 am and 5:00 pm five days a week (Monday through Friday). Proper coordination (including notifications, signage, etc.) would be conducted in an effort to minimize vehicle delays during construction activities.

Table 2-1. Gates Proposed for Upgrade

Location	Area Disturbed (acres)[1]	Fiscal Year Proposed for Upgrades[2]
6th Avenue/Main Gate	6.0	2009
Mississippi Gate	9.0	2009
Telluride Gate	5.0	2009

Notes: [1] Ground disturbance acreage estimates include associated infrastructure
[2] Currently planned, but subject to change based on funding, needs, etc.



EXPLANATION

Proposed Construction

Existing Infrastructure

Proposed Improvements at the Telluride Gate ECF

NOT TO SCALE

Figure 2-4

In accordance with the National Pollutant Discharge Elimination System (NPDES) storm water requirements (construction sites greater than 5 acres [Phase I] and between 1 and 5 acres [Phase II], a site-specific storm water pollution prevention plan (SWPPP) would be developed and implemented. The construction contractor would also be required to obtain a Construction Site Storm Water NPDES permit before initiating any ground-disturbing activity.

The SWPPP would be maintained on site and would outline measures (i.e., implementation of BMPs) to eliminate or reduce any potential impacts to surface water quality.

Prior to the start of activities, a notice of intent (NOI) would be filed with the U.S. EPA in accordance with the U.S. EPA Storm Water Construction General Permit. No activities would proceed until the NOI has been posted on the U.S. EPA website for seven days.

Personnel and equipment for the upgrades would come from local sources (local contractors). Personnel would access the sites via existing roadways. Construction equipment would be delivered (trailered) via local roadways as well, and would be stored at each gate location. On-site equipment would likely include several mobile, heavy trucks or equivalent type vehicles (e.g., bulldozer, loader, dump trucks, grader, etc.). Additional light-duty, stationary equipment (e.g., generators, compressors, saws, etc.) and construction worker private vehicles (pickup trucks or the equivalent) would also be present throughout the duration of activities. Construction worker private vehicles would be parked in existing parking lots. Any substantial equipment maintenance would be conducted off site by the contractor and in accordance with applicable laws and regulations. Construction equipment would be required to be operated (hours of operation) and maintained in an effort to reduce combustive emissions and ensure minimal impacts to local and regional air quality. To further ensure minimal impacts to local and regional air quality through fugitive dust emissions, the area of soil disturbance would be limited to only that required and exposed soils would be watered at the beginning, during, and at the end of daily activities. Construction waste/debris (including any hazardous materials or waste) would be recycled or disposed at an approved landfill in accordance with AFI 32-7080, *Pollution Prevention Program*, and applicable federal, state, and local laws and regulations. Construction activities would be conducted in accordance with the Air Force Occupational and Environmental Safety, Fire Protection, and Health Program (AFI 91-301) which implements the Department of Labor, Occupational Safety and Health (OSHA) standards and further prescribed Air Force occupational and environmental safety, fire protection, and health requirements. Activities would take advantage (to the maximum extent possible) of existing utility service(s) in the areas and coordination would be conducted to ensure minimal interruption to surrounding building service.

Although not anticipated, should any cultural material be uncovered during construction, work would stop and the site would be evaluated by trained archaeologists or other personnel prior to the continuation of activities. Should extensive vegetation clearing/removal be required, all vegetation clearing would be conducted prior to March 1 or after October 31 to ensure no impacts to

potential ground-nesting birds (e.g., burrowing owl) and to comply with the Migratory Bird Treaty Act (MBTA). Should prairie dog burrows be encountered in the areas of construction, the prairie dogs would be removed prior to vegetation clearing activities using approved removal methods. Should asbestos-containing materials (ACM) be encountered during any ground disturbing activities at any of the gate locations, work would immediately stop and measures would be taken to secure the area and prevent a potential release of asbestos fibers in accordance with local, state, and federal regulations regarding handling, remediation, and disposal. Because of the proximity of ERP Site 10 to the 6th Avenue/Main Gate area, proper coordination would occur to insure that activities are conducted in accordance with appropriate local, state, and federal regulations and to ensure that activities associated with the upgrades do not interfere with ongoing study/evaluation occurring at the site.

Due to the radon issue in Arapahoe County, building design/construction would include the implementation of radon-resistant techniques as applicable (e.g., gas permeable layer, plastic sheeting, etc.). All building designs would be consistent with relevant AFIs and base policy/guidance (e.g., Facilities Excellence Plan) that establish requirements on the uses and heights of structures in the vicinity of air installations. New facility construction would be consistent with, and compliment, the look and feel of other development on the base (i.e., consistent style, design, color, etc.), and would not conflict or detract from the prevailing visual quality/character of adjacent off-base areas. Where appropriate, facilities design/construction would comply with the requirements of Unified Facilities Criteria (UFC) 4-010-01, *Minimum Antiterrorism Standards for Buildings* and UFC 4-022-01, *Entry Control Facilities/Access Control Points*, and other applicable UFCs.

Operations

Typical long-term, sustained operations would not vary greatly from existing operations and would include:

6th Avenue/Main Gate

- Gate – 24-hour operation
- Two inbound lanes with associated security personnel, (second lane to be used only during peak times)
- Visitor Center – 6:30 am to 5:00 pm operation (one to two security personnel).

Mississippi Gate

- Gate – generally 6:00 am to 7:00 pm operation
- Two inbound lanes with associated security personnel, (second lane to be used only during peak times).

Telluride Gate

- Gate – hours based on demand, available security personnel, and Force Protection Condition (FPCON) level
- Two inbound lanes with associated security personnel, (second lane to be used only during peak times).

The number of security personnel manning the gates and the Visitor Center could vary slightly based on the prevailing FPCON level, availability of personnel, and peak travel times.

2.3 ALTERNATIVES TO THE PROPOSED ACTION

Because of prevailing installation security and anti-terrorism AFIs related to ECFs, there are no "no build" alternatives that meet project objectives. However, there are several site specific designs/infrastructure layouts for each of the three gate locations that were initially developed and considered. The infrastructure components specific to each of the alternatives that meet the project objectives are the same as those described earlier in Section 2.2.1 through 2.2.3. Demolition/construction activities (including the approximate acreage of ground disturbance, etc.) and operations would also be similar to that described previously in Section 2.2.4 unless otherwise noted. Specific alternatives to the Proposed Action include:

No-Action Alternative

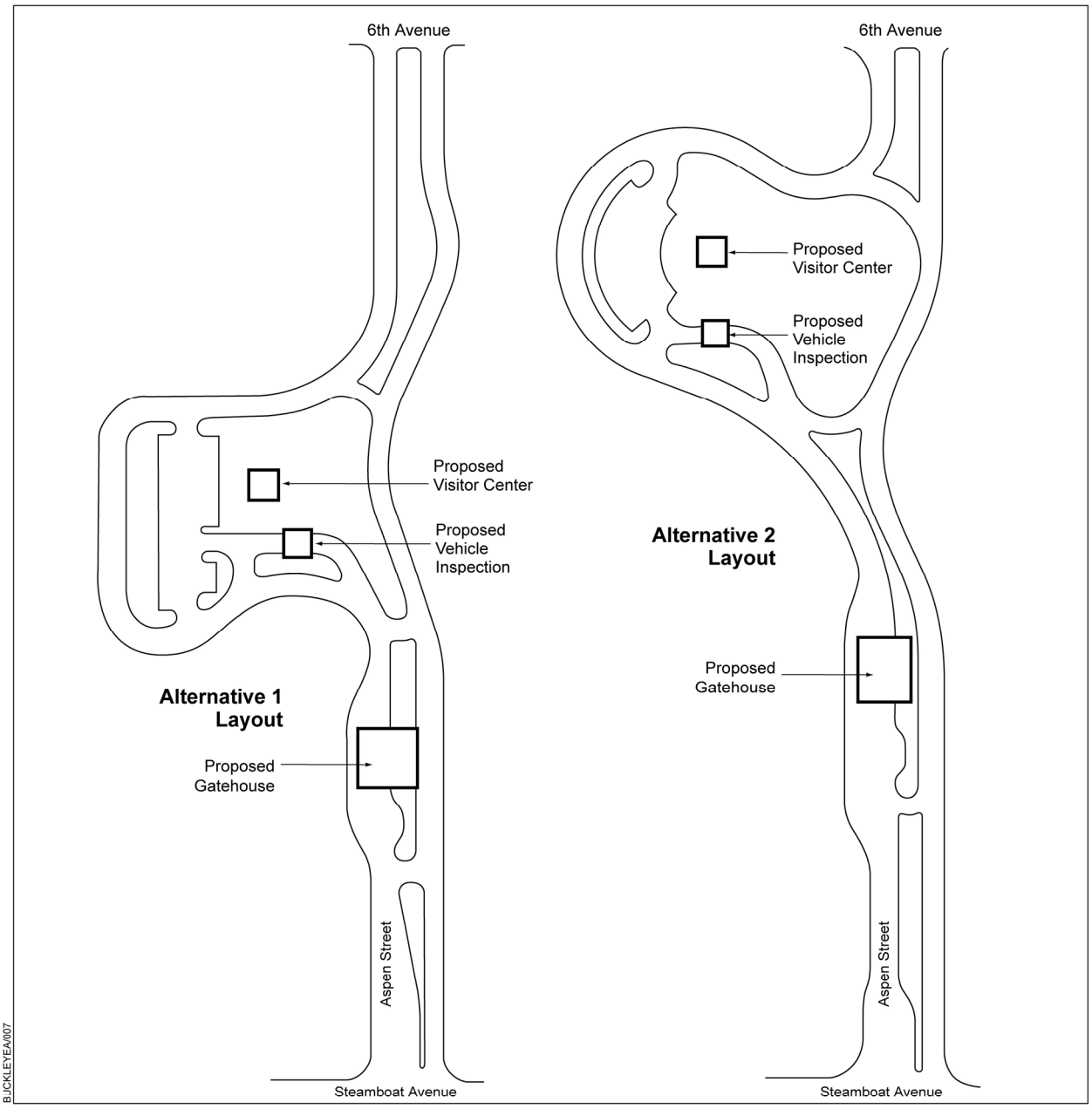
Under the No-Action Alternative, no ECF upgrades would occur. Steps would not be taken to comply with prevailing installation security and anti-terrorism AFIs as they relate to ECFs. No steps would be taken to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, or impart a better impression of professionalism and commitment to facilities excellence.

6th Avenue/Main Gate Alternatives

Two alternative designs/infrastructure layouts were developed for the proposed upgrades at the 6th Avenue/Main Gate ECF. As mentioned previously, the infrastructure components are similar to those described earlier in Section 2.2.1. The two alternative designs/infrastructure layouts for the 6th Avenue/Main Gate ECF are shown in Figure 2-5.

Mississippi Gate Alternatives

Two additional designs/infrastructure layouts were developed for the proposed upgrades at the Mississippi Gate ECF. As mentioned previously, the infrastructure components are similar to those described earlier in Section 2.2.3. The two alternative designs/infrastructure layouts for the Mississippi Gate ECF are shown in Figure 2-6.

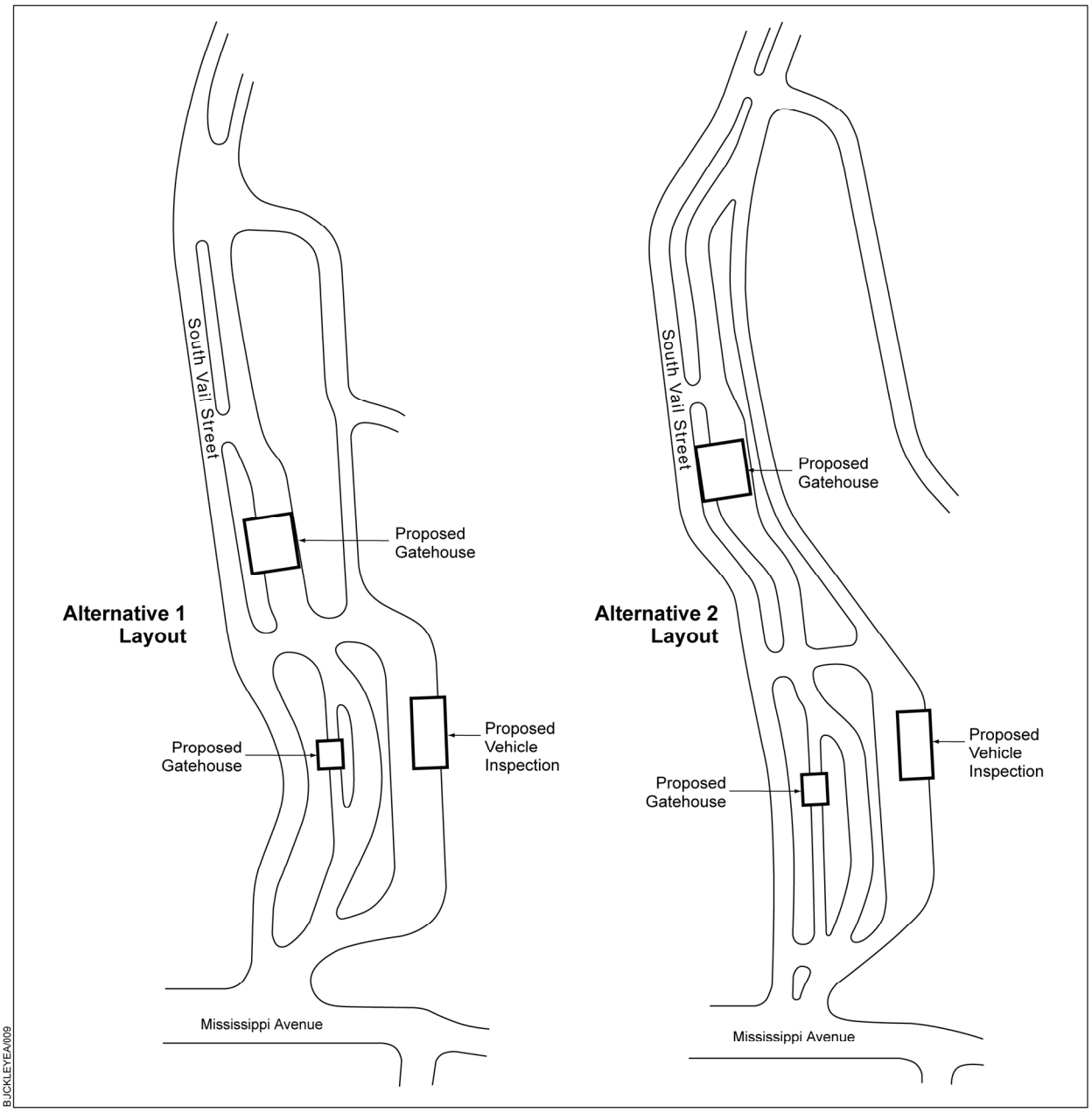


EXPLANATION

Alternative Design/ Infrastructure Layout at the 6th Avenue/ Main Gate ECF

NOT TO SCALE

Figure 2-5



EXPLANATION

Alternative Design/ Infrastructure Layout at the Mississippi Gate ECF

NOT TO SCALE

Figure 2-6

Telluride Gate Alternatives

There was one alternative design/infrastructure layout developed for the proposed upgrades at the Telluride Gate ECF. As mentioned previously, the infrastructure components are similar to those described earlier in Section 2.2.2. The alternative design/infrastructure layout for the Telluride Gate ECF is shown in Figure 2-7.

2.3.1 Alternatives Eliminated from Detailed Study

Those alternatives that did not fully satisfy the purpose and need criteria identified earlier in Section 1.2 were eliminated from detailed study in this EA. Those alternatives eliminated from detailed study, as well as a brief discussion of why they were eliminated, are discussed below.

6th Avenue/Main Gate – Alternative Layouts 1 and 2

Both alternative layout 1 and 2 for the 6th Avenue/Main Gate ECF were eliminated from detailed study because they did not fully satisfy the purpose and need criteria identified earlier. Specifically, neither one of these alternatives would provide a design/infrastructure layout with sufficient containment to facilitate traffic and ECF operations. Additionally, these alternatives conflict with the use of nearby lands for future facilities identified in the Buckley AFB General Plan (Buckley AFB, 2005).

Mississippi Gate – Alternative Layouts 1 and 2

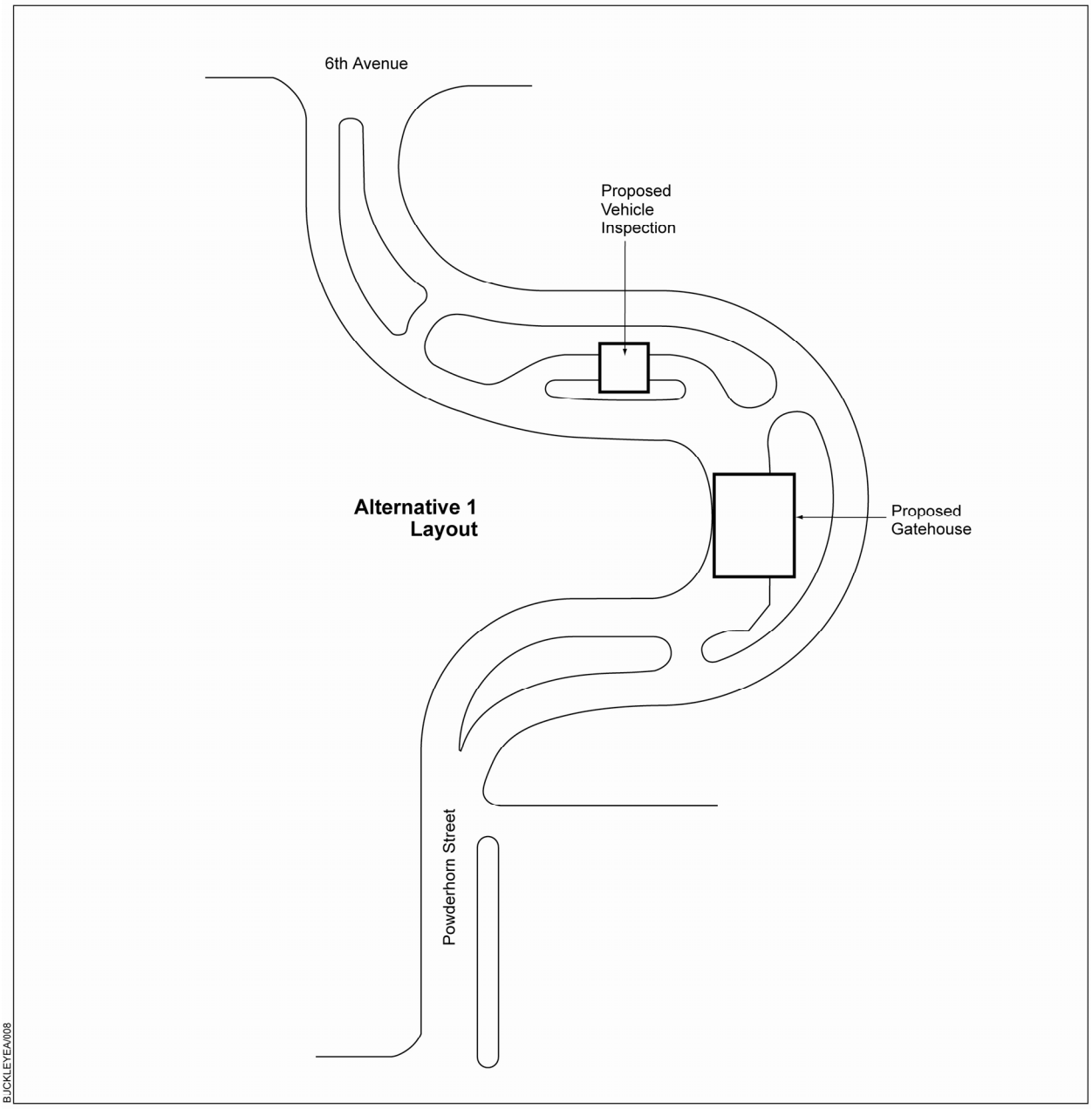
Both alternative layout 1 and 2 for the Mississippi Gate ECF were eliminated from detailed study because they did not fully satisfy the purpose and need criteria identified earlier. Specifically, neither one of these alternatives would adequately resolve cross traffic circulation conflicts that currently exist immediately off the base (i.e., South Aspen Street/Mississippi Avenue/Biscay Street intersections).

Telluride Gate – Alternative Layout

The alternative layout for the Telluride Gate ECF was eliminated from detailed study because it did not fully satisfy the purpose and need criteria identified earlier. Specifically this alternative would conflict with the use of nearby lands for future facilities identified in the Buckley AFB General Plan (Buckley AFB, 2005).

2.3.2 Alternatives Carried Forward for Detailed Study

Those alternatives that fully satisfied the purpose and need criteria identified earlier in Section 1.2 were carried forward for detailed analysis in this EA. The No-Action Alternative does not fully satisfy the purpose and need criteria; however, pursuant to NEPA, the No-Action Alternative has been carried forward as the baseline to which potential impacts of the Proposed Action can be measured. There were no alternative actions (i.e., alternative design/infrastructure layouts) that fully satisfied the purpose and need criteria. As



EXPLANATION

Alternative Design/ Infrastructure Layout at the Telluride Gate ECF

NOT TO SCALE

Figure 2-7

a result, only the Proposed Action and No-Action Alternative were carried forward for detailed analysis in this EA.

2.4 ALTERNATIVES COMPARISON

Table 2-2 provides a summary comparison of the Proposed Action and alternatives as they relate to the purpose and need (i.e., improve gate security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence) and selection criteria presented earlier in Section 2.1. The table shows that only the Proposed Action satisfies each of the selection criteria. Table 2-3 presents a comparative analysis of the Proposed Action and No-Action Alternative for each resource (i.e., air quality, land use, traffic, water resources, visual quality, occupational safety and health, asbestos, ERP sites, hazardous substances and waste sites/storage facilities, and biological resources) evaluated in this EA. Tables 2-4 and 2-5 outline mitigation measures and best management practices that would be implemented to ensure no major adverse impacts occur from implementation of the Proposed Action or No-Action Alternative. A detailed discussion of potential effects is presented in Chapter 4.0, Environmental Consequences. Neither the Proposed Action nor the alternatives are anticipated to have a significant impact on the environment.

Table 2-2. Summary Comparison of Proposed Action and Alternatives to Selection Criteria

Purpose and Need Selection Criteria	6th Avenue/ Main Gate Alternative Layouts	Telluride Gate Alternative Layout	Mississippi Gate Alternative Layouts	Proposed Action	No-Action Alternative
Provide for improved base security in accordance with prevailing AFIs?	Yes	Yes	Yes	Yes	No
Provide for improved safety for security personnel?	Yes	Yes	Yes	Yes	No
Provide for maximized traffic flow and reduced congestion?	No[1]	Yes	No[2]	Yes	No
Demonstrate professionalism and commitment to facilities excellence?	Yes	Yes	Yes	Yes	No
Provide improvements/upgrades consistent with the Buckley AFB General Plan?	No	No	No	Yes	No

Notes: [1] Alternatives do not provide a design/infrastructure layout with sufficient containment to facilitate traffic and ECF operations.
[2] Alternatives do not adequately resolve cross traffic circulation conflicts that currently exist immediately off the base (Aspen Street/Mississippi Avenue/Biscay Street).

Table 2-3. Summary of Environmental Impacts
Page 1 of 2

Resource	Proposed Action	No-Action Alternative
Air Quality	• Demolition/construction activities would result in minor, short-term air quality impacts • Vehicle wait times to enter Buckley AFB could be reduced, resulting in long-term beneficial impacts to regional air quality	• No short- or long-term impacts to air quality would occur
Land Use and Aesthetics	• The proposed ECF upgrades would result in long-term, beneficial impacts to adjacent land uses • Proposed ECF upgrades would result in long-term beneficial impacts to the visual character of the gate areas	• No short- or long-term impacts to land use would occur • No short- or long-term impacts to the visual character of the gate areas would occur
Water Resources	• Minor, short-term impacts to surface water drainage patterns may occur during demolition and construction activities • Minor, long-term impacts to a portion of the storm water detention pond near the Telluride Gate would occur	• No short- or long-term impacts to water resources would occur
Biological Resources	• Demolition and construction activities would result in minor short-term impact to wildlife • Minor, short- and long-term impacts to prairie dogs as a result of habitat loss, transfer, or removal could occur • No short- or long-term impacts to sensitive habitats would occur	• No short- or long-term impacts to biological resources would occur
Traffic	• The proposed ECF upgrades would result in long-term beneficial impacts with improved traffic flow and reduce congestion • The ECF upgrades would result in long-term beneficial impacts with improved vehicle queuing times and reduced traffic/congestion immediately off the base • The proposed ECF upgrades could result in minor, short-term traffic impacts during construction activities	• Minor, long-term impacts would result at the Mississippi Gate where vehicle queuing space would remain limited and cross traffic conflicts would remain
Occupational Safety and Health	• Proposed upgrades would result in minor long-term safety and health benefits for security personnel and for visitors entering/exiting the base	• Minor, long-term impacts to safety would occur with no improvement in safety for security personnel and visitors to the base
Asbestos-Containing Material	• Minor, short-term impacts from ACM or asbestos-contaminated soils could occur during demolition activities (if discovered)	• No short- or long-term impacts to ACM would occur

Table 2-3. Summary of Environmental Impacts
Page 2 of 2

Resource	Proposed Action	No-Action Alternative
Hazardous Substances and Waste Sites/Storage Facilities	• No short- or long-term impacts from the storage, use, and disposal of hazardous materials and hazardous waste would occur	• No short- or long-term impacts from the storage, use, or disposal of hazardous materials or hazardous waste would occur
Environmental Restoration Program Sites	• No short- or long-term impacts to ERP sites would occur	• No short- or long-term impacts to ERP sites would occur

ACM = asbestos-containing material
AFB = Air Force Base
ECF = Entry Control Facility
ERP = Environmental Restoration Program

Table 2-4. Mitigation Measures

Resource	Proposed Action	No-Action Alternative
Air Quality	None	None
Lands Use and Aesthetics	None	None
Water Resources	None	None
Biological Resources	None	None
Traffic	None	None
Occupational Safety and Health	None	None
Asbestos-Containing Material	None	None
Hazardous Substances and waste Sites/Storage Facilities	None	None
Environmental Restoration Program Sites	None	None

Table 2-5. Best Management Practices

Resource	Proposed Action	No-Action Alternative
Air Quality	Construction equipment would be operated and maintained to reduce/minimize combustive emissions Area of soil disturbance would be limited Exposed soils would be watered Prepare a fugitive dust control plan	None
Lands Use and Aesthetics	None	None
Water Resources	A SWPPP would be developed and implemented for construction activities to eliminate or reduce potential impacts to surface water quality	None
Biological Resources	Vegetation clearing/removal would be conducted prior to March 1 or after October 31 to minimize potential impacts to ground-nesting birds and to comply with the MBTA Prairie dogs would be removed prior to vegetation clearing activities If nesting burrowing owls are present prior to prairie dog removal, then removal action would not take place Preconstruction survey would be conducted to confirm the presence or absence of any nesting species prior to ground breaking activities	None
Traffic	Construction worker vehicles would be parked in existing parking lots Notifications and signage would be implemented to minimize vehicle delays during construction	None
Occupational Safety and Health	None	None
Asbestos-Containing Material	None	None
Hazardous Substances and waste Sites/Storage Facilities	Construction equipment maintenance would occur off site Construction waste/debris would be recycled to the extent possible Radon-resistant techniques would be incorporated into the building design/construction to limit potential radon exposure	None
Environmental Restoration Program Sites	Construction activities would be coordinated with the installation ERP manager to ensure no impacts to nearby ERP Site 10	None

ERP = Environmental Restoration Program
MBTA = Migratory Bird Treaty Act
SWPPP = Storm Water Pollution Prevention Plan

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section of the EA provides a description of the affected environment and the areas that could potentially impact or be impacted by the implementation of the Proposed Action. This section also describes the potential environmental consequences associated with implementing the Proposed Action.

Based upon the nature of the activities that would occur under the Proposed Action and No-Action Alternative, it was determined that the potential exists for the following resources to be affected or to create environmental effects: air quality, land use, traffic, water resources, visual quality, occupational safety and health, asbestos, ERP sites, hazardous substances and waste sites/storage facilities, and biological resources.

The region of influence (ROI) to be studied is defined for each resource area affected by the proposed project. The ROI determines the geographical area to be addressed as the Affected Environment. Although the project area may constitute the ROI limit for some resources, potential impacts associated with certain issues (e.g., traffic and air quality) transcend these limits.

3.1 AIR QUALITY

Air quality in a given location is described as the concentration of various pollutants in the atmosphere, generally expressed in units of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of a pollutant concentration is determined by comparing it to federal and/or state ambient air quality standards. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare with a reasonable margin of safety.

The U.S. EPA established the federal standards for the permissible levels of certain pollutants in the atmosphere. The National Ambient Air Quality Standards (NAAQS) have been established for seven criteria pollutants: ozone, nitrogen dioxide (NO_2), particulate matter equal to or less than 10 microns in diameter (PM_{10}), particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$), carbon monoxide (CO), sulfur dioxide (SO_2), and lead. Ozone is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors. The ozone precursors are nitrogen oxide (NO_X) and volatile organic compounds (VOCs). The state standards are established by the Colorado Department of Public Health and Environment (CDPHE), Air Quality Control Commission and are termed the Colorado Ambient Air Quality Standards (CAAQS). The NAAQS and CAAQS are outlined in Table 3-1.

Table 3-1. National and State Ambient Air Quality Standards.

Criteria Pollutant	Averaging Time	Primary NAAQS[1, 2, 3, 4]	Secondary NAAQS[1, 2, 5]	Colorado Standards[2, 3]
Carbon Monoxide	8-hour 1-hour	9 ppm (10,000 μg/m^3) 20 ppm (23,000 μg/m^3)	No standard No standard	9 ppm (10,000 μg/m^3) 35 ppm (40,000 μg/m^3)
Nitrogen Dioxide	Annual	0.053 ppm (100 μg/m^3)	Same as Primary Standard	0.053 ppm (100 μg/m^3)
Ozone	8-hour 1-hour	0.08 ppm (157 μg/m^3)	Same as Primary Standard	0.12 ppm (235 μg/m^3)
Lead	Quarterly	1.5 μg/m^3	Same as Primary Standard	No standard
PM_{10}	Annual 24-hour	No standard 150 μg/m^3	No standard Same as Primary Standard	50 μg/m^3 150 μg/m^3
$PM_{2.5}$	Annual 24-hour	15 μg/m^3 35 μg/m^3	Same as Primary Standard Same as Primary Standard	No standard No standard
Sulfur Oxides (measured as SO_2)	Annual 24-hour 3-hour	0.03 ppm (80 μg/m^3) 0.14 ppm (365 μg/m^3) No standard	No standard No standard 0.50 ppm (1,300 μg/m^3)	15 μg/m^3 100 μg/m^3 700 μg/m^3

Notes:
[1] Primary standards define levels of air quality necessary to protect public health with an adequate margin of safety. Secondary standards define levels of air quality necessary to protect public welfare (i.e., soils, vegetation, property, and wildlife) from any known or anticipated adverse effects.
[2] The 8-hour primary and secondary ambient air quality standards are met at a monitoring site when the average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.08 ppm.
[3] The NAAQS and Colorado standards are based on standard temperature and pressure of 25 degrees Celsius and 760 millimeters of mercury.
[4] National Primary Standards: The levels of air quality necessary to protect the public health with an adequate margin of safety. Each state must attain the primary standards no later than three years after the state implementation plan is approved by the U.S. EPA.
[5] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the state implementation plan is approved by the U.S. EPA.

μg/m^3 = micrograms per cubic meter
NAAQS = National Ambient Air Quality Standards
PM_{10} = particulate matter equal to or less than 10 microns in diameter
$PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in diameter
ppm = parts per million
SO_2 = sulfur dioxide

Areas that meet the NAAQS standard for a criteria pollutant are designated as being "in attainment" while areas where criteria pollutant levels exceed the NAAQS are designated as "nonattainment". The nonattainment classifications for CO and PM_{10} are further divided into moderate and serious categories. Ozone nonattainment areas are further classified, based on the severity of the pollution problem, as either basic, marginal, moderate, serious, severe, or extreme. A maintenance area is an area that has recently been re-designated as an attainment area from a former nonattainment area. However, during the maintenance period, most of the Clean Air Act (CAA) rules for a nonattainment area are still applicable to a maintenance area.

