

FINAL

ENVIRONMENTAL ASSESSMENT

CARWASH FACILITY

AT BUCKLEY AIR FORCE BASE, COLORADO



460 CES/CEV
Buckley Air Force Base, Colorado

June 2003

Report Documentation Page

Form Approved
OMB No. 0704-0188

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1. REPORT DATE JUN 2003		2. REPORT TYPE		3. DATES COVERED 00-00-2003 to 00-00-2003	
4. TITLE AND SUBTITLE Final Environmental Assessment Carwash Facility at Buckley Air Force Base, Colorado				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Booz Allen & Hamilton, 8283 Greensboro Drive, McLean, VA, 22012				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) to analyze the potential environmental consequences that could result from the implementation of the Proposed Action and other alternatives being considered, including the No Action Alternative. The Proposed Action consists of constructing and operating a four-bay carwash facility that would occupy approximately 2,000 square feet with one automatic wash bay and three manual bays, as well as a closed-loop recycling system for the wash effluent. Two Alternative Actions were considered: Alternative A is similar to the Proposed Action but contains options for (1) disposing treated wastewater into a municipal sewer system, (2) having only three manual bays, and (3) having only one automatic bay; Alternative B would be located at an alternate location from the Proposed Action and contain options for (1) constructing and operating a four-bay carwash facility with one automatic wash bay and three manual bays, as well as a closed-loop wastewater system, (2) having the same construction as Option 1 with a sanitary sewer connection for discharge into the municipal sewer system, (3) having only three manual bays, and (4) having only one automatic bay. A carwash facility would not be constructed in the No Action Alternative. Resources that have the potential to be affected by any of the alternatives include air quality, biological resources, water resources, potable water wastewater, solid waste, and management of asbestos-containing material. Based on the nature of activities that would occur with the construction and operation of the carwash facility minimal or no adverse impacts to the resources analyzed are anticipated.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

FINDING OF NO SIGNIFICANT IMPACT
BUCKLEY AIR FORCE BASE CARWASH FACILITY
BUCKLEY AIR FORCE BASE, COLORADO

AGENCY: United States Air Force, 460th Air Base Wing.

BACKGROUND: Pursuant to the National Environmental Policy Act, the Council on Environmental Quality regulations implementing the Act (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense Directive 6050.1, Regulation 5000.2-R, and Air Force Instruction 32-7061, *The Environmental Impact Analysis Process* as promulgated in 32 CFR Part 989, and other applicable Federal regulations, the United States Air Force (USAF) conducted an assessment of the potential environmental consequences of the Proposed Action, Alternative Actions, and No Action alternatives.

PROPOSED ACTION: The Proposed Action consists of constructing a four-bay carwash facility on Site 1 (directly south of the Base Exchange and Commissary and west of Building 201) that would occupy approximately 2,000 square feet with one automatic wash bay and three manual bays. Wastewater from the carwash would be recycled through a closed-loop recycling system. Water for the carwash would be periodically recharged and some sludge would be generated and periodically disposed of at an off-base disposal site by a private contractor.

ALTERNATIVE ACTIONS: Two action alternatives were considered. Alternative A is similar to the Proposed Action but contains options for (1) disposing treated wastewater into a municipal sewer system, (2) having only three manual bays, and (3) having only one automatic bay. Alternative B is located on Site 2 (directly east of the Base Exchange/Commissary and just south of 6th Avenue) and contains options for (1) constructing a four-bay carwash facility with one automatic wash bay and three manual bays, as well as a recycling wastewater system, (2) having the same construction as Option 1 with a sanitary sewer connection for discharge into the municipal sewer system, (3) having only three manual bays, and (4) having only one automatic bay.

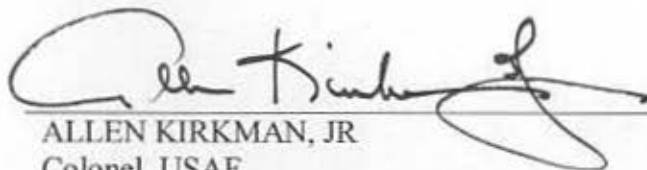
NO ACTION: Under the No Action Alternative, active, reserve, and retired military personnel and their dependants that use services provided at Buckley AFB would continue washing their privately-owned vehicles (POVs) at inconvenient off-base locations.

FACTORS CONSIDERED IN DETERMINING THAT NO ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED: The Environmental Assessment (EA), which is incorporated by reference, analyzed the environmental impacts of the Proposed Action, Alternative Actions, and No Action Alternative, taking into account all relevant environmental resource areas and conditions. In an effort to eliminate repetitive discussions regarding potential environmental impacts at Buckley AFB, portions of this document have been tiered to the 1998 EA for the Construction of a Base Exchange and Commissary Complex Buckley Air National Guard Base, Colorado Finding of No Significant Impact (FONSI) signed 8 January 1999 (BX/Commissary EA), which is hereby incorporated by reference. Resources that might be affected by any one of

the alternatives and are discussed further in this EA, include: air quality, biological resources, water resources, potable water, wastewater, solid waste, and asbestos-containing material. Impacts to these resources from any of the action alternatives would be transitory, in association with construction, and readily controlled through best management practices, or would be minor. Minor impacts would include the increased use of potable water, increased disposal of solid wastes, and if the wastewater is discharged to the sanitary sewer, increased discharge of wastewater, particularly for alternative options that do not contain a closed-loop recycling system. In addition, disturbance of the site would result in the irreversible and unavoidable loss of 0.046 acres of land that could provide potential habitat for wildlife in the future, if this location were not used for other development. These minor impacts are countered by the convenience of being able to wash cars without driving off-base and by eliminating the potential for wastewater that might flow untreated into storm sewers if POVs were washed on-base at inappropriate locations. Other resources have been omitted from discussion in this EA either because they are anticipated to be unaffected by the various alternatives or because they have been adequately evaluated for comparable actions in the EA for the Construction of a Base Exchange and Commissary Complex Buckley Air National Guard Base, Colorado, which resulted in a Finding of No Significant Impact (FONSI) signed on January 8, 1999.

PUBLIC NOTICE: The National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and the U.S. Air Force Environmental Impact Analysis Process require public review of the EA prior to Finding of No Significant Impact (FONSI) approval and implementation of the Proposed Action. The public had 30 days to review and submit comments on the EA. The public comment period ended on 29 April 2003. The comments and concerns submitted by the public and agencies are incorporated into the analysis of potential environmental impacts as part of the EA and are presented in Appendix B, Public and Agency Comment Letters, of the EA.

FINDING OF NO SIGNIFICANT IMPACT: Based on requirements of the National Environmental Policy Act, the Council on Environmental Quality, and 32 CFR Part 989, I conclude that the environmental effects of either the Proposed Action or the Action Alternatives and associated options (A or B) would not be significant, and therefore, an Environmental Impact Statement will not be prepared. A notice indicating that the EA was available for public review for a 30-day period was published in the Denver Post and the Rocky Mountain News, Denver, CO newspapers, on 30 March 2003. Printed copies of the Draft EA and Draft FONSI were placed in the public libraries in Aurora and Denver, CO where they were available for review.



ALLEN KIRKMAN, JR
Colonel, USAF
Commander, 460th Air Base Wing

29 JUL 2003

Date

**COVER SHEET
FINAL ENVIRONMENTAL ASSESSMENT
CARWASH FACILITY
AT BUCKLEY AIR FORCE BASE, COLORADO**

a. Responsible Agency: Department of the Air Force

b. Action: The United States Air Force proposes to construct and operate a carwash facility in the northwest portion of Buckley Air Force Base (AFB) in Colorado. The carwash facility would provide a convenient location for active, reserve, and retired military personnel and their dependants to wash privately-owned vehicles (POVs) at Buckley AFB in a facility that would recycle wash effluent and dispose of solid waste in an environmentally sound manner. The Proposed Action consists of constructing and operating a four-bay carwash facility that would occupy approximately 2,000 square feet with one automatic wash bay and three manual bays.

c. For Further Information, contact:

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d. Designation: Final Environmental Assessment (EA)

e. Abstract: This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) to analyze the potential environmental consequences that could result from the implementation of the Proposed Action and other alternatives being considered, including the No Action Alternative. The Proposed Action consists of constructing and operating a four-bay carwash facility that would occupy approximately 2,000 square feet with one automatic wash bay and three manual bays, as well as a closed-loop recycling system for the wash effluent. Two Alternative Actions were considered: Alternative A is similar to the Proposed Action but contains options for (1) disposing treated wastewater into a municipal sewer system, (2) having only three manual bays, and (3) having only one automatic bay; Alternative B would be located at an alternate location from the Proposed Action and contain options for (1) constructing and operating a four-bay carwash facility with one automatic wash bay and three manual bays, as well as a closed-loop wastewater system, (2) having the same construction as Option 1 with a sanitary sewer connection for discharge into the municipal sewer system, (3) having only three manual bays, and (4) having only one automatic bay. A carwash facility would not be constructed in the No Action Alternative. Resources that have the potential to be affected by any of the alternatives include air quality, biological resources, water resources, potable water, wastewater, solid waste, and management of asbestos-containing material. Based on the nature of activities that would occur with the construction and operation of the carwash facility, minimal or no adverse impacts to the resources analyzed are anticipated.