3.1.1 Affected Environment

The project study area is located in Arapahoe County, Colorado, within the Metropolitan Denver Air Quality Control Region (AQCR). Based on the regional nature of air quality, the ROI for this resource is the entire Denver AQCR. The

Denver AQCR is currently designated as attainment for NO_2, sulfur oxides (SO_X), and $PM_{2.5}$; attainment/maintenance for CO and PM_{10}; and nonattainment for the ozone standards (Colorado Department of Public Health and Environment, 2006, 2008; Colorado Air Quality Control Commission, 2005). A detailed plan to reduce ozone is being developed by the Colorado Air Pollution Control Division, along with the Regional Air Quality Council and the North Front Range Metropolitan Planning Organization. The resulting attainment plan will be submitted by the Regional Air Quality Council to the Colorado Air Quality Control Commission for approval by the end of 2008, with legislative review expected after that. Once all state approval processes have been completed, the plan ultimately will be submitted by the governor to the U.S. EPA. The plan will require further reductions in ozone levels beyond what was required through an earlier Ozone Early Action Compact. The Ozone Early Action Compact allowed the U.S. EPA to defer classifying the Denver metropolitan area under the 8-hour ozone standard. That deferral expired on November 20, 2007 (Colorado Department of Public Health and Environment, 2008).

Buckley AFB is classified as a major source for NO_X and SO_2 under the Title V provisions. Buckley AFB is a minor source for CO, PM_{10}, and VOCs under the Title V provisions because the base accepted permit limits that establish the potential to emit at less than 100 tons per year. Buckley AFB falls under the jurisdiction of the CDPHE, which is tasked with issuing, renewing and enforcing the CAA Title V Air Operating Permit for Buckley AFB (Permit No. 950PAR118). The permit documents stationary sources of regulated emissions at Buckley AFB, including natural gas-fired boilers, gasoline-fired boilers, dual-fired boilers that primarily use natural gas but have fuel oil back-up, fuel oil generators, gasoline-fired arresting barrier engines, regulated aboveground storage tanks (ASTs), degreasing stations, and abrasive paint removal stations. The 2006 emission inventory shows Buckley AFB to be well below permit limits for all pollutants (Golder Associates, 2007).

Mobile sources at Buckley AFB include on- and off-road vehicles and equipment, aerospace ground equipment, and aircraft operations. Mobile sources are not considered under the CAA Title V operating permit or the Colorado operating permit program, but are considerable components of total base emissions. Total stationary and mobile source emissions at Buckley AFB are presented in Table 3-2.

3.1.2 Environmental Consequences

As part of the analysis, emissions generated from construction, demolition, operation, motor vehicles, and other non-mobile sources were examined for CO, VOCs, NO_x, SO_X, and PM_{10}. Impacts to air quality would be considered significant if any criteria pollutant emissions associated with the implementation of the Proposed Action would exceed the *de minimis* rates specified for a nonattainment area for the 8-hour ozone standard, would exceed the *de minimis* rates specified for a attainment/maintenance areas for CO or PM_{10}, would be regionally significant, or would contribute to a violation of the Buckley AFB Title V permit limitations.

Table 3-2. Buckley AFB Mobile and Stationary Air Emissions Inventory (tons/year)[1]

Pollutant Emission Sources	VOC[2]	CO	NO_x[2]	SO_x	PM_{10}
Buckley AFB 2006 Point Source Emissions	11.11	41.14	54.75	1.62	4.17
Buckley AFB 2006 Fugitive Source Emissions	10.81	0.07	0	neg.	2.78
Buckley AFB Total Emissions	21.92	41.21	54.75	1.62	6.95
AQCR 36 Emission Inventory	185,055	439,095	114,245	65,700	25,550
Conformity Rule *De Minimis* Threshold[3]	100	100	100	NA	100
10 percent of AQCR 36 Emission Inventory (Significant Threshold Values)	18,506	43,910	11,425	NA	2,555

Notes:
[1] The Buckley AFB 2003 Air Emission Inventory did not assess lead or $PM_{2.5}$ emissions.
[2] VOCs and NO_x contribute to the formation of ground-level ozone
[3] 40 CFR 93.153(b) – These limits are applicable to non-attainment and maintenance areas, and therefore, apply to Buckley AFB.

AFB = Air Force Base
AQCR = Air Quality Control Region
CO = carbon monoxide
neg = negligible
NO_X = nitrogen oxide
PM_{10} = particulate matter equal to or less than 10 microns on diameter
SO_X = sulfur oxide
tpy = tons per year
VOC = volatile organic compound

Sources: URS Group, 2004; Golder Associates, 2007; Colorado Air Quality Control Commission, 2000, 2001a, b.

No-Action Alternative

Under the No-Action Alternative, no ECF upgrades would occur. Therefore, implementing the No-Action Alternative would result in no impacts to air quality.

Proposed Action

Implementing the Proposed Action would result in minor, short-term impacts on local air quality during demolition and construction activities. Emissions would not exceed the *de minimis* rates specified for a nonattainment area for the 8-hour ozone standard, would not exceed the *de minimis* rates specified for attainment/maintenance areas for CO or PM_{10}, would not be regionally significant, and would not contribute to a violation of Buckley AFB Title V permit limitations. The primary impact would be directly related to the generation of PM_{10} at and around the project areas during the preliminary stages of demolition and construction. These emissions would primarily be a function of demolition and construction activities such as grading and excavation, movement of dust (wind erosion) from stockpiled materials, and mechanical entrainment of road dust.

Demolition/Construction Activities

The proposed upgrades at the three gate locations would result in the generation of PM_{10} emissions as fugitive dust from ground-disturbing activities (e.g., grading, demolition, soil piles, etc.). Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of dust emissions from a construction site is proportional to the area of land being disturbed and the level of construction activity. Demolition and construction operations would also result in emissions of criteria pollutants as combustion products from equipment, as well as evaporative emissions from architectural coatings and asphalt paving operations (Sacramento Metropolitan Air Quality Management District, 1994). Specific information describing the types of equipment required for a specific task, the hours the equipment would be operated, and the operating conditions vary widely from project to project. For purposes of analysis, these parameters were estimated using established methodologies for construction and experience with similar types of construction projects. Construction and demolition activities associated with the Proposed Action would create fugitive dust emissions from the following activities:

- Ground disturbance (soil scraping, bulldozing, compacting, etc.)
- Site grading
- Foundation excavation
- Material handling (soils, aggregate, demolition debris/waste, etc.)
- Vehicle travel on paved and unpaved roads
- Construction
- Walk-way and parking lot preparation
- Sidewalk preparation and paving
- Landscape and turf installation
- Miscellaneous emissions (equipment trackout, windblown dust, etc.)

The Air Force Air Conformity Applicability Model (ACAM) was used to estimate emissions from the demolition/construction phase for all three gate locations under the Proposed Action (Table 3-3). ACAM calculates construction and demolition emissions based on algorithms developed by the South Coast and Sacramento Metropolitan Air Quality Management Districts from California, and it incorporates the U.S. EPA's Mobil 6, a regulatory on-road source model to calculate on-road vehicle emissions (South Coast Air Quality Management District, 1993, Sacramento Metropolitan Air Quality Management District, 1994).

Table 3-3. Proposed Action Estimated Demolition/Construction Emissions

Year	Emissions Generated from Construction and Demolition Site Disturbance Activities (tons/year)				
	VOC	NO_X	CO	SO_X	PM_{10}
Construction Emissions (2009)	0.06	1.00	0.36	neg.	0.04
Operational Emissions	0	0	0	0	0

CO = carbon monoxide
neg = negligible
NO_X = nitrogen oxide
PM_{10} = particulate matter equal to or less than 10 microns on diameter
VOC = volatile organic compound

Fugitive Dust Emissions

Fugitive dust emissions (i.e., PM_{10} and $PM_{2.5}$) generated at each location would depend on the extent and duration of the activities listed above. For the purposes of this EA, fugitive dust emissions were estimated based on the area of ground disturbance related to each gate location (see Table 2-1). Areas of ground disturbance were assumed at maximum anticipated footprint sizes, with contingency for contractor lay-down and preparation areas. Conservative assumptions related to distances required for utility trenching, vehicle travel on paved and unpaved roads and material handling were also made for calculating emissions. BMPs would be specified in the fugitive dust control plan and would be instituted on-site to minimize fugitive dust emissions. BMPs could include:

- Applying water on haul roads and other exposed earth surfaces,
- Wetting equipment and excavation faces,
- Spraying water on buckets during excavation and dumping,
- Hauling materials in properly tarped or watertight containers,
- Restricting vehicle speeds to 10 miles per hour (mph),
- Covering excavated areas and material after excavation activity ceases, and
- Reducing the excavation size and/or number of excavations.

Operational Emissions

No new stationary source of emissions from completed buildings and facilities would be anticipated with the implementation of the Proposed Action. Although no additional furnaces, backup generators, or fuel tanks would be installed and operated as part of the Proposed Action, heating and cooling of the 6th Avenue/Main Gate Visitor Center was included in the air emission calculations. There would be no increase in personnel or traffic at Buckley AFB as a result of the Proposed Action. With implementation of the Proposed Action, vehicle wait times to enter Buckley AFB should be reduced, resulting in negligible, long-term, beneficial impacts to regional air quality. Therefore, no change in ongoing emissions due to personal vehicle operations would be anticipated. Changes in landscaping and maintenance activities would also be considered negligible.

Air Conformity Analysis

Federal actions must comply with the U.S. EPA General Conformity Rule published in 40 CFR 93, Subpart B (for federal agencies). The General Conformity Rule, which took effect on January 31, 1994, requires all federal agencies to ensure that proposed agency activities conform to an approved or promulgated State Implementation Plan (SIP). Conformity means compliance with a SIP for the purpose of attaining or maintaining the NAAQS. Specifically, this means ensuring the federal activity does not: (1) cause a new violation of the

NAAQS; (2) contribute to an increase in the frequency or severity of violations of existing NAAQS; (3) delay the timely attainment of any NAAQS; or (4) delay interim or other milestones contained in the SIP for achieving attainment.

Compliance with the General Conformity Rule is assessed by conducting a conformity applicability analysis; and if *de minimis* or regional significance is exceeded, a conformity determination is conducted. The General Conformity Rule provides two significance thresholds for emissions from a federal action: (1) a regionally significant action is a federal action for which the emissions of any pollutant represent 10 percent or more of an area's emissions inventory for that pollutant and (2) if emissions of any pollutant exceed the *de minimis* emission thresholds for nonattainment and maintenance areas, the emissions would be significant. Total emissions within AQCR 36, 10 percent of the AQCR 36 emissions, and the *de minimis* thresholds for maintenance areas are provided on Table 3-4. The estimate annual emissions associated with the implementation of the Proposed Action are also presented in Table 3-4. These include the estimated annual emissions created through demolition/construction and operational activities. As shown in the table, the estimated values for CO, VOC, NO_x, and PM_{10} would be less than the *de minimis* values and less than 10 percent of the AQCR 36 emission inventory. As a result, a formal conformity determination is not required because (1) the Proposed Action is not "regionally significant" and (2) the estimated emissions are below *de minimis* values as stated in 40 CFR 93.153(b).

Table 3-4. Proposed Action Air Emissions Totals

Year	Emissions (tons/year)				
	VOC	NO_x	CO	SO_X	PM_{10}
Demolitions/Construction Emissions (2009)	0.06	1.00	0.36	Neg.	0.04
Operational Emissions	0	0	0	0	0
De minimis Values	100	100	100	NA	100
Above/Below *de minimis* values?	Below	Below	Below	NA	Below

CO = carbon monoxide
NA = not applicable
neg = negligible
NO_X = nitrogen oxide
PM_{10} = particulate matter equal to or less than 10 microns on diameter
SO_X = sulfur oxide
VOC = volatile organic compound

3.2 LAND USE AND AESTHETICS

3.2.1 Land Use

3.2.1.1 Affected Environment.

The ROI for potential land use impacts includes the project sites and the immediate surrounding area (both on- and off-base). Land uses within Buckley AFB are generally divided into fourteen Existing Land Use Area (ELUA) categories according to the 2005 Buckley AFB General Plan (Buckley AFB, 2005):

- 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
- Water.

According to the 2005 General Plan, both the 6th Avenue/Main Gate and the Mississippi Gate are located within the Administrative ELUA. The Telluride Gate is within the Community Commercial ELUA designation.

To facilitate future planning and development on the base, Area Development Plans (ADPs) have been developed. ADPs are conceptual planning boundaries overlaid on the existing layout of the base. The ADPs consolidate and colocate facilities with like or compatible land uses. The goal of establishing and implementing the ADP concept was to minimize health, safety, and security risks by segregating incompatible facilities and activities, and by placing similar facilities in close proximity to one another. This approach also optimizes organizational efficiencies, minimizes travel distances and times, and reduces associated potential exposure to hazards. All three gates are within ADP 2 (Entry Gates ADP).

The Buckley AFB AICUZ Program combined with analysis of the functional relationships between on- and off-base land uses address off-base land uses. The AICUZ Program strives to ensure compatible use of the lands surrounding the installation to reduce encroachment that may impede flight operations. These off-base development concerns include height of flight obstructions, noise levels generated by flight operations, and zones of increased accident potential in the vicinity of airfield runways (i.e., Accident Potential Zones [APZs]). There are three types of APZs. The Clear Zone has the greatest accident potential and is an area where no structures except navigational aids and airfield lighting are allowed. Certain land use restrictions are recommended in APZ I and APZ II. Various industrial, manufacturing, and agricultural land uses are generally acceptable within APZ I; however, residential and high population density land uses are discouraged. The accident potential in APZ II is low enough that in addition to those uses listed for APZ I, low-density housing and commercial uses are also compatible with flight operations. The 6th Avenue/Main Gate is located within APZ I. The Telluride Gate and Mississippi Gate are outside all APZs.

Adjacent land use across 6th Avenue and north of the 6th Avenue/Main Gate and the Telluride Gate is industrial in nature. Adjacent land use across Mississippi Avenue to the south of the Mississippi Gate is residential. Compatibility of off-base land use is conducted by partnering to promote planned growth that would support the needs of the City of Aurora, Arapahoe County, and Buckley AFB.

3.2.1.2 Environmental Consequences.

No-Action Alternative

Under the No-Action Alternative, no ECF upgrades would occur. Therefore, implementing the No-Action Alternative would result in no impacts to land use.

Proposed Action

Implementing the Proposed Action would result in long-term beneficial impacts to land use. The proposed upgrades would result in no change in existing land use and would be consistent with the 2005 General Plan ADPs. The proposed upgrades would also be consistent with the Buckley AFB AICUZ Program, would result in no conflicts with adjacent on-base land uses, and would not conflict with off-base land use planning or zoning.

3.2.2 Aesthetics

3.2.2.1 Affected Environment.

The ROI for potential visual quality impacts are the areas immediately surrounding the three gate locations both on- and off-base. The Air Force strives to provide both efficient and pleasant physical environments that are conducive to attracting and retaining skilled and motivated personnel. An Air Force installation conveys a visual image in terms of its design character and organization that can be either clear, logical, and attractive or cluttered, confused, and disoriented. The design, location, and maintenance of individual elements such as buildings, roads, parking lots, fencing, signage, and landscaping affect the quality of the visual environment of a given base. In fact, the perimeter fencing, adjacent buildings, and entry gates are often the only elements the surrounding community sees and opinions are formed by the visual quality or character of these elements. A base that is functional, attractive, and harmonious from within creates a positive impression on the surrounding community and creates an environment that enhances the capability of the base to support its mission(s) and to foster pride with personnel and their commitment to military service.

Facility and infrastructure upgrades/modifications and new construction is ongoing throughout Buckley AFB. This development is being conducted in accordance with the 2005 General Plan which was developed to guide the installation planning process and insure a well-planned, vibrant, and aesthetically pleasing base integrated into its natural environment. In general, all three of the existing gates (to a lesser extent the Telluride Gate due to its size) are visually appealing infrastructure elements that give the impression of a functional, well organized, military base. None of the gates are in conflict with, or detract

significantly from, the prevailing visual quality (architectural style, design, etc.) of the immediate surrounding area or land uses.

3.2.2.2 Environmental Consequences.

No-Action Alternative

Under the No-Action Alternative, no ECF upgrades would occur. Therefore, implementing the No-Action Alternative would result in no impacts to visual quality/resources in the area.

Proposed Action

The long-term effect of constructing new ECFs would result in a long-term, beneficial impacts to the visual character of the gate areas. In addition, the use of landscaping would enhance the aesthetic quality of the ECF locations. The upgrades would be consistent with the 2005 General Plan which was developed to insure a well-planned, vibrant, and aesthetically pleasing base. Implementing the proposed upgrades would improve the visual appearance of all three gates, would be consistent with, and compliment, the look and feel of other development on the base (i.e., consistent style, design, color, etc.), and would not conflict or detract from the prevailing visual quality/character of adjacent off-base areas. Where appropriate, ECF design/construction would comply with the requirements of UFC 4-010-01, *Minimum Antiterrorism Standards for Buildings*.

3.3 WATER RESOURCES

3.3.1 Affected Environment

Surface Water Features and Storm Water Drainage

The ROI for potential impacts to water resources includes East Toll Gate Creek. Surface waters include lakes, ponds, rivers, streams, impoundments, and wetlands within the area potentially disturbed during implementation of proposed upgrades. Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for saturated soil. The Clean Water Act (CWA), as amended in 1977, is the primary federal law that protects the nation's waters.

The South Platte River, approximately 15 miles northwest of Buckley AFB, is the primary surface water drainage in the region. There are several intermittent creeks located within or adjacent to Buckley AFB. Named tributaries include East Toll Gate Creek, which flows into Sand Creek. The only surface water feature in the vicinity of the gate locations is a storm water detention pond situated adjacent to the Telluride Gate. Potential wetland areas on the base are distributed within the East Toll Gate Creek channel. There are no wetlands in the immediate vicinity of any of the three existing gate locations.

Buckley AFB is generally divided into two drainage watersheds – the eastern watershed (Drainage Basins A, B, and E) and the western watershed (Drainage Basins C and D). The on-base watersheds, drainage basins, and corresponding impervious areas within each basin are detailed in Table 3-5. As demonstrated by the table, there is approximately 3,127 acres of drainage area at Buckley AFB, of which, approximately 412 acres (13.2) percent are currently covered by impervious surfaces.

Table 3-5. On-Base Surface Water Drainage and Basins

On-Base Watershed	Drainage Basin	Approximate Area Covered by Impervious Surfaces (acres)	Approximate Area with no Impervious Surface Coverage (acres)	Approximate Total Area (acres)
Eastern	A	44	339	383
	B	42	542	564
	E	14	323	337
Western	C	170	1,139	1,309
	D	142	372	514
	Totals	**412**	**2,715**	**3,127**

Source: Buckley AFB, 2002.

The 6th Avenue/Main Gate is located in Drainage Basin A (Outfall 8 potentially discharges to Sand Creek based on topography, but it is unlikely to occur because of the distance and natural infiltration) and current infrastructure accounts for approximately 2.0 acres (.05 percent) of the total impervious surface coverage of the basin. The Telluride Gate is also located in Drainage Basin A (Outfall 7 discharging to the City of Aurora storm sewer system) and current infrastructure accounts for approximately 0.5 acre (.01 percent) of the total impervious surface coverage in the basin. The Mississippi Gate is located in Drainage Basin C (Outfall 1 discharging into the East Toll Gate Creek) and infrastructure accounts for approximately 1.6 acres (.009 percent) of the total impervious coverage in the basin.

The U.S. EPA has jurisdiction over storm water permitting at federal facilities in Colorado. Storm water runoff from construction sites on federal facilities in Colorado is regulated under the NPDES General Permit for Storm Water Discharges from Construction Activities (COR10000F). Buckley also obtained coverage under the NPDES General Permit for Storm Water Discharges from Federal Facility Small Municipal Separate Storm Sewer Systems (MS4) in Colorado on April 9, 2004. The MS4 permit (COR04208f) requires Buckley AFB to conduct several activities including review and/or coordinate construction storm water permitting activities and ensure controls are included in the design of new facilities. None of the three gate locations are situated near industrial facilities.

Floodplains

Floodplains can generally be described as low areas or land alongside or surrounding a body of water which holds the overflow of water during a given flood event. Executive Order (EO) 11988, Floodplains Management, directs government agencies to avoid adverse effects and incompatible development in

floodplains. The objective of the EO is to avoid, to the extent possible, the long- and short-term adverse impacts associated with occupancy and modification of a floodplain. The EO applies to federal agencies conducting activities and programs that may potentially affect floodplains.

To comply with EO 11988, the Air Force must evaluate the impacts of specific proposal on the floodplain, before taking any action. If construction within the 100-year floodplain is unavoidable, the agencies must ensure the action conforms to applicable floodplain protection standards and that accepted flood proofing and other flood protection measures are applied to the construction. The Federal Emergency Management Agency (FEMA) has designated the East Toll Gate Creek drainage, and the Sand Creek drainage as being within the 100-year floodplain. None of the three existing gate locations are situated within or immediately adjacent to the 100-year floodplain of East Toll Gate Creek or Sand Creek.

Groundwater

Buckley AFB is located within a groundwater basin know as the Denver Basin. There are four major bedrock aquifers that underlie Buckley AFB within the Denver basin, the Denver, Upper Arapahoe, Lower Arapahoe, and Laramie-Fox Hills aquifer. These aquifers are separated by a bed of shale with low permeability and are located in zones of sandstone and siltstone (U.S. Geological Survey, 1995). Surficial aquifers at Buckley AFB are associated with present and ancestral surficial stream and river valleys. The aquifer systems are the result of alluvial deposition from erosion of upland bedrock areas. The alluvial aquifer identified on Buckley AFB is associated with East Toll Gate and Sand Creeks and consists of primarily coarse-grained materials. Groundwater is recharged to this aquifer through direct infiltration of precipitation and irrigation water and by lateral and upward seepage of groundwater. Groundwater is discharge from the alluvial aquifer through seepage to streams, evapotranspiration, downward seepage into underlying bedrock aquifers, and extraction via pumping wells. Groundwater flows in these surficial aquifers generally toward the north-northwest along creek beds, toward the South Platte River (Buckley AFB, 2002). There are six groundwater wells on the base.

3.3.2 Environmental Consequences

No-Action Alternative

Implementing the No-Action Alternative would result in no impacts to water resources. Because no ECF upgrades would occur, the storm water detention pond near the Telluride Gate would not be impacted. As a result, there would be no impacts to surface water features (including wetlands).

Proposed Action

Minor, long-term impacts to a portion of the storm water detention pond situated near the Telluride Gate would result from implementing proposed upgrades. A portion of this detention pond would be removed to allow upgrades to the entry

point. As part of the construction activity, the detention pond would be modified and expanded to allow for adequate storm water detention from the northwestern portion of the base. Because the detention pond would continue to have adequate containment of storm water runoff, implementing the Proposed Action would result in minor impacts to surface water resources.

Implementing the proposed upgrades would result in an increase in total impervious surface coverage (and increased storm water runoff) within Drainage Basins A and C. Specifically, the upgrades would result in an additional 1.0 acres of impervious surface coverage in Drainage Basin A and an additional 0.5 acre of impervious surface coverage in Drainage Basin C. These numbers represent a 0.02 and 0.003 percent increase in each of the respective drainage basins. These slight increases would not add significantly to storm water discharge in the respective drainage basins and are well within the capacity of the existing drainage system(s) in the area. The construction contractor would obtain a Construction Site Storm Water NPDES permit before initiating any ground-disturbing activity. The Construction Site Storm Water NPDES permit, together with the required construction and operation SWPPPs, would outline site management practices designed to eliminate or reduce any potential impacts as a result of potential soil erosion, pollutant discharge, etc.

None of the gate locations are located within or immediately adjacent to the 100-year floodplain of East Toll Gate Creek or Sand Creek. As a result, there would be no impacts to floodplains and activities would be consistent with EO 11988.

Due to the depth of groundwater in the region (greater than 20 feet below ground surface in most areas), it is unlikely that groundwater would be encountered during construction activities associated with the proposed upgrades. The small increase in impervious surface acreage (total of 1.5 acres) as a result of the proposed upgrades would not affect the recharge potential of the aquifer. No groundwater impacts are anticipated.

3.4 BIOLOGICAL RESOURCES

3.4.1 Affected Environment

Biological resources include the native and introduced plants and animals in the project area. For discussion purposes, these are divided into vegetation, wildlife, threatened and endangered species, and sensitive habitats. The ROI for discussion of biological resources and potential impacts on these resources include the site of proposed ECF upgrades (where construction is proposed) and adjacent property.

Buckley AFB lies within the Dry Domain, Central High Plains ecological subregion (U.S. Army Corps of Engineers, 1997). Areas to the west are mostly urbanized. Historically, the native climax vegetation for the region was primarily mixed bunchgrass prairie (U.S. Air Force, 1998).

Vegetation. Buckley AFB lies in the plains grassland ecosystem that is composed of a patchwork of grass communities. The communities on base are shown in Figure 3-1. The dominant habitat type on base is the crested wheatgrass (*Agropyron dasystachyum*) community. Mid-grass prairie is dominant in the southern portion of the base and contains species such as western wheatgrass (*Agropyron smithii*) (Brown, 1947).

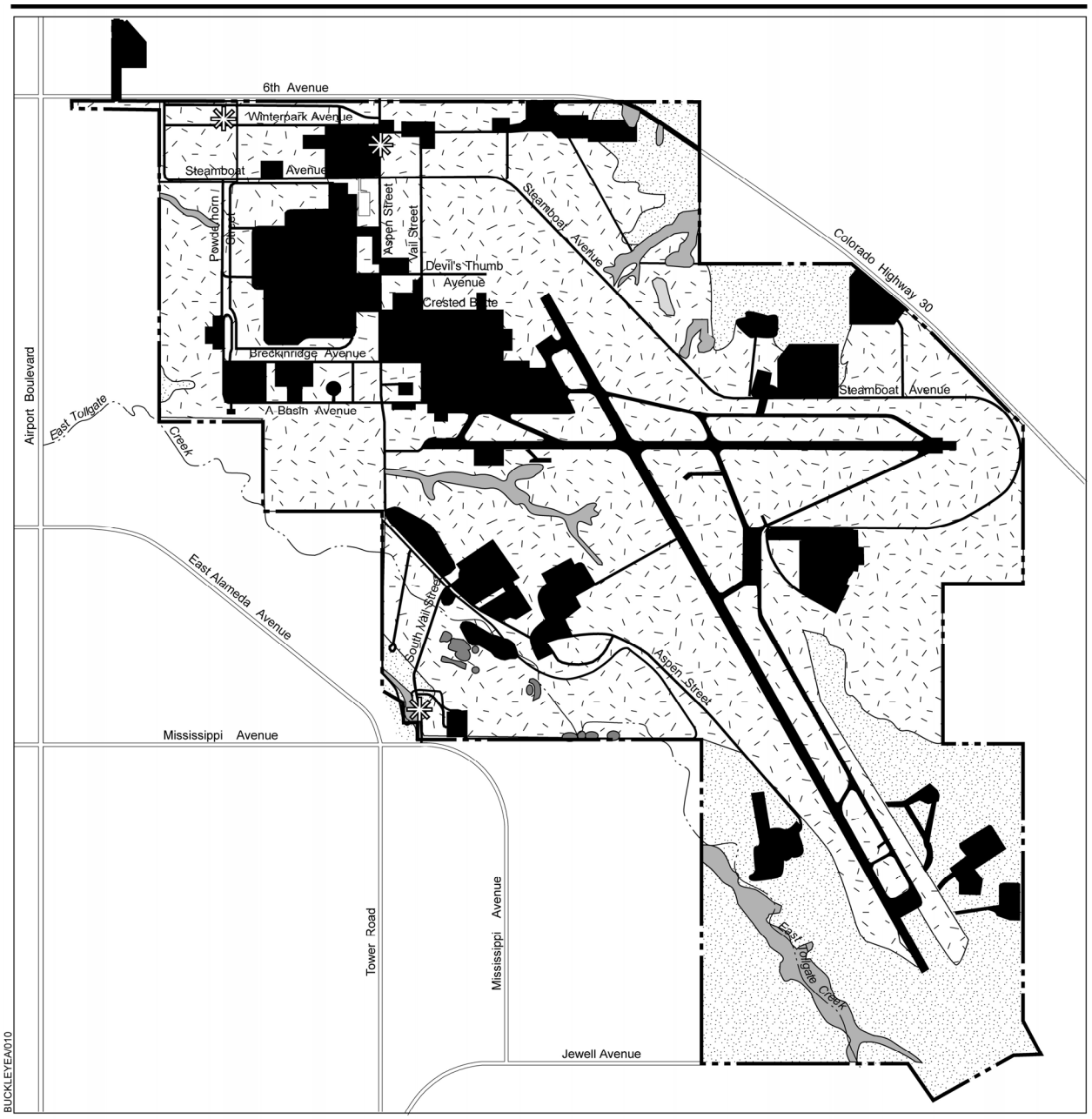
Vegetation on and near the 6th Avenue/Main Gate, Telluride Gate, and Mississippi Gate is primarily urban landscaped with crested wheatgrass mixed with some forbs (herbaceous plant that is not a grass). Large mature trees are present near the 6th Avenue/Main Gate. Ornamental trees are also planted near the developed areas of the gates.

East Tollgate Creek flows through the southern portion of the base west of Mississippi Gate. This creek supports riparian habitat including cottonwood trees (*Populus deltoides*) and willows (*Salix* sp.) with scattered patches of rubber rabbitbrush (*Chrysothamnus nauseousus*). Vegetation surrounding the riparian habitat consists of crested wheatgrass and weedy forbs.

Wildlife. Wildlife habitats on the base include urban landscape, grassland, midgrass prairie, riparian (including open meadows and trees along streams), ornamental tree stands, weedy forbs, and yucca stands. A total of seven amphibian and 19 reptile species occur in Arapahoe County and may occur on Buckley AFB. Twelve of the reptile species are snakes, including the bullsnake (*Pituophis melanoleucus*), plains hognose snake (*Heterodon nasicus nasicus*), and the prairie rattlesnake (*Crotalus viridis viridis*). Other common reptiles include the western painted turtle (*Chrysemys picta belli*) and the northern prairie lizard (*Sceloporus undulatus garmani*). The great plains toad (*Bufo cognatus*) and plains spadefoot toad (*Scaphiopus bombifrons*) are among the amphibians that may be found at Buckley AFB.

Most native North American birds, their eggs, and nests are protected by the MBTA of 1918, as amended. Resident bird species found to occur near Buckley AFB include the western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), and lark bunting (*Calamospiza melanocorys*). The burrowing owl (*Speotyto cunicularia*), American kestrel *(Falco sparverius*), Swainson's hawk (*Buteo swainsoni*), and prairie falcon *(Falco mexicanus*) are among the raptors found in the area. The wetland and riparian areas on base support ducks and geese, including northern shoveler (*Anas clypeata*), blue-winged teal (*Anas discors),* and Canada goose (*Branta canadensis*). Killdeer (*Charadrius vociferus*) and great blue herons (*Ardea herodias*) are shorebirds also found in association with water on base.

A number of small mammals exist on Buckley AFB. Common rodents may include the fox squirrel (*Sciurus niger*), thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*), prairie vole (*Microtus ochrogaster*), black-tailed prairie dog (*Cynomys ludovicianus*), and several species of mice. An EA has been prepared for the proposed management practices of the prairie dogs over large portions of the base (Air National Guard, 1998). The base proposes non-lethal relocation methods to the extent possible and lethal control measures as a



EXPLANATION

- Base Boundary
- Buckley Field Facilities (Urban Landscape)
- Bottomland Meadow (Potential Wetland)
- Cottonwood Willow (Potential Wetland)
- Crested Wheatgrass
- Midgrass Prairie
- Access Gate

0 600 1200 2400 Feet

Vegetation on Buckley AFB

Figure 3-1

"last resort" (possible lethal control measures include poisoning, fumigating, and trapping and sending to a raptor or ferret rehabilitation facility).

Predators include the red fox (*Vulpes vulpes*), badger (*Taxidea taxus*), and coyote (*Canis latrans*) (U.S. Air Force, 1996). White-tailed deer (*Odocoileus virginianus*) and mule deer (*Odocoileus hemionus)* are among the larger herbivores that could occur on base but are unlikely due to perimeter fence. Pronghorn antelope (*Antilocapra americana*) that occur in the region have been excluded from the base by an exterior fence to prevent collision hazards to aircraft (Air National Guard, 1998).

The base access gates include habitats for open grassland species, including the prairie rattlesnake (*Crotalus virdis virdis*), northern prairie lizard (*Sceloporus undulatus garmani*), western meadowlark, American kestrel, and prairie dogs. Prairie dogs are thought to be the main winter food source for ferruginous hawks (*Buteo regalis*), golden eagles (*Aquila chrysaetos*), and red-tailed hawks (*Buteo jamaicensis*) in this region (Air National Guard, 1998); these raptors could also use the ornamental trees near the gates for resting sites or hunting perches.

Threatened and Endangered Species. A number of threatened and endangered species have the potential to occur on base. They are listed with their status in Table 3-6.

The black-tailed prairie dog (*Cynomys ludovicianus*) is considered a state species of special concern because of their role as a keystone species and their importance to the shortgrass prairie community. Black-tailed prairie dogs occur in many areas throughout Buckley AFB. They inhabit burrows, which form networks of tunnels, typically 3 to 6 feet deep (U.S. Air Force, 2006).

Burrowing owls (*Athene cunicularia*) are listed as state threatened in Colorado, but also receive federal protection under the MBTA. Burrowing owls nest in abandoned prairie dog burrows and are generally present on base from early March to late October (U.S. Air Force, 2006).

The bald eagle (*Haliaeetus leucocephalus*), recently federally de-listed is still considered threatened in the state of Colorado. This species occurs around lakes and rivers in the winter. It typically feeds on fish but is also known to feed on small mammals, including prairie dogs (Ehrlich et al., 1988). Generally, winter habitat preferences for the bald eagle include a readily available food source associated with ice-free waters, diurnal perches, nocturnal roost trees, and low human activity. The bald eagle is a transient visitor to the area in the winter. However, the bald eagle is not known to breed in the area.

The ferruginous hawk (*Buteo regalis*), a state species of concern, is fairly common in Arapahoe County. It feeds almost exclusively on small mammals and primarily nests in trees. Ferruginous hawks are known to occur as a resident on the adjacent Prairie Conservation Center property and are likely to be present on Buckley AFB.

Table 3-6. Sensitive Species Potentially Occurring on Buckley AFB

Common Name	Scientific Name	Status (Federal/State)	Potential for Occurrence
Mammals			
Black-tailed prairie dog	*Cynomys ludovicianus*	--, SC	Present
Black-footed ferret	*Mustela nigripes*	FE, SE	Not present; Buckley AFB is within Block Clearance Zone in Colorado
Swift fox	*Vulpes velox*	FC, SC	Unlikely; occurs on eastern plains of Colorado in areas of native prairie. No observations at Buckley AFB.
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	FT, SC	Not Present; Buckley AFB is within the Denver Metropolitan Block Clearance Zone.
Birds			
Burrowing owl	*Athene cunicularia*	--, ST	Potentially Present. Nesting locations associated with prairie dog burrow complexes
Bald eagle	*Haliaeetus leucocephalus*	Federally De-listed, ST	Incidental observations; no known nest or roost locations within the base
Ferruginous hawk	*Buteo regalis*	--, SC	Potentially present; no known nesting locations
Mountain plover	*Charadrius montanus*	--, SC	Potentially present; no known nesting locations
Amphibians			
Northern leopard frog	*Rana pipiens*	--, SC	Unlikely. Association with permanent water sources.
Plants			
Colorado butterfly weed	*Gaura neomexicana ssp. Coloradensis*	FT, --	Unlikely; no individuals found during surveys conducted in 2004
Ute ladies'-tresses orchid	*Spiranthes diluvialis*	FT, --	Unlikely; no individuals found during surveys conducted in 2001

Status codes: FE = Federally Endangered, FT = Federally Threatened, FC = Federal Candidate
SE = State Endangered, ST = State Threatened, SC = State Special Concern

Sources: U.S. Air Force, 2006; Colorado Division of Wildlife, 2007; U.S. Fish and Wildlife Service, 2007.

The mountain plover (*Charadrius montanus*) is a state species of concern. It prefers open, arid lands that support short grasses, such as buffalo and blue grama, and scattered cacti on the eastern plains of Colorado. Their known range dissipates at the eastern edge of Arapahoe County, and they are unlikely to occur on Buckley AFB.

One listed plant species may occur in the region but not at any of the gate locations. Ute ladies-tresses orchid (*Spiranthes diluvialus*), a federally listed threatened species, is found in seasonally moist soils and wet meadows

nearsprings, lakes, or perennial streams and their associated floodplains below 6,500 feet in elevation. According to the Colorado Natural Heritage Program (CNHP), current distribution of the orchid does not include Arapahoe County. Although the three gate locations have not been specifically surveyed for this plant, the only potential habitat would be along creeks on base if a new population were to be found.

The Colorado Butterfly Weed (*Guara Neomexicana* ssp. *coloradensis*), a federally threatened species, prefers alluvial soils and is frequently associated with species and conditions favorable to rushes and sedges. According to the CNHP, current distribution of the Butterfly Weed includes wetland areas of Arapahoe County. This species could occur along creeks on Buckley AFB.

Sensitive Habitat. Sensitive habitats are those areas considered for protection due to their ecological value. They include wetlands, critical habitat for protected species, plant communities of limited or unusual distribution, and important seasonal use areas for wildlife. Wetlands are the only sensitive habitats known on Buckley AFB. Wetlands are found along riparian corridors and are currently designated as bottomland meadow or cottonwood/willow associations. None of the gate locations are situated within or adjacent to wetlands.

3.4.2 Environmental Consequences

No-Action Alternative

Because no building demolition or construction would occur and current gate operations do not disturb biological resources, implementing the No-Action Alternative would result in no impacts to biological resources.

Proposed Action

The construction of the gate improvements would disturb less than 20 acres of vegetation and habitat (for all three access gates combined). Any areas of temporary disturbance that would not be paved or landscaped should be reseeded with the approved grassland seed mix. Mature trees near the 6th Avenue/Main Gate would be preserved/incorporated into the design of the ECF. Timely attention to revegetation of disturbed sites may minimize the invasion of noxious weeds, such as thistle, which tends to invade newly disturbed areas easily.

Site access by construction vehicles would create additional disturbance to wildlife. Wildlife within and around the gate locations could be affected. Larger resident species would relocate to adjacent open areas. Some reptile and small mammal species with small home ranges or those that hide in the ground for protection could be eliminated on site during construction. There is adjacent habitat, similar to the habitat that will be removed, so impacts to wildlife and vegetation should be minimal from this relatively small area of habitat disturbance.

The access gates are located in relatively developed portions of the base, although prairie dogs may occupy sites on or adjacent to the Proposed Action. Approved prairie dog removal methods, including non-lethal and lethal methods, are described and analyzed in the *Supplement to Environmental Assessment of Proposed Prairie Dog Practices at Buckley Air Force Base* (Buckley AFB, 2001). This document specifies that if a prairie dog colony would be impacted by a Proposed Action, then prairie dogs would be removed prior to construction (U.S. Air Force, 2006). Minor, short- and long-term impacts to prairie dogs as a result of habitat loss, transfer, or removal would occur under the Proposed Action.

If lethal measures are used (e.g., poison, fumigation, trapping) to remove prairie dogs, these measures could also affect wildlife that use this habitat, such as the burrowing owl. Burrowing owls may be present during the breeding season (March 1-October 31). To deter a burrowing owl from nesting at or near the gate locations, prairie dogs should be removed and burrows destroyed prior to March 1. If nesting burrowing owl are present prior to prairie dog removal, then the removal action would not take place. If construction is necessary during the burrowing owl nesting season, a pre-construction survey for the presence/ absence of this species would be required in accordance with the *Supplement to Environmental Assessment of Proposed Prairie Dog Practices at Buckley Air Force Base* (Buckley AFB, 2001). If nesting burrowing owls are present, a 150 foot buffer would be established around active nest sites during the breeding season to protect owls from disturbances associated with construction activities. Given these measures, minor, short-term impacts to nesting individuals or juvenile burrowing owls from construction-related activities would be negligible. No impacts to burrowing owls would be anticipated from black-tailed prairie dog removal under the Proposed Action.

Some foraging habitat of birds of prey, such as the bald eagle and ferruginous hawk could be lost as a result of proposed gate improvements. However, the transitory nature of these raptors allows for foraging in similar adjacent areas, and the effect should be minimal.

The mountain plover is also known to use prairie dog towns for their ground nests and could be affected by the project if activities occur during the nesting season. However, this species is not known to occur on the base, and it is unlikely that any individuals will be affected.

If the Proposed Action is initiated during nesting season, a preconstruction survey is recommended to confirm the presence or absence of any nesting species prior to ground breaking activities.

The access gate locations do not contain any wetland areas; therefore, no effects on sensitive habitats are anticipated.

3.5 TRAFFIC

3.5.1 Affected Environment

The ROI for potential traffic impacts includes the roads that currently provide access to the base at the three gates (i.e., Aspen Street and Telluride Street) and those intersecting streets immediately outside the gates (i.e., 6th Avenue and Mississippi Avenue). Traffic both on Buckley AFB and immediately adjacent to the base is influenced by the entry gates and gate operations. The gates, location, and access routes are listed in Table 3-7 and shown on Figure 2-1.

Table 3-7. Gates, Location, and Access Roads

Gate	Location	East/West Access Road	Base Access Road
6th Avenue/Main Gate	North	6th Avenue	Aspen Street
Telluride Gate	North	6th Avenue	Telluride Street
Mississippi Gate	South	Mississippi Avenue	South Aspen Street

6th Avenue and Mississippi Avenue are the two major east/west arteries in the City of Aurora that serve as the main routes of travel to and from Buckley AFB. 6th Avenue provides access on the north side of the base and Mississippi Avenue provides access on the south side. During the peak evening traffic hour (5:00 to 6:00 pm), traffic flow on 6th Avenue west of the 6th Avenue/Main Gate and Telluride Gate is approximately 1,300 vehicles per hour. Traffic flow on 6th Avenue east of the gates is approximately 400 vehicles per hour during the peak evening traffic hour. West of the Mississippi Gate on Mississippi Avenue, there are approximately 700 vehicles per hour on the road during peak traffic hours (Buckley AFB, 2003). Traffic averages approximately 2,900 vehicles per day west of the Mississippi Gate (Parsons Brinckerhoff/Felsburg Holt and Ullevig, 2002).

Traffic flow on the base is primarily via a single street, Aspen Street, running generally north/south and feeding two secondary streets that distribute traffic to the industrial and flight line areas. Aspen Street carries average daily traffic ranging from 3,000 vehicles per day in the central base area to 500 vehicles per day in the less traveled areas of the base (Buckley AFB, 2003). All other roadways on the base are classified as tertiary streets serving individual areas on the base.

6th Avenue/Main Gate

The 6th Avenue/Main Gate is the primary north gate and is operational 24 hours a day. The 6th Avenue/Main Gate has two available inbound traffic lanes (the second lane is used only during peak times) and two outbound traffic lanes. The 6th Avenue/Main Gate sees approximately 655 peak morning hour (between 6:30 and 7:30 am) inbound vehicles. The two inbound and outbound lanes at the 6th Avenue/Main Gate are sufficient to accommodate traffic requirements; however, there is limited vehicle queuing space (approximately 800 feet) (Buckley AFB, 2003).

Mississippi Gate

The Mississippi Gate is operational from 5:30 am to 7:30 pm, processing approximately 780 peak morning hour (between 6:30 and 7:30 am) inbound vehicles. The Mississippi Gate has two available inbound traffic lanes (the second lane is used only during peak times) and two outbound traffic lanes. The Mississippi Gate also processes all commercial vehicles (e.g., construction vehicles, delivery trucks, etc.). The two inbound and outbound lanes at the Mississippi Gate are sufficient to accommodate traffic requirements; however, there are currently cross traffic conflicts/issues immediately off the base due to the close proximity of the South Aspen Street/Mississippi Avenue intersection, and the Mississippi Avenue/Biscay Street intersection to the immediate east (Buckley AFB, 2003).

Telluride Gate

The Telluride Gate has been designed primarily as a limited use gate for accessing the Base Exchange (BX) and Commissary. The Telluride Gate is operational based on demand, available security personnel, and FPCON level. Estimated peak-hour morning traffic is 200 to 250 vehicles. The existing inbound and outbound lanes at the Telluride Gate are sufficient to accommodate traffic requirements; however, there is limited vehicle queuing space (less than 200 feet) (Buckley AFB, 2003).

3.5.2 Environmental Consequences

No-Action Alternative

Because no improvements would be implemented, traffic flow through the gates would continue to be adequate; however, at the Mississippi Gate, vehicle queuing space would remain limited and cross traffic conflicts would remain. No steps would be taken to maximize traffic flow. Although traffic conflicts could continue to occur because gate improvements would not be implemented, traffic flow through the gates would not change; therefore, implementing the No-Action Alternative would result in minor, long-term impacts to traffic.

Proposed Action

Implementing the Proposed Action would result in long-term beneficial traffic impacts. The proposed upgrades are designed to not only improve base security, improve security personnel safety, and impart an impression of professionalism and commitment to facilities excellence, but also to maximize traffic flow and reduce congestion. All gates have adequate capacity for current and reasonably foreseeable future vehicle processing operations. Implementing the proposed upgrades should improve the existing conditions by providing for more orderly gate operations, vehicle flow, and vehicle processing/inspections. Implementing the upgrades should also improve (i.e., reduce) vehicle queuing times and reduce traffic/congestion immediately off the base, particularly in the immediate area of the South Aspen Street/Mississippi Avenue intersection and the Mississippi Avenue/Biscay Street intersection.

Implementing the proposed upgrades would result in minor, short-term traffic impacts during construction activities. However, proper coordination (including notifications, signage, temporary reroutes/lane closures, etc.) should minimize vehicle processing delays during construction activities and reduce any short-term impacts that may occur. Continued coordination/communication with local officials (as part of ongoing development at the base) regarding potential long-term improvements at the 6th Avenue/Aspen Street and Mississippi Avenue/South Aspen Street intersections could also provide additional benefits by maximizing traffic flow and reducing congestion in the immediate area.

3.6 OCCUPATIONAL SAFETY AND HEALTH

3.6.1 Affected Environment

The ROI for potential occupational safety and health impacts is the areas (including access roads) immediately surrounding the three gate locations. AFI 91-301 establishes the Air Force guidelines, policy, and procedures to protect Air Force resources and military and civilian personnel from occupational deaths, injuries, or illnesses. AFI 91-301 implements the Department of Labor, OSHA standards and further prescribed Air Force occupational and environmental safety, fire protection, and health requirements. Both OSHA and AFI 91-301 standards apply to nonmilitary-unique workplaces, operations, equipment, and systems. Some guidance contained in the AFI 91-301 standards has been tailored to apply to a specific Air Force operation; however, the safety principles involved are generally universal. OSHA standards do not apply to military-unique workplaces (e.g., military weapons, aircraft, marine vessels, missiles, ordnance, etc.), operations, equipment, and systems. However, the OSHA standards apply insofar as is possible, practicable, and consistent with the military requirements.

Current operations are being conducted at the gates in accordance with relevant AFIs and/or other standards; however, the Air Force is continually striving to increase safety for security personnel and those entering/exiting the base. The primary occupational safety and health issues at the gates are the provisions for security personnel personal protection against possible attack or errant drivers and exposure to inclimate weather. An additional issue associated with operations at the 6th Avenue/Main Gate is the safety of individuals having to cross Aspen Street to get from the overflow parking lot to the Visitor Center. Existing safety infrastructure used at the gates can include (but is not limited to) vehicle barriers, temporary lighting, heaters, or other infrastructure designed to provide for security personnel safety and health.

3.6.2 Environmental Consequences

No-Action Alternative

Implementing the No-Action Alternative would result in minor, long-term occupational safety and health impacts. Should the No-Action Alternative be implemented, no improvement to the current safety concerns for security personnel and visitors to the base would occur. Under the No-Action Alternative, no ECF upgrades would occur. Steps would not be taken to comply with

prevailing installation safety AFIs as they relate to ECFs. No steps would be taken to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, or to impart a better impression of professionalism and commitment to facilities excellence.

Proposed Action

Implementing the Proposed Action would result in minor, long-term, beneficial occupational safety and health impacts. All short-term construction activities associated with the proposed upgrades would be conducted in accordance with OSHA standards and long-term operations at the gate would be conducted in accordance with the AFI 91-301 Program. The proposed upgrades would, however, result in long-term safety and health benefits for security personnel conducting gate operations, those entering/exiting the base, and other personnel working on the base. Long-term benefits would be realized through improved signage/road markings, barriers, speed reduction measures, canopies and crash protection devices, cameras and lighting, vehicle arresting devices, and other safety/security measures appropriate for each of the three gate locations.

3.7 ASBESTOS

3.7.1 Affected Environment

The ROI for potential impacts from ACM and/or asbestos-contaminated soils is the immediate construction area associated with the 6th Avenue/Main Gate, Mississippi Gate, and Telluride Gate. Asbestos became a popular commercial product to manufacturers and builders and was commonly used from the early 1900s through the 1970s. Asbestos is durable, fire retardant, resists corrosion, and insulates well. It has been estimated that 3,000 different types of commercial products at one point contained some amount of asbestos. The use of asbestos has commonly included ceiling and floor tiles and various insulation applications. Intact and undisturbed ACM does not pose a health risk. Asbestos becomes a problem when, due to damage, disturbance, or deterioration over time, the material release fibers into the air.

Asbestos is regulated by the U.S. EPA and OSHA. Emissions of asbestos fibers into the ambient air are regulated in accordance with Section 112 of the CAA, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). NESHAP also requires that the U.S. EPA or the state (if the state has been delegated authority under NESHAP) be notified before a building is demolished, and/or before modification/renovations impacting ACM begin. In Colorado, the CDPHE is the delegated authority under NESHAP. The Air Force has a policy of managing asbestos in place and systematically eliminating it from facilities as modifications/renovations are conducted. Specific Air Force regulations for the handling and disposal of ACM are prescribed in a variety of AFIs, specifically AFI 32-1052, *Facility Asbestos Management*. Unless the architect of a structure on Buckley AFB has certified that the facility contains no ACM, inspections are conducted prior to the modification/renovation or demolition. Inspections are conducted using Colorado-accredited building inspectors. Buckley AFB has conducted a base-wide ACM survey and sampling

has already been conducted at multiple facilities. Buckley AFB requires all contractors, vendors, or other outside parties conducting work in areas that contain ACM be qualified to conduct work that may involve ACM disturbance.

Past demolition projects at Buckley AFB conducted throughout the 1950s and 1960s resulted in construction materials/debris (including asbestos lined pipes) being left in place. Therefore, the potential exists for either finding ACM or asbestos-contaminated soils during ground disturbing activities at, and in the immediate vicinity, of these previous structures. A World War II era map of the base shows the location of past structures and can be used to determine the potential for ACM or asbestos-contaminated soils.

Due to the age of the buildings at the three gate locations (and previous modifications/renovations that have taken place), ACM should not be present in existing construction materials. A review of the historic map indicates that there were several structures in the general vicinity of the 6th Avenue/Main Gate (immediately east and approximately 500 feet west of Aspen Street), a dense grouping of former structures at the Telluride Gate (as well as an area immediately east of the gate known to contain asbestos-containing materials and soils) and no former structures in the vicinity of the Mississippi Gate. As a result, it is possible that ACM or asbestos-contaminated soils are present in the vicinity of the 6th Avenue/Main Gate and the Telluride Gate.

3.7.2 Environmental Consequences

No-Action Alternative

Because no building demolition or construction would occur and current gate operations do not disturb building materials, implementing the No-Action Alternative would result in no impacts from ACM and/or potential asbestos contaminated soils.

Proposed Action

Implementing the Proposed Action could result in minor, short-term, adverse impacts from ACM and/or potential asbestos-contaminated soils. According to the historic map of the base, there were several previous structures in the general vicinity of the 6th Avenue/Main Gate and a dense grouping of former structures at the Telluride Gate. These structures were demolished in the 1950s and 1960s and construction materials/debris could have been left in place. There is also an area immediately east of the Telluride Gate known to contain asbestos-contaminated materials and soils. As a result, it is possible that ACM or asbestos-contaminated soils are present in the vicinity of the 6th Avenue/Main Gate and at the Telluride Gate. Should ACM be encountered during any ground disturbing activities at any of the gate locations, work would immediately stop and measures would be taken to secure the area and prevent a potential release of asbestos fibers in accordance with applicable local, state, and federal regulations regarding handling, remediation, and disposal of ACM.

3.8 HAZARDOUS SUBSTANCES AND WASTE SITES/STORAGE FACILITIES

3.8.1 Affected Environment

The ROI for potential impacts from hazardous substances and waste sites/storage facilities is the area comprising and immediately adjacent to the three gate locations. Hazardous materials are those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. Sections 9601-9675), the Toxic Substances Control Act (TSCA) (15 U.S.C. Sections 2601-2671), and the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Sections 6901-6992). In general, this includes substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare, or to the environment when released into the environment. In addition, hazardous materials are regulated by the Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. Sections 11001-110505). Transportation of hazardous materials is regulated by the U.S. Department of Transportation (U.S. DOT) and Colorado Department of Transportation (CDOT) regulations within 49 CFR and 8 Code of Colorado Regulations (CCR) 1507-9, respectively. The NPDES permit considers Buckley AFB to be an industrial site and the use and storage of hazardous materials occurs at multiple locations throughout the base; however, there are no hazardous materials used or stored at any of the three gate locations or in the immediate vicinity of the gate locations.

Hazardous wastes are those substances defined as hazardous by the CCR for Hazardous Wastes (Title 6 CCR 1007-3 Part 261). In general, this includes substances that, because of their characteristics, may present substantial danger to public health or to the environment. Hazardous waste from operations and facilities construction (including renovations and demolition) at Buckley AFB are managed in accordance with RCRA regulations (as adopted and implemented under corresponding regulations found at Title 6 CCR 1007-3), the Buckley AFB Facilities Excellence Plan, multiple EOs including 13101 (recycling) and 13148 (landscape mulching), and the Affirmative Procurement Plan (purchasing recycled materials). In fiscal year (FY) 04, Buckley AFB generated approximately 2,950 tons of non-hazardous waste. Of this, 1,531 tons were generated from construction and demolition activities. An additional, 909 tons of non-hazardous solid waste and 1,105 tons of construction and demolition debris were recycled in FY 04. In comparison, approximately 6 tons of hazardous waste was generated at Buckley AFB in FY 04 (Buckley AFB, 2004a). No hazardous wastes are generated at or in the immediate vicinity any of the three gate locations.

3.8.2 Environmental Consequences

No-Action Alternative

Because no building demolition or construction would occur and current gate operations do not involve the use of hazardous substances or generate hazardous waste, implementing the No-Action Alternative would result in no hazardous material or hazardous waste impacts.

Proposed Action

Implementing the Proposed Action would not result in adverse hazardous material or hazardous waste impacts. There are no hazardous materials used or stored at or in the immediate vicinity of any of the three gate locations or in the immediate vicinity of the existing gate locations. There are also no hazardous wastes generated at or in the immediate vicinity of any of the three gate locations. Demolition and construction activities often involve the use of hazardous materials and can result in hazardous wastes being generated. To insure no impacts as a result of the proposed upgrades, demolition and construction activities would be conducted in accordance with AFI 32-7080, *Pollution Prevention Program*, and all applicable federal, state, and local laws and regulations with regards to the use, storage, and disposal of hazardous materials and hazardous waste.

3.9 ENVIRONMENTAL RESTORATION PROGRAM SITES

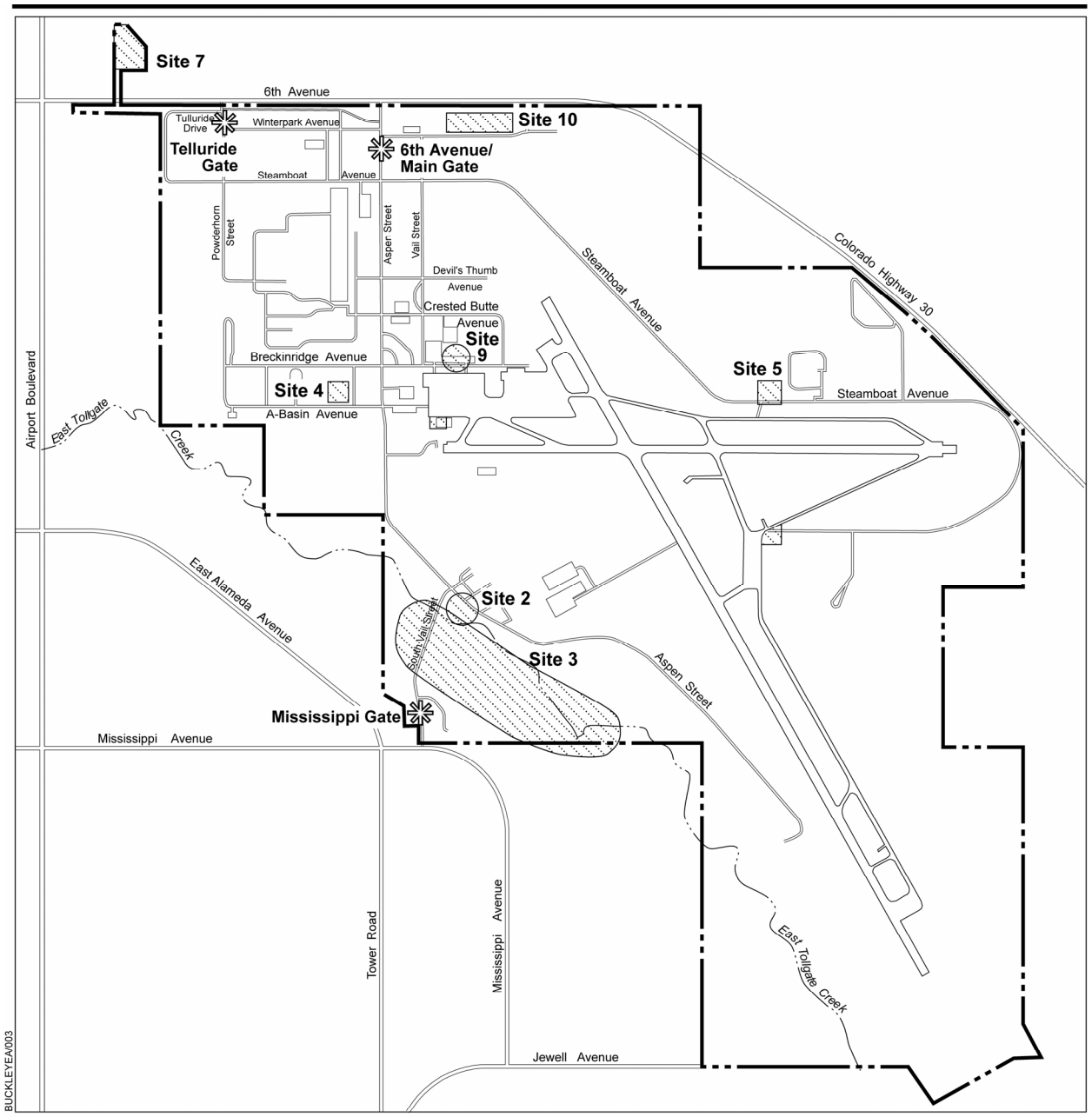
3.9.1 Affected Environment

The ROI for potential impacts to/from ERP sites is the immediate construction area associated with the 6th Avenue/Main Gate, Mississippi Gate, and Telluride Gate. The scope of the ERP is investigation and cleanup of Air Force sites whose past activities created contamination primarily from hazardous substances, hazardous wastes, low level radioactive materials, or wastes, or petroleum oils, and lubricants. The Buckley AFB ERP consists of ten sites, two of which have been closed (Figure 3-2). Also ongoing is an expansion of the Preliminary Assessment/Site Inspection conducted by the Colorado Air National Guard in the 1980s. This nationwide search for historical Army, Navy, and National Guard records is designed to determine whether there are contaminated sites not previously discovered at Buckley AFB.

ERP Site 10 is immediately north/northeast of the 6th Avenue/Main Gate area. ERP Site 3 is approximately 1,000 feet northeast of the Mississippi Gate. There are no ERP sites in the area of the Telluride Gate. ERP Site 10 is a former warehouse area. The site is located along the northern portion of the base and comprises four separate areas totaling approximately 7,000,000 square feet. This area was used from 1940 to 1996 for vehicle maintenance and service and for pesticide/herbicide storage. ERP Site 10 is currently undergoing study/evaluation (Remedial Investigation/Feasibility Study [RI/FS] phase).

ERP Site 3 is the former base landfill, which was operational from 1942 through 1982 and was reportedly used for disposal of municipal refuse, construction debris, solvents, paints, and pesticides. The landfill is capped with a native soil cover and encompasses approximately eleven acres. ERP Site 3 is currently undergoing study/evaluation specifically regarding the thickness and extent of the existing native soil cover.

Areas potentially contaminated with asbestos are discussed in Section 3.7.



EXPLANATION

- Base Boundary
- ERP Site
- Access Gate

0 600 1200 2400 Feet

ERP Sites

Site 1	Fire Training Area
Site 2	Oil Pit
Site 3	Base Landfill
Site 4	Fire Training Area
Site 5	Fire Training Area
Site 6	Storm Drain, Bldg 801
Site 7	Sludge Drying Beds
Site 8	Buried Aircraft, location unknown
Site 9	UST Burial
Site 10	Former Warehouse Area

Environmental Restoration Program Sites

Figure 3-2

3.9.2 Environmental Consequences

No-Action Alternative

Because no building demolition or construction would occur and current gate operations do not disturb ERP sites, implementing the No-Action Alternative would result in no impacts to/from ERP sites.

Proposed Action

Because ERP Site 10 is immediately north/northeast of the 6th Avenue/Main Gate area, there are no ERP sites in the area of the Telluride Gate. As a result, there would be no potential for ERP impacts at the Mississippi Gate or Telluride Gate. Although ERP Site 10 is in close proximity to the 6th Avenue/Main Gate area, the proposed development is not within the boundaries of the ERP site and proper coordination would occur to ensure that activities associated with the upgrades do not interfere with ongoing study/evaluation occurring at the site. As a result, no short- or long-term impacts to/from ERP sites would be anticipated.

3.10 CUMULATIVE IMPACTS

Cumulative impacts result from:

> …the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR § 1508.7)

As this regulation suggests, the purpose of cumulative effects analysis is to view the impacts of a proposed project within the larger context of past, present, and future activities that are independent of the proposed project but which have, and could likely affect, resources of greatest concern. This approach allows the decision maker to evaluate the incremental impacts of the proposed project in light of the overall health and abundance of selected resources. The focus of the analysis is on the sustainability of each resource of interest; the analysis, therefore, is not limited to the immediate project area but takes into consideration larger areas that represent the base for sustaining the resource.

The evaluation of cumulative effects presented herein addresses the requirements set forth in guidance from the federal CEQ, *Considering Cumulative Effects under the National Environmental Policy Act, 1997b*, as well as other regulatory guidance including:

- CEQ, Executive Office of the President. Incorporating Biodiversity Considerations into Environmental Impact Analysis under the National Environmental Policy Act, 1993;

- U.S. EPA. *Consideration of Cumulative Impacts in EPA Review of NEPA Documents*, 1999a; and

- U.S. EPA. *Considering Ecological Processes in Environmental Impact Assessments*, 1999b.

Table 3-8 below outlines the resource categories which have been determined to have a potential for cumulative effects related to the Proposed Action. Cumulative effects to land use, aesthetics, biological resources, traffic, occupational safety and health, asbestos, hazardous substances and waste sites, and ERP sites are not expected from the implementation of ECF improvements with other actions in the region.

Table 3-8. Resources of Special Interest for Cumulative Effects Analysis

Category	Indicators of Potential
Air Quality	Influence on the ability of the region to meet air quality standards
Water Resources	Results in storm water runoff in excess of drainage system capacities

In order to identify cumulative effects, a baseline (discussed above) is created that establishes the impacts that have already occurred to a particular resource, as well as the impacts that are likely to occur in the future without the project. As the CEQ regulations indicate, this baseline is developed from a review of "other past, present, and reasonably foreseeable future actions" affecting resources of interest (40 CFR § 1508.7). CEQ guidance on cumulative impacts explains its concept of baseline more fully as follows:

> "The analyst must determine the realistic potential for the resource to sustain itself in the future and whether the Proposed Action will affect this potential; therefore, the baseline condition of the resource of concern should include a description of how conditions have changed over time and how they are likely to change in the future without the Proposed Action."

Reasonably foreseeable actions and their potential effects have been adequately documented in previous NEPA documentation, specifically, the 2006 Final CIP EA (Buckley AFB, 2006). Table 3-9 provides a summary listing of Buckley AFB future construction projects. A list of Buckley AFB proposed construction projects through 2016 is provided in Appendix B. Table 3-10 provides a summary of cumulative impacts for resources evaluated in the EA.

A discussion of potential cumulative impacts from the work described in this EA can be found below.