EXECUTIVE SUMMARY

This Environmental Assessment (EA) analyzes the potential environmental consequences of constructing and operating a carwash facility at Buckley Air Force Base (Buckley AFB), which is approximately 13.5 miles east of Denver, Colorado. Currently the active duty, reserve, and retired military personnel and their dependants at Buckley AFB must wash their privately-owned vehicles (POVs) at inconvenient off-base locations. Thus, the purpose and need of the Proposed Action is to provide a convenient carwash facility that would properly recycle wash effluent and dispose of solid waste in an environmentally sound manner.

Two potential locations for the carwash have been identified in the northwest corner of Buckley AFB in a semi-improved area. The first location (Site 1) is directly south of the Base Exchange and Commissary (BX/Commissary) and west of Building 201. This area is currently a vacant field adjacent to these areas and south of Steamboat Avenue. The second location (Site 2) is directly east of the BX/Commissary and just south of 6th Avenue. This area is also a vacant field and is adjacent to a parking lot, gas station, office, and recreational buildings. The second location would likely require asbestos remediation prior to any construction or ground work as demolition of former buildings across the installation left asbestos containing materials throughout the soils.

The Proposed Action consists of constructing and operating a four-bay carwash facility on Site 1 that would occupy approximately 2,000 square feet with one automatic wash bay and three manual bays. Wastewater from the carwash would be recycled through a closed-loop recycling system. Water for the carwash would be periodically recharged and some sludge would be generated and periodically disposed of at an off-base disposal site by a private contractor. A hazardous waste determination would be necessary prior to disposal of the sludge.

The two action alternatives are:

- **Alternative A:** similar to the Proposed Action but contains options for (1) disposing treated wastewater into a municipal sewer system, (2) having only three manual bays, and (3) having only one automatic bay.
- **Alternative B:** located on Site 2 and contains options for (1) constructing and operating a four-bay carwash facility with one automatic wash bay and three manual bays, as well as a recycling wastewater system, (2) having the same construction as Option 1 with a sanitary sewer connection for discharge into the municipal sewer system, (3) having only three manual bays, and (4) having only one automatic bay.

A carwash facility would not be constructed under the No Action Alternative.

Any one of the alternatives might affect selected resources or media (air quality, biological resources, water resources, potable water, wastewater, solid waste, and management of potential asbestos-containing material). Other resources and media have been omitted from discussion in this EA either because they are anticipated to be unaffected by the various alternatives or have been adequately evaluated for comparable actions without significant impact in the EA for the Construction of a BX and Commissary Complex Buckley Air National Guard (ANG) Base,

Colorado (BX/Commissary EA), which resulted in a Finding of No Significant Impact (FONSI) signed on January 8, 1999. This EA is tiered to the BX/Commissary EA for resources or media not discussed.

The resources and media that might be affected by the carwash can be characterized as follows.

Buckley AFB is located in the Denver Metropolitan attainment/maintenance area for carbon monoxide (CO), volatile organic compounds (VOCs), and particulate matter less than 10 microns in diameter (PM₁₀). Air emissions generated from constructing and operating the carwash would not have a significant regional impact to air quality or impact Buckley AFB's Title V Operating Permit.

The proposed carwash siting areas are surrounded by urban development and, while vacant, have been largely disturbed. Animal occupants are expected to be those associated with such a largely urban setting plus occasional transient migrants or predators. Surface water and shallow groundwater drain northwest toward the South Platte River. Deep groundwater drains northeast. The closest stream is East Tollgate Creek, which is approximately 1.5 miles to the west of the region of influence (ROI). Surface water flow for Site 1 is minimal, but would be expected to flow south into the base stormwater detention pond, and eventually to East Tollgate Creek, due to engineering design.

Surface water flow for Site 2 would be expected to flow to a detention pond just north of the ROI, out an outfall in the northwest corner of Buckley AFB, into a ditch that parallels 6th Avenue, and ultimately into East Tollgate Creek. Potable water from the City of Aurora, wastewater treatment by the Metro Wastewater Reclamation District, and solid waste disposal through private contractors support the entire base.

Potential asbestos-containing material from previous demolition of World War II (WWII) buildings may be present at Site 2, and if so, would require remediation and removal prior to construction in consultation with the Colorado Department of Public Health and Environment (CDPHE).

Impacts anticipated from implementation of either the Proposed or Alternative Actions would be minimal. Asbestos would need to be managed, removed, or determined to be at safe levels before initiation of carwash construction. Fugitive dust would be airborne during the temporary construction period, but would be expected to be controlled through best management construction practices and monitoring. Because the areas have been previously disturbed and are partially developed with adjacent buildings, there is currently only minimal vegetation present.

The proposed carwash facility would consume 0.046 acres of occupied (Site 1) and previously occupied (Site 2) prairie dog habitat and their potential predators and coinhabitants, including the burrowing owl. At the time of site assessment, Site 1 contained two active prairie dog burrows and six abandoned burrows. Site 2 previously had prairie dogs removed from it; however, some burrows may remain. Existing or remaining burrows on either site are potential habitat for burrowing owls. If burrows were filled in as a result of this action, there would still be numerous undeveloped areas surrounding Buckley to provide habitat for burrowing owls and prairie dogs.

Any runoff from the carwash footprint during construction, potentially increasing sediment and nutrient load, would be contained through best management practices. Features included in footprint design and catch basins could contain potential runoff during carwash operation. The use of potable water would increase most under the Proposed Action, Alternative A-Option 1 and Alternative B-Options 1 and 2 due to the additional bay and its automated cycle. Under all of the action alternatives, water use would increase somewhat over that currently used with the highest amounts used by the alternatives that contain a four bay carwash. However, the increased usage would be minimal compared to water consumption on base as a whole. The resulting wastewater under the Proposed Action and Alternative B, Option 1 would be recycled, while under the remainder of the alternative options it would be discharged in permissible quantities to the municipal sewer system. The solid wastes under all the action alternatives would be collected and taken to an off-base disposal site by a private contractor. All of the above minor impacts would be avoided under the No Action Alternative, however there is the potential for discharge of untreated wastewater into storm sewers or the ground if POVs were washed at inappropriate locations.

Based on the nature of activities that would occur with the construction and operation of the carwash facility, minimal or no adverse impacts to the resources or media analyzed are anticipated. Before the carwash facility could be pursued further, the carwash facility would need to be presented to the 460th Air Base Wing Facility Board at Buckley AFB for review, approval for development, and specific project siting. In addition, final modifications in the carwash construction details and permits would be made in appropriate compliance with recommendations made during the Environmental Compliance/Construction review.

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ACRONYMS AND ABBREVIATIONS

AICUZ	Air Installation Compatible Use Zoning
AFB	Air Force Base
AFI	Air Force Instruction
ANG	Air National Guard
BX	Base Exchange
CAA	Clean Air Act
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COANG	Colorado Air National Guard
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
HAPs	Hazardous Air Pollutants
IRP	Installation Restoration Program
MACT	Maximum Achievable Control Technology
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
O ₃	Ozone
O&G	Oil and Grease
OSH	Occupational Safety and Health
Pb	Lead
PCB	Polychlorinated Biphenyl
PM _{2.5}	Particulate Matter less than 2.5 microns in diameter
PM ₁₀	Particulate Matter less than 10 microns in diameter
POV	Privately-Owned Vehicle
PSD	Prevention of Significant Deterioration
PTE	Potential To Emit
ROI	Region of Influence
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SBIRS	Space Based Infrared Surveillance
SHPO	State Historic Preservation Officer
SO ₂	Sulfur Dioxide
SO _x	Sulfur Oxides
SWDA	Solid Waste Disposal Act
TSS	Total Suspended Solids
USC	United States Code
VOCs	Volatile Organic Compounds
WWII	World War II

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The United States Air Force proposes to construct and operate a carwash facility at Buckley Air Force Base (Buckley AFB or base) in Colorado. This Environmental Assessment (EA) has been prepared to evaluate this proposal, in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality (CEQ) regulations implementing NEPA, and the Air Force Instruction (AFI) 32-7061, Environmental Impact Analysis Process (EIAP).

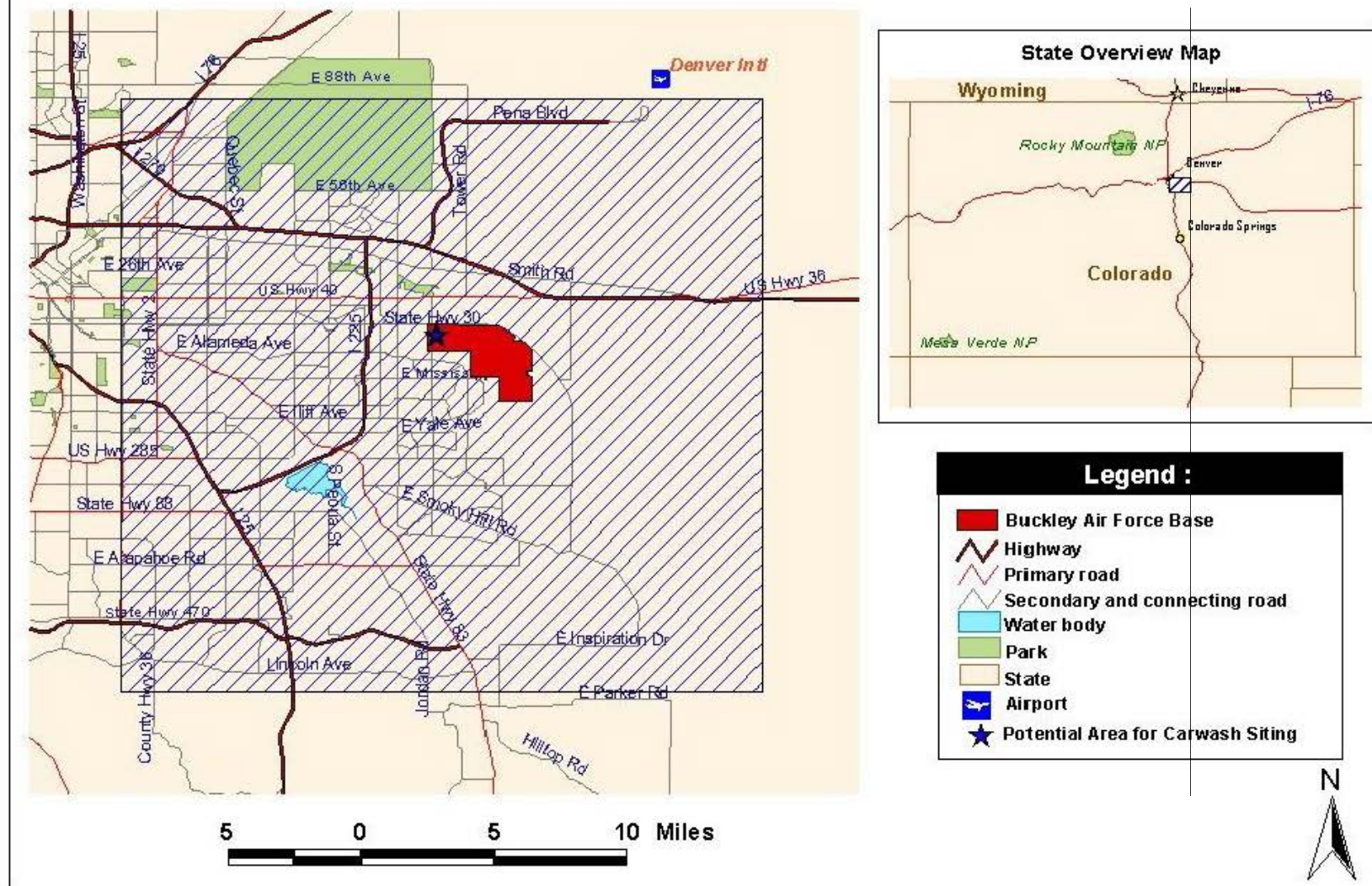
This EA provides an analysis of environmental consequences that could result from the implementation of the Proposed Action, Alternative Actions, and No Action alternatives. In an effort to eliminate repetitive discussions regarding potential environmental impacts at Buckley AFB, portions of this document have been tiered to the 1998 EA for the Construction of a Base Exchange (BX) and Commissary Complex Buckley Air National Guard (ANG) Base, Colorado (BX/Commissary EA), which resulted in a Finding of No Significant Impact (FONSI) signed 8 January 1999. Consistent with recommendations set forth by the CEQ, several sections of the BX/Commissary EA are hereby incorporated by reference into this document.

1.1 INTRODUCTION

Buckley AFB is located in Arapahoe County, approximately 4.5 miles east of Denver, Colorado and encompasses approximately 3,250 acres (see Figure 1-1). Buckley transitioned from an ANG Base to an Air Force Base on October 1, 2000 and the newly activated 460th Air Base Wing assumed management of the Base. Buckley also houses the 2nd Space Warning Squadron (2 SWS), the Aerospace Data Facility (ADF), and a number of military tenants including the Colorado Air National Guard (COANG), Army National Guard, U.S. Marine Reserve, and U.S. Navy. Approximately 9,200 military and civilian employees, including contract employees, work and/or live at Buckley AFB. There are approximately 150 buildings on base, including one 200-person dormitory. The base will likely expand their community and housing facilities in the near future to support additional active duty personnel.

The COANG operates and maintains the Buckley airfield, which is the only operating military airfield in the Denver Metropolitan Area. The airfield provides services for government and military aircraft. Other major activities on Buckley AFB include the development of space and missile systems, satellite tracking, data reception, and early warning radar (COANG, 1997).

Figure 1-1. Location of Buckley Air Force Base



1.2 PURPOSE AND NEED

The purpose of the proposed action is to provide a facility for washing privately-owned vehicles (POVs) on Buckley AFB. Currently, there are no carwash facilities on base. Active, reserve, and retired military personnel and their dependants must wash their POVs at an off-base site, which is an inconvenience for them. A carwash facility would only use 16-40 gallons of water per POV depending on the type of carwash, whereas washing a POV with a hose for only ten minutes may use 80-140 gallons of water (CWONJ, 2002). If a POV were washed at an unsuitable site, the untreated wastewater and soaps, oils, and sludge from washing POVs at various locations on base could seep directly into storm sewers, which are not intended for this type of use. The dirty water at a carwash facility would be treated and either reused or piped into a municipal sewer system.

1.3 DECISIONS TO BE MADE

This EA provides the information required to understand the potential future environmental consequences of constructing and operating a carwash facility in the northwest portion of Buckley AFB. It also provides information to support the decision of whether to prepare an Environmental Impact Statement (EIS) or a FONSI as the appropriate next step in the NEPA evaluation of the proposed action. Before the carwash facility could be pursued further, the carwash facility would need to be presented to the 460th Air Base Wing Facility Board at Buckley AFB for review, approval for development, and specific location of the carwash footprint within the evaluated siting areas. In addition, final modifications in the carwash construction details and permits would be made in appropriate compliance with recommendations made during the Environmental Compliance/Construction review.

1.4 SCOPE OF THE ENVIRONMENTAL REVIEW

Areas of potential concern for the alternatives were identified from discussions with base personnel and comparisons with similar activities on military bases elsewhere. Both beneficial and adverse impacts are identified and analyzed in this document. In conformity with the EIAP (32 Code of Federal Regulations Part 989 (32 CFR 989)) and CEQ regulations, the scope of analysis is defined by the potential range of environmental impacts that could result from the implementation of each alternative. Resource areas that might be affected by the proposed action were analyzed in this document to provide the decision-maker with sufficient evidence and analysis to support the determination whether to prepare an EIS or a FONSI (40 CFR 1508.9). The resources and media discussed include: air quality, biological resources (including threatened or endangered species), water resources, potable water, wastewater, solid waste, and asbestos-containing material.

The region of influence (ROI) includes the area disturbed during the installation and operation of the carwash facility, as well as outlying areas that may be influenced by emissions or outflows from the carwash. Thus, the ROI may vary by resource for purposes of the analysis (e.g., the Metropolitan Air Quality Control District is the ROI for air, the ROI for water is either the watershed/sub-watershed).

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2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section describes the proposed action and alternatives evaluated for the installation of a carwash facility at Buckley AFB to meet the purpose and need presented in Section 1.0. The alternatives are described in sufficient detail to provide an understanding of their potential effects on the environment.

Two potential locations for the carwash have been identified in the northwest corner of Buckley AFB in a semi-improved area. The first location (Site 1) is directly south of the Base Exchange and Commissary (BX/Commissary) and west of Building 201. The area is currently a vacant field adjacent to these areas and south of Steamboat Avenue. The second location (Site 2) is directly east of the BX/Commissary and just south of 6th Avenue. The area is also a vacant field and is adjacent to a parking lot, gas station, office, and recreational buildings. The second location would likely require asbestos remediation prior to any construction or ground work as demolition of former buildings across the installation left asbestos containing materials throughout the soils.

2.1 PROPOSED ACTION

The Proposed Action consists of constructing and operating a four-bay carwash facility with one automatic wash bay and three manual wash bays. The facility footprint would encompass approximately 2,000 square feet (0.046 acres) in the northwest portion of Buckley AFB. The carwash footprint would be located within Site 1 as shown on Figure 2-1. The approximate size of the footprint is shown on Figure 2-1 so that it may be visually compared with the approximately 67,500 square-foot (1.5-acre) siting area. Construction would also include installation of drainage and landscaping.