Air Quality

The cumulative effects analysis for air quality that has been documented in the 2006 Final Capital Improvement Project (CIP) EA concludes that as long as

Table 3-9. Buckley AFB Construction Program List

Fiscal Year	Project Description	Building No.	Project Footprint (square feet)
08	BITC Mailroom	1540	4,000
08	Youth Baseball Field	NA	Unknown
08	ADF Parking Lot Mod-2	NA	Unknown
08	Demolish Building 341	341	216
08	FAMCAMP – 38 RV Parking Sites, 10 Tent Sites	NA	Unknown
08	Vehicle Maintenance Facility	1027	37,717
08	Satellite Pharmacy	208	6,000
08	Weapons Release Complex	805	4,000
09	CSS	NA	50,0000
09	Demolish Building 902	902	4,428
09	Demolish Marine Area Foundations	NA	Unknown
09	Demolish Fuel Storage	200	1,576
09	Demolish Fuel Tanker Stands	200	Unknown
09	Demolish Fuels Lab	300	1,503
09	Logistics Readiness Complex	1026	24,650
09	RV Storage Lot	NA	621,075
09	North Runway Extension	NA	536,274
09	Demolish Building 31	31	204
10	Demolish Building 950	950	20,303
10	South Runway Repair	NA	538,704
10	Bowling Center and Community Activities	Unknown	35,600
10	Youth Soccer Field	NA	Unknown
10	Youth Softball Field	NA	Unknown

ADF = Aerospace Data Facility
BITC = Base Information Transfer Center
CSS = Combat Support Squadron
FAMCAMP = Family Camp
NA = not applicable
RV = recreational vehicle

Table 3-10. Cumulative Impacts

Resource	Proposed Action	No-Action Alternative
Air Quality	None	None
Lands Use and Aesthetics	None	None
Water Resources	None	None
Biological Resources	None	None
Traffic	None	None
Occupational Safety and Health	None	None
Asbestos-Containing Material	None	None
Hazardous Substances and waste Sites/Storage Facilities	None	None
Environmental Restoration Program Sites	None	None

existing regulatory controls and permitting is adhered to, there would be moderate, but no significant cumulative air quality impacts anticipated from existing and anticipated new sources of air emissions. As discussed earlier, the Proposed Action described in this EA was included in the impact analysis performed for the 2006 Final CIP EA and would be implemented consistent with pertinent regulatory controls and permit requirements and, as described previously in Section 3.1.2, would not contribute significantly to an increase of air emissions. As a result, when combined with past, present, and reasonably foreseeable future actions in the area, implementation of the Proposed Action would not be anticipated to negatively influence the ability of the region to meet air quality standards/goals. Implementation of the Proposed Action would, therefore, result in minimal cumulative air quality impacts.

Water Resources

The cumulative effects analysis for water resources, specifically storm water runoff, which has been documented in the 2006 Final CIP EA, concludes that when combined with past, present, and reasonably foreseeable actions in the area, increased storm water loads could result in existing storm water infrastructure components being hydraulically overwhelmed, and increased concentrations of particulate matter and other contaminants (from construction areas and parking lots) being carried and discharged into receiving streams and water bodies both on and off base. The analysis further concludes that as long as existing regulatory controls and permitting are adhered to, and if standard engineering practices and construction techniques (including development of site-specific drainage plans, implementation of BMPs, etc.) were implemented, potential cumulative impacts could be eliminated or minimized to a level considered insignificant. As discussed earlier, the Proposed Action described in this EA was included in the impact analysis performed for the 2006 Final CIP EA and would be implemented consistent with existing regulatory controls and permit requirements. Standard engineering practices and construction techniques (including implementation of BMPs where appropriate) would also be implemented. As a result, implementation of the Proposed Action would not be anticipated to result in cumulative impacts because of additional storm water runoff due to increased impervious surfaces.

Biological Resources

The cumulative effects analysis for biological resources considered the proposed ECF improvement activities as well as other ongoing or proposed base construction projects. Construction and operational activities associated with implementation of the Proposed Action would remove only a minor amount of maintained landscaping at the ECF locations (less than 20 acres for all three ECF improvement areas combined). Although the access gates are located in relatively developed portions of the base, prairie dogs may occupy sites on or adjacent to the ECF locations. Short-term impacts to prairie dogs as a result of habitat loss, transfer, or removal would occur under the Proposed Action. Prairie dogs are considered a mobile species and would be able to seek similar habitat in surrounding areas. If nesting burrowing owls are present and construction is necessary during the burrowing owl nesting season, a pre-construction survey for

the presence/absence of this species would be required. A 150-foot buffer would be required around active nest sites during the breeding season to protect owls from disturbances associated with construction activities. These same impacts would occur at other locations on the base where prairie dog populations and burrowing owls may be present. In addition, some foraging habitat of birds of prey could be lost as a result of proposed ECF improvements and other construction activities on the base. However, raptors are transitory in nature and would have ample foraging in similar adjacent areas; potential effects would be minimal. Implementation of the Proposed Action could result in minimal cumulative impacts to biological resource as a result of loss of habitat.

3.11 COMPATIBILITY OF THE PROPOSED ACTION WITH OBJECTIVES OF FEDERAL, STATE, REGIONAL, AND LOCAL LAND USE PLANS AND POLICIES

The Proposed Action promotes the Air Force's intention to improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence. The Proposed Action and No-Action Alternative would not adversely affect federal, state, regional, or local land use plans and policies and are compatible with adjacent off-site land uses.

3.12 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

The Proposed Action and alternative would not affect the long-term productivity of the environment because no significant environmental impacts are anticipated, provided BMPs identified in this EA are implemented, and natural resources would not be depleted.

3.13 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable resource commitment refers to the use of nonrenewable sources and the effects these resources would have on future generations. Irreversible effects would result primarily from the consumption or destruction of a resource that could not be reversed regardless of time such as expenditure of energy, labor, etc. Irretrievable resource commitments would involve a loss or gain in the value of an affected resource that is not reversible over an extended period of time such as restoring habitat after land being developed (20 or more years to fully restore), reuse of building materials, etc. The Proposed Action and alternative would result in a net increase of approximately 1.5 acres of impervious surfaces at Buckley AFB. The only other irreversible or irretrievable commitment of resources would be for labor, fuel, and demolished materials.

4.0 LIST OF PREPARERS

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6.0 REFERENCES

Air National Guard, 1998. Draft Environmental Assessment of Proposed Prairie Dog Management Practices at Buckley Air National Guard Base, January.

Brown, L., 1947. Grasslands. An Audubon Society Nature Guide.

Buckley AFB, 2001. Supplement to Environmental Assessment of Proposed Prairie Dog Practices at Buckley Air Force Base.

Buckley AFB, 2002. Buckley Air Force Base Integrated Natural Resource Management Plan, November (revised October 2004).

Buckley AFB, 2003. Gate Design and Traffic Engineering Guidance, Buckley AFB, Colorado. Prepared by the Military Traffic Management Command, Transportation Agency Engineering Agency, January.

Buckley AFB, 2004a. Utility usage data provided by Buckley AFB, October.

Buckley AFB, 2004b. Anti-Terrorism/Force Protection (AT/FP) Gate Improvement Projects Master Planning Out-Brief, May.

Buckley AFB, 2005. Buckley Air Force Base General Plan, Final Submittal, 460th Air Base Wing, Buckley AFB, Colorado.

Buckley AFB, 2006a. Final Environmental Assessment for Capital Improvement Projects at Buckley AFB, Colorado.

Buckley AFB, 2006b. Base Population Figures.

Colorado Air Quality Control Commission, 2000. Carbon Monoxide Redesignation Request and Maintenance Plan for the Denver Metropolitan Area.

Colorado Air Quality Control Commission, 2001a. Ozone Redesignation Request and Maintenance Plan for the Denver Metropolitan Area.

Colorado Air Quality Control Commission, 2001b. PM_{10} Redesignation Request and Maintenance Plan for the Denver Metropolitan Area.

Colorado Air Quality Control Commission, 2005. Early Action Compact, Ozone Action Plan, Revision to the State Implementation Plan, December.

Colorado Department of Public Health and Environment, 2002. Title V Technical Review Document, Buckley Air Force Base, Colorado.

Colorado Department of Public Health and Environment, 2006. Status of Air Quality Redesignations and Maintenance Plans in Colorado, December.

Colorado Department of Public Health and Environment, 2008. Air Pollution Control Division, Denver and North Front range Area Violates Ozone Standards.

Colorado Division of Wildlife, 2007. Threatened and Endangered List. http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/ThreatenedEndangeredList/ListOfThreatenedAndEndangeredSpecies.htm. Accessed August 21, 2007.

Colorado Natural Heritage Program, July 2000. Natural Heritage Inventory of Buckley Air National Guard Base, Arapahoe County, Colorado.

Council on Environmental Quality, 1978. Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.

Council on Environmental Quality, 1993. Incorporating Biodiversity Considerations into Environmental Impact Analysis under the National Environmental Policy Act.

Ehrlich, P.R., D.S. Dobkin, D. Wheye, 1988. The Birder's Handbook. A Field Guide to the Natural History of North American Birds.

Federal Emergency Management Agency, 1995. Flood Insurance Rate Map, City of Aurora, Colorado, Adams, Arapahoe and Douglas Counties, Community – Panel Number 080002 0205 E, Revised August 16, 1995.

Golder Associates, 2007. Calendar Year 2006 Air Emissions Inventory Buckley Air Force Base Colorado, April.

Means, R.S., Inc., 2003. Site Work and Landscape Cost Data.

Military Traffic Management Command, 1982. Traffic Engineering for Better Gates, December.

Parsons Brinckerhoff/Felsburg Holt and Ullevig, 2002. E-470 Systems Operational Analysis. Prepared for the E-470 Public Highway Authority, April.

Sacramento Metropolitan Air Quality Management District, 1994. Air Quality Thresholds of Significance.

South Coast Air Quality Management District, 1993. CEQA Air Quality Handbook.

URS Group, 2004. Buckley Air Force Base, Aurora, Colorado, 2003 Air Emissions Inventory.

U.S. Air Force, 1996. Environmental Impact Analysis Process, Space Based Infrared System (SBIRS) Mission Control Station for Defense Support Program Consolidation, April.

U.S. Air Force, 1998. Environmental Assessment for Construction and Operation of a Base Exchange and Commissary Complex at Buckley Air National Guard Base, Colorado, September.

U.S. Air Force, 2003. Entry Control Facilities Design Guide, February.

U.S. Air Force, 2006. Environmental Assessment for Proposed Security Forces Operation Facility, Buckley Air Force Base, Colorado, July.

U.S. Army Corps of Engineers, 1997. Environmental Considerations, Former Lowry (Buckley) Bombing and Gunnery Range, Arapahoe County, CO, Planning Division, Omaha District.

U.S. Department of Agriculture, 2001. Memo from the U.S. Department of Agriculture regarding soils use at potential cropland at Buckley AFB, January.

U.S. Environmental Protection Agency, 1991. Nonroad Engine and Vehicle Emission Study-Report.

U.S. Environmental Protection Agency, 1998. AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources, including Supplements D and E, Office of Air Quality Planning and Standards, Research Triangle Park, NC, September.

U.S. Environmental Protection Agency, 1999a. Consideration of Cumulative Impacts in EPA Review of NEPA Documents.

U.S. Environmental Protection Agency, 1999b. Considering Ecological Processes in Environmental Impact Assessments.

U.S. Environmental Protection Agency, 2004a. Median Life, Annual Activity and Load Factor Values for Nonroad Engine Emission Modeling, April.

U.S. Environmental Protection Agency, 2004b. Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling – Compression – Ignition, April.

U.S. Environmental Protection Agency, 2007. EPA Map of Colorado Radon Zones.

U.S. Fish and Wildlife Service, 2007. Threatened and Endangered Species Within Mountain-Prairie Region 6, Colorado. http://ecos.fws.gov/tess_public/SpeciesReport.do?lead=6&listingType=L. Accessed August 21, 2007.

U.S. Geological Survey, 1995. Ground Water Atlas of the United States, Segment 2.

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APPENDIX A

AIR EMISSIONS CALCULATIONS

PROPOSED ACTION

Equipment Type/Activity	Number of Units	Weeks	Hours	Horsepower[1] (hp)	Load Factor[1] (%)	Emission Factor[1] (grams/hp-hour)				Emission Rate (tons)			
						VOC	NO_x	CO	PM_{10}	VOC	NO_x	CO	PM_{10}
Demolition													
Front end loader, 2.5 cy	1	1	30	158	59	0.68	8.38	2.70	0.402	0.00	0.03	0.01	0.00
Dump Truck	2	1	5	489	59	0.68	8.38	2.70	0.402	0.00	0.01	0.00	0.00
Construction													
Backhoe loader, 80 hp	1	1	30	80	59	0.99	8.30	3.49	0.722	0.00	0.01	0.01	0.00
Chain saws	1	1	30	80	59	0.99	8.30	3.49	0.722	0.00	0.01	0.01	0.00
Chipping machine	1	1	30	80	59	0.99	8.30	3.49	0.722	0.00	0.01	0.01	0.00
Concrete pump, small	1	1	30	80	59	0.99	8.30	3.49	0.722	0.00	0.01	0.01	0.00
Crane, 90-ton	1	1	30	80	59	0.99	8.30	3.49	0.722	0.00	0.01	0.01	0.00
Crane, hydraulic, 12 ton	1	1	30	194	43	0.68	8.38	2.70	0.402	0.00	0.02	0.01	0.00
Front end loader, 2.5 cy	1	1	30	158	59	0.68	8.38	2.70	0.402	0.00	0.03	0.01	0.00
Gas engine vibrator	1	1	30	8	43	0.99	8.30	3.49	0.722	0.00	0.00	0.00	0.00
Gas welding machine	1	2	60	35	21	0.99	8.30	3.49	0.722	0.00	0.00	0.00	0.00
Grader, 30,000 lb	1	1	30	172	59	0.68	8.38	2.70	0.402	0.00	0.03	0.01	0.00
Hydraulic excavator, 3.5 cy	1	1	30	183	59	0.68	8.38	2.70	0.402	0.00	0.03	0.01	0.00
Delivery truck, 200 hp	4	30	300	489	59	0.68	8.38	2.70	0.402	0.06	0.80	0.26	0.04
										0.08	*1.01*	*0.33*	*0.05*
Total										**0.06**	**1.00**	**0.36**	**0.04**

Notes:
Emission factors were obtained from: U.S. EPA, *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling - Compression-Ignition*, April 2004.
Load factors were obtained from: U.S. EPA, *Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling*, April 2004.
Horse power values were obtained from: *U.S. EPA, Nonroad Engine and Vehicle Emission Study - Report*, November 1991.
cy = cubic yard
lb = pound

Air Force Air Conformity Applicability Model (ACAM)
Emissions Summary and Conformity Screening

Scenario: Gate Upgrades
Installation: Buckley AFB

Conformity Code: **GREEN** (Conformity determination is not required based on applicability screening).

Buckley AFB
Tons/Year Emissions for 2009

	VOCs	NO_X	CO	SO_X	PM_{10}
Proposed Action Emissions:	0.06	1.00	0.36	neg.	0.04
De Minimis Thresholds:	100	100	100	NA	100
Ten Percent of County Budget:	18,506	11,425	43,910	NA	2,555

NA = not applicable
neg. = negligible

ACAM REFERENCES

Sacramento Metropolitan Air Quality Management District, 1994. *Air Quality Thresholds of Significance,* December.

South Coast Air Quality management District, 1993. CEQA *Air Quality Handbook*.

U.S. Environmental Protection Agency, 1998. AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Volume I: Stationary Point and Area Sources, including Supplements D and E, Office of Air Quality Planning and Standards, Research Triangle Park, NC, September.

U.S. Environmental Protection Agency, 1999. *User's Guide to TANKS, Storage Tank Emissions Calculations Software*, Version 4.0, September.

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APPENDIX B

BUCKLEY AFB CONSTRUCTION PROJECT LIST

Buckley AFB Construction Project List
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Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM
	02	1	BX/Commissary (completed)			200,152		
	02	35	Fitness Center (completed)	6308	54500	67900		Yes
	02		Gas Meter House					Yes
	02	2	Telluride Gate (completed)	11	120	133		Yes
	03	1030	460 SW Headquarters (Completed)	4744	51066		88086	
	03		ADAL SBIRS Mission Control (Under construction)	1672	18000			
	03	725	Child Development Center 4 room Addition (Bldg 725)	69	743			
	03	1530	Control Tower (COANG) (Completed)	539	5800	4949		
	03	25	Demolish Building 25 (completed)		?			Yes
	03	960	Engine Shop Addition Bldg 960 (COANG)	186	2000			
	03	1019	Entomology (O&M) Replace Entomology Shop (Completed)	209	2255			
	03	806	Fire Station Addition (Completed)	2000	21531			
	03	n/a	Remove Golf Driving Range (Completed)	1	12			
	03	703	H-70 Fuel Storage Facility	97	1045	178		
	03	n/a	New northern runway extension (COANG)	3484	37500			

Buckley AFB Construction Project List
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Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM
	03	n/a	Repair Runway, Taxiways, Ramps (COANG)	181161	1950000			
	03	n/a	Two Pavilions at Williams Lake (Completed)	6	60			
	03	1015 and 1017	Two Warehouses - Civil Engineering. Originally one warehouse. (Completed)	929	10000	10000		
	04	39	Demo Gas Meter House					X
	04	205	Dormitory II (144 person) Originally 02 (Completed)	5040	54,250	57,528		
	04	n/a	ADD/Alter Access Roads (Airfield) (COANG)	41204	443520			
	04	n/a	Approach Lighting (COANG)	62	672			
	04	830	Civil Engineering Complex (COANG)	3470	37350			
	04	17906	Fire Training Facility - originally 08 (Under Construction)		3,400 buildings, 41,112 concrete pads			
	04	n/a	Impound Lot (asphalt paved)	743	8000			
	04	801	Maintain Maint Hangar 801 (COANG)	Interior	Interior			
	04		New East Gate (estimate based on existing structure at Peterson AFB)	12	128			

Buckley AFB Construction Project List
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Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
	04		New Visitor Center (estimate based on existing structure at Peterson AFB)	49	525				
	04	841	Repair ANG Supply, Bldg 841 (COANG)	Interior	Interior				
	04	n/a	Repair Parking Lot East of Bldg 471	12	316798				
	04	n/a	Repair Parking Lots ANG wide (COANG)	12	144000				
	04	n/a	Upgrade Base Infrastructure, Ph III	n/a	n/a				
	04	n/a	Military Family housing = 71 acres total land (for houses, landscaping, roads etc). Total acreage includes the clubhouse/ pool and playgrounds. (Under Construction)	66175	712298			Yes	Moved from '02-ok?
	05	1500	Army Aviation Support Facility (COARNG) (Under Construction)	11148	120000				
	05	n/a	Athletic Fields (two ball fields, 1 track, and 1 football field) (Ball Fields Complete)	160 Parking Spaces	Fence 3,600 meters			Yes	
	05	n/a	CDCII Pre school Playground	818	8800				

Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
	05	n/a	CDCII Pretoddler Playground	486	5225				
	05	n/a	CDCII Toddler Playground	599	6450				
CRWU043006	05	316	Chapel Center (Complete)	2423	26080				
CRWU043007	05	351	Child Development Center CDCII (Under Construction)	2248	24197				
	05	n/a	Construct 2 SWS/MCS Force Protection - just installing barriers						
CRWU051092	05	19	Demolish Building 19 (Camana Club) (Completed)					Yes	
CRWU061006	05	1011	Demolish Warehouse (1011/1012) Was an FY 05 Project. (Completed)		22949				
	05	600	Medical Clinic ADAL (Completed)	424	4563				
	05	n/a	Repair Taxiways A&K	Unknown at this time	Unknown at this time				
	05	n/a	Vail Street Improvements	8475	91200				
CRWUC071007	06	n/a	Storm Water Retention Pond						new
CRWU033009	06	1022	Outdoor Rec Equip Rental (NAF) - originally 05, then awarded 06 (Under Construction)	865	9310				

Buckley AFB Construction Project List
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Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
CRWU051101	06		Medical Warehouse (Poss construct with '06 funds) (Under Construction)	372	4000				
CRWU033009	06	204	Car Wash (AAFES) 4 bay (Under Construction)	186	2000			Yes	CRWU021044?
CRWU787395	06	1025	Haz Materials Storage (Env. Level 1) HAZMART Pharmacy Construction initiated in 06. (Under Construction)	507	5457				
CRWU787399	06	1025	Haz Waste Facility (Env. Level 1) Construction initiated in 06. (Under Construction)	150	1615				
CRWU061035	06	306	Demolish Entomology Facility (306) Originally FY04, then '08, then '06 if funded	108	1160				
CRWU031112	06		ADF Parking Lot Mod-1						
	07	n/a	Athletic Fields Concession (NAF)	130	1399			Yes	
CRWU053006	07	730	Communications Center (ADAL 730) orig 05 - moved to 07	5666	60988				
CRWU063006	07	347	Consolidated Services Facility Admin	1476	15892				14100ft^2
CRWU063003	07	1032	Leadership Development Center (Under Construction)	1638	17631				

Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
CRWU073006	07	350	Youth Center (NAF) 06 MILCON project	2656	28586				
CRWU073005	07		Military Working Dog Kennel	325	3500				
CRWU061039	07	302	Demolish Fuels Admin (302) Construction 07, then 09, possibly '06 if funded.		1185				
CRWU052063	07		Repair Alert Taxiway L Pvts						
CRWU062002	07		Repair Taxiway "M"						
CRWU073008	07	1051	POL Ops Building	255	2745				
CRWU073008	07	1054	Pump house	93	1001				
CRWU073008	07	1053	Storage POL Bulk Ops Building	42	452				
CRWU073008	07	Multi	Consolidated Fuels Includes Demo of existing structures, construction of POL Ops Bldg, Pump House, and Storage POL Bulk Ops Bldg - are all listed separately in this table) NOTE: 06 Construction Project, proposed NTP is Jan 07; therefore, considering 07 project.	390	4198				10000bbl
	07		Construct ADF Admin Facility	2788	30000				
CRWU083001	07		Freight Transfer Facility	1115	12000				new
	07	1606	Demolish Crash House (1606)		8327				

Buckley AFB Construction Project List
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Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
CRWU033003	07	332	Temporary Lodging Facility (NAF) Originally 03	6450	69434	84377			
CRWU033003	07	331	Visitors Quarters	3676	39568	39568			
CRWU059006	07	701	Squadron Ops Facility (COANG)	2132	22950				new
CRWU029003	07	911	Alert Crew Quarters (COANG)	604	6500				new
CRWU041108	08	1540	BITC Mailroom	372	4000				
CRWU041017	08		Youth Baseball Field (Originally part of youth athletic fields).						
	08		ADF Parking Lot Mod-2						
CRWU073008	08	341	Demolish Building 341 (Part of consolidated fuels)		216				
CRWU061012	08		FAMCAMP - originally 07, RV Parking Sites 38, Tent Sites 10 each						38 Spaces
CRWU053007	08	1027	Vehicle Maintenance Facility - originally 07 (joint COANG)	3504	37717				19525 ft^2
CRWU048002	08	208	Satellite Pharmacy	557	6000			Yes	5712 ft^2
CRWU019119	08	805	ADAL Weapons Release Complex (ADAL COANG). Was '09, then '13, then '08.	372	4000				
	09		NSA CSS, was '08	46468	500000				

Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
CRWU051014	09	902	Demolish Building 902 Originally 05 project, then '08 and possibly '09 if funded		4428				
CRWU051013	09	n/a	Demolish Marine Area Foundations Originally 05 project then '08, then '09 if funded		Unknown at this time	Unknown at this time			
CRWU073008	09	200	Demolish Fuel Storage (200) Construction 07, if funded		1576			Yes	
CRWU073008	09	200	Demolish Fuel Tanker Stands Construction 07	Unknown at this time	Unknown at this time			Yes	
CRWU073008	09	300	Demolish Fuels Lab (300) Construction 07,		1503				
CRWU063002	09	1026	Logistics Readiness Complex - originally 06, now states in clear zone	2290	24650				
CRWU041130	09		RV Storage Lot (ADAL)	57700	621075				
	09		North Runway Extension (Construct, COANG)	49821	536274				new
CRWU091001	09	31	Demolish Building 31 Originally FY 09, then 10 and possibly '12 if funded.		204				
CRWU071003	10	950	Demolish Building 950 Originally FY07, then '09, possibly '07 if funded.		20303				
	10		South Runway Repair (COANG)	50047	538704				

Buckley AFB Construction Project List
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Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
CRWU103003	10		Bowling Center and Community Activities (Peterson)_	3307	35600			Yes [1]	check ACAM with Area changes
CRWU081002	10		Youth Soccer Field						
CRWU041017A	10		Youth Softball Field						
	11		West Parking Lot						
CRWU071002	11	940	Demolish Building 940 Originally FY07, possibly '10 if funded		14758				
CRWU033008	11		Arts, Crafts, Auto Skills Development Ctr	1033	11119				
CRWU073003	11	345	Education Center/Library Originally 07	2193	23605				
CRWU049013	11	n/a	East Parking Apron Relocation (COANG). Was FY '12	33696	362700				
CRWU051011	12	1631	Demolish Electrical Shop (1631) Originally 05 project, then '08 if funded		3025				
CRWU051013	12	n/a	Demolish Marine Area Foundations Originally 05 project then '09 if funded		Unknown at this time	Unknown at this time			
CRWU041012	12	1620	Demolish Radio Relay Bldg (1620) Originally 04 then possibly '08 if funded	149	1600				

Buckley AFB Construction Project List
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Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
CRWU051012	12	1632	Demolish Reserve Forces Bldg (1632) Originally 05 project then possibly '08 if funded.		600				
CRWU071001	12		Demolish Engine Test Pad Originally FY07		2057				
CRWU051079	12	310	Demolish Hydrazine Bldg (310) Originally FY 04 then 10 and possibly 13 if funded.	76	820				
CRWU063001	12+		Fire/Crash Rescue Station	2137	23000				
CRWU053002	12+		Telluride Entry Gate	567	6107				
CRWU053004	12+		6th Ave Entry Gate. Was'11	885	9528				
CRWU053005	12+		Mississippi Entry Gate	902	9709				
CRWU093002	12+	447	Spaced Based Infrared (SBIR) Operational Support Facility Originally 09.	8820	94940				
CRWU013001	12+	447	Spaced Based Infrared (SBIR) Remote Ground Station. Was FY'11	1900	20451				
CRWU019118	12+		Weapons Loading Training Facility (COANG) originally 09 - requesting 08	929	10000				

Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
CRWU909724 44300 sy	13	11603	Taxiway and Arm/Disarm (COANG) Includes Demolition of existing parking apron and portion of Sunlight Road and taxiways F, W, X, and Y. Originally 08		75 feet by 10,500 linear feet and holding pads 225 feet by 400 LF (paved)				
CRWU053009	13	35	Fitness Center ADAL (estimate based on existing swimmint pool at Peterson AFB) Originally 09	3345	36000			Yes	Check ACAM with Area changes
CRWU073004	13	807	SF Operations Facility - was 06, then 07	3252	35000				
CRWU061164	14		Adult Softball Field						
	15		Dormitory 3 (96 PN)	3717	40000				
CRWU051084	15		Entry Control Facility (upgrade-was 08)	1337	14391				
CRWU063011	15	806	Fire Station Addition (crash house) - 2 Originally 09 - requesting FY 07. Joint ANG/AF	985	10600				
CRWU073010	15	1023	Consolidated Base Warehouse Originally 08	4645	50000				area changes
CRWU063008	15	1600	Small Arms Range Indoor Arm Range - indoor with outdoor grenade launcher (originally 06)	2205	23735				

Buckley AFB Construction Project List
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Project Number	FY	Bldg No.	Projects	Project Footprint (m^2)**	Project Footprint (ft^2)**	Design/ Actual Footprint (ft^2)**	Actual parking (ft^2)	ACAM	
CRWU103002	15	multi	Upgrade Based Infrastructure Ph IV. Originally 09	Unknown at this time	Unknown at this time				
CRWU069201	16		Upgrade Weapons Live Load Area (COANG)	929	10000				
	TBD		Expand Bldg 700 (COANG)						

Either interior, or otherwise catexed, therefore not included in the EA - even under cumulative.
Paving only, no structures
Insufficient information to date to include in an EA
** Project footprint does not include disturbance due to construction; such as, laydown areas and generally doesn't include parking lots
Updated 11 September based on Aug 06 Facilities Board
(1) Community Center only

Year: 2002

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	**Project Ground Disturbance Duration (days)**	**Maximum Building Area (ft^2)**	**Total Building Land Disturbance(1) (ft^2)**	**Roadway/Parking Lot Land Disturbance(2) (ft^2)**	**Landscaping Land Disturbance(3) (ft^2)**	**Length Sidewalk/Walkways Land Disturbance(4) (linear ft)**	**Sidewalk/Walkway Land Disturbance(4) (ft^2)**	**Length Utility Main Connection Land Disturbance(5) (linear ft)**	**Utilities Trenching Land Disturbance(5) (ft^2)**	**Total Land Disturbance (ft^2)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Telluride Realignment/Streetscape/Telluride Gate	42	133	266	252,144	25,214	2,550	30,600	50	300	308,524	7.08	3.00
Fitness Center	305	75,880	455,280	151,760	15,176	900	10,800	0	0	633,016	14.53	3.00
Space Ops Parking	135	0	0	360,000	0	1,300	15,600	300	1,800	377,400	8.66	3.00
Gas Meter House	90	378	2,268	0	76	0	0	100	600	2,944	0.07	3.00
BX/Commissary	305	200,152	800,608	595,392	40,030	0	0	0	0	1,396,000	32.05	
Totals	**877**	**276,543**	**1,258,422**	**1,359,296**	**80,496**	**4,750**	**57,000**	**450**	**2,700**	**2,717,884**	**62.39**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A;
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). L engths were measured to closest major roadway, where utilities are assumed to exist.
(6) BX Commissary -Parking based on values obtained from Geo-base for the front and back parking areas. Area of disturbance was closer to 4 x footprint

Demolition Project Ground Disturbance Details (Information for Appendix C)											
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance(1) (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Winter Park Street West Of Dormitory #1 (Bldg 28)	90	0	0	N/A	N/A	0	0	100,000	100,000	1.38	3.00
Totals	**90**	**0**	**0**	**0**	**0**	**0**	**0**	**100,000**	**100,000**	**1**	

Year: 2002

Information for Table 4.12 and Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Telluride Realignment/Streetscape/Telluride Gate	42	308,524	7.08	148,823	3.00
Fitness Center	305	633,016	14.53	2,216,137	3.00
Space Ops Parking	135	377,400	8.66	584,814	3.00
Gas Meter House	90	2,944	0.07	3,041	3.00
BX/Commissary	305	1,396,000	32.05	4,887,282	0.00
Demolition					
Winter Park Street West Of Dormitory #1 (Bldg 28)	90	0	0.00	0	3.00
Totals	**967**	**2,717,884**	**62.39**	**7,840,097**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Telluride Realignment/Streetscape/Telluride Gate	42	133	0(1)	0	0	0	0	0	11	3.00
Fitness Center	305	75,880	0	0	0	0	0	0	76	3.00
Space Ops Parking	135	0	0	0	0	0	0	0	34	3.00
Gas Meter House	90	378	0	0	0	0	0	0	23	3.00
BX/Commissary	305	200,152	0	0	0	0	0	0	76	0.00
Demolition										
Winter Park Street West Of Dormitory #1 (Bldg 28)	90	0	N/A	N/A	0	0	100,000	100,000	8,250	3.00
Totals	**967**	**276,543**	**0**	**0**	**0**	**0**	**100,000**	**100,000**	**8,469**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75 lbs/ft3
Bathroom etc Bulk Density =	100 lbs/ft3
Other Demolition Bulk Density =	165 lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Telluride Realignment/Streetscape/Telluride Gate	133	210,120	15,300	225,553	5.18	3.00	NA
Fitness Center	75,880	101,173	5,400	182,453	4.19	3.00	CS
Space Ops Parking	0	240,000	7,800	247,800	5.69	3.00	NA
Gas Meter House	378	0	0	378	0.01	3.00	I
BX/Commissary	200,152	396,928	0	597,080	13.71	0.00	
Totals	**276,543**	**948,221**	**28,500**	**1,253,264**	**28.77**		
Demolition							
Winter Park Street West Of Dormitory #1 (Bldg 28)	0	N/A	N/A	0	0.00	3.00	
Totals	**0**	**0**	**0**	**0**	**0.00**		
Net Loss	**276,543**	**948,221**	**28,500**	**1,253,264**	**28.77**		

* = Land Use Types Used for Traffic Calculations are as follows:
A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	**Project Ground Disturbance Duration (days)**	**Delivery Traffic (VEH)[8,9]**	**Construction Employee Traffic (VEH)[10]**	**Delivery Traffic (VEH/day)**	**Construction Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Telluride Realignment/Streetscape/Telluride Gate	42	168	672	4	16	3.00
Fitness Center	305	1,220	4,880	4	16	3.00
Space Ops Parking	135	540	2,160	4	16	3.00
Gas Meter House	90	360	1,440	4	16	3.00
BX/Commissary	305	1,220	4,880	4	16	0.00
TOTALS	**877**	**3,508**	**14,032**	**20**	**80**	