The three bays with manual carwashes would use approximately 16 gallons of water per bay per cycle and the automatic wash could use from 30-40 gallons of water per cycle, or may exceed this amount depending on the system chosen (CWONJ, 2002). The carwash facility would have a closed-loop recycling system for wash effluent and have zero discharge into the municipal sewer system. Chemicals might be used to help remove solids from the effluent and a reservoir is typically used to store the recycled water for reuse. Water for the carwash would need to be periodically recharged. Sludge generated would also need to be removed periodically and most likely would be discarded in a sanitary landfill after dewatering, or deposited in a special waste landfill.

2.2 ALTERNATIVE A

Alternative A is the same as the Proposed Action in location, however it contains three options:

- Option 1 would contain one automatic wash bay and three manual wash bays and require a sanitary sewer connection to discharge wastewater into a municipal sewer system. The system would require adequate treatment of the effluent to meet the local sewer authority's discharge requirements. Typically, this requires a gravity separator or containment sump to reduce total suspended solids (TSS) and oil and grease (O&G) before the effluent is released into the sewer system. A licensed contractor would clean

out the gravity separator or sump periodically, and the residue would be disposed of properly.

- Option 2 would be similar to Option 1, except that it would omit the automatic carwash bay. A three-bay manual carwash facility would be constructed under this alternative on approximately the same area as the Proposed Action (2,000 square feet) and in the same location—the northwest portion of Buckley AFB (Figure 2-1). Construction would also include installation of drainage, connection to the sanitary sewer, and if necessary, landscaping.
- Option 3 would be similar to Option 1 except that it would include only the automatic carwash bay.

2.3 ALTERNATIVE B

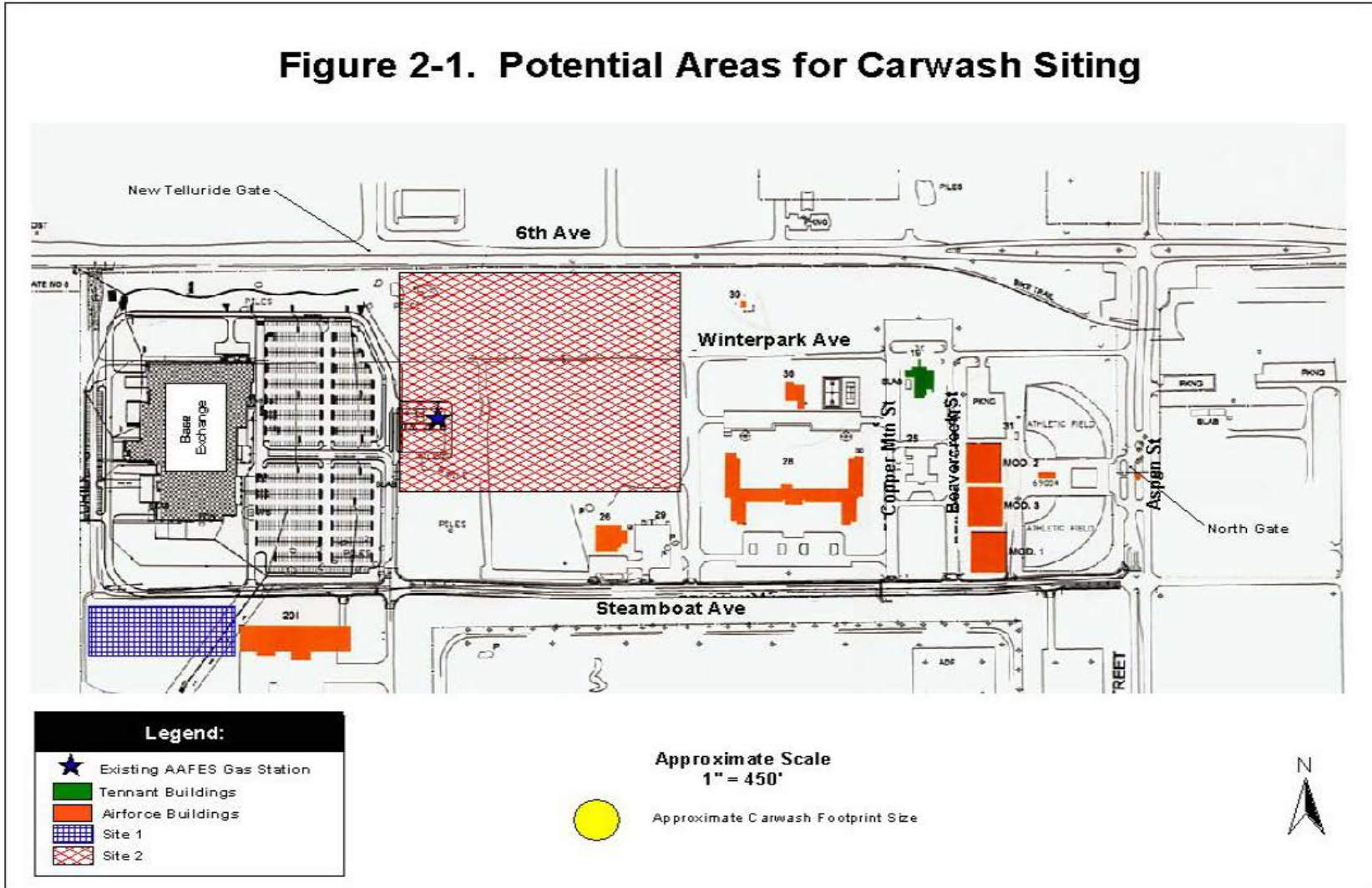
Alternative B would be located on Site 2 (see Figure 2-1) and contains four options. The facility footprint would encompass approximately 2,000 square feet (0.046 acres) in the northwest portion of Buckley AFB, the same as the Proposed Action and Alternative A. The approximate size of the footprint is shown on Figure 2-1 so that it may be visually compared with the approximately 810,000 square-foot (15-acre) siting area. Construction would also include installation of drainage and landscaping as in the Proposed Action and Alternative A. The following outlines the options for Alternative B:

- Option 1, similar to the Proposed Action, would consist of constructing and operating a four-bay carwash facility with one automatic wash bay and three manual wash bays. The carwash facility would have a closed-loop recycling system for wastewater and have zero discharge.
- Option 2 would be the same as Option 1 under Alternative A. The carwash facility would contain one automatic wash bay and three manual wash bays, would require a sanitary sewer connection, and would discharge wastewater into a municipal sewer system
- Option 3 would be the same as Option 2 under Alternative A. The carwash facility would contain three manual wash bays, would require a sanitary sewer connection, and would discharge wastewater into a municipal sewer system.
- Option 4 would be the same as Option 3 under Alternative A. The carwash facility would include only an automatic wash bay, would require a sanitary sewer connection, and would discharge wastewater into a municipal sewer system.

2.4 NO ACTION

Under the No Action Alternative, no carwash facility would be installed. Personnel would continue to wash their POVs off-site and there would be an increased potential for washing cars at unsuitable locations on base.

Figure 2-1. Potential Areas for Carwash Siting



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3.0 AFFECTED ENVIRONMENT

This section addresses resources and media at Buckley AFB. The first section provides consideration of selected resources that would most likely be impacted by the proposed carwash, such as air quality, biological resources (including threatened or endangered species), water resources, potable water, wastewater, solid waste, and asbestos-containing material. The second section identifies environmental resources that would not incur either short- or long-term impacts from construction and operation of the proposed carwash, such as land use, occupational safety and health (OSH), hazardous materials and waste management, socioeconomic issues, cultural resources, and transportation, and provides the rationale for not discussing them further. Other resources that are highly unlikely to be impacted by the carwash (e.g., visual or aesthetic resources, radon, polychlorinated biphenyls (PCB's), lead-based (Pb-based) paint, air installation compatible use zoning (AICUZ), installation restoration program (IRP) sites, and environmental justice) are discussed briefly in the BX/Commissary EA and hereby incorporated by reference.

3.1 RESOURCES AND MEDIA HAVING POTENTIAL IMPACTS

This section describes the following natural and human environmental resources at Buckley AFB which are likely to be affected by any of the alternatives: air quality, biological resources (including threatened or endangered species), water resources, potable water, wastewater, solid waste, and asbestos-containing material. In addition, air quality is addressed because attainment status has changed since the BX/Commissary EA and FONSI were written. Biological resources are addressed because prairie dogs have since become a federal candidate species.

The ROI includes geographical areas that may be influenced by the installation and operation of the carwash facility and will be addressed as the affected environment. Although the boundaries of the base or the immediate carwash location may constitute the ROI limit for some resources, potential impacts associated with certain resources (e.g., air quality and water resources) transcend those limits.

3.1.1 Air Quality

The ROI for air quality is considered to be the Denver metropolitan area.

The Clean Air Act (CAA) (42 USC 7401-7671q), as amended, provides the framework for federal, state, tribal, and local rules and regulations to protect air quality. The CAA gives the USEPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR §50) that set safe concentration levels for six criteria pollutants: particulate matter measuring less than 10 microns in diameter (PM₁₀), sulfur dioxide (SO₂), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O₃), and lead (Pb).