Demolition Project Quantity of Materials Calculations							
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Demolition Traffic (VEH)[5,6]**	**Demolition Employee Traffic (VEH)[7]**	**Demolition Traffic (VEH/day)**	**Demolition Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Winter Park Street West Of Dormitory #1 (Bldg 28)	90	na	360	1,440	na	na	3.00
Totals	**90**	**0**	**360**	**1,440**	**0**	**0**	

Year: 2003

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	Project Ground Disturbance Duration (days)	Maximum Building Area (ft^2)	Total Building Land Disturbance(1) (ft^2)	Roadway/ Parking Lot Land Disturbance(2) (ft^2)	Landscaping Land Disturbance(3) (ft^2)	Length Sidewalk/ Walkways Land Disturbance(4) (linear ft)	Sidewalk/ Walkway Land Disturbance(4) (ft^2)	Length Utility Main Connection Land Disturbance(5) (linear ft)	Utilities Trenching Land Disturbance(5) (ft^2)	Total Land Disturbance (ft^2)	Total Land Disturbance (acres)	ADP or ELUA Number
Entomology Shop	330	2,255	13,530	4,500	451	600	7,200	800	4,800	30,481	1	6.00
Civil Engineering Warehouse	135	10,000	20,000	33,750	2,000	600	7,200	800	4,800	67,750	2	6.00
Golf Driving Range	30	144	288	0	11,000	NA	800	NA	800	12,888	0.30	7.00
Control Tower	270	4,949	29,694	0	990	1,000	12,000	500	3,000	45,684	1.05	10.00
Engine Shop Addition	60	2,000	4,000	0	400	500	6,000	200	1,200	11,600	0.27	10.00
Runway and Taxiway Additions	120	0	0	56,250	0	0	0	0	0	56,250	1.29	10.00
Runway and Taxiway, Ramp Repairs	270	0	0	2,242,500	390,000	0	0	0	0	2,632,500	60.43	11.00
ADAL SBIRS Mission Control; Space Operations Area	270	18,000	108,000	0	3,600	3,000	36,000	300	1,800	149,400	3.43	12.00
ADAL CDC	135	3,837	23,022	0	0	0	0	0	0	23,022	0.53	4.00
Fire Station Addition	270	21,531	129,186	25,837	4,306	1,650	19,800	0	0	179,129	4.11	6.00
H-70 (Hydrazine) Fuel Storage	90	594	3,564	0	119	500	6,000	100	600	10,283	0.24	10.00
WG Headquarters	320	51,066	306,396	96,300	10,213	900	10,800	400	2,400	426,109	9.78	7.00
Lake Williams Pavilions (2)	60	60	360		12	0	0		0	360	0.01	
Totals	**2,360**	**114,436**	**638,040**	**2,459,137**	**423,091**	**8,750**	**105,800**	**3,100**	**19,400**	**3,645,456**	**83.69**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.
(6) Engine shop addition - assume only 2*disturbance since it's ADAL

Demolition Project Ground Disturbance Details (Information for Appendix C)											
Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Total Building Land Disturbance(1) (ft^2)	Building Height (ft)	Interior Wall Length (ft)	Total Building Demolition Debris/Waste Generated (2) (ft^3)	Bathroom, Kitchen and Other Integrated Components(2) (ft^3)	Other Demolition Components(2)(3) (ft^3)	Total Demolition Debris/Waste Generated (ft^3)	Total Land Disturbance (acres)	ADP or ELUA Number
Bldg 25	24	12,000	24,000	N/A	N/A	99,024	3,000	191,880	293,904	0.55	2.00
Totals	**24**	**12,000**	**24,000**	**0**	**0**	**99,024**	**3,000**	**191,880**	**293,904**	**1**	

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and debris stockpile areas.
(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

- Demolition of exterior walls generates 3.36 ft^3 per ft^2 of building space demolished.
- Demolition of interior walls generates 0.812 ft^3 per ft^2 of building space demolished.
- Demolition of roofs generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of foundations generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of bathroom, kitchen and other components generates 0.254 ft^3 per ft^2 of building space demolished.
- Demolition of other demolition components generates 15.99 ft^3 per ft^2 of building space demolished.
- Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

Year: 2003

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Entomology Shop	330	30,481	0.70	115,458	6.00
Civil Engineering Warehouse	135	67,750	1.56	104,985	6.00
Golf Driving Range	30	12,888	0.30	4,438	7.00
Control Tower	270	45,684	1.05	141,582	10.00
Engine Shop Addition	60	11,600	0.27	7,989	10.00
Runway and Taxiway Additions	120	56,250	1.29	77,479	10.00
Runway and Taxiway, Ramp Repairs	270	2,632,500	60.43	8,158,574	11.00
ADAL SBIRS Mission Control; Space Operations Area	270	149,400	3.43	463,017	12.00
ADAL CDC	135	23,022	0.53	35,675	4.00
H-70 (Hydrazine) Fuel Storage	90	10,283	0.24	10,623	10.00
WG Headquarters	320	426,109	9.78	1,565,139	7.00
Lake Williams Pavilions (2)	60	360	0.01	248	0.00
Demolition					
Bldg 25	24	24,000	0.55	6,612	2.00
Totals	**2,114**	**3,490,327**	**80.13**	**10,691,818**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Entomology Shop	330	2,255	0(1)	0	0	0	0	0	83	6.00
Civil Engineering Warehouse	135	10,000	0	0	0	0	0	0	34	6.00
Golf Driving Range	30	144	0	0	0	0	0	0	8	7.00
Control Tower	270	4,949	0	0	0	0	0	0	68	10.00
Engine Shop Addition	60	2,000	0	0	0	0	0	0	15	10.00
Runway and Taxiway Additions	120	0	0	0	0	0	0	0	30	10.00
Runway and Taxiway, Ramp Repairs	270	0	0	0	0	0	0	0	68	11.00
ADAL SBIRS Mission Control; Space Operations Area	270	18,000	0	0	0	0	0	0	68	12.00
ADAL CDC	135	3,837	0	0	0	0	0	0	34	4.00
Fire Station Addition	270	21,531	0	0	0	0	0	0	68	6.00
H-70 (Hydrazine) Fuel Storage	90	594	0	0	0	0	0	0	23	10.00
WG Headquarters	320	51,066	0	0	0	0	0	0	80	7.00
Lake Williams Pavilions (2)	60	60	0	0	0	0	0	0	15	0.00
Demolition										
Bldg 25	24	12,000	N/A	N/A	99,024	3,000	191,880	293,904	19,694	2.00
Totals	**2,384**	**126,436**	**0**	**0**	**99,024**	**3,000**	**191,880**	**293,904**	**20,284**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75	lbs/ft3
Bathroom etc Bulk Density =	100	lbs/ft3
Other Demolition Bulk Density =	165	lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Entomology Shop	2,255	3,000	3,600	8,855	0.20	6.00	I
Civil Engineering Warehouse	10,000	22,500	3,600	36,100	0.83	6.00	I
Golf Driving Range	144	0	400	544	0.01	7.00	NA
Control Tower	4,949	0	6,000	10,949	0.25	10.00	I
Engine Shop Addition	2,000	0	3,000	5,000	0.11	10.00	I
Runway and Taxiway Additions	0	37,500	0	37,500	0.86	10.00	NA
Runway and Taxiway, Ramp Repairs	0	1,495,000	0	1,495,000	34.32	11.00	NA
ADAL SBIRS Mission Control; Space Operations Area	18,000	0	18,000	36,000	0.83	12.00	NA
ADAL CDC	3,837	0	0	3,837	0.09	4.00	
Fire Station Addition	21,531	17,225	9,900	48,656	1.12	6.00	
H-70 (Hydrazine) Fuel Storage	594	0	3,000	3,594	0.08	10.00	
WG Headquarters	51,066	64,200	5,400	120,666	2.77	7.00	
Lake Williams Pavilions (2)	60	0	0	60	0.00	0.00	
Totals	**114,436**	**1,639,425**	**52,900**	**1,806,761**	**41.48**		
Demolition							
Bldg 25	12,000	N/A	N/A	12,000	0.28	2.00	
Totals	**12,000**	**0**	**0**	**12,000**	**0.28**		
Net Loss	**102,436**	**1,639,425**	**52,900**	**1,794,761**	**41.20**		

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	Project Ground Disturbance Duration (days)	Delivery Traffic (VEH)[8,9]	Construction Employee Traffic (VEH)[10]	Delivery Traffic (VEH/day)	Construction Employee Traffic (VEH/day)	ADP or ELUA Number
Entomology Shop	330	1,320	5,280	4	16	6.00
Civil Engineering Warehouse	135	540	2,160	4	16	6.00
Golf Driving Range	30	120	480	4	16	7.00
Control Tower	270	1,080	4,320	4	16	10.00
Engine Shop Addition	60	240	960	4	16	10.00
Runway and Taxiway Additions	120	480	1,920	4	16	10.00
Runway and Taxiway, Ramp Repairs	270	1,080	4,320	4	16	11.00
ADAL SBIRS Mission Control; Space Operations Area	270	1,080	4,320	4	16	12.00
ADAL CDC	135	540	2,160	4	16	4.00
Fire Station Addition	270	1,080	4,320	4	16	6.00
H-70 (Hydrazine) Fuel Storage	90	360	1,440	4	16	10.00
WG Headquarters	320	1,280	5,120	4	16	7.00
Lake Williams Pavilions (2)	60	240	960	4	16	0.00
TOTALS	**2,360**	**9,440**	**37,760**	**52**	**208**	

Demolition Project Quantity of Materials Calculations							
Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Demolition Traffic (VEH)[5,6]	Demolition Employee Traffic (VEH)[7]	Demolition Traffic (VEH/day)	Demolition Employee Traffic (VEH/day)	ADP or ELUA Number
Bldg 25	24	12,000	96	384	4	16	2.00
Totals	**24**	**12,000**	**96**	**384**	**4**	**16**	

Year: 2004

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	**Project Ground Disturbance Duration (days)**	**Maximum Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Roadway/Parking Lot Land Disturbance[2] (ft^2)**	**Landscaping Land Disturbance[3] (ft^2)**	**Length Sidewalk/Walkways Land Disturbance[4] (linear ft)**	**Sidewalk/Walkway Land Disturbance[4] (ft^2)**	**Length Utility Main Connection Land Disturbance[5] (linear ft)**	**Utilities Trenching Land Disturbance[5] (ft^2)**	**Total Land Disturbance (ft^2)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Space Ops Parking	195	0	0	607,500	0	950	11,400	0	0	618,900	14.21	2.00
Aspen Avenue	135	0	0	540,000	0	2,100	25,200	0	0	565,200	12.98	2.00
Dormitory # 2	270	57,528	345,168	39,600	11,506	1,250	15,000	1,000	6,000	417,274	9.58	3.00
Aspen Avenue Improvements/Streetscape	104	0	0	624,000	62,400	5,300	63,600	0	0	750,000	17.22	4.00
Fire Water mains	70	0	0	0	0	0	0	86,000	516,000	516,000	11.85	4.00
Transportation System/Aspen Ave	60	0	0	276,000	0	0	0	0	0	276,000	6.34	6.00
Aspen Avenue	52	0	0	312,000	0	5,400	64,800	0	0	376,800	8.65	7.00
ADAL Access Roads[6]	106	0	0	665,280	0	0	0	0	0	665,280	15.27	11.00
Approach Lighting	70	672	806		134	0	0		0	806	0.02	
East Restricted/Official Use Only Access	70	128	154		26	0	0		0	154	0.00	
351 Housing Units	345	734,798	4,408,788	15,900	73,480	21,060	126,360	500	3,000	4,627,528	71.00	1.00
Clubhouse/Pool	120	22,500	135,000	0	2,250	450	2,700	1,000	6,000	145,950	3.35	1.00
Playgrounds Totlots(6)	11	0	0	60,000	0	900	5,400	0	0	65,400	1.50	1.00
Fire Training Facility	90	3,400	4,080	41,112	680		0		0	45,192	1.04	
Repair Parking Lots ANG wide	180	0	0	144,000	0		0		0	144,000	3.31	
Totals	**1,878**	**819,026**	**4,893,996**	**3,325,392**	**150,475**	**37,410**	**314,460**	**88,500**	**531,000**	**9,214,483**	**176.30**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.

Demolition Project Ground Disturbance Details (Information for Appendix C)												ACAM Information
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated [2] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[2] (ft^3)**	**Other Demolition Components[2][3] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**	**Duration**
Gas Meter House (Bld 39)	20	378	756	N/A	N/A	0	0	756	756	0.02	3.00	
T 11 (Mod 3) Miscellaneous Administrative Functions (a)	40	20,000	40,000	N/A	N/A	0	0	0	0	0.92	2.00	40.00
Totals	**60**	**20,378**	**40,756**	**0**	**0**	**0**	**0**	**756**	**756**	**1**		

(a) Modular units are removed and returned to the "lender"; therefore, no demolition debris with regards to the building. Impact is from grading after removal.

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Space Ops Parking	195	618,900	14.21	1,385,279	2.00
Aspen Avenue	135	565,200	12.98	875,826	2.00
Dormitory # 2	270	417,274	9.58	1,293,203	3.00
Aspen Avenue Improvements/Streetscape	104	750,000	17.22	895,317	4.00
Fire Water mains	70	516,000	11.85	414,601	4.00
Transportation System/Aspen Ave	60	276,000	6.34	190,083	6.00
Aspen Avenue	52	376,800	8.65	224,904	7.00
ADAL Access Roads(6)	106	665,280	15.27	809,455	11.00
Approach Lighting	70	806	0.02	648	0.00
East Restricted/Official Use Only Access	70	154	0.00	123	0.00
351 Housing Units	345	4,627,528	106.23	18,325,265	1.00
Clubhouse/Pool	120	145,950	3.35	201,033	1.00
Playgrounds Totlots(6)	11	65,400	1.50	8,258	1.00
Repair Parking Lots ANG wide	180	144,000	3.31	297,521	0.00
Demolition					
Gas Meter House (Bld 39)	20	756	0.02	174	3.00
T 11 (Mod 3) Miscellaneous Administrative Functions (a)	40	40,000	0.92	18,365	2.00
Totals	**1,848**	**9,210,047**	**211.43**	**24,940,054**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons)(4)**	**ADP or ELUA Number**
Construction										
Space Ops Parking	195	0	0	0	0	0	0	0	49	2.00
Aspen Avenue	135	0	0	0	0	0	0	0	34	2.00
Dormitory # 2	270	57,528	0	0	0	0	0	0	68	3.00
Aspen Avenue Improvements/Streetscape	104	0	0	0	0	0	0	0	26	4.00
Fire Water mains	70	0	0	0	0	0	0	0	18	4.00
Transportation System/Aspen Ave	60	0	0	0	0	0	0	0	15	6.00
Aspen Avenue	52	0	0	0	0	0	0	0	13	7.00
ADAL Access Roads(6)	106	0	0	0	0	0	0	0	27	11.00
Approach Lighting	70	672	0	0	0	0	0	0	18	0.00
East Restricted/Official Use Only Access	70	128	0	0	0	0	0	0	18	0.00
351 Housing Units	345	734,798	0	0	0	0	0	0	86	1.00
Clubhouse/Pool	120	22,500	0	0	0	0	0	0	30	1.00
Playgrounds Totlots(6)	11	0	0	0	0	0	0	0	3	1.00
Repair Parking Lots ANG wide	180	0	0	0	0	0	0	0	45	0.00
Demolition										
Gas Meter House (Bld 39)	20	378	N/A	N/A	0	0	756	756	62	3.00
T 11 (Mod 3) Miscellaneous Administrative Functions (a)	40	20,000	N/A	N/A	0	0	0	0	0	2.00
Totals	**60**	**20,378**	**0**	**0**	**0**	**0**	**756**	**756**	**62**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75 lbs/ft3
Bathroom etc Bulk Density =	100 lbs/ft3
Other Demolition Bulk Density =	165 lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Space Ops Parking	0	405,000	5,700	410,700	9.43	2.00	NA
Aspen Avenue	0	360,000	12,600	372,600	8.55	2.00	NA
Dormitory # 2	57,528	26,400	7,500	91,428	2.10	3.00	C
Aspen Avenue Improvements/Streetscape	0	520,000	31,800	551,800	12.67	4.00	NA
Fire Water mains	0	0	0	0	0.00	4.00	NA
Transportation System/Aspen Ave	0	184,000	0	184,000	4.22	6.00	NA
Aspen Avenue	0	208,000	32,400	240,400	5.52	7.00	NA
ADAL Access Roads(6)	0	443,520	0	443,520	10.18	11.00	
Approach Lighting	672	0	0	672	0.02	0.00	
East Restricted/Official Use Only Access	128	0	0	128	0.00	0.00	
351 Housing Units	734,798	10,600	63,180	808,578	18.56	1.00	
Clubhouse/Pool	22,500	0	1,350	23,850	0.55	1.00	
Playgrounds Totlots(6)	0	40,000	2,700	42,700	0.98	1.00	
Repair Parking Lots ANG wide	0	96,000	0	96,000	2.20	0.00	
Totals	**815,626**	**2,293,520**	**157,230**	**3,266,376**	**74.99**		
Demolition							
Gas Meter House (Bld 39)	378	N/A	N/A	378	0.01	3.00	
T 11 (Mod 3) Miscellaneous Administrative Functions (a)	20,000	N/A	N/A	20,000	0.46	2.00	
Totals	**20,378**	**0**	**0**	**20,378**	**0.47**		
Net Loss	**795,248**	**2,293,520**	**157,230**	**3,245,998**	**74.52**		

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	Project Ground Disturbance Duration (days)	Delivery Traffic (VEH)[8,9]	Construction Employee Traffic (VEH)[10]	Delivery Traffic (VEH/day)	Construction Employee Traffic (VEH/day)	ADP or ELUA Number
Space Ops Parking	195	780	3,120	4	16	2.00
Aspen Avenue	135	540	2,160	4	16	2.00
Dormitory # 2	270	1,080	4,320	4	16	3.00
Aspen Avenue Improvements/Streetscape	104	416	1,664	4	16	4.00
Fire Water mains	70	280	1,120	4	16	4.00
Transportation System/Aspen Ave	60	240	960	4	16	6.00
Aspen Avenue	52	208	832	4	16	7.00
ADAL Access Roads(6)	106	424	1,696	4	16	11.00
Approach Lighting	70	280	1,120	4	16	0.00
East Restricted/Official Use Only Access	70	280	1,120	4	16	0.00
351 Housing Units	345	1,380	5,520	4	16	1.00
Clubhouse/Pool	120	480	1,920	4	16	1.00
Playgrounds Totlots(6)	11	44	176	4	16	1.00
Repair Parking Lots ANG wide	180	720	2,880	4	16	0.00
TOTALS	**1,788**	**7,152**	**28,608**	**56**	**224**	

Demolition Project Quantity of Materials Calculations							
Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Demolition Traffic (VEH)[5,6]	Demolition Employee Traffic (VEH)[7]	Demolition Traffic (VEH/day)	Demolition Employee Traffic (VEH/day)	ADP or ELUA Number
Gas Meter House (Bld 39)	20	378	80	320	4	16	3.00
T 11 (Mod 3) Miscellaneous Administrative Functions (a)	40	20,000	160	640	4	16	2.00
Totals	**60**	**20,378**	**240**	**960**	**8**	**32**	

Year: 2005

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	Project Ground Disturbance Duration (days)	Maximum Building Area (ft^2)	Total Building Land Disturbance[1] (ft^2)	Roadway/Parking Lot Land Disturbance[2] (ft^2)	Landscaping Land Disturbance[3] (ft^2)	Length Sidewalk/Walkways Land Disturbance[4] (linear ft)	Sidewalk/Walkway Land Disturbance[4] (ft^2)	Length Utility Main Connection Land Disturbance[5] (linear ft)	Utilities Trenching Land Disturbance[5] (ft^2)	Total Land Disturbance (ft^2)	Total Land Disturbance (acres)	ADP or ELUA Number
Athletic Fields	135	0	0	0	789,750	1,200	14,400	150	900	805,050	18.48	2.00
Central Mall	120	0	0	0	160,000	2,380	28,560	200	1,200	189,760	4.36	5.00
Chapel	270	26,080	156,480	135,000	5,216	NA	24,900	NA	1,200	322,796	7.41	5.00
Child development center	270	24,197	145,182	121,000	4,839	2,075	24,900	100	1,200	297,121	6.82	5.00
Army Aviation Support Facility	540	120,000	720,000	0	24,000	5,000	60,000	300	1,800	805,800	18.50	10.00
Taxiways A&K Repairs	66	0	0	750,000	0	0	0	0	0	750,000	17.22	11.00
Install Two DSOC Modular Facilities	90	33,000	33,000	0	0	0	0	0	0	33,000	0.76	12.00
ANG CE Complex	270	37350	74700	49200	7470	0		0	0	131370	3.02	6.00
ADAL Clinic	230	4,563	27,378	80,000	913	NA	12,000	NA	600	120,891	2.78	4.00
Child development center playgrounds	90	0	30,713		0		0		0	30,713	0.71	
Visitor Center ADAL and Parking Lot	120	1,000	2,000	14,400	200	NA	12,000	0	0	28,600	0.66	2.00
Totals	**2,201**	**246,190**	**1,189,453**	**1,149,600**	**992,388**	**10,655**	**176,760**	**750**	**6,900**	**3,515,101**	**80.70**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.
(6) CDC Playground disturbance assume similar to parking lots and estimated at 1.5 times the playground size.

Demolition Project Ground Disturbance Details (Information for Appendix C)											
Project	Disturbance Duration	Building Area (ft^2)	Disturbance[1] (ft^2)	Building Height (ft)	(ft)	Debris/Waste Generated [2]	Other Integrated	Components[2][3] (ft^3)	Debris/Waste	Disturbance (acres)	Number
Baseball Field	0	0	0	0	0	0	0	800	800	3.67	2.00
Bldg 19 CAMANA Club	70	7,132	14,264	15	400	46,450	5,130	9,212	60,792	0.33	2.00
Demolish Beaver Creek Street in vicinity of building 28	60	0	0	N/A	N/A	0	0	80,000	80,000	1.19	4.00
Demolish Bldg 1011	60	22,949	45,898	15	400	189,375	5,737	366,955	562,067	1.05	7.00
T-10 (Mod 1)Miscellaneous Administrative Functions (a)	40	20,000	40,000	N/A	N/A	0	0	0	0	0.92	2.00
Demolish Bldg 1012	15	1,458	2,916	15	100	12,031	365	23,313	35,709	0.07	8.25
Totals	**245**	**51,539**	**103,078**	**45**	**900**	**247,857**	**11,232**	**480,280**	**739,368**	**7**	

(a) Modular units are removed and returned to the "lender"; therefore, no demolition debris with regards to the building. Impact is from grading after removal.

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and debris stockpile areas.

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

- Demolition of exterior walls generates 3.36 ft^3 per ft^2 of building space demolished.
- Demolition of interior walls generates 0.812 ft^3 per ft^2 of building space demolished.
- Demolition of roofs generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of foundations generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of bathroom, kitchen and other components generates 0.254 ft^3 per ft^2 of building space demolished.
- Demolition of other demolition components generates 15.99 ft^3 per ft^2 of building space demolished.
- Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Athletic Fields	135	805,050	18.48	1,247,495	2.00
Central Mall	120	189,760	4.36	261,377	5.00
Chapel	270	322,796	7.41	1,000,401	5.00
Child development center	270	297,121	6.82	920,831	5.00
Army Aviation Support Facility	540	805,800	18.50	4,994,628	10.00
Taxiways A&K Repairs	66	750,000	17.22	568,182	11.00
Install Two DSOC Modular Facilities	90	33,000	0.76	34,091	12.00
ANG CE Complex	270	131,370	3.02	407,138	6.00
ADAL Clinic	230	120,891	2.78	319,156	4.00
Child development center playgrounds	90	30,713	0.71	31,728	0.00
Visitor Center ADAL and Parking Lot	120	28,600	0.66	39,394	2.00
Demolition					
Baseball Field	0	0	0.00	0	2.00
Bldg 19 CAMANA Club	70	14,264	0.33	11,461	2.00
Demolish Beaver Creek Street in vicinity of building 28	60	0	0.00	0	4.00
Demolish Bldg 1011	60	45,898	1.05	31,610	7.00
T-10 (Mod 1)Miscellaneous Administrative Functions (a)	40	40,000	0.92	18,365	2.00
Demolish Bldg 1012	15	2,916	0.07	502	8.25
Totals	**2,446**	**3,618,179**	**83.06**	**9,886,359**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Athletic Fields	135	0	0	0	0	0	0	0	34	2.00
Central Mall	120	0	0	0	0	0	0	0	30	5.00
Chapel	270	26,080	0	0	0	0	0	0	68	5.00
Child development center	270	24,197	0	0	0	0	0	0	68	5.00
Army Aviation Support Facility	540	120,000	0	0	0	0	0	0	135	10.00
Taxiways A&K Repairs	66	0	0	0	0	0	0	0	17	11.00
Install Two DSOC Modular Facilities	90	33,000	0	0	0	0	0	0	23	12.00
ANG CE Complex	270	37,350	0	0	0	0	0	0	68	6.00
ADAL Clinic	230	4,563	0	0	0	0	0	0	58	4.00
Child development center playgrounds	90	0	0	0	0	0	0	0	23	0.00
Visitor Center ADAL and Parking Lot	120	1,000	0	0	0	0	0	0	30	2.00
Demolition										
Baseball Field	0	0	0	0	0	0	800	800	66	2.00
Bldg 19 CAMANA Club	70	7,132	15	400	46,450	5,130	9,212	60,792	2,758	2.00
Demolish Beaver Creek Street in vicinity of building 28	60	0	N/A	N/A	0	0	80,000	80,000	6,600	4.00
Demolish Bldg 1011	60	22,949	15	400	189,375	5,737	366,955	562,067	37,662	7.00
T-10 (Mod 1)Miscellaneous Administrative Functions (a)	40	20,000	N/A	N/A	0	0	0	0	0	2.00
Demolish Bldg 1012	15	1,458	15	100	12,031	365	23,313	35,709	2,393	8.25
Totals	**2,446**	**297,729**	**45**	**900**	**247,857**	**11,232**	**480,280**	**739,368**	**50,030**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75 lbs/ft3
Bathroom etc Bulk Density =	100 lbs/ft3
Other Demolition Bulk Density =	165 lbs/ft3

Project	Building Area Impervious Surfaces (ft^2)	Roadway/Parking Lot Impervious Surfaces (ft^2)	Sidewalk/Walkways Impervious Surfaces (ft^2)	Total Impervious Surfaces (ft^2)	Total Impervious Surfaces (acres)	ADP or ELUA Number	Land Use Type*
Construction							
Athletic Fields	0	0	7,200	7,200	0.17	2.00	NA
Central Mall	0	0	14,280	14,280	0.33	5.00	NA
Chapel	26,080	90,000	12,450	128,530	2.95	5.00	CS
Child development center	24,197	80,667	12,450	117,314	2.69	5.00	CS
Army Aviation Support Facility	120,000	0	30,000	150,000	3.44	10.00	I
Taxiways A&K Repairs	0	500,000	0	500,000	11.48	11.00	NA
Install Two DSOC Modular Facilities	33,000	0	0	33,000	0.76	12.00	NA
ANG CE Complex	37,350	32,800	0	70,150	1.61	6.00	A
ADAL Clinic	4,563	53,333	6,000	63,896	1.47	4.00	
Child development center playgrounds	0	0	0	0	0.00	0.00	
Visitor Center ADAL and Parking Lot	1,000	9,600	6,000	16,600	0.38	2.00	
Totals	**246,190**	**766,400**	**88,380**	**1,100,970**	**25.27**		
Demolition							
Baseball Field	0	N/A	N/A	0	0.00	2.00	
Bldg 19 CAMANA Club	7,132	N/A	N/A	7,132	0.16	2.00	
Demolish Beaver Creek Street in vicinity of building 28	0	40,000	N/A	40,000	0.92	4.00	
Demolish Bldg 1011	22,949	N/A	N/A	22,949	0.53	7.00	
T-10 (Mod 1)Miscellaneous Administrative Functions (a)	20,000	N/A	N/A	20,000	0.46	2.00	
Demolish Bldg 1012	1,458	N/A	N/A	1,458	0.03	8.25	
Totals	**51,539**	**40,000**	**0**	**91,539**	**2.10**		
Net Loss	**194,651**	**726,400**	**88,380**	**1,009,431**	**23.17**		

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	**Disturbance Duration**	**Delivery Traffic (VEH)[8,9]**	**Traffic (VEH)[10]**	**(VEH/day)**	**Employee Traffic**	**ADP or ELUA Number**
Athletic Fields	135	540	2,160	4	16	2.00
Central Mall	120	480	1,920	4	16	5.00
Chapel	270	1,080	4,320	4	16	5.00
Child development center	270	1,080	4,320	4	16	5.00
Army Aviation Support Facility	540	2,160	8,640	4	16	10.00
Taxiways A&K Repairs	66	264	1,056	4	16	11.00
Install Two DSOC Modular Facilities	90	360	1,440	4	16	12.00
ANG CE Complex	270	1,080	4,320	4	16	6.00
ADAL Clinic	230	920	3,680	4	16	4.00
Child development center playgrounds	90	360	1,440	4	16	0.00
Visitor Center ADAL and Parking Lot	120	480	1,920	4	16	2.00
TOTALS	**2,201**	**8,804**	**35,216**	**44**	**176**	

Demolition Project Quantity of Materials Calculations							
Project	**Disturbance Duration**	**Building Area (ft^2)**	**(VEH)[5,6]**	**Traffic (VEH)[7]**	**(VEH/day)**	**(VEH/day)**	**ADP or ELUA Number**
Baseball Field	0	0	0	0	0	0	2.00
Bldg 19 CAMANA Club	70	7,132	280	1,120	4	16	2.00
Demolish Beaver Creek Street in vicinity of building 28	60	0	240	960	4	16	4.00
Demolish Bldg 1011	60	22,949	240	960	4	16	7.00
T-10 (Mod 1)Miscellaneous Administrative Functions (a)	40	20,000	160	640	4	16	2.00
Demolish Bldg 1012	15	1,458	60	240	4	16	8.25
Totals	**245**	**51,539**	**980**	**3,920**	**20**	**80**	

Year: 2006

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	**Project Ground Disturbance Duration (days)**	**Maximum Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Roadway/Parking Lot Land Disturbance[2] (ft^2)**	**Landscaping Land Disturbance[3] (ft^2)**	**Length Sidewalk/Walkways Land Disturbance[4] (linear ft)**	**Sidewalk/Walkway Land Disturbance[4] (ft^2)**	**Length Utility Main Connection Land Disturbance[5] (linear ft)**	**Utilities Trenching Land Disturbance[5] (ft^2)**	**Total Land Disturbance (ft^2)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Deceleration Lanes	135	0	0	54,000	0	N/A	0	0	0	54,000	1.24	2.00
Car Wash	135	2,000	12,000	4,000	400	300	3,600	100	600	20,600	0.47	3.00
Clinic Warehouse	135	4,000	24,000	0	0	0	12,000	0	600	36,600	0.84	4.00
Outdoor Recreation Supply	94	16,000	96,000	54,000	3,200	0	0	200	1,200	154,400	4	6.00
Athletic Fields (Track, Football, Soccer Fields) [6]	270	0	0	48,000	455,000	1,200	14,400	300		517,400	11.88	3.00
Hazardous Waste Bldg	135	5,457	32,742	4,500	1,091	0	0	0	0	38,333	0.88	6.00
HAZMAT Bldg	135	5,457	32,742	4,500	1,091	0	0	0	0	38,333	0.88	6.00
North Industrial Storm Water Retention Pond	270	0	0	652,500	0	0	0	0	0	652,500	14.98	
Repair Parking Lost East of Bldg 471	120	0	0	316,789	0	0	0	0	0	316,789	7.27	
ADF Parking Lot Mod-1	90	0	0	4,800	0	0	0	0	0	4,800	0.11	
Totals	**1,519**	**32,914**	**197,484**	**1,143,089**	**460,783**	**1,500**	**30,000**	**600**	**2,400**	**1,833,756**	**42.10**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.
(6) ADF Parking lot mod disturbance assumption 1.5 times the square footage.
(7) North industrial storm water retention pond lot mod disturbance assumption 1.5 times the square footage.
(6) Repair of parking lots - assume disturbance doesn't extend past the parking lot boundaries. Already a conservative number since repair of existing, where no to minimal grading/fugitive dust.