Primary NAAQS are established to protect public health, and secondary standards provide protection for the public welfare, which includes wildlife, climate, transportation, and economic values (Table 3-1). Additionally, the USEPA also has responsibility for ensuring that air quality standards are met to control pollutant emissions from mobile (i.e., vehicles) and stationary (i.e., factories) sources. New regulations on particulate matter less than 2.5 microns in diameter (PM_{2.5}) and a proposed 8-hour O₃ standard could affect the Denver metropolitan area and Buckley AFB in the future, but are not currently regulated.

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

Air Pollutant	Averaging Time	NAAQS Primary¹	NAAQS Secondary²	Colorado Standards
CO	1-hour	35 ppm	35 ppm	35 ppm
	8-hour	9 ppm	9 ppm	9 ppm
NO _x	Annual	0.053 ppm	0.053 ppm	100 µg/m ³
SO ₂	3-hour	-	0.50 ppm	700 µg/m ³
	24-hour	0.14 ppm	-	100 µg/m ³
	Annual	0.03 ppm	-	15 µg/m ³
PM ₁₀	24-hour	150 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual	50 µg/m ³	50 µg/m ³	50 µg/m ³
O ₃	1-hour ³	0.12 ppm	0.12 ppm	0.12 ppm
	8-hour	0.08 ppm	0.08 ppm	0.08 ppm
Pb	Quarterly average	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³

Notes:

1. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.
 2. Secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings.
 3. The ozone 1-hour standard applies only to designated nonattainment areas.
- ppm = parts per million
µg/m³ = micrograms per cubic meter

The NAAQS represent the maximum levels of background pollutants that are considered safe, with an adequate margin of safety to protect public health and welfare. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, the CDPHE Air Pollution Control Division (APCD) accepts the federal standards for the Denver metropolitan area.

Areas that violate NAAQS are designated as "non-attainment" areas, and areas that comply with air quality standards are designated "attainment" areas for relevant pollutants. "Attainment/Maintenance" are areas that were previously designated "non-attainment" and have subsequently been re-designated to "attainment", for a probationary period, due to meeting the NAAQS. "Attainment/maintenance" status is achieved through the development and implementation of maintenance plans for criteria pollutants of interest.

The CAA contains the legislation that mandates the general conformity rule to ensure that Federal actions in non-attainment and attainment/maintenance areas do not interfere with a state's timely attainment of the NAAQS. The CAA also requires that federal agencies demonstrate that their actions conducted in non-attainment and attainment/maintenance areas conform to the purposes of the State Implementation Plan (SIP).

The general conformity rule divides the air conformity process into two distinct areas: applicability analysis and conformity determination. The applicability analysis process requires

federal agencies to determine if their proposed action(s) would increase emissions of criteria pollutants above the threshold levels (40 CFR §93.153). These threshold rates vary depending on severity of non-attainment and geographic location. The applicability threshold levels for Buckley AFB are shown in Table 3-2.

**Table 3-2.
Applicability Thresholds for Attainment/Maintenance Areas**

Criteria Pollutants	Tons per Year
O ₃ (NO _x & SO ₂)	100
All Maintenance Areas	
O ₃ (VOCs)	
Maintenance Areas inside an O ₃ transport region	50
Maintenance Areas outside an O ₃ transport region	100
CO	
All Maintenance Areas	100
PM ₁₀	
All Maintenance Areas	100
Pb	
All Maintenance Areas	25

VOC = Volatile Organic Compound

An action is subject to the general conformity rule if the emissions are deemed regionally significant. Regionally significant emissions are defined as the total direct and indirect emissions of a federal action for any criteria pollutant that represents 10 percent or more of a non-attainment or maintenance area's emission inventory for that pollutant.

3.1.1.1 Existing Conditions

Buckley AFB is located in Arapahoe County, Colorado, within the Metropolitan Denver Air Quality Control Region (AQCR) 36. The Denver metropolitan area was previously designated by the EPA as a serious non-attainment area for CO, a non-attainment area for the 1-hour ozone standard, and a moderate non-attainment area for PM₁₀. Recently, the EPA redesignated the Denver metropolitan area as an attainment/maintenance area for the following criteria pollutants: ozone on 11 October 2001, CO on 14 January 2002, and PM₁₀ on 16 October 2002 (APCD 2002).

Buckley AFB has been identified as a major source of criteria pollutants because it has the potential to emit or has actual emissions of more than 100 tons per year of any single criteria pollutant. Buckley AFB is currently identified by the APCD as a major Title V source subject to Title V Operating Permit No. 95OPAR118. This permit was issued on 28 August 1997, most recently reissued on 01 July 2002 and expires 30 June 2007 (BAFB 2001). Buckley AFB's Title V Operating Permit has established emission limits for NO_x and SO₂ at 249.9 tons per year and emission limits for CO, VOCs, and PM₁₀ at 99.9 tons per year. If Buckley AFB adds new sources or modifies existing sources resulting in a significant net emissions increase for any criteria pollutant listed in Colorado Regulation No. 3, Part A, Section I.B.58, PSD permitting requirements may apply.

In July 2002, the CDPHE performed an inspection of stationary source emission units and determined Buckley AFB was in compliance with its Title V permit.

Toxic air pollutants are those pollutants listed by the Clean Air Act Amendments of 1990 that are hazardous to human health or the environment, but are not specifically covered under another part of the Act. The National Emissions Standards for Hazardous Air Pollutants (NESHAPS) and Colorado State regulations regulate several toxic air pollutants including arsenic, asbestos, benzene, beryllium, mercury, and vinyl chloride. Buckley AFB currently emits hazardous air pollutants during the course of base activities such as storing fuel, using paints, and running generators. These emissions are estimated annually in the Buckley AFB Air Emission Inventory. Based on a review of HAP emissions, Buckley AFB is not a major source of HAPs and is not subject to additional permitting requirements or maximum achievable control technology (MACT) standards. Actual criteria pollutant and HAP emissions for Buckley AFB in calendar year 2001 are summarized in Table 3-3.

Table 3-3. Buckley AFB 2001 Actual Criteria Pollutant and HAP Emissions

Emission Source	CO (tpy)	NO _x (tpy)	PM (tpy)	PM ₁₀ (tpy)	SO _x (tpy)	VOC (tpy)	Total HAPs (tpy)
Combustion Sources							
Nat. Gas Boilers, Furnaces, Heaters <0.3MMBtu/hr	0.12	0.28	0.02	0.02	0.00	0.02	0.07
Nat. Gas Boilers, Furnaces, Heaters 0.3-10 MMBtu/hr	2.96	3.53	0.27	0.27	0.02	0.19	0.00
Nat. Gas Boilers, Furnaces, Heaters with Diesel Backup	2.27	2.70	---	0.21	0.02	0.15	0.05
Diesel Generators <600 hp	0.39	1.79	0.13	0.13	0.12	0.15	0.00
Diesel Generators >600 hp	19.56	85.34	---	1.43	1.44	2.52	0.11
Arresting Barriers	0.27	0.01	0.00	0.00	0.00	0.01	0.00
AGE Equipment	0.86	1.01	0.06	0.06	0.38	0.10	0.03
Engine Test Cell (Hush House)	1.73	1.54	0.03	0.03	0.05	0.99	0.01
Fuel Storage and Transfer							
Fuel Storage Tanks	---	---	---	---	---	1.31	0.10
Fuel Transfer Losses	---	---	---	---	---	0.27	0.01
Operational Sources							
Chemical Usage ^a	---	---	---	---	---	1.15	1.41
Paint Usage	---	---	---	---	---	0.58	0.07
Degreasers	---	---	---	---	---	0.14	0.00
Fuel Cell Maintenance	---	---	---	---	---	0.07	0.00
Aircraft Deicing	---	---	---	---	---	0.20	0.00
Abrasive Blasting	---	---	0.00	---	---	---	0.00
Paper Shredder	---	---	---	---	---	---	---
Small Arms Firing	0.07	---	---	---	---	---	0.00
Welding	---	---	0.00	0.00	---	---	0.00
Woodworking	---	---	0.15	0.15	---	---	---
Fugitive Particulates							
Construction Projects	---	---	34.74	15.63	---	---	---
Cooling Towers	---	---	9.59	9.59	---	---	---
Rock Crusher	---	---	0.06	0.06	---	---	---
Dust from Road Travel	---	---	106.85	26.42	---	---	---
Mobile Sources							
On-Road Vehicles	72.12	11.55	0.73	---	0.00	7.81	---
Non-Road Gasoline Vehicles	15.78	0.62	0.01	---	0.02	11.36	---
Non-Road Diesel Vehicles	2.24	4.76	0.53	---	0.33	0.57	---
Aircraft Landings, Takeoffs and Touch & Go's	91.44	8.59	---	2.03	2.93	4.03	---
Transient Aircraft Landings, Takeoffs, and Touch & Go's	12.12	11.66	---	---	1.13	4.26	---
Aircraft Trim and Power Checks	0.95	0.58	0.03	---	0.02	0.37	---
Total Fugitive (tpy) ^b			141.59	42.05			
Total Stationary Sources (tpy)	28.24	96.20	10.31	11.95	2.03	7.84	1.88
Total Mobile Sources (tpy)	194.7	37.8	1.3	2.0	4.4	28.4	0.0

Notes:

(a) Per Hazmart personnel, chemical usage values from EMIS represent only 65% of actual base usage. Emission values are scaled up to account for the non-tracked data.