Demolition Project Ground Disturbance Details (Information for Appendix C)													
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated [2] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[2] (ft^3)**	**Other Demolition Components[2][3] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Land Disturbance (acres)**	**Total Building Demolition Debris/Waste Generated per Build Area**	**Including Bathroom, Kitchen and Other Integrated Components**	**ADP or ELUA Number**
Demolish Building 1103	60	264	528	NA	NA	2,179	66	4,221	6,466	0.01	NA	NA	13.00
Totals	**60**	**264**	**528**	**0**	**0**	**2,179**	**66**	**4,221**	**6,466**	**0**	**0**	**0**	

Year: 2006

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Deceleration Lanes	135	54,000	1.24	83,678	2.00
Car Wash	135	20,600	0.47	31,921	3.00
Clinic Warehouse	135	36,600	0.84	56,715	4.00
Outdoor Recreation Supply	94	154,400	3.54	166,593	6.00
Athletic Fields (Track, Football, Soccer Fields)(6)	270	517,400	11.88	1,603,512	3.00
HAZMAT Bldg	135	38,333			6.00
ADF Parking Lot Mod-1	90	4,800	0.11	4,959	0.00
Demolition					
Demolish Building 1103	60	528	0.01	364	13.00
Totals	**1,054**	**826,661**	**18.98**	**1,947,742**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Deceleration Lanes	135	0	0(1)	0	0	0	0	0	34	2.00
Car Wash	135	2,000	0	0	0	0	0	0	34	3.00
Clinic Warehouse	135	4,000	0	0	0	0	0	0	34	4.00
Outdoor Recreation Supply	94	16,000	0	0	0	0	0	0	24	6.00
Athletic Fields (Track, Football, Soccer Fields)(6)	270	0	0	0	0	0	0	0	68	3.00
HAZMAT Bldg	135	5,457	0	0	0	0	0	0	0	6.00
ADF Parking Lot Mod-1	90	0	0	0	0	0	0	0	23	0.00
Demolition										
Demolish Building 1103	60	264	NA	NA	2,179	66	4,221	6,466	433	13.00
Totals	**1,054**	**27,721**	**0**	**0**	**2,179**	**66**	**4,221**	**6,466**	**648**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36	ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812	ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04	ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04	ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254	ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99	ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75	lbs/ft3
Bathroom etc Bulk Density =	100	lbs/ft3
Other Demolition Bulk Density =	165	lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Deceleration Lanes	0	36,000	0	36,000	0.83	2.00	NA
Car Wash	2,000	2,667	1,800	6,467	0.15	3.00	C
Clinic Warehouse	4,000	0	6,000	10,000	0.23	4.00	CS
Outdoor Recreation Supply	16,000	36,000	0	52,000	1.19	6.00	CS
Athletic Fields (Track, Football, Soccer Fields)(6)	0	32,000	7,200	39,200	0.90	3.00	
ADF Parking Lot Mod-1	0	3,200	0	3,200	0.07	0.00	
Totals	**22,000**	**109,867**	**15,000**	**146,867**	**3.37**		
Demolition							
Demolish Building 1103	264	N/A	N/A	264	0.01	13.00	
Totals	**264**	**0**	**0**	**264**	**0.01**		
Net Loss	**21,736**	**109,867**	**15,000**	**146,603**	**3**		

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	**Project Ground Disturbance Duration (days)**	**Delivery Traffic (VEH)[8,9]**	**Construction Employee Traffic (VEH)[10]**	**Delivery Traffic (VEH/day)**	**Construction Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Deceleration Lanes	135	540	2,160	4	16	2.00
Car Wash	135	540	2,160	4	16	3.00
Clinic Warehouse	135	540	2,160	4	16	4.00
Outdoor Recreation Supply	94	376	1,504	4	16	6.00
Athletic Fields (Track, Football, Soccer Fields)(6)	270	1,080	4,320	4	16	3.00
ADF Parking Lot Mod-1	90	360	1,440	4	16	0.00
TOTALS	**859**	**3,436**	**13,744**	**24**	**96**	

Demolition Project Quantity of Materials Calculations							
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Demolition Traffic (VEH)[5,6]**	**Demolition Employee Traffic (VEH)[7]**	**Demolition Traffic (VEH/day)**	**Demolition Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Demolish Building 1103	60	264	240	960	4	16	13.00
Totals	**60**	**264**	**240**	**960**	**4**	**16**	

Year: 2007

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	**Project Ground Disturbance Duration (days)**	**Maximum Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Roadway/Parking Lot Land Disturbance[2] (ft^2)**	**Landscaping Land Disturbance[3] (ft^2)**	**Length Sidewalk/Walkways Land Disturbance[4] (linear ft)**	**Sidewalk/Walkway Land Disturbance[4] (ft^2)**	**Length Utility Main Connection Land Disturbance[5] (linear ft)**	**Utilities Trenching Land Disturbance[5] (ft^2)**	**Total Land Disturbance (ft^2)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Visitors Qtrs/Temporary Lodging	320	109,002	654,012	54,000	21,800	600	7,200	100	600	737,612	16.93	5.00
Consolidated Fuels Storage (POL Bldg, Pumphouse, Bulk operations storage	338	8,400	36,158	13,500	1,680	1,200	14,400	800	4,800	70,538	24.90	6.00
Permanent Alert Shelters and Crew Quarters	135	6,500	39,000	4,500	1,300	1,000	12,000	0	0	56,800	1.30	11.00
Services Warehouse	135	5,000	30,000	1,200	1,000	0	0	0	0	31,200	0.72	
Military Working Dog Kennel[7]	135	3,500	21,000	3,000	700		0		0	24,000	0.55	3.00
Military Working Dog Garage(7)	135	900	5,400	1,350	180		0		0	6,930	0.16	3.00
Military Working Dog WarehouseStorage(7)	120	323	1,938	485	65		0		0	2,487	0.06	3.00
Military Working Dog training/obedience area(7)	120	0	26,156	0	0		0		0	26,156	0.60	3.00
926th Security Forces Squadron (2 story)	270	9,376	28,128	43,500	1,875	0	0	705	4,230	75,858	1.74	
Communications Additions/Alterations	330	60,988	365,928	73,186	12,198	600	7,200	400	2,400	460,911	10.58	4.00
Consolidated Services Facility	270	15,145	90,870	54,000	3,029	900	10,800	100	600	159,299	3.66	5.00
Youth Center	270	28,586	171,516	32,400	5,717	350	4,200	200	1,200	215,033	4.94	5.00
Leadership Development Center	270	17,631	105,786	68,400	3,526	800	21,600	400	1,800	201,112	4.62	7.00
ADF Adm building	270	30,000	180,000	144	0	3,200	38,400	0	0	218,544	5.02	
Totals	**3,118**	**295,351**	**1,755,892**	**349,664**	**53,070**	**8,650**	**115,800**	**2,705**	**15,630**	**2,286,482**	**76**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area (1 story), providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.
(6) Freight Transfer facility 5 GOV's and 11-13 POVs, loaders/tractor trailers and pallet storage area. Assumption is loaders etc. are 6 times the size of a normal vehicle (conservative estimate). 18 vehicles *300 plus 7 * 6 * 300 for other vehicles/equipment.
(7) Military Working Dog Kennel and associated buildings. Dog training area has no "facility and/or parking construction". Parking for the kennel was determined to be 300 sf per parking space and parking for the garage and storage assumed to be 1.5 times the size of the building since these facilities still require access/temporary parking.
(8) ARPC Administrative Space is a total of 78,301 SF - will be more than one story, with a basement - where the area of disturbance would be based on 26,100 feet. In addition, total number of personnel 454 for all facilities x 300sf for parking = 136,200 sf (Did not know the breakdown by building so included all parking for the adm. building).
(9) ANG PSF has an additional 131 personnel * 300 sf for parking - again, included all the parking in admin.
(10) Per AF 813 anticipate 48,080 ft2 disturbance with an additional 22,000 ft2 if contractor staging area is not available. Used the conservative approach - 70,080 sf in calculations. No of personnel unknown - not listed, so assume parking area is the same sf as the building and disturbance is twice that (conservative approach).
(11) Per Draft DOPAA Lockheed ADF sidewalk 4 feet by 800 foot. 30,000 sq foot ad building on slab, 12 foot wide service driveway (assume 12 x 12)

Demolition Project Ground Disturbance Details (Information for Appendix C)											
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated[2] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[2] (ft^3)**	**Other Demolition Components[2][3] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Demolish Building 1606	17	8,327	16,654	NA	NA	68,714	2,082	133,149	203,945	0.39	NA
Fuel Administration (Bldg 302)	60	1,370	2,740	N/A	N/A	11,305	343	21,906	33,554	0.06	
Totals	**77**	**9,697**	**19,394**	**0**	**0**	**80,020**	**2,424**	**155,055**	**237,499**	**0**	

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and debris stockpile areas.

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Visitors Qtrs/Temporary Lodging	320	737,612	16.93	2,709,320	5.00
Consolidated Fuels Storage (POL Bldg, Pumphouse, Bulk operations storage	338	70,538	1.62	273,667	6.00
Permanent Alert Shelters and Crew Quarters	135	56,800	1.30	88,017	11.00
Services Warehouse	135	31,200	0.72	48,347	0.00
Military Working Dog Kennel(7)	135	24,000	0.55	37,190	3.00
Military Working Dog Garage(7)	135	6,930	0.16	10,739	3.00
Military Working Dog WarehouseStorage(7)	120	2,487	0.06	3,426	3.00
Military Working Dog training/obedience area(7)	120	26,156	0.60	36,028	3.00
926th Security Forces Squadron (2-story)	270	75,858	1.74	235,097	0.00
Communications Additions/Alterations	330	460,911	10.58	1,745,876	4.00
Consolidated Services Facility	270	159,299	3.66	493,695	5.00
Youth Center	270	215,033	4.94	666,425	5.00
Leadership Development Center	270	201,112	4.62	623,282	7.00
ADF Adm building	270	218,544	5.02	677,306	0.00
Demolition					
Demolish Building 1606	17	16,654	0.38	3,184	NA
Fuel Administration (Bldg 302)	60	2,740	0.06	1,887	
Totals	**3,195**	**2,305,876**	**52.94**	**7,653,484**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Visitors Qtrs/Temporary Lodging	320	109,002	0(1)	0	0	0	0	0	80	5.00
Consolidated Fuels Storage (POL Bldg, Pumphouse, Bulk operations storage	338	8,400	0	0	0	0	0	0	85	6.00
Permanent Alert Shelters and Crew Quarters	135	6,500	0	0	0	0	0	0	34	11.00
Services Warehouse	135	5,000	0	0	0	0	0	0	34	0.00
Military Working Dog Kennel(7)	135	3,500	0	0	0	0	0	0	34	3.00
Military Working Dog Garage(7)	135	900	0	0	0	0	0	0	34	3.00
Military Working Dog WarehouseStorage(7)	120	323	0	0	0	0	0	0	30	3.00
Military Working Dog training/obedience area(7)	120	0	0	0	0	0	0	0	30	3.00
926th Security Forces Squadron (2-story)	270	9,376	0	0	0	0	0	0	68	0.00
Communications Additions/Alterations	0	60,988	0	0	0	0	0	0	0	4.00
Consolidated Services Facility	0	15,145	0	0	0	0	0	0	0	5.00
Youth Center	0	28,586	0	0	0	0	0	0	0	5.00
Leadership Development Center	0	17,631	0	0	0	0	0	0	0	7.00
ADF Adm building	0	30,000	0	0	0	0	0	0	0	0.00
Demolition										
Demolish Building 1606	17	8,327	NA	NA	68,714	2,082	133,149	203,945	13,666	NA
Fuel Administration (Bldg 302)	60	1,370	N/A	N/A	11,305	343	21,906	33,554	2,248	
Totals	**1,785**	**305,048**	**0**	**0**	**80,020**	**2,424**	**155,055**	**237,499**	**16,341**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75 lbs/ft3
Bathroom etc Bulk Density =	100 lbs/ft3
Other Demolition Bulk Density =	165 lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Visitors Qtrs/Temporary Lodging	109,002	36,000	3,600	148,602	3.41	5.00	C
Consolidated Fuels Storage (POL Bldg, Pumphouse, Bulk operations storage	8,400	9,000	7,200	24,600	0.56	6.00	I
Permanent Alert Shelters and Crew Quarters	6,500	3,000	6,000	15,500	0.36	11.00	C
Services Warehouse	5,000	800	0	5,800	0.13	0.00	
Military Working Dog Kennel(7)	3,500	2,000	0	5,500	0.13	3.00	
Military Working Dog Garage(7)	900	900	0	1,800	0.04	3.00	
Military Working Dog WarehouseStorage(7)	323	323	0	646	0.01	3.00	
Military Working Dog training/obedience area(7)	0	0	0	0	0.00	3.00	
926th Security Forces Squadron (2-story)	9,376	29,000	0	38,376	0.88	0.00	
Communications Additions/Alterations	60,988	48,790	3,600	113,378	2.60	4.00	
Consolidated Services Facility	15,145	36,000	5,400	56,545	1.30	5.00	
Youth Center	28,586	21,600	2,100	52,286	1.20	5.00	
Leadership Development Center	17,631	45,600	10,800	74,031	1.70	7.00	
ADF Adm building	30,000	96	19,200	49,296	1.13	0.00	
Totals	295,351	233,109	57,900	586,360	13		
Demolition							
Demolish Building 1606	8,327	N/A	N/A	8,327	0.19	NA	
Fuel Administration (Bldg 302)	1,370	N/A	N/A	1,370	0.03		
Totals	**9,697**	**0**	**0**	**9,697**	**0.22**		
Net Loss	**285,654**	**233,109**	**57,900**	**576,663**	**13.24**		

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	**Project Ground Disturbance Duration (days)**	**Delivery Traffic (VEH)[8,9]**	**Construction Employee Traffic (VEH)[10]**	**Delivery Traffic (VEH/day)**	**Construction Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Visitors Qtrs/Temporary Lodging	320	1,280	5,120	4	16	5.00
Consolidated Fuels Storage (POL Bldg, Pumphouse, Bulk operations storage	338	1,352	5,408	4	16	6.00
Permanent Alert Shelters and Crew Quarters	135	540	2,160	4	16	11.00
Services Warehouse	135	540	2,160	4	16	0.00
Military Working Dog Kennel(7)	135	540	2,160	4	16	3.00
Military Working Dog Garage(7)	135	540	2,160	4	16	3.00
Military Working Dog WarehouseStorage(7)	120	480	1,920	4	16	3.00
Military Working Dog training/obedience area(7)	120	480	1,920	4	16	3.00
926th Security Forces Squadron (2-story)	270	1,080	4,320	4	16	0.00
Communications Additions/Alterations	330	1,320	5,280	4	16	4.00
Consolidated Services Facility	270	1,080	4,320	4	16	5.00
Youth Center	270	1,080	4,320	4	16	5.00
Leadership Development Center	270	1,080	4,320	4	16	7.00
ADF Adm building	270	1,080	4,320	4	16	0.00
TOTALS	**3,118**	**12,472**	**49,888**	**56**	**224**	

Demolition Project Quantity of Materials Calculations							
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Demolition Traffic (VEH)[5,6]**	**Demolition Employee Traffic (VEH)[7]**	**Demolition Traffic (VEH/day)**	**Demolition Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Demolish Building 1606	17	8,327	67	266	4	16	NA
Fuel Administration (Bldg 302)	60	1,370	240	960	4	16	
Totals	**77**	**9,697**	**307**	**1,226**	**8**	**32**	

Year: 2008

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	Project Ground Disturbance Duration (days)	Maximum Building Area (ft^2)	Total Building Land Disturbance[1] (ft^2)	Roadway/Parking Lot Land Disturbance[2] (ft^2)	Landscaping Land Disturbance[3] (ft^2)	Length Sidewalk/Walkways Land Disturbance[4] (linear ft)	Sidewalk/Walkway Land Disturbance[4] (ft^2)	Length Utility Main Connection Land Disturbance[5] (linear ft)	Utilities Trenching Land Disturbance[5] (ft^2)	Total Land Disturbance (ft^2)	Total Land Disturbance (acres)	ADP or ELUA Number
Family Camp	135	0	0	87,150	180,000	0	0	300	1,800	268,950	6.17	8.00
Youth Athletic Field Concession	90	1,399	8,394	63,000	280	300	3,600	100	600	75,874	1.74	3.00
ADF Parking Lot Mod-2	90		0	5,250	0		0		0	5,250	0.12	
BITC Mailroom	120	4,000	24,000		800		0		0	24,800	0.57	
Freight Transfer Facility	135	12,000	72,000	18,000	2,400	0	0	0	0	92,400	2.12	11.00
Squadron Operations Facility	270	22,950	137,700		4,590		0		0	137,700	3.16	
Totals	**840**	**40,349**	**242,094**	**173,400**	**188,070**	**300**	**3,600**	**400**	**2,400**	**604,974**	**13.89**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.
(6) ADF Parking lot mod disturbance assumption 1.5 times the square footage.
(7) FAMCAMP Originally based on number of parking spaces 88) - currently 58100 sf - area of disturbance 1.5 times sf.

Demolition Project Ground Disturbance Details (Information for Appendix C)											
Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Total Building Land Disturbance[1] (ft^2)	Building Height (ft)	Interior Wall Length (ft)	Total Building Demolition Debris/Waste Generated [2] (ft^3)	Bathroom, Kitchen and Other Integrated Components[2] (ft^3)	Other Demolition Components[2][3] (ft^3)	Total Demolition Debris/Waste Generated (ft^3)	Total Land Disturbance (acres)	ADP or ELUA Number
T 12 (Mod 2) Miscellaneous Administrative Functions (a)	40	20,000	40,000	N/A	N/A	0	0	0	0	0.92	2.00
Demolish Building 31	60	204	408			1,683	51	3,262	4,996	0.01	
Military Vehicle Fuels (Bldg 341)	60	216	432	N/A	N/A	1,782	54	3,454	5,290	0.01	5.00
Totals	**160**	**20,420**	**40,840**	**0**	**0**	**3,466**	**105**	**6,716**	**10,287**	**1**	

(a) Modular units are removed and returned to the "lender"; therefore, no demolition debris with regards to the building. Impact is from grading after removal.

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption

Project	Project Ground Disturbance Duration (days)	Total Building/Land Disturbance (sq ft)	Total Building/Land Disturbance (acres)	Total Water Use (Gallons)(1)	ADP or ELUA Number
Construction					
Family Camp	135	268,950	6.17	416,761	8.00
Youth Athletic Field Concession	90	75,874	1.74	78,382	3.00
ADF Parking Lot Mod-2	90	5,250	0.12	5,424	0.00
BITC Mailroom	120	24,800	0.57	34,160	0.00
Freight Transfer Facility	135	92,400	2.12	143,182	11.00
Squadron Operations Facility	270	137,700	3.16	426,756	0.00
Demolition					
T 12 (Mod 2) Miscellaneous Administrative Functions (a)	40	40,000	0.92	18,365	2.00
Demolish Building 31	60	408	0.01	281	0.00
Military Vehicle Fuels (Bldg 341)	60	432	0.01	298	5.00
Totals	**1,000**	**645,814**	**14.83**	**1,123,609**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation

Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Building Height (ft)	Interior Wall Length (ft)	Total Building Demolition Debris/Waste Generated (2) (ft^3)	Bathroom, Kitchen and Other Integrated Components(2) (ft^3)	Other Demolition Components(2)(3) (ft^3)	Total Demolition Debris/Waste Generated (ft^3)	Total Demolition Debris/Waste Generated (tons) (4)	ADP or ELUA Number
Construction										
Family Camp	135	0	0	0	0	0	0	0	34	8.00
Youth Athletic Field Concession	90	1,399	0	0	0	0	0	0	23	3.00
ADF Parking Lot Mod-2	90	0	0	0	0	0	0	0	23	0.00
BITC Mailroom	120	4,000	0	0	0	0	0	0	30	0.00
Freight Transfer Facility	135	12,000	0	0	0	0	0	0	34	11.00
Squadron Operations Facility	270	22,950	0	0	0	0	0	0	68	0.00
Demolition										
T 12 (Mod 2) Miscellaneous Administrative Functions (a)	40	20,000	N/A	N/A	0	0	0	0	0	2.00
Demolish Building 31	60	204	0	0	1,683	51	3,262	4,996	335	0.00
Military Vehicle Fuels (Bldg 341)	60	216	N/A	N/A	1,782	54	3,454	5,290	354	5.00
Totals	**1,000**	**60,769**	**0**	**0**	**3,466**	**105**	**6,716**	**10,287**	**899**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75	lbs/ft3
Bathroom etc Bulk Density =	100	lbs/ft3
Other Demolition Bulk Density =	165	lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Family Camp	0	58,100	0	58,100	1.33	8.00	
Youth Athletic Field Concession	1,399	42,000	1,800	45,199	1.04	3.00	
ADF Parking Lot Mod-2	0	3,500	0	3,500	0.08	0.00	
BITC Mailroom	4,000	0	0	4,000	0.09	0.00	
Freight Transfer Facility	12,000	12,000	0	24,000	0.55	11.00	
Squadron Operations Facility	22,950	0	0	22,950	0.53	0.00	
Totals	**40,349**	**115,600**	**1,800**	**157,749**	**3.62**		
Demolition							
T 12 (Mod 2) Miscellaneous Administrative Functions (a)	20,000	N/A	N/A	20,000	0.46	2.00	
Demolish Building 31	204	N/A	N/A	204	0.00	0.00	
Military Vehicle Fuels (Bldg 341)	216	N/A	N/A	216	0.00	5.00	
Totals	**20,420**	**0**	**0**	**20,420**	**0.47**		
Net Loss	**19,929**	**115,600**	**1,800**	**137,329**	**3.15**		

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	**Project Ground Disturbance Duration (days)**	**Delivery Traffic (VEH)[8,9]**	**Construction Employee Traffic (VEH)[10]**	**Delivery Traffic (VEH/day)**	**Construction Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Family Camp	135	540	2,160	4	16	8.00
Youth Athletic Field Concession	90	360	1,440	4	16	3.00
ADF Parking Lot Mod-2	90	360	1,440	4	16	0.00
BITC Mailroom	120	480	1,920	4	16	0.00
Freight Transfer Facility	135	540	2,160	4	16	11.00
Squadron Operations Facility	270	1,080	4,320	4	16	0.00
TOTALS	**840**	**3,360**	**13,440**	**24**	**96**	

Demolition Project Quantity of Materials Calculations							
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Demolition Traffic (VEH)[5,6]**	**Demolition Employee Traffic (VEH)[7]**	**Demolition Traffic (VEH/day)**	**Demolition Employee Traffic (VEH/day)**	**ADP or ELUA Number**
T 12 (Mod 2) Miscellaneous Administrative Functions (a)	40	20,000	160	640	4	16	2.00
Demolish Building 31	60	204	240	960	4	16	0.00
Military Vehicle Fuels (Bldg 341)	60	216	240	960	4	16	5.00
Totals	**160**	**20,420**	**640**	**2,560**	**12**	**48**	

Year: 2009

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	**Project Ground Disturbance Duration (days)**	**Maximum Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Roadway/Parking Lot Land Disturbance[2] (ft^2)**	**Landscaping Land Disturbance[3] (ft^2)**	**Length Sidewalk/ Walkways Land Disturbance[4] (linear ft)**	**Sidewalk/ Walkway Land Disturbance[4] (ft^2)**	**Length Utility Main Connection Land Disturbance[5] (linear ft)**	**Utilities Trenching Land Disturbance[5] (ft^2)**	**Total Land Disturbance (ft^2)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Highspeed Taxiway	270	0	0	1,020,000	0	0	0	0	0	1,020,000	23.42	11.00
Pharmacy	135	5,700	34,200	8,550	1,140	300	3,600	100	600	48,090		
BRAC ARPC Administrative (2-story) [6]	365	133,534	400,602	110,250	13,353		0	2,950	17,700	541,905	12.44	3.00
Recreational Vehicle Parking	72	0	0	17,100	360,000	0	0	500	3,000	380,100		
Weapons Release Complex Expansion	90	10,000	60,000	0	2,000	1,000	12,000	200	1,200	73,200	1.68	8.00
Impound Lot	30	0	0	12,000				500	3,000	15,000	0.34	10.00
BRAC AFR Medical Squadron Training	270	10,882	32,646		1,088		0	1,690	10,140	43,874	1.01	
BRAC AFR Communications Squadron Training (2-story)	135	3,434	10,302	36,000	343		0	2,510	15,060	61,705	1.42	
BRAC AFRC - Consolidated Training. Storage Facility (2 story)	365	15,887	47,661	30,000	1,589		0	3,025	18,150	97,400	2.24	
BRAC AFRC - CE Sq. Fac	365	11,960	35,880	0	1,196		0	1,400	8,400	45,476	1.04	
AFRC Group HQ	365	23,660	70,980	40,500	2,366		0	2,950	17,700	131,546	3.02	
Aspen Way Expansion	270	0	0	100,000	0		0		0	100,000	2.30	
Mississippi Gate and New West Gate[7]			418,000	54,000	0		0	3,000	18,000	490,000	11.25	
Totals	**2,732**	**215,057**	**1,110,271**	**1,428,400**	**383,076**	**1,300**	**15,600**	**18,825**	**112,950**	**3,048,297**	**60**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.
(6) The parking structure is estimated to be 135,000 square feet and two story, therefore, disturbance area is divided by two.
(7) The Mississippi Gate disturbance area is estimated at 100,000 ft2 and the disturbance area for the New West Gate is estimated at 390,000 ft2.
(7) (con't) Roadways for the Mississippi Gate are estimated at 400 feet x 20 feet, and for the New West Gate are estimated at 700 feet x 40 feet.

Demolition Project Ground Disturbance Details (Information for Appendix C)											
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated[2] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[2] (ft^3)**	**Other Demolition Components[2][3] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Jet Fuel Tanks/Refueling Operations/Bldg 200/202	160	2,686	5,372	N/A	N/A	22,165	672	42,949	65,786	0.12	1.00
6th Ave Entry Gate (including approx.67,500 sf of asphalt	60	2,949	5,898	N/A	N/A	24,335	737	71,999	97,071	0.14	2.00
Telluride Entry Gate (including approx. 7653 sf of asphalt	60	495	990	N/A	N/A	4,085	124	14,132	18,340	0.02	2.00
Mississippi Entry Gate - includes building 1552 (including approx.61,193 sf of asphalt)	60	379	758	N/A	N/A	3,128	95	1,027,725	1,030,948	0.02	2.00
Fuel Administration (Bldg 300)	60	1,503	3,006	N/A	N/A	12,403	376	24,033	36,811	0.07	5.00
Military Vehicle Fuels (Bldg 344)	60	216	432	N/A	N/A	1,782	54	3,454	5,290	0.01	5.00
Military Vehicle Fuels (Bldg PB605)	20	216	432	N/A	N/A	1,782	54	3,454	5,290	0.01	5.00
Demolish Building 902	60	5,615	11,230	15	220	46,335	1,404	4,232	51,971	0.26	
Vail Street Improvement	60	0	0	N/A	N/A	0	0	182,400	182,400	0.00	
Totals	**600**	**14,059**	**28,118**	**15**	**220**	**116,015**	**3,515**	**1,374,378**	**1,493,908**	**1**	

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and debris stockpile areas.
(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

- Demolition of exterior walls generates 3.36 ft^3 per ft^2 of building space demolished.
- Demolition of interior walls generates 0.812 ft^3 per ft^2 of building space demolished.
- Demolition of roofs generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of foundations generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of bathroom, kitchen and other components generates 0.254 ft^3 per ft^2 of building space demolished.
- Demolition of other demolition components generates 15.99 ft^3 per ft^2 of building space demolished.
- Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Highspeed Taxiway	270	1,020,000	23.42	3,161,157	11.00
Pharmacy	135	48,090	1.10	74,520	0.00
BRAC ARPC Administrative (2-story) (6)	365	541,905	12.44	2,270,380	3.00
Recreational Vehicle Parking	72	380,100	8.73	314,132	0.00
Weapons Release Complex Expansion	90	73,200	1.68	75,620	8.00
Impound Lot	30	15,000	0.34	5,165	10.00
BRAC AFR Medical Squadron Training	270	43,874	1.01	135,974	0.00
BRAC AFR Communications Squadron Training (2-story)	135	61,705	1.42	95,618	0.00
BRAC AFRC - Consolidated Training. Storage Facility (2 story)	365	97,400	2.24	408,068	0.00
BRAC AFRC - CE Sq. Fac	365	45,476	1.04	190,527	0.00
AFRC Group HQ	365	131,546	3.02	551,128	0.00
Aspen Way Expansion	270	100,000	2.30	309,917	0.00
Demolition					
Jet Fuel Tanks/Refueling Operations/Bldg 200/202	160	5,372	0.12	9,866	1.00
6th Ave Entry Gate (including approx.67,500 sf of asphalt	60	5,898	0.14	4,062	2.00
Telluride Entry Gate (including approx. 7653 sf of asphalt	60	990	0.02	682	2.00
Mississippi Entry Gate - includes building 1552 (including approx.61,193 sf of asphalt)	60	758	0.02	522	2.00
Fuel Administration (Bldg 300)	60	3,006	0.07	2,070	5.00
Military Vehicle Fuels (Bldg 344)	60	432	0.01	300	5.00
Military Vehicle Fuels (Bldg PB605)	20	432	0.01	99	5.00
Demolish Building 902	60	11,230	0.26	7,734	
Vail Street Improvement	60	0	0.00	0	
Totals	**3,332**	**2,586,415**	**59.38**	**7,617,542**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft3)**	**Other Demolition Components(2)(3) (ft3)**	**Total Demolition Debris/Waste Generated (ft3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Highspeed Taxiway	270	0	0	0	0	0	0	0	68	11.00
Pharmacy	135	5,700	0	0	0	0	0	0	34	0.00
BRAC ARPC Administrative (2-story) (6)	365	133,534	0	0	0	0	0	0	91	3.00
Recreational Vehicle Parking	72	0	0	0	0	0	0	0	18	0.00
Weapons Release Complex Expansion	90	10,000	0	0	0	0	0	0	23	8.00
Impound Lot	30	0	0	0	0	0	0	0	8	10.00
BRAC AFR Medical Squadron Training	270	10,882	0	0	0	0	0	0	68	0.00
BRAC AFR Communications Squadron Training (2-story)	135	3,434	0	0	0	0	0	0	34	0.00
BRAC AFRC - Consolidated Training. Storage Facility (2 story)	365	15,887	0	0	0	0	0	0	91	0.00
BRAC AFRC - CE Sq. Fac	365	11,960	0	0	0	0	0	0	91	0.00
AFRC Group HQ	365	23,660	0	0	0	0	0	0	91	0.00
Aspen Way Expansion	270	0	0	0	0	0	0	0	68	0.00
Mississippi Gate and New West Gate (7)	0	0	0	0	0	0	0	0	0	0.00
Demolition										
Jet Fuel Tanks/Refueling Operations/Bldg 200/202	160	2,686	N/A	N/A	22,165	672	42,949	65,786	4,408	1.00
6th Ave Entry Gate (including approx.67,500 sf of asphalt	60	2,949	N/A	N/A	24,335	737	71,999	97,071	6,889	2.00
Telluride Entry Gate (including approx. 7653 sf of asphalt	60	495	N/A	N/A	4,085	124	14,132	18,340	1,325	2.00
Mississippi Entry Gate - includes building 1552 (including approx.61,193 sf of asphalt)	60	379	N/A	N/A	3,128	95	1,027,725	1,030,948	84,909	2.00
Fuel Administration (Bldg 300)	60	1,503	N/A	N/A	12,403	376	24,033	36,811	2,467	5.00
Military Vehicle Fuels (Bldg 344)	60	216	N/A	N/A	1,782	54	3,454	5,290	354	5.00
Military Vehicle Fuels (Bldg PB605)	20	216	N/A	N/A	1,782	54	3,454	5,290	354	5.00
Demolish Building 902	60	5,615	15	220	46,335	1,404	4,232	51,971	2,157	
Vail Street Improvement	60	0	N/A	N/A	0	0	182,400	182,400	15,048	
Totals	**3,332**	**229,116**	**15**	**220**	**116,015**	**0**	**0**	**1,493,908**	**118,595**	**54**

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).
(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36	ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812	ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04	ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04	ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254	ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99	ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.
(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.
(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75	lbs/ft3
Bathroom etc Bulk Density =	100	lbs/ft3
Other Demolition Bulk Density =	165	lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Highspeed Taxiway	0	1,020,000	0	1,020,000	23.42	11.00	NA
Pharmacy	5,700	8,550	1,800	16,050	0.37	0.00	NA
BRAC ARPC Administrative (2-story) (6)	133,534	110,250	0	243,784	5.60	3.00	
Recreational Vehicle Parking	0	17,100	0	17,100	0.39	0.00	
Weapons Release Complex Expansion	10,000	0	6,000	16,000	0.37	8.00	
Impound Lot	0	12,000	0	12,000	0.28	10.00	
BRAC AFR Medical Squadron Training	10,882	0	0	10,882	0.25	0.00	
BRAC AFR Communications Squadron Training (2-story)	3,434	36,000	0	39,434	0.91	0.00	
BRAC AFRC - Consolidated Training. Storage Facility (2 story)	15,887	30,000	0	45,887	1.05	0.00	
BRAC AFRC - CE Sq. Fac	11,960	0	0	11,960	0.27	0.00	
AFRC Group HQ	23,660	40,500	0	64,160	1.47	0.00	
Aspen Way Expansion	0	100,000	0	100,000	2.30		
Mississippi Gate and New West Gate (7)	0	54,000	0	54,000	1.24		
Totals	**215,057**	**1,428,400**	**7,800**	**1,651,257**	**38**		
Demolition							
Jet Fuel Tanks/Refueling Operations/Bldg 200/202	2,686	N/A	N/A	2,686	0.06	1.00	
6th Ave Entry Gate (including approx.67,500 sf of asphalt	2,949	N/A	N/A	2,949	0.07	2.00	
Telluride Entry Gate (including approx. 7653 sf of asphalt	495	N/A	N/A	495	0.01	2.00	
Mississippi Entry Gate - includes building 1552 (including approx.61,193 sf of asphalt)	379	N/A	N/A	379	0.01	2.00	
Fuel Administration (Bldg 300)	1,503	N/A	N/A	1,503	0.03	5.00	
Military Vehicle Fuels (Bldg 344)	216	N/A	N/A	216	0.00	5.00	
Military Vehicle Fuels (Bldg PB605)	216	N/A	N/A	216	0.00	5.00	
Demolish Building 902	5,615	N/A	N/A	5,615	0.13		
Vail Street Improvement	0	N/A	N/A	0	0.00		
Totals	**14,059**	**0**	**0**	**14,059**	**0.32**		
Net Loss	**200,998**	**1,428,400**	**7,800**	**1,637,198**	**37.58**		

* = Land Use Types Used for Traffic Calculations are as follows:
A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	**Project Ground Disturbance Duration (days)**	**Delivery Traffic (VEH)[8,9]**	**Construction Employee Traffic (VEH)[10]**	**Delivery Traffic (VEH/day)**	**Construction Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Highspeed Taxiway	270	1,080	4,320	4	16	11.00
Pharmacy	135	540	2,160	4	16	0.00
BRAC ARPC Administrative (2-story) (6)	365	1,460	5,840	4	16	3.00
Recreational Vehicle Parking	72	288	1,152	4	16	0.00
Weapons Release Complex Expansion	90	360	1,440	4	16	8.00
Impound Lot	90	360	1,440	4	16	10.00
BRAC AFR Medical Squadron Training	270	1,080	4,320	4	16	0.00
BRAC AFR Communications Squadron Training (2-story)	135	540	2,160	4	16	0.00
BRAC AFRC - Consolidated Training. Storage Facility (2 story)	365	1,460	5,840	4	16	0.00
BRAC AFRC - CE Sq. Fac	365	1,460	5,840	4	16	0.00
AFRC Group HQ	365	1,460	5,840	4	16	0.00
Aspen Way Expansion	270	1,080	4,320	4	16	0.00
Mississippi Gate and New West Gate (7)	0	0	0			0.00
TOTALS	**2792**	**11168**	**44672**	**48**	**192**	**32**

Demolition Project Quantity of Materials Calculations							
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Demolition Traffic (VEH)[5,6]**	**Demolition Employee Traffic (VEH)[7]**	**Demolition Traffic (VEH/day)**	**Demolition Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Jet Fuel Tanks/Refueling Operations/Bldg 200/202	160	2,686	640	2,560	4	16	1.00
6th Ave Entry Gate (including approx.67,500 sf of asphalt	60	2,949	240	960	4	16	2.00
Telluride Entry Gate (including approx. 7653 sf of asphalt	60	495	240	960	4	16	2.00
Mississippi Entry Gate - includes building 1552 (including approx.61,193 sf of asphalt)	60	379	240	960	4	16	2.00
Fuel Administration (Bldg 300)	60	1,503	240	960	4	16	5.00
Military Vehicle Fuels (Bldg 344)	60	216	240	960	4	16	5.00
Military Vehicle Fuels (Bldg PB605)	20	216	80	320	4	16	5.00
Demolish Building 902	60	5,615	240	960	4	16	
Vail Street Improvement	60	0	240	960	4	16	
Totals	**440**	**11,373**	**1,760**	**7,040**	**32**	**128**	

Year: 2010

Construction Project Ground Disturbance Details (Information for Appendix B)												
Project	**Project Ground Disturbance Duration (days)**	**Maximum Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Roadway/Parking Lot Land Disturbance[2] (ft^2)**	**Landscaping Land Disturbance[3] (ft^2)**	**Length Sidewalk/Walkways Land Disturbance[4] (linear ft)**	**Sidewalk/Walkway Land Disturbance[4] (ft^2)**	**Length Utility Main Connection Land Disturbance[5] (linear ft)**	**Utilities Trenching Land Disturbance[5] (ft^2)**	**Total Land Disturbance (ft^2)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Community Activity Center/Bowling	90	5,274	35,600	7,911	1,055	NA	5,400	NA	600	50,566	1.16	2.00
Youth Athletic Fields	270	0	0	44,550	650,000	1,500	18,000	100	600	713,150	16.37	3.00
Logistics Complex	270	24,650	147,900	33,750	4,930	500	6,000	200	1,200	193,780	4.45	6.00
Totals	**630**	**29,924**	**183,500**	**86,211**	**655,985**	**2,000**	**29,400**	**300**	**2,400**	**957,496**	**21.98**	

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.

Demolition Project Ground Disturbance Details (Information for Appendix C)											
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated[2] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[2] (ft^3)**	**Other Demolition Components[2][3] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**
Demolition of Buildings 1411, 1413, and 1415	4	2,100	4,200	0	0	10,979	525	33,579	45,083	0.10	15.00
Abandoned Sections Of Steamboat Avenue and Trail System	33	0	0	0	0	0	0	165,000	165,000	2.46	8.00
Demolish Building 950	41	20,303	40,606	NA	NA	167,540	5,076	324,645	497,261	0.95	13.00
Totals	**78**	**22,403**	**44,806**	**0**	**0**	**178,519**	**5,601**	**523,224**	**707,344**	**4**	

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Community Activity Center/Bowling	90	50,566	1.16	52,237	2.00
Youth Athletic Fields	270	713,150	16.37	2,210,176	3.00
Logistics Complex	270	193,780	4.45	600,558	6.00
Demolition					
Demolition of Buildings 1411, 1413, and 1415	4	4,200	0.10	202	15.00
Abandoned Sections Of Steamboat Avenue and Trail System	33	0	0.00	0	8.00
Demolish Building 950	41	40,606	0.93	18,926	13.00
Totals	**708**	**1,002,302**	**23.01**	**2,882,100**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Community Activity Center/Bowling	90	5,274	0	0	0	0	0	0	23	2.00
Youth Athletic Fields	270	0	0	0	0	0	0	0	68	3.00
Logistics Complex	270	24,650	0	0	0	0	0	0	68	6.00
Demolition										
Demolition of Buildings 1411, 1413, and 1415	4	2,100	0	0	10,979	525	33,579	45,083	3,208	15.00
Abandoned Sections Of Steamboat Avenue and Trail System	33	0	0	0	0	0	165,000	165,000	13,613	8.00
Demolish Building 950	41	20,303	NA	NA	167,540	5,076	324,645	497,261	33,320	13.00
Totals	**708**	**52,327**	**0**	**0**	**178,519**	**5,601**	**523,224**	**707,344**	**50,298**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75 lbs/ft3
Bathroom etc Bulk Density =	100 lbs/ft3
Other Demolition Bulk Density =	165 lbs/ft3

Project	Building Area Impervious Surfaces (ft^2)	Roadway/Parking Lot Impervious Surfaces (ft^2)	Sidewalk/Walkways Impervious Surfaces (ft^2)	Total Impervious Surfaces (ft^2)	Total Impervious Surfaces (acres)	ADP or ELUA Number	Land Use Type*
Construction							
Community Activity Center/Bowling	5,274	5,274	2,700	13,248	0.30	2.00	
Youth Athletic Fields	0	29,700	9,000	38,700	0.89	3.00	
Logistics Complex	24,650	22,500	3,000	50,150	1.15	6.00	
Totals	**29,924**	**57,474**	**14,700**	**102,098**	**2.34**		
Demolition							
Demolition of Buildings 1411, 1413, and 1415	2,100	N/A	N/A	2,100	0.05	15.00	
Abandoned Sections Of Steamboat Avenue and Trail System	0	82,500	N/A	82,500	1.89	8.00	
Demolish Building 950	20,303	N/A	N/A	20,303	0.47	13.00	
Totals	**22,403**	**82,500**	**0**	**104,903**	**2.41**		
Net Loss	**7,521**	**-25,026**	**14,700**	**-2,805**	**-0.06**		

* = Land Use Types Used for Traffic Calculations are as follows:
A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations

Project	Project Ground Disturbance Duration (days)	Delivery Traffic (VEH)[8,9]	Construction Employee Traffic (VEH)[10]	Delivery Traffic (VEH/day)	Construction Employee Traffic (VEH/day)	ADP or ELUA Number
Community Activity Center/Bowling	90	360	1,440	4	16	2.00
Youth Athletic Fields	270	1,080	4,320	4	16	3.00
Logistics Complex	270	1,080	4,320	4	16	6.00
TOTALS	**630**	**2,520**	**10,080**	**12**	**48**	

Demolition Project Quantity of Materials Calculations

Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Demolition Traffic (VEH)[5,6]	Demolition Employee Traffic (VEH)[7]	Demolition Traffic (VEH/day)	Demolition Employee Traffic (VEH/day)	ADP or ELUA Number
Demolition of Buildings 1411, 1413, and 1415	4	2,100	17	67	4	16	15.00
Abandoned Sections Of Steamboat Avenue and Trail System	33	0	132	528	4	16	8.00
Demolish Building 950	41	20,303	162	650	4	16	13.00
Totals	**78**	**22,403**	**311**	**1,245**	**12**	**48**	

Year: 2011

Construction Project Ground Disturbance Details (Information for Appendix B)

Project	Project Ground Disturbance Duration (days)	Maximum Building Area (ft^2)	Total Building Land Disturbance(1) (ft^2)	Roadway/Parking Lot Land Disturbance(2) (ft^2)	Landscaping Land Disturbance(3) (ft^2)	Length Sidewalk/Walkways Land Disturbance(4) (linear ft)	Sidewalk/Walkway Land Disturbance(4) (ft^2)	Length Utility Main Connection Land Disturbance(5) (linear ft)	Utilities Trenching Land Disturbance(5) (ft^2)	Total Land Disturbance (ft^2)	Total Land Disturbance (acres)	ADP or ELUA Number	Year Scheduled for Completion
Youth Athletic Fields	210	0	0	15,900	778,125	1,650	9,900	500	3,000	28,800	0.66	1.00	11
Arts, Crafts, Auto Skills Center	270	11,119	66,714	13,500	2,224	400	4,800	100	600	85,614	1.97	6.00	11
Visitors Center	270	1,000	6,000	0	200	NA	5,400	NA	600	12,000	0.28	2.00	11
Education Center	270	23,605	141,630	54,000	4,721	350	4,200	200	1,200	201,030	4.62	5.00	11
ADF CF Admin & ADPE6	365	635,000	1,905,000	0	63,500		0		0	1,905,000	43.73		11
ADF CF Parking Garage7	365	0	0	300,000	0		0		0	300,000	6.89		11
ADF - Chiller Plant Expansion	365	12,600	75,600	0	2,520		0		0	75,600	1.74		11
ADF - New Backup Generator Plant	365	22,500	135,000	0	4,500		0		0	135,000	3.10		11
ADF New Utility Line	90		0	0	0		0	1,320	7,920	7,920	0.18		11
ADF New Access Roads8	180		0	21,120	0		0		0	21,120	0.48		11
ADF Replacement Surface Parking	180		0	330,000	0		0		0	330,000	7.58		11
Totals	**2,930**	**705,824**	**2,329,944**	**734,520**	**855,790**	**2,400**	**24,300**	**2,120**	**13,320**	**3,102,084**	**71.21**		

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.
(6) Assumed facility is two-story; Total Building Land Disturbance (D) and Landscaping Land Disturbance (F) divided by two to reflect smaller footprint.
(7) Assumed sf for 2000 vehicles per (2) above; assumed 2-level garage, so divided total sf by 2 for footprint.

Demolition Project Ground Disturbance Details (Information for Appendix C)

Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Total Building Land Disturbance(1) (ft^2)	Building Height (ft)	Interior Wall Length (ft)	Total Building Demolition Debris/Waste Generated (2) (ft^3)	Bathroom, Kitchen and Other Integrated Components(2) (ft^3)	Other Demolition Components(2,3) (ft^3)	Total Demolition Debris/Waste Generated (ft^3)	Total Land Disturbance (acres)	ADP or ELUA Number	Year Scheduled for Completion
Visitors Center (Bldg 41)	10	783	1,566	15	100	6,400	100	10,000	16,500	0.04	2.00	11
Demolish Building 940	30	14,758	29,516	NA	NA	121,783	3,690	235,980	361,453	0.68	13.00	11
Totals	**40**	**15,541**	**31,082**	**15**	**100**	**128,183**	**3,790**	**245,980**	**377,953**	**1**		

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and debris stockpile areas.
(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

- Demolition of exterior walls generates 3.36 ft^3 per ft^2 of building space demolished.
- Demolition of interior walls generates 0.812 ft^3 per ft^2 of building space demolished.
- Demolition of roofs generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of foundations generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of bathroom, kitchen and other components generates 0.254 ft^3 per ft^2 of building space demolished.
- Demolition of other demolition components generates 15.99 ft^3 per ft^2 of building space demolished.
- Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption

Project	Project Ground Disturbance Duration (days)	Total Building/Land Disturbance (sq ft)	Total Building/Land Disturbance (acres)	Total Water Use (Gallons)(1)	ADP or ELUA Number
Construction					
Youth Athletic Fields	210	28,800	0.66	69,421	1.00
Arts, Crafts, Auto Skills Center	270	85,614	1.97	265,333	6.00
Visitors Center	270	12,000	0.28	37,190	2.00
Education Center	270	201,030	4.62	623,027	5.00
ADF CF Admin & ADPE6	365	1,905,000	43.73	7,981,233	0.00
ADF CF Parking Garage7	270	300,000	6.89	929,752	0.00
ADF - Chiller Plant Expansion	365	75,600	1.74	316,736	0.00
ADF - New Backup Generator Plant	365	135,000	3.10	565,599	0.00
ADF New Utility Line	365	7,920	0.18	33,182	0.00
ADF New Access Roads 8	365	21,120	0.48	88,485	0.00
ADF Replacement Surface Parking	90	330,000	7.58	340,909	0.00
Demolition					
Visitors Center (Bldg 41)	10	1,566	0.04	180	2.00
Demolish Building 940	30	29,516	0.68	10,000	13.00
Totals	**3,245**	**3,133,166**	**71.93**	**11,261,046**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation

Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Building Height (ft)	Interior Wall Length (ft)	Total Building Demolition Debris/Waste Generated [2] (ft^3)	Bathroom, Kitchen and Other Integrated Components[2] (ft^3)	Other Demolition Components[2&3] (ft^3)	Total Demolition Debris/Waste Generated (ft^3)	Total Demolition Debris/Waste Generated (tons)[4]	ADP or ELUA Number
Construction										
Youth Athletic Fields	210	0	0[1]	0	0	0	0	0	53	1.00
Arts, Crafts, Auto Skills Center	270	11,119	0	0	0	0	0	0	68	6.00
Visitors Center	270	1,000	0	0	0	0	0	0	68	2.00
Education Center	270	23,605						0	68	5.00
ADF CF Admin & ADPE6	365	635,000						0	91	0.00
ADF CF Parking Garage7	365	0						0	91	0.00
ADF - Chiller Plant Expansion	365	12,600						0	91	0.00
ADF - New Backup Generator Plant	365	22,500						0	91	0.00
ADF New Utility Line	90	0						0	23	0.00
ADF New Access Roads 8	180	0						0	45	0.00
ADF Replacement Surface Parking	180	0						0	45	0.00
Demolition										
Visitors Center (Bldg 41)	10	783	15	100	6,400	100	10,000	16,500	1,070	2.00
Demolish Building 940	30	14,758	NA	NA	121,783	3,690	235,980	361,453	24,220	13.00
Totals	**2,970**	**721,365**	**15**	**100**	**128,183**	**3,790**	**245,980**	**377,953**	**26,022**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75	lbs/ft3
Bathroom etc Bulk Density =	100	lbs/ft3
Other Demolition Bulk Density =	165	lbs/ft3

Project	Building Area Impervious Surfaces (ft^2)	Roadway/Parking Lot Impervious Surfaces (ft^2)	Sidewalk/Walkways Impervious Surfaces (ft^2)	Total Impervious Surfaces (ft^2)	Total Impervious Surfaces (acres)	ADP or ELUA Number	Land Use Type*
Construction							
Youth Athletic Fields	0	10,600	4,950	15,550	0.36	1.00	NA
Arts, Crafts, Auto Skills Center	11,119	9,000	2,400	22,519	0.52	6.00	NA
Visitors Center	1,000	0	2,700	3,700	0.08	2.00	NA
Education Center	23,605	36,000	2,100	61,705	1.42	5.00	NA
ADF CF Admin & ADPE6	635,000	0	0	635,000	14.58	0.00	A
ADF CF Parking Garage7	0	200,000	0	200,000	4.59	0.00	A
ADF - Chiller Plant Expansion	12,600	0	0	12,600	0.29	0.00	I
ADF - New Backup Generator Plant	22,500	0	0	22,500	0.52	0.00	I
ADF New Utility Line	0	0	0	0	0.00	0.00	NA
ADF New Access Roads 8	0	14,080	0	14,080	0.32	0.00	A
ADF Replacement Surface Parking	0	220,000	0	220,000	5.05	0.00	A
Totals	**705,824**	**489,680**	**12,150**	**1,207,654**	**28**		
Demolition							
Visitors Center (Bldg 41)	783	N/A	N/A	783	0.02	2.00	
Demolish Building 940	14,758	N/A	N/A	14,758	0.34	13.00	
Totals	**15,541**	**0**	**0**	**15,541**	**0**	0	
Net Loss	**690,283**	**489,680**	**12,150**	**1,192,113**	**27**	**0**	

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative

C = Commercial

CS = Community Service

I = Industrial

NA = Not Applicable

Construction Projects Traffic Calculations						
Project	Project Ground Disturbance Duration (days)	Delivery Traffic (VEH)[8,9]	Construction Employee Traffic (VEH)[10]	Delivery Traffic (VEH/day)	Construction Employee Traffic (VEH/day)	ADP or ELUA Number
Youth Athletic Fields	210	840	3,360	4	16	1.00
Arts, Crafts, Auto Skills Center	270	1,080	4,320	4	16	6.00
Visitors Center	270	1,080	4,320	4	16	2.00
Education Center	270	1,080	4,320	4	16	5.00
ADF CF Admin & ADPE6	365	1,460	5,840	4	16	0.00
ADF CF Parking Garage7	365	1,460	5,840	4	16	0.00
ADF - Chiller Plant Expansion	365	1,460	5,840	4	16	0.00
ADF - New Backup Generator Plant	365	1,460	5,840	4	16	0.00
ADF New Utility Line	90	360	1,440	4	16	0.00
ADF New Access Roads 8	180	720	2,880	4	16	0.00
ADF Replacement Surface Parking	180	720	2,880	4	16	0.00
TOTALS	**2,930**	**11,720**	**46,880**	**44**	**176**	

Demolition Project Quantity of Materials Calculations							
Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Demolition Traffic (VEH)[5,6]	Demolition Employee Traffic (VEH)[7]	Demolition Traffic (VEH/day)	Demolition Employee Traffic (VEH/day)	ADP or ELUA Number
Visitors Center (Bldg 41)	10	783	40	160	4	16	2.00
Demolish Building 940	30	14,758	118	472	4	16	13.00
Totals	**40**	**15,541**	**158**	**632**	**8**	**32**	

Year: 2012

Construction Project Ground Disturbance Details (Information for Appendix B)													
Project	**Project Ground Disturbance Duration (days)**	**Maximum Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Roadway/Parking Lot Land Disturbance[2] (ft^2)**	**Landscaping Land Disturbance[3] (ft^2)**	**Length Sidewalk/Walkways Land Disturbance[4] (linear ft)**	**Sidewalk/Walkway Land Disturbance[4] (ft^2)**	**Length Utility Main Connection Land Disturbance[5] (linear ft)**	**Utilities Trenching Land Disturbance[5] (ft^2)**	**Total Land Disturbance (ft^2)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**	**Year Scheduled for Completion**
Vehicle Maintenance	135	37,737	226,422	32,400	7,547	400	4,800	100	600	264,222	6.07	6.00	12
Security Forces Operations Facility	270	35,683	214,098	0	7,137	0	0	0	0	214,098	4.92	13.00	12
ADAL Fitness Center Pool	270	36,000	216,000		7,200					216,000	4.96		12
Totals	**675**	**109,420**	**656,520**	**32,400**	**21,884**	**400**	**4,800**	**100**	**600**	**694,320**	**15.94**		

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist.

Demolition Project Ground Disturbance Details (Information for Appendix C)												
Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Total Building Land Disturbance[1] (ft^2)	Building Height (ft)	Interior Wall Length (ft)	Total Building Demolition Debris/Waste Generated [2] (ft^3)	Bathroom, Kitchen and Other Integrated Components[2] (ft^3)	Other Demolition Components[2][3] (ft^3)	Total Demolition Debris/Waste Generated (ft^3)	Total Land Disturbance (acres)	ADP or ELUA Number	Year Scheduled for Completion
Demolish Engine Test Pad	60	2,057	4,114			16,974	514	32,891	50,380	0.10		12
Demolish Marine Area Foundations	15	1,450	2,900	N/A	N/A	3,000	0	0	3,000	0.07	9.00	12
Hydrazine Plant (Bldg 310)	60	820	1,640	N/A	N/A	6,767	205	13,112	20,083	0.04	5.00	12
Demolish Bldg 429	120	24,568	49,136	15	400	202,735	6,142	392,842	601,719	1.13	12.00	12
Demolish Bldg 431	90	15,116	30,232	15	100	124,737	3,779	241,705	370,221	0.69	12.00	12
Demolish Radio Relay Bldg (Bldg 1620)	20	1,600	3,200	N/A	N/A	11,550	100	3,570	15,220	0.07	9.00	12
Demolish Reserve Forces Bldg (Bldg 1632)	20	600	1,200	N/A	N/A	5,630	110	0	5,740	0.03	9.00	12
Demolish Electrical Shop Bldg (Bldg 1631)	30	3,025	6,050	N/A	N/A	15,200	100	0	15,300	0.14	9.00	12
Totals	**415**	**49,236**	**98,472**	**30**	**500**	**386,593**	**10,950**	**684,120**	**1,081,664**	**2**		

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Vehicle Maintenance	135	264,222	6.07	409,435	6.00
Security Forces Operations Facility	270	214,098	4.92	663,527	13.00
ADAL Fitness Center Pool	270	216,000	4.96	669,421	0.00
Demolition					
Demolish Engine Test Pad	60	4,114	0.09	2,833	0.00
Demolish Marine Area Foundations	15	2,900	0.07	499	9.00
Hydrazine Plant (Bldg 310)	60	1,640	0.04	1,129	5.00
Demolish Bldg 429	120	49,136	1.13	67,680	12.00
Demolish Bldg 431	90	30,232	0.69	31,231	12.00
Demolish Radio Relay Bldg (Bldg 1620)	20	3,200	0.07	735	9.00
Demolish Reserve Forces Bldg (Bldg 1632)	20	1,200	0.03	275	9.00
Demolish Electrical Shop Bldg (Bldg 1631)	30	6,050	0.14	2,083	9.00
Totals	**1,090**	**792,792**	**18.20**	**1,848,851**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Vehicle Maintenance	135	37,737	0(1)	0	0	0	0	0	34	6.00
Security Forces Operations Facility	270	35,683	0	0	0	0	0	0	68	13.00
ADAL Fitness Center Pool	270	36,000	0	0	0	0	0	0	68	0.00
Demolition										
Demolish Engine Test Pad	60	2,057	0	0	16,974	514	32,891	50,380	3,376	0.00
Demolish Marine Area Foundations	15	1,450	N/A	N/A	3,000	0	0	3,000	113	9.00
Hydrazine Plant (Bldg 310)	60	820	N/A	N/A	6,767	205	13,112	20,083	1,346	5.00
Demolish Bldg 429	120	24,568	15	400	202,735	6,142	392,842	601,719	40,319	12.00
Demolish Bldg 431	90	15,116	15	100	124,737	3,779	241,705	370,221	24,807	12.00
Demolish Radio Relay Bldg (Bldg 1620)	20	1,600	N/A	N/A	11,550	100	3,570	15,220	733	9.00
Demolish Reserve Forces Bldg (Bldg 1632)	20	600	N/A	N/A	5,630	110	0	5,740	217	9.00
Demolish Electrical Shop Bldg (Bldg 1631)	30	3,025	N/A	N/A	15,200	100	0	15,300	575	9.00
Totals	**1,090**	**158,656**	**30**	**500**	**386,593**	**10,950**	**684,120**	**1,081,664**	**71,653**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75 lbs/ft3
Bathroom etc Bulk Density =	100 lbs/ft3
Other Demolition Bulk Density =	165 lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Vehicle Maintenance	37,737	21,600	2,400	61,737	1.42	6.00	NA
Security Forces Operations Facility	35,683	0	0	35,683	0.82	13.00	CS
ADAL Fitness Center Pool	36,000	0	0	36,000	0.83	0.00	CS
Totals	**109,420**	**21,600**	**2,400**	**133,420**	**3.06**		
Demolition							
Demolish Engine Test Pad	2,057	N/A	N/A	2,057	0.05	0.00	
Demolish Marine Area Foundations	1,450	N/A	N/A	1,450	0.03	9.00	
Hydrazine Plant (Bldg 310)	820	N/A	N/A	820	0.02	5.00	
Demolish Bldg 429	24,568	N/A	N/A	24,568	0.56	12.00	
Demolish Bldg 431	15,116	N/A	N/A	15,116	0.35	12.00	
Demolish Radio Relay Bldg (Bldg 1620)	1,600	N/A	N/A	1,600	0.04	9.00	
Demolish Reserve Forces Bldg (Bldg 1632)	600	N/A	N/A	600	0.01	9.00	
Demolish Electrical Shop Bldg (Bldg 1631)	3,025	N/A	N/A	3,025	0.07	9.00	
Totals	**49,236**	**0**	**0**	**49,236**	**1.13**		
Net Loss	**60,184**	**21,600**	**2,400**	**84,184**	**1.93**		

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	**Project Ground Disturbance Duration (days)**	**Delivery Traffic (VEH)[8,9]**	**Construction Employee Traffic (VEH)[10]**	**Delivery Traffic (VEH/day)**	**Construction Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Vehicle Maintenance	135	540	2,160	4	16	6.00
Security Forces Operations Facility	270	1,080	4,320	4	16	13.00
ADAL Fitness Center Pool	270	1,080	4,320	4	16	0.00
TOTALS	**675**	**2,700**	**10,800**	**12**	**48**	

Demolition Project Quantity of Materials Calculations							
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Demolition Traffic (VEH)[5,6]**	**Demolition Employee Traffic (VEH)[7]**	**Demolition Traffic (VEH/day)**	**Demolition Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Demolish Engine Test Pad	60	2,057	240	960	4	16	0.00
Demolish Marine Area Foundations	15	1,450	60	240	4	16	9.00
Hydrazine Plant (Bldg 310)	60	820	240	960	4	16	5.00
Demolish Bldg 429	120	24,568	480	1,920	4	16	12.00
Demolish Bldg 431	90	15,116	360	1,440	4	16	12.00
Demolish Radio Relay Bldg (Bldg 1620)	20	1,600	80	320	4	16	9.00
Demolish Reserve Forces Bldg (Bldg 1632)	20	600	80	320	4	16	9.00
Demolish Electrical Shop Bldg (Bldg 1631)	30	3,025	120	480	4	16	9.00
Totals	**415**	**49,236**	**1,660**	**6,640**	**32**	**128**	

Year: 2012

Construction Project Ground Disturbance Details (Information for Appendix B)													
Project	Project Ground Disturbance Duration (days)	Maximum Building Area (ft^2)	Total Building Land Disturbance[1] (ft^2)	Roadway/Parking Lot Land Disturbance[2] (ft^2)	Landscaping Land Disturbance[3] (ft^2)	Length Sidewalk/Walkways Land Disturbance[4] (linear ft)	Sidewalk/Walkway Land Disturbance[4] (ft^2)	Length Utility Main Connection Land Disturbance[5] (linear ft)	Utilities Trenching Land Disturbance[5] (ft^2)	Total Land Disturbance (ft^2)	Total Land Disturbance (acres)	ADP or ELUA Number	Year Scheduled for Completion
Steamboat Avenue - Realign	54	0	0	324,000	32,400	5,600	67,200	0	0	391,200	8.98	8.00	TBD
Relocate Jogging Trail	60	0	0	0	0	3,800	45,600	0	0	45,600	1.05	8.00	TBD
Core Area	270	6,000	12,000	39,600	150,000	0	0	500	3,000	54,600	1.25	8.00	TBD
New East Gate	90	0	0	15,000	100	NA	4,500	50	300	19,800	0.45	9.00	TBD
Widen 6th Avenue From Airport Boulevard to 6th Avenue Gate	106	0	0	792,000	0	0	0	0	0	792,000	18.18	14.00	20
Outdoor Arms Range	270	23,735	142,410	0	4,747	0	0	0	0	142,410	3.27	9.00	15
6th Ave Entry Control Gate	305	9,528	57,168	6,450	0	NA	4,146	5,503	66,036	133,800	3.07	2.00	15
Telluride Entry Control Gate	270	6,107	36,642	7,998	3,003	NA	301	971	11,652	56,593	1.30	2.00	15
Mississippi Entry Control Gate	305	9,709	58,254	7,299	3,003	NA	408	1,795	21,540	87,501	2.01	2.00	15
Entry Control Facility	270	14,391	86,346							86,346	1.98		15
Consolidated Base Warehouse	270	49,998	299,988	67,500	10,000	800	9,600	800	4,800	381,888	8.77	6.00	15
SBIRS Remote Ground Station	270	20,451	122,706	12,271	4,090	0	0	0	0	134,977	3.10	12.00	16
SBIRS Operational Support Facility	320	94,937	569,622	56,962	18,987	0	0	0	0	626,584	14.38	12.00	16
Taxiway and Arm/Disarm	95	0	0	1,181,250	0	0	0	1,000	6,000	1,187,250	27.26	11.00	16
Fire/Crash Rescue Center	270	23,000	138,000		4,600					138,000	3.17		14
North Runway Extension	180	0	0	536,274	0					536,274	12.31		14
South Runway Repair	180	0	0	538,704	0					538,704	12.37		15
Weapons Loading Training Facility	270	10,000								0	0.00		15
Dormitory 3	270	40,000								0	0.00		16
East Apron Parking	180			362,700						362,700	8.33		16
										0	0.00		
Totals	**4,305**	**307,856**	**1,523,136**	**3,948,008**	**230,930**	**10,200**	**131,755**	**10,619**	**113,328**	**5,716,227**	**131.23**		

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.
(2) Parking Lot size is estimated on 300 ft2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
(3) Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002).
(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lenghts were measured to closest major roadway, where utilities are assumed to exist.

Demolition Project Ground Disturbance Details (Information for Appendix C)												
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated [2] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[2] (ft^3)**	**Other Demolition Components[2][3] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Land Disturbance (acres)**	**ADP or ELUA Number**	**Year Scheduled for Completion**
Security Forces Kennel (Bldg 210)	60	500	1,000	N/A	N/A	4,126	125	7,995	12,246	0.02	3.00	TBD
Entomology (Bldg 306)	90	1,160	2,320	N/A	N/A	9,572	290	18,548	28,411	0.05	5.00	TBD
Totals	**150**	**1,660**	**3,320**	**0**	**0**	**13,698**	**415**	**26,543**	**40,657**	**0**		

Information for Table 4.12 And Appendix E Construction and Demolition Water Suppression Consumption					
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (sq ft)**	**Total Building/Land Disturbance (acres)**	**Total Water Use (Gallons)(1)**	**ADP or ELUA Number**
Construction					
Steamboat Avenue - Realign	54	391,200	8.98	242,479	8.00
Relocate Jogging Trail	60	45,600	1.05	31,405	8.00
Core Area	270	54,600	1.25	169,215	8.00
New East Gate	90	19,800	0.45	20,455	9.00
Widen 6th Avenue From Airport Boulevard to 6th Avenue Gate	106	792,000	18.18	963,636	14.00
Outdoor Arms Range	270	142,410	3.27	441,353	9.00
6th Ave Entry Control Gate	305	133,800	3.07	468,423	2.00
Telluride Entry Control Gate	270	56,593	1.30	175,392	2.00
Mississippi Entry Control Gate	305	87,501	2.01	306,334	2.00
Entry Control Facility	270	86,346	1.98	267,601	0.00
Consolidated Base Warehouse	270	381,888	8.77	1,183,537	6.00
SBIRS Remote Ground Station	270	134,977	3.10	418,316	12.00
SBIRS Operational Support Facility	320	626,584	14.38	2,301,503	12.00
Taxiway and Arm/Disarm	95	1,187,250	27.26	1,294,637	11.00
Fire/Crash Rescue Center	270	138,000	3.17	427,686	0.00
North Runway Extension	180	536,274	12.31	1,108,004	0.00
South Runway Repair	180	538,704	12.37	1,113,025	0.00
Weapons Loading Training Facility	270	0	0.00	0	0.00
Dormitory 3	270	0	0.00	0	0.00
East Apron Parking	180	362,700	8.33	749,380	0.00
0	0	0	0.00	0	0.00
Totals	4,305	5,716,227	131	11,682,381	103
Demoltion					
Security Forces Kennel (Bldg 210)	60	1,000	0.02	689	3.00
Entomology (Bldg 306)	90	2,320	0.05	2,397	5.00
Totals	**8,760**	**11,435,774**	**262.53**	**23,367,847**	

(1) Based on a irrigation rate of 500 gallons/acre/day of construction.