(b) Construction project and dust from road travel only

CO = Carbon monoxide

NO_x = Nitrogen oxides

PM = Particulate matter

PM₁₀ = Particulate matter less than 10 microns

SO_x = Sulfur oxides

VOC = Volatile organic compounds

HAP = Hazardous air pollutant

Tpy = Tons per year

MMBtu/hr = Million British thermal units per hour

Hp = Horsepower

--- = Insignificant emissions

3.1.2 Biological Resources

The ROI for plant species is considered to be the ground surface disturbed by the Proposed Action or other alternatives. Buckley AFB is in the plains grassland ecosystem, which is composed of a patchwork of grass communities. In the immediate vicinity of the ROI, crested wheatgrass has been planted on areas not occupied by buildings and any associated landscaping. Activities within both site areas have destroyed any natural vegetation that may have been present. A windbreak containing small evergreens and bushes is to the west of Site 1, and elm trees occur to the east and west of Site 2.

The ROI for animal species is considered to be the aggregate home ranges of the individuals that collectively form the population represented at the carwash siting areas during a substantive portion of its life cycle. Wildlife species are those associated with a largely urban setting. From among the species discussed in Section 3.4.4 of the BX/Commissary EA, those most likely to occur on the ROI are reptiles such as the bullsnake; ground nesting bird species such as western meadowlarks, horned larks, and killdeer; tree nesting bird species such as American kestrels; and small mammals such as thirteen-lined ground squirrels and mice. In addition, two active and six abandoned prairie dog burrows are located within Site 1 and prairie dogs have previously inhabited Site 2. Although Site 2 is within the prairie dog control zone (U.S. Air Force, 2001) and prairie dogs have been removed from this location, they are present in adjacent areas and could return in the future. When prairie dog burrows are present, burrowing owls could be using the burrows for nesting. Other species that might be expected on or near the ROI are garter snakes; tree nesting species such as the American robin, blue jay, scrub jay, house finch, house sparrow, and black-billed magpie; cottontail rabbits; and occasional foraging species such as red-tailed hawks, Swainson's hawks, ferruginous hawks, raccoons, skunks, and coyotes. Current observations of Site 2 indicate black-billed magpies were using the nearby elm trees (Hatch, personal communication, 2002). Observations of Site 1 did not indicate use by any bird species, however trees on both sites would be expected to provide perching and nesting habitat for a variety of migratory birds species that are relatively tolerant of human activity.

Sensitive species identified for potential occurrence at Buckley AFB include the black-tailed prairie dog, swift fox, bald eagle, ferruginous hawk, mountain plover, burrowing owl, Ute ladies-tresses, and Colorado butterfly plant. Of these species, the burrowing owl would be the most likely to occur in the proposed carwash siting areas, and perhaps transient ferruginous hawks—which would be expected where prairie dogs are located. The siting areas are too dry and/or too small for likely occurrence of the other species. There are also no wetlands in either siting area.

3.1.3 Water Resources

The ROI for water resources is considered to be the East Tollgate Creek drainage. Both surface water and shallow groundwater at Buckley AFB drain northwest toward the South Platte River, approximately 15 miles away. Deep groundwater drains northeast. East Tollgate Creek, the closest surface water drainage is approximately 1.5 miles to the west of the ROI. Groundwater at Buckley AFB occurs closest to the surface in the Dawson Arkose aquifer. Surficial alluvial deposits associated with East Tollgate Creek may extend into the ROI vicinity.

There are two stormwater outfalls in the northwest corner of Buckley AFB that ultimately flow into East Tollgate Creek. The closest stormwater detention ponds are south of the ROI for both sites. Surface water flow for Site 1 is minimal, but would be expected to flow south into the base stormwater detention pond, and eventually to East Tollgate Creek, due to engineering design. Surface water flow across Site 2 would be expected to flow to a detention pond just north of the ROI, out an outfall in the northwest corner of Buckley AFB, into a ditch that parallels 6th Avenue, and ultimately into East Tollgate Creek. Stormwater discharge is regulated under a federal Multi-Sector General Permit, COR 05A05F. National Pollutant Discharge Elimination System (NPDES) permits are required for construction projects disturbing 1 acre or greater. The current Storm Water Pollution Prevention Plan (SWPPP), dated March 2002, is currently undergoing revision.

3.1.4 Potable Water

The ROI for potable water is the City of Aurora's supply and distribution system. Buckley AFB obtains potable water from the City of Aurora and typically utilizes 100,000 to 500,000 gallons of water per day, depending on the time of year. Buckley AFB complies with City of Aurora outdoor watering restrictions, so water use drops considerably during times of drought.

3.1.5 Wastewater

The ROI for wastewater is considered to be the Metro Wastewater Reclamation District (Metro) sewer system plus the carwash siting areas and associated drainages and aquifers that might be affected by wastewater spills. Buckley AFB has an industrial wastewater discharge permit (No. 213) with the Metro to discharge wastewater to the sanitary sewer. The permit is renewed every 5 years; the most recent permit became effective on 1 February 2003. Wastewater discharges from the base currently range from between 100,000 and 500,000 gallons per day, depending on the time of year.

A Slug Loading Control Plan, required under Buckley's wastewater permit, contains a description of discharge practices, description of stored chemicals, procedures for immediately notifying Metro of slug discharges, and if necessary, procedures to prevent adverse impact from accidental spills (inspection, maintenance, worker training, building of containment structures or equipment, emergency response, etc.). The permit requires Buckley to notify Metro within 60 days of the time a new facility is brought on line and, if the facility discharges wastewater, to update the Slug Loading Control Plan to reflect the new facility's contribution to the wastewater within this same timeframe.

3.1.6 Solid Waste

The ROI for solid wastes is considered to be the BFI Tower Road landfill plus the carwash siting areas and the transit route between these two areas where solid waste spills could potentially occur. A private contractor handles solid waste collection and disposal at Buckley AFB and transports the refuse to the BFI Disposal Site on Tower Road in Denver County. According to Section 3.2.3.3 of the BX/Commissary EA, the permitted portion of the landfill occupies 2,680 acres with a life span of 40 to 50 years.

3.1.7 Asbestos-Containing Material

Because Site 2 may be contaminated with asbestos-containing material, the ROI for asbestos-containing material is considered to be Site 2 or its immediate surroundings where airborne asbestos fibers might be sufficiently concentrated to be inhaled in harmful quantities. Residual asbestos-containing materials in surface soils in portions of this area are currently undergoing cleanup as part of site preparation for the new Fitness Center, however the decision to cleanup the portions of the site containing the carwash would not occur unless the carwash is constructed. The asbestos is contained in an approximately 6-inch-thick layer at a depth of 18–24 inches below ground surface in and across the area. This material appears to be residue from World War II (WWII) -era structures removed during the 1950s, 60s, and 70s.

Review of May 1944 historical diagrams indicated that buildings were not constructed on or near Site 1; therefore, asbestos contamination is not expected at that site.

For a discussion of asbestos as a Hazardous Air Pollutant, see Section 3.1.1, Air Quality.

3.2 RESOURCES WITHOUT SHORT- OR LONG-TERM IMPACTS

3.2.1 Land Use

The ROI for land use is considered to be Buckley AFB and the sections of the City of Aurora that immediately surround Buckley AFB. These areas are already developed or planned for development; therefore, the alternatives are not expected to affect current land use or their trends.

Site 1 is a vacant area, with an industrial warehouse to the east, the City of Aurora to the west, the BX Commissary to the north, and proposed administrative buildings to the south. The area is planned for community commercial development.

Site 2 is located in a community commercial area with outdoor recreation/open space to the north, housing to the east (dormitory), and administrative buildings to the southeast (Fitness Center and Building 26).

3.2.2 Occupational Safety and Health

Buckley AFB has an occupational safety and health (OSH) plan in place to address issues of safety in the workplace. The alternatives are not expected to affect OSH, and the implemented alternative would conform to the OSH plan.

3.2.3 Hazardous Materials and Waste Management

For this analysis, the terms hazardous materials or hazardous waste refers to those substances defined as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code (U.S.C.) Section 9601 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 to 6992. Implementation of either the action alternatives or the no-action alternative is not anticipated to affect the handling of such hazardous materials or hazardous waste at Buckley AFB. It is assumed that all cleaners and/or waxes used in carwash operations

are not defined as hazardous substances under the above-mentioned regulations. A waste characterization will be made to ensure that any solid waste generated is not hazardous waste.

3.2.4 Socioeconomic Issues

Socioeconomic issues at Buckley AFB include conditions of residents and employees on or near Buckley AFB, such as social interaction and economic well-being. This project would only provide an added convenience to active, reserve, and retired military personnel and their dependants. No further impacts on such parameters are expected to be associated with the alternatives, and therefore are not addressed in this EA.

3.2.5 Cultural Resources

Cultural resources are defined as Native American, prehistoric, archaeological, or historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture or community for scientific, traditional, religious, or other reasons. Several federal laws, primarily the National Historic Preservation Act (NHPA), govern the protection of cultural resources. An archaeological survey of the entire base not covered by structures, paving, or similar features was conducted in 1990. Based on this survey it was determined that none of the archaeological resources were eligible for inclusion in the National Register. The Colorado State Historic Preservation Officer (SHPO) concurred with these findings (COANG, 1996). The proposed carwash involves new construction and there are no existing buildings within or near the carwash siting areas that are potentially eligible for inclusion in the National Register of Historic Places.

3.2.6 Transportation

The primary access to Buckley AFB is through the North Gate on 6th Avenue; however, a new gate, the Telluride gate, is currently under construction in the BX Commissary area. The Telluride gate would provide the most direct access to the carwash area. Both sites would be located off Steamboat Avenue, which is a collector road off Aspen Street—the most heavily traveled road on base. The proposed carwash would have no further impacts than originally addressed in the BX Commissary EA, since the carwash would only be available to active, reserve, and retired military personnel and their dependants. It is assumed that, because of the convenient location of the proposed carwash, most personnel would wash their cars before or after work or during a shopping trip at the BX Commissary. Therefore, the proposed project would not modify the current number of vehicle trips onto the base.

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4.0 ENVIRONMENTAL CONSEQUENCES

This section describes the environmental consequences that could result from constructing and operating a carwash facility (the Proposed Action and Alternative Actions) at Buckley AFB, and the No Action alternative.

Changes in the human and natural environment that may result from the alternatives were evaluated against the existing environmental conditions, as described in Section 3.0. Anticipated direct and indirect effects were assessed for each environmental resource described. The context and intensity consideration defined in the CEQ regulations (40 CFR 1508.27) was used in evaluating the potential occurrence of environmental consequences. When appropriate, the analysis notes best management practices that would be incorporated into project implementation to reduce or eliminate potential adverse effects on the environment.

This section describes potential effects of the alternatives on air quality, biological resources, water resources, potable water, wastewater, solid waste, and asbestos. Implementation of any of the alternatives is not expected to have a significant impact on other resources, as discussed at the beginning of Section 3.0.

4.1 RESOURCE SPECIFIC ENVIRONMENTAL CONSEQUENCES

4.1.1 Air Quality

Impacts to air quality would be considered significant if any criteria pollutant emissions associated with the implementation of the proposed action or alternatives exceeded the rates specified for attainment/maintenance areas for CO, O₃ and PM₁₀ provided in Table 3-2.

The air quality analysis examined impacts from air emissions associated with the construction and operation of the Buckley AFB carwash. As part of the analysis, emissions generated from construction and motor vehicles were examined for CO, volatile organic compounds (VOCs), SO_x, NO_x, and PM₁₀.

Proposed Action

Implementing the proposed action would have a minor, temporary impact on local air quality, however emissions are not regionally significant and will not exceed the rates specified for attainment/maintenance areas of CO, O₃ and PM₁₀. Emissions from constructing the project would not have a significant impact on Buckley's Title V Operating Permit.

The primary impact to air quality would be directly related to the generation of fugitive emissions such as PM₁₀ at and around the project areas during the preliminary stages of construction. These emissions would primarily be a function of (1) construction activities, such as grading, excavation and mobile exhaust emissions; (2) movement of dust (wind erosion) from 'piled' materials; and (3) mechanical entrainment of road dust.

The potential air quality impact resulting from construction activities would be minor, would be temporary, and would disperse with distance from the project area. Implementing abatement measures such as proper maintenance of construction vehicles, limiting the size of the

disturbance area, and watering unpaved roadways, as necessary, would minimize potential impacts.

Watering the disturbed area twice per day with approximately 3,500 gallons per acre would reduce TSP emissions by as much as 50 percent (EPA 1995). Fugitive particulate emissions due to the heavy construction activities and mobile emissions from heavy equipment operations are the only anticipated emissions during the construction phase of the Proposed Action.

Criteria pollutant emissions associated with the implementation of the Proposed Action do not exceed the rates specified for attainment/maintenance areas for CO, O₃ and PM₁₀ (Table 3-2). The proposed action is not regionally significant because the emissions do not exceed 10 percent or more of the Applicability Thresholds for Attainment/Maintenance Area's total emissions for that particular pollutant. Emissions from the construction activity are shown in Table 4-1.

**Table 4-1
Total Construction Emissions Compared to Applicability Thresholds**

Criteria Pollutants	Applicability Threshold tpy	Total Construction Emissions tpy	Emissions Exceed Applicability Threshold
NO _x	100	1.3	No
SO ₂	100	0.23	No
VOCs	50(100)	0.16	No
CO	100	0.40	No
PM ₁₀	100	0.20	No

tpy = Tons per year

Combustive emissions from construction equipment exhausts were estimated using emissions factors for diesel-powered off road equipment (USEPA 1991).

Alternative Actions and Options

The same potential impacts identified for construction and project implementation under the Proposed Action may also occur under each of the Alternative Actions (A, B, and their associated options) since the amount of ground disturbed would be similar even for alternative options, which have a smaller carwash facility but more adjacent pavement in compensation. Best management practices identified under the Proposed Action would also need to be implemented under these alternatives.

No Action

Selecting the No Action Alternative would result in no significant impacts to ambient air quality conditions of the project areas or surrounding areas since no construction activities would be undertaken. Ambient air conditions would remain as described in Section 3.1.1.

4.1.2 Biological Resources

Biological resources can be lost, altered, or displaced by disturbances to physical or other biological resources. Determination of the significance of potential impacts to biological resources is based on 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, 2) the proportion of the resource that would be affected relative to its occurrence in the region, 3) the sensitivity of the resource to proposed activities, and 4) the duration of ecological ramifications. Such impacts would be considered potentially significant if the viability of a protected or sensitive plant or animal species population or its habitat were jeopardized over relatively large areas. Impacts that enhance a species' population or its habitat would be considered beneficial.

Proposed Action

Due to the semi-improved and disturbed nature of Site 1, impacts to vegetation are not anticipated.

Implementation of the Proposed Action would eliminate 0.046 acres occupied by prairie dogs and potentially used by those animals that forage or nest on the ground (i.e., the burrowing owl). Active and abandoned prairie dog burrows are located in the western portion of the site, therefore impacts to both the prairie dog, and potentially the burrowing owl, could be avoided or minimized if the carwash facility is located within the eastern portion of the site, near Building 201. If prairie dogs are present in the area to be disturbed by construction, they must be removed prior to ground disturbance. Prairie dogs at the site would be handled per the Supplement to Environmental Assessment of Proposed Prairie Dog Management Practices at Buckley AFB dated June 2001. If burrowing owls are observed during or prior to construction, all work must stop immediately and the Natural and Cultural Resource Manager with the 460th Environmental Flight consulted before work could resume.

Species using the wind break trees and bushes near Site 1 might be temporarily disturbed during construction activities. If landscaping is installed, the additional vegetation might benefit wildlife species that are tolerant of urban environments.

Alternative Actions and Options

The same potential impacts identified for construction and project implementation under the Proposed Action may also occur under each of the Alternative Actions. Impacts from Alternative B would be similar to those of the Proposed Action and Alternative A because prairie dogs and other wildlife could relocate back to this area even though they were previously removed. Further, if the carwash is constructed on Site 2, an asbestos remediation program would be necessary to remove any asbestos contaminated materials, and therefore the soils and vegetation in Site 2 will likely be disturbed. Thus, no impacts are anticipated from Alternative B. The extent of vegetation of habitat disturbance is not expected to differ among the action alternatives. Best management practices identified under the Proposed Action would also need to be implemented under these alternatives.

No Action

Under the No Action Alternative, the installation of a carwash facility on Buckley AFB would not occur; therefore, there would be no impacts to biological resources from this project. The previously occupied prairie dog habitat and habitat used by species that forage or nest on the ground within Site 2 may be preserved for the potential of their return in the future if no other facilities are constructed at this location.

4.1.3 Water Resources

An impact to water resources would be considered potentially significant if an aquifer, groundwater well, or surface water body were damaged to the extent that a measurable change in a user's water supply resulted or an exceedance of water quality standards occurred. An impact would be insignificant if the changes in the water supply were unmeasurable or the water quality did not exceed established standards. Impacts such as increased recharge or improved water quality would be considered beneficial.

Proposed Action

The Proposed Action may potentially have short-term impacts to water resources from run-off and sedimentation during construction. Employing best management practices during construction would minimize any potential impacts to water resources. Since this project is not anticipated to exceed more than a tenth of an acre, no further action would be required under the general stormwater permit requirements for Buckley AFB or the revised requirements implemented in March 2003 for projects of 1 acre or greater. However, if the project would exceed this amount, a project specific NPDES permit may be required for construction.