Information for Table Table 4.15 and Appendix F Construction and Demolition Project Solid Waste Generation										
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated (2) (ft^3)**	**Bathroom, Kitchen and Other Integrated Components(2) (ft^3)**	**Other Demolition Components(2)(3) (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) (4)**	**ADP or ELUA Number**
Construction										
Steamboat Avenue - Realign	54	0	0	0	0	0	0	0	14	8.00
Relocate Jogging Trail	60	0	0	0	0	0	0	0	15	8.00
Core Area	270	6,000	0	0	0	0	0	0	68	8.00
New East Gate	90	0	0	0	0	0	0	0	23	9.00
Widen 6th Avenue From Airport Boulevard to 6th Avenue Gate	106	0	0	0	0	0	0	0	27	14.00
Outdoor Arms Range	270	23,735	0	0	0	0	0	0	68	9.00
6th Ave Entry Control Gate	305	9,528	0	0	0	0	0	0	76	2.00
Telluride Entry Control Gate	270	6,107	0	0	0	0	0	0	68	2.00
Mississippi Entry Control Gate	305	9,709	0	0	0	0	0	0	76	2.00
Entry Control Facility	270	14,391	0	0	0	0	0	0	68	0.00
Consolidated Base Warehouse	270	49,998	0	0	0	0	0	0	68	6.00
SBIRS Remote Ground Station	270	20,451	0	0	0	0	0	0	68	12.00
SBIRS Operational Support Facility	320	94,937	0	0	0	0	0	0	80	12.00
Taxiway and Arm/Disarm	95	0	0	0	0	0	0	0	24	11.00
Fire/Crash Rescue Center	270	23,000	0	0	0	0	0	0	68	0.00
North Runway Extension	180	0	0	0	0	0	0	0	45	0.00
South Runway Repair	180	0	0	0	0	0	0	0	45	0.00
Weapons Loading Training Facility	270	10,000	0	0	0	0	0	0	68	0.00
Dormitory 3	270	40,000	0	0	0	0	0	0	68	0.00
East Apron Parking	180	0	0	0	0	0	0	0	45	0.00
0	0	0	0	0	0	0	0	0	0	0.00
Totals	**4,305**	**307,856**	**0**	**0**	**0**	**0**	**0**	**0**	**1,076**	**103**
Demolition										
Security Forces Kennel (Bldg 210)	60	500	N/A	N/A	4,126	125	7,995	12,246	821	3.00
Entomology (Bldg 306)	90	1,160	N/A	N/A	9,572	290	18,548	28,411	1,904	5.00
Totals	**8,760**	**617,372**	**0**	**0**	**13,698**	**415**	**26,543**	**40,657**	**4,877**	

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:

Demolition of exterior walls generates	3.36 ft^3 per ft^2 of building space demolished.
Demolition of interior walls generates	0.812 ft^3 per ft^2 of building space demolished.
Demolition of roofs generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of foundations generates	2.04 ft^3 per ft^2 of building space demolished.
Demolition of bathroom, kitchen and other components generates	0.254 ft^3 per ft^2 of building space demolished.
Demolition of other demolition components generates	15.99 ft^3 per ft^2 of building space demolished.

Values for facilities scheduled for demolition and assessed in previous EAs were derrived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.

(4) Bulk densities for demolition project calculations were assumed as follows:

Building Demolition Bulk Density =	75 lbs/ft3
Bathroom etc Bulk Density =	100 lbs/ft3
Other Demolition Bulk Density =	165 lbs/ft3

Information for Table 4.27 and Appendix I Increased Impervious Surface Calculations							
Project	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**	**ADP or ELUA Number**	**Land Use Type***
Construction							
Steamboat Avenue - Realign	0	216,000	33,600	249,600	5.73	8.00	CS
Relocate Jogging Trail	0	0	22,800	22,800	0.52	8.00	CS
Core Area	6,000	26,400	0	32,400	0.74	8.00	CS
New East Gate	0	10,000	2,250	12,250	0.28	9.00	A
Widen 6th Avenue From Airport Boulevard to 6th Avenue Gate	0	528,000	0	528,000	12.12	14.00	NA
Outdoor Arms Range	23,735	0	0	23,735	0.54	9.00	
6th Ave Entry Control Gate	9,528	4,300	2,073	15,901	0.37	2.00	
Telluride Entry Control Gate	6,107	5,332	151	11,590	0.27	2.00	
Mississippi Entry Control Gate	9,709	4,866	204	14,779	0.34	2.00	
Entry Control Facility	14,391	0	0	14,391	0.33	0.00	
Consolidated Base Warehouse	49,998	45,000	4,800	99,798	2.29	6.00	
SBIRS Remote Ground Station	20,451	8,180	0	28,631	0.66	12.00	
SBIRS Operational Support Facility	94,937	37,975	0	132,912	3.05	12.00	
Taxiway and Arm/Disarm	0	787,500	0	787,500	18.08	11.00	
Fire/Crash Rescue Center	23,000	0	0	23,000	0.53	0.00	
North Runway Extension	0	357,516	0	357,516	8.21	0.00	
South Runway Repair	0	359,136	0	359,136	8.24	0.00	
Weapons Loading Training Facility	10,000	0	0	10,000	0.23	0.00	
Dormitory 3	40,000	0	0	40,000	0.92	0.00	
East Apron Parking	0	241,800	0	241,800	5.55	0.00	
Totals	**307,856**	**2,632,005**	**65,878**	**3,005,739**	**69.00**		
Demolition							
Security Forces Kennel (Bldg 210)	500	N/A	N/A	500	0.01	3.00	
Entomology (Bldg 306)	1,160	N/A	N/A	1,160	0.03	5.00	
Totals	**1,660**	**0**	**0**	**1,660**	**0.04**		
Net Loss	**306,196**	**2,632,005**	**65,878**	**3,004,079**	**68.96**		

* = Land Use Types Used for Traffic Calculations are as follows:

A = Administrative
C = Commercial
CS = Community Service
I = Industrial
NA = Not Applicable

Construction Projects Traffic Calculations						
Project	**Project Ground Disturbance Duration (days)**	**Delivery Traffic (VEH)[8,9]**	**Construction Employee Traffic (VEH)[10]**	**Delivery Traffic (VEH/day)**	**Construction Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Steamboat Avenue - Realign	54	216	864	4	16	8.00
Relocate Jogging Trail	60	240	960	4	16	8.00
Core Area	270	1,080	4,320	4	16	8.00
New East Gate	90	360	1,440	4	16	9.00
Widen 6th Avenue From Airport Boulevard to 6th Avenue Gate	106	424	1,696	4	16	14.00
Outdoor Arms Range	270	1,080	4,320	4	16	9.00
6th Ave Entry Control Gate	305	1,220	4,880	4	16	2.00
Telluride Entry Control Gate	270	1,080	4,320	4	16	2.00
Mississippi Entry Control Gate	305	1,220	4,880	4	16	2.00
Entry Control Facility	270	1,080	4,320	4	16	0.00
Consolidated Base Warehouse	270	1,080	4,320	4	16	6.00
SBIRS Remote Ground Station	270	1,080	4,320	4	16	12.00
SBIRS Operational Support Facility	320	1,280	5,120	4	16	12.00
Taxiway and Arm/Disarm	95	380	1,520	4	16	11.00
Fire/Crash Rescue Center	270	1,080	4,320	4	16	0.00
North Runway Extension	180	720	2,880	4	16	0.00
South Runway Repair	180	720	2,880	4	16	0.00
Weapons Loading Training Facility	270	1,080	4,320	4	16	0.00
Dormitory 3	270	1,080	4,320	4	16	0.00
East Apron Parking	180	720	2,880	4	16	0.00
TOTALS	**4,305**	**17,220**	**68,880**	**80**	**320**	

Demolition Project Quantity of Materials Calculations							
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Demolition Traffic (VEH)[5,6]**	**Demolition Employee Traffic (VEH)[7]**	**Demolition Traffic (VEH/day)**	**Demolition Employee Traffic (VEH/day)**	**ADP or ELUA Number**
Security Forces Kennel (Bldg 210)	60	500	240	960	4	16	3.00
Entomology (Bldg 306)	90	1,160	360	1,440	4	16	5.00
Totals	**150**	**1,660**	**600**	**2,400**	**8**	**32**	

APPENDIX C

REGULATORY CONSULTATION

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

MAR 1 0 2008

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 (EA) for the upgrade of base entry control facilities (ECFs) at Buckley Air Force Base (AFB). The upgrades are being proposed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence. Upgrades at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. The No Action Alternative would continue the congested and unsafe conditions at the ECFs for Buckley AFB and does not meet the project purpose and need.

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 are maps referencing the buildings and proposed sites.

Proposed Action Sites:

- Main Gate (6th Avenue and Aspen Street) - Buildings 40 and 41 were constructed after 1990. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

- Telluride Gate (6th Avenue and Telluride Street) - Buildings 1, 2, 4 and 35 were constructed after 1990. Therefore, they are not eligible for inclusion on the National Register of Historic Places.

- Mississippi Gate (Mississippi Avenue and Aspen Street) – Buildings 1550 and 1552 were constructed 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 Proposed Upgrades at the 6th Avenue, Mississippi, and Telluride Entry Control Facilities Environmental Assessment will be sent for your review in the near future.

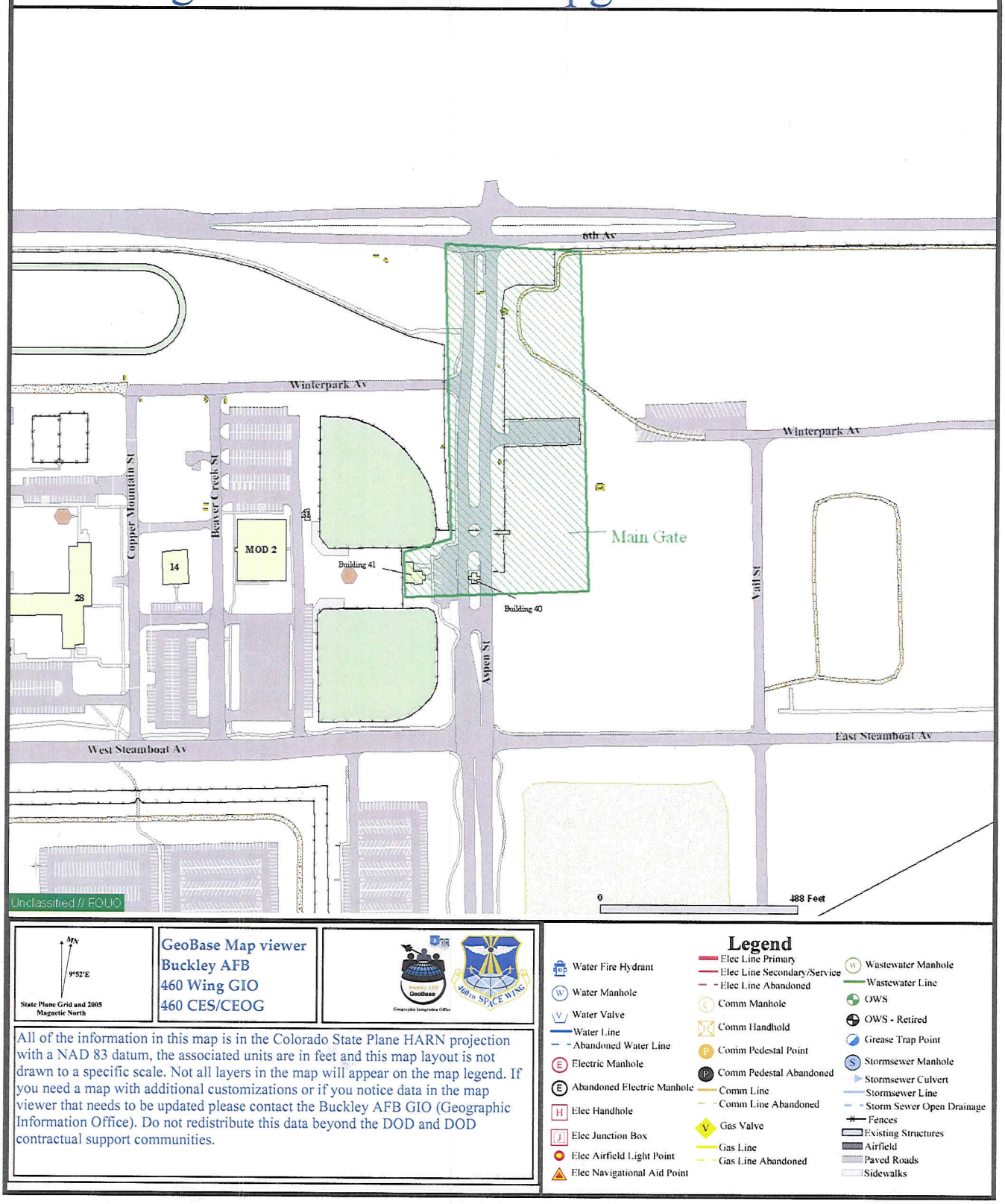
Sincerely

Bruce James

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

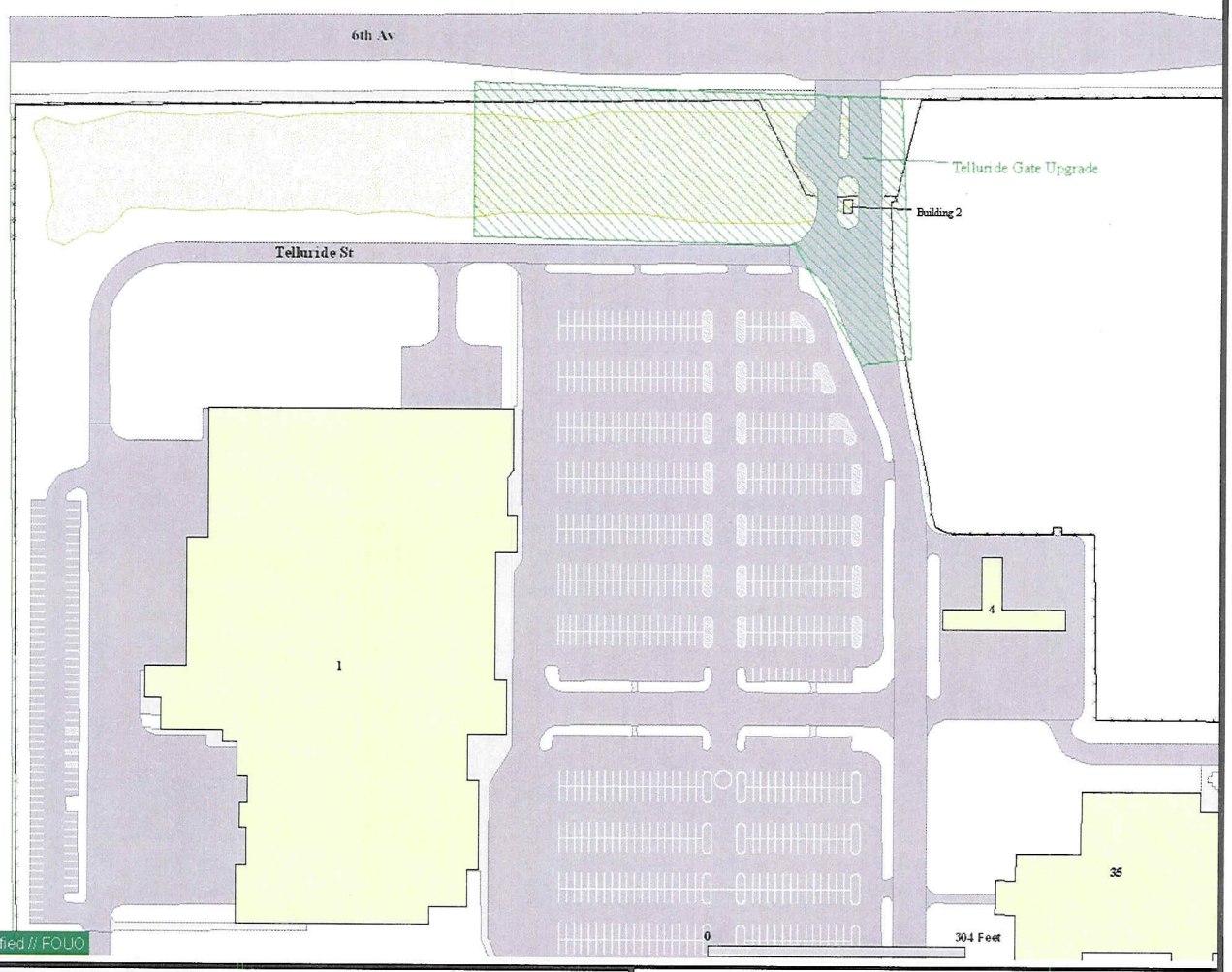
Attachment
Location figures

Figure 1: Main Gate Upgrade Location



All of the information in this map is in the Colorado State Plane HARN projection with a NAD 83 datum, the associated units are in feet and this map layout is not drawn to a specific scale. Not all layers in the map will appear on the map legend. If you need a map with additional customizations or if you notice data in the map viewer that needs to be updated please contact the Buckley AFB GIO (Geographic Information Office). Do not redistribute this data beyond the DOD and DOD contractual support communities.

Figure 2: Telluride Gate Upgrade Location



MN
9°52'E
State Plane Grid and 2005 Magnetic North

GeoBase Map viewer
Buckley AFB
460 Wing GIO
460 CES/CEOG

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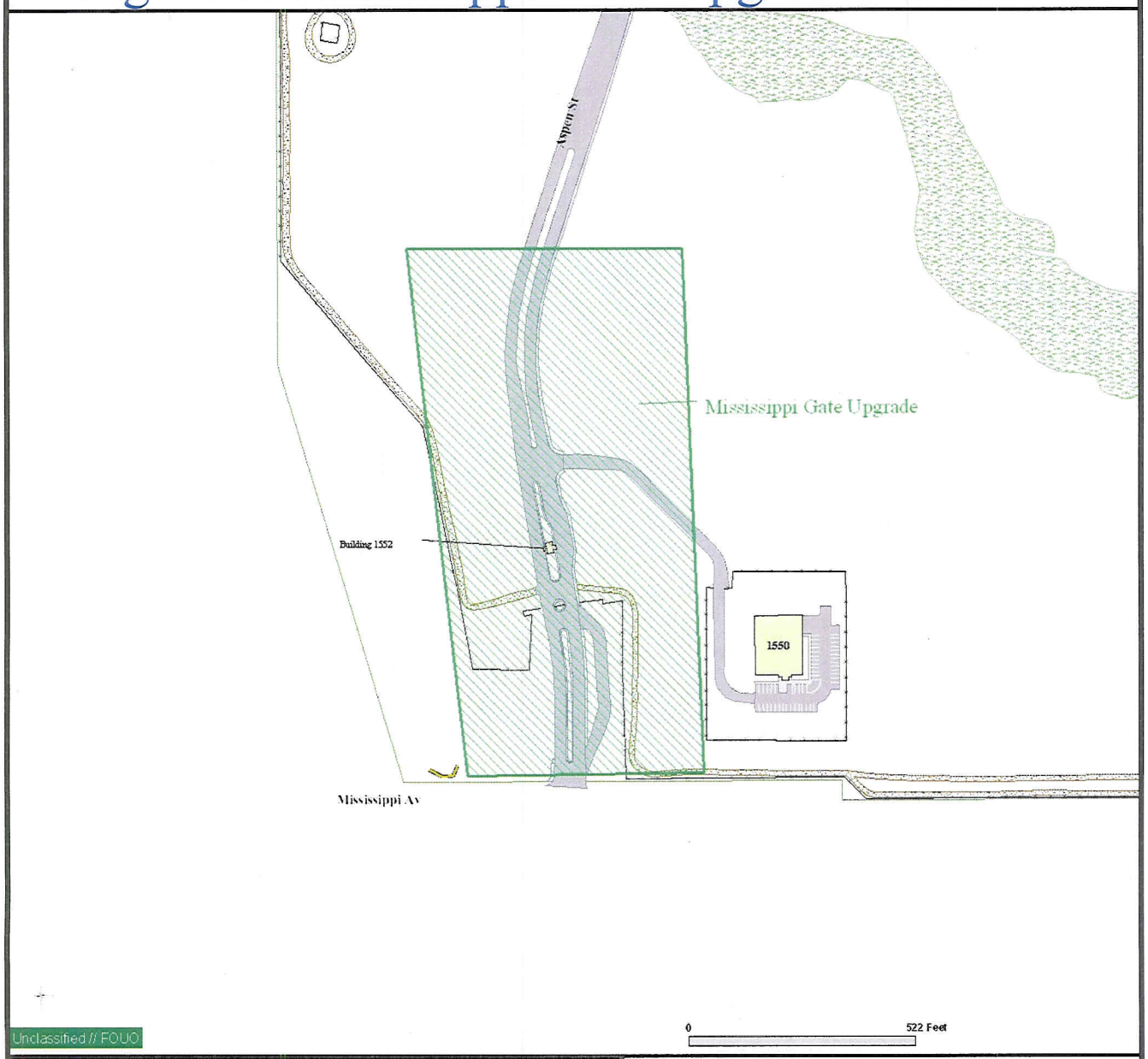
Legend

- Water Fire Hydrant
- Water Manhole
- Water Valve
- Water Line
- Abandoned Water Line
- Electric Manhole
- Abandoned Electric Manhole
- Elec Handhole
- Elec Junction Box
- Elec Airfield Light Point
- Elec Navigational Aid Point
- Elec Line Primary
- Elec Line Secondary/Service
- Elec Line Abandoned
- Comm Manhole
- Comm Handhold
- Comm Pedestal Point
- Comm Pedestal Abandoned
- Comm Line
- Comm Line Abandoned
- Gas Valve
- Gas Line
- Gas Line Abandoned
- Wastewater Manhole
- Wastewater Line
- OWS
- OWS - Retired
- Grease Trap Point
- Stormsewer Manhole
- Stormsewer Culvert
- Stormsewer Line
- Storm Sewer Open Drainage
- Fences
- Existing Structures
- Airfield
- Paved Roads
- Sidewalks

Figure 3: Mississippi Gate Upgrade Location



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- Stormsewer Line
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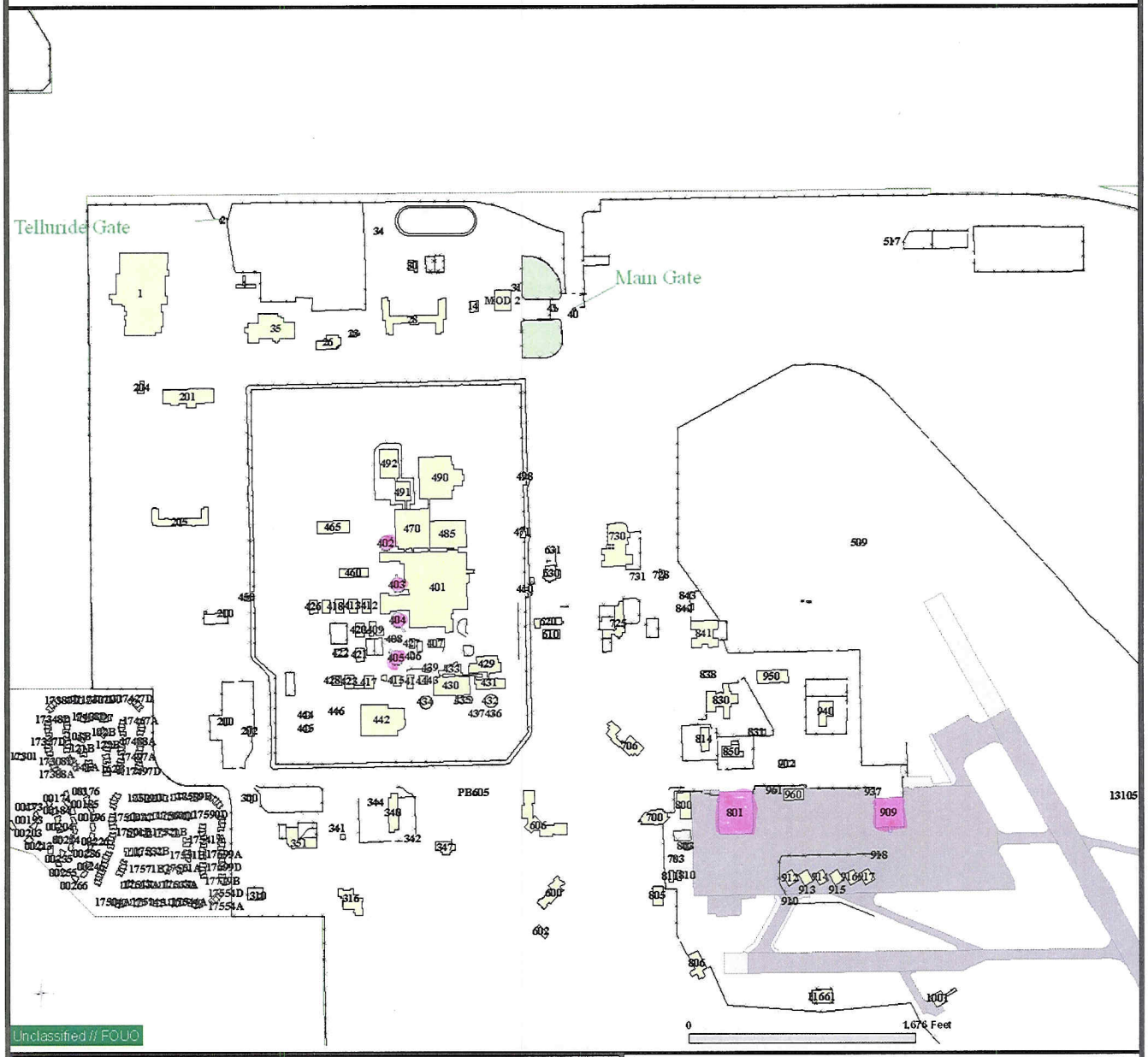
Figure 4: Historical Sites with Main and Telluride Gate



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- Fences
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- Paved Roads
- Sidewalks

Historical Sites

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

12 March 2008

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 Upgrades at the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECF). The upgrades are being proposed to improve base security, improve security force (SF) personnel safety, maximize traffic flow and reduce congestion, and to impart an impression of professionalism and commitment to facilities excellence. Upgrades at all three ECF/gate locations would include all associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized.

The Air Force is requesting initiation of Section 7 consultation per the Endangered Species Act for the Environmental Assessment of Upgrades at the 6th Avenue, Mississippi, and Telluride Entry Control Facilities. 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, Krystal Phillips at 720-847-6158/ krystal.phillips@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)

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

MAR 2 6 2008

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

Dear Ms. Contiguglia,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

The public comment period for this EA is 30 days. Please provide any written comments by 5pm on Tuesday, 29 April 2008 to:

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

If you have any questions please feel free to contact Elizabeth Meyer at 720-847-7159, or via e-mail: elizabeth.meyer@buckley.af.mil.

Bruce James

BRUCE JAMES
Chief, Environmental Planning & Conservation

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

MAR 2 6 2008

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

Dear Mr. Rathke,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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660 South Aspen Street, Mail Stop 86
Buckley AFB, CO 80011-9551

If you have any questions please feel free to contact Elizabeth Meyer at 720-847-7159, or via e-mail: elizabeth.meyer@buckley.af.mil.

Bruce R James

BRUCE JAMES
Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 26 2008

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

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

Dear Mr. Svoboda,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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Bruce James

BRUCE JAMES
Chief, Environmental Planning & Conservation

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

MAR 26 2008

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

Dear Ms. Mehlhop,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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460 CES/CEVP
660 South Aspen Street, Mail Stop 86
Buckley AFB, CO 80011-9551

If you have any questions please feel free to contact Elizabeth Meyer at 720-847-7159, or via e-mail: elizabeth.meyer@buckley.af.mil.

Bruce R James

BRUCE JAMES
Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 26 2008

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

Mr. Bruce Rosenlund
Colorado Field Supervisor
US Fish & 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 proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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660 South Aspen Street, Mail Stop 86
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Bruce James

BRUCE JAMES
Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 2 6 2008

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

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

Dear Ms. Foreman,

The Air Force is pleased to provide the Aurora Public Library a review copy of the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), 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 Tuesday, 29 April 2008.

If you have any questions please feel free to contact Elizabeth Meyer at the address above.

Bruce James

BRUCE JAMES
Chief, Environmental Planning & Conservation

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

MAR 2 6 2008

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

Dear Ms. Sciosca,

The Air Force is pleased to provide the Boulder Public Library a review copy of the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. We appreciate the Boulder 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

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If you have any questions please feel free to contact Elizabeth Meyer at the address above.

Bruce R James

BRUCE JAMES
Chief, Environmental Planning & Conservation

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

MAR 2 6 2008

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

Dear Ms. Hann,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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Bruce James

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Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 26 2008

Mr. Bruce James
Environmental Flight
460th Civil Engineering Squadron
660 South Aspen Street
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,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 26 2008

Mr. Bruce James
Environmental Flight
460th Civil Engineering Squadron
660 South Aspen Street
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) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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Bruce R James

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Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 2 6 2008

Mr. Bruce James
Environmental Flight
460th Civil Engineering Squadron
660 South Aspen Street
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,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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Bruce R James

BRUCE JAMES
Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 2 6 2008

Mr. Bruce James
Environmental Flight
460th Civil Engineering Squadron
660 South Aspen Street
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,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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Bruce R James

BRUCE JAMES
Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 2 6 2008

Mr. Bruce James
Environmental Flight
460th Civil Engineering Squadron
660 South Aspen Street
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) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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460 CES/CEVP
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Buckley AFB, CO 80011-9551

If you have any questions please feel free to contact Elizabeth Meyer at 720-847-7159, or via e-mail: elizabeth.meyer@buckley.af.mil.

Bruce R James

BRUCE JAMES
Chief, Environmental Planning & Conservation

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

MAR 26 2008

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

Dear Ms. Moore,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

The public comment period for this EA is 30 days. Please provide any written comments by 5pm on Tuesday, 29 April 2008 to:

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

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460TH SPACE WING (AFSPC)

MAR 2 6 2008

Mr. Bruce James
Environmental Flight
460th Civil Engineering Squadron
660 South Aspen Street
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) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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MAR 2 6 2008

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

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

Dear Mr. Fernandez,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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Bruce R James

BRUCE JAMES
Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 2 6 2008

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

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

Dear Mr. Watkins,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 2 6 2008

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

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

Dear Ms. Holdeman,

The Air Force is pleased to provide the Denver Public Library a review copy of the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. We appreciate the Denver 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 Tuesday, 29 April 2008.

If you have any questions please feel free to contact Elizabeth Meyer at the address above.

Bruce R James

BRUCE JAMES
Chief, Environmental Planning & Conservation

DEPARTMENT OF THE AIR FORCE

460TH SPACE WING (AFSPC)

MAR 2 6 2008

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

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

Dear Mr. Jansak,

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed improvement of the 6th Avenue, Mississippi, and Telluride Entry Control Facilities (ECFs) at Buckley Air Force Base (AFB), Colorado. Under the Proposed Action, improvements at all three gate locations would include associated infrastructure, including sidewalks, parking lots, entry roads, utilities, fencing, signage, landscaping, etc. (as appropriate for each location). Where feasible, existing infrastructure at each location would be utilized. Proposed upgrades would be consistent with the guidance provided in the U.S. Air Force Installation Entry Control Facilities Design Guide. The Proposed Action is needed to improve base security, improve security personnel safety, maximize traffic flow, reduce congestion, and impart an impression of professionalism and commitment to facilities excellence.

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