Potential spills to stormwater during operation of the carwash facility may impact water resources. Design features that would capture any potential runoff and grading for adequate drainage of the carwash footprint could offset those potential impacts. Equipping the drainage system associated with the carwash with catch basins would trap sediment and potential floating oils. Designing the gravity separators with adequate capacity to capture carwash effluent and regular maintenance and monitoring would prevent any potential overflow.

Alternative Actions and Options

The same potential impacts identified for construction and project implementation under the Proposed Action may also occur under each of the Alternative Actions. Best management practices identified under the Proposed Action would also need to be implemented under these alternatives. The catch basins associated with a smaller carwash facility (Alternative A-Options 2 and 3; Alternative B-Options 3 and 4) could be somewhat smaller than those associated with Alternative A-Option 1, Alternative B-Options 1 and 2, or the Proposed Action.

No Action

No impacts from project implementation would occur. Unknown quantities of untreated wastewater and soaps, oils, and sludge that could occur from washing POVs at scattered locations on base might seep into storm sewers, which are not intended for this type of use, or percolate into the ground. These small and infrequent discharges should not pose much risk to the environment. However, if carwashing activities became more frequent, effluent is

discharged directly to a water source, or products containing acids, caustics, or metal brighteners were used, impacts to water resources and aquatic species could occur.

4.1.4 Potable Water

Impacts to potable water would be considered significant if its use exceeded the supply made available to Buckley AFB by City of Aurora, or precluded the potential for other developments within or outside of Buckley AFB but within the City's supply area. In addition, a requirement for water that became detrimentally expensive because of its volume would also be considered significant. Conservation of water that resulted in diminished use would be considered a beneficial impact.

It is assumed that the carwash facility would be open seven days a week, 24 hours a day. The most use would occur between 6 A.M. and 10 P.M. and wash cycles would occur every 10 minutes during that time. It is also assumed that a manual carwash bay would use approximately 16 gallons of water per cycle and the automatic wash would use 40 gallons per cycle.

Proposed Action

Based on the assumptions listed above, the carwash facility under the Proposed Action would use approximately 8,448 gallons of water per day. This alternative would consume more water for its operation than Alternative A-Options 2 and 3 and Alternative B-Options 3 and 4, but because of its recycling system, would use less water than Alternative A-Option 1 and Alternative B-Option 2.

It is important to note that due to the current drought situation, Buckley AFB would adhere to any and all City of Aurora water use restrictions (e.g., close the carwash or limit its use).

Alternative Actions and Options

Based on the assumptions above, the following table outlines the approximate use of water per day per alternative.

**Table 4-2
Total Water Use by Alternative**

Alternative and Option	Type of Carwash Facility	Potable Water use (gallons per day)
Alternative A-Option 1	One automatic, 3 manual bays	8,448
Alternative A-Option 2	3 manual bays	4,608
Alternative A-Option 3	One automatic bay	3,840
Alternative B-Option 1	One automatic, 3 manual bays	8,448
Alternative B-Option 2	One automatic, 3 manual bays	8,448
Alternative B-Option 3	3 manual bays	4,608
Alternative B-Option 4	One automatic bay	3,840

Alternative A-Option 1 and Alternative B-Option 2 would consume the most water for their operations because they have the same number and types of carwash bays as the Proposed Action, but do not use a recycling system for their wastewater. Fresh potable water would thus

be used for each wash cycle. Under Alternative A-Option 2 and Alternative B-Option 3, the three manual carwash bays would use approximately 16 gallons of water per bay per cycle, while under Alternative A-Option 3 and Alternative B-Option 4, the single automatic carwash bay would use from 40 gallons of water per cycle. Even these smaller-scale actions would ultimately use more potable water than the Proposed Action and Alternative B-Option 1 because they lack a recycling system.

Adherence to City of Aurora water use restrictions would be the same as described under the Proposed Action.

No Action

No additional usage of potable water would occur in relation to this project.

4.1.5 Wastewater

Significant impacts from wastewater would occur if the capacity of the Metro Wastewater Reclamation District (Metro) sewer system were exceeded, seriously taxed, or its use became excessively expensive or precluded the development of other facilities on or off Buckley AFB but served by the Metro system. Reductions in wastewater or pretreatment to diminish its need for processing at the sewage treatment plant would be considered benefits.

Proposed Action

Due to a closed-loop recycling system being constructed with the carwash, the wash effluent would be recycled and periodically recharged causing no discharges to the sanitary sewer system.

Alternative Actions and Options

Alternative B-Option 1 would have the same impact to wastewater as the Proposed Action. The remaining alternatives and options include discharge of wastewater into the sanitary sewer and it is assumed that approximately the same amount of wastewater would be discharged as potable water used (see Section 4.1.4). Treated wastewater would discharge to the Metro Wastewater Reclamation District. The carwash facility would contain a gravity separator or containment sump before effluent could be discharged to the POTW. The proposed carwash facility would not change wastewater regulatory requirements and would not necessitate permit modifications. Metro would have to be notified within 60 days of the carwash coming online and the Slug Loading Control Plan would need to be amended and resubmitted to Metro.

Best management practices, including regular maintenance and monitoring of effluent and equipment, would maintain acceptable levels of TSS, O&G, and metals before discharge to the POTW.

No Action

Under the No Action Alternative, the installation of a carwash facility on Buckley AFB would not occur; therefore, increased discharge to the sanitary sewer system associated with this project would not occur.

4.1.6 Solid Waste

Impacts from solid wastes would be considered significant if the Denver-Arapahoe Disposal Site in Arapahoe County were to be used for disposal to an extent that would diminish its overall lifespan much more rapidly than currently planned.

Proposed Action

On average, approximately 40 gallons of sludge is generated from 3,000 gallons of wastewater (WSDE, 1995). Sludge generated from carwash operations would periodically need to be removed and disposed. The sludge would likely be disposed of at an off-base disposal site by a private contractor currently servicing the base. A waste characterization will be made to ensure that any solid waste generated is not hazardous waste.

Alternative Actions and Options

The same potential impacts identified for construction and project implementation under the Proposed Action may also occur under the action alternatives. Alternatives with fewer carwash bays would generate proportionately less sludge.

No Action

Under the No Action Alternative, the installation of a carwash facility on Buckley AFB would not occur; therefore, waste generation associated with this project would not occur.

4.1.7 Asbestos-Containing Material

Impacts from asbestos-containing material (ACM) would be considered significant if CDPHE and/or OSHA standards were exceeded by materials present during carwash construction or if the asbestos containing material were left in a location where later detrimental exposure of workers or the public could occur.

Proposed Action

No impacts from ACM would occur under this alternative as it would be located within Site 1.

Alternative Actions and Options

Alternative B and associated options could experience effects from ACM due to its location within Site 2. However, should Alternative B be chosen for the carwash site, remediation of the asbestos-contaminated soil within the construction area would occur prior to construction of the facility in consultation with CDPHE.

No Action

Under the No Action Alternative, the installation of a carwash facility on Buckley AFB would not occur; therefore, removal of asbestos-contaminated soil in the area proposed for the carwash would not occur.

4.2 UNAVOIDABLE ENVIRONMENTAL EFFECTS

Only minimal unavoidable environmental effects would result from implementation of the action alternatives, if appropriate best management practices were implemented. A total of 0.046 acres of disturbed land in a semi-improved area would be unavoidably impacted.

4.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Implementation of the action alternatives would not result in a substantive irretrievable commitment of resources, since only a total of 0.046 acres of semi-improved land would be irreversibly lost.

4.4 CUMULATIVE ENVIRONMENTAL CONSEQUENCES

Cumulative impacts result from the "incremental impact of actions when added to other past, present, and reasonably foreseeable future actions regardless of which agency undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time" (CEQ, 1978).

4.4.1 Past Actions

Buckley transitioned from an ANG Base to an Air Force Base on October 1, 2000, increasing its force and mission. Buckley AFB has received minimal incremental increases in force over the last few years, warranting need for more services on base. A BX Commissary was constructed near the proposed project siting areas on March 2002 to provide services to active, reserve, and retired military personnel and their dependants.

4.4.2 Current Actions

Another secured gate, the Telluride Gate, is currently being constructed to service the gas station and BX and Commissary, off 6th Avenue west of the North Gate. It is uncertain when this gate will be open for use; however, it is anticipated to be open after completion of the asbestos remediation program.

4.4.3 Reasonably Foreseeable Future Actions

Reasonably foreseeable actions within the collective environmental resource ROIs for the proposed carwash facility occur from Buckley AFB activities and do not involve other agencies. Reasonably foreseeable actions include construction and operation of the following facilities in the next five years:

- Wing Headquarters Building – FY 03
- Visitors Quarters/Temporary Lodging Facility – FY 03
- Golf Driving Range - FY 03
- Addition to Space Based Infrared Surveillance (SBIRS) Mission Control Station – FY 03
- Replace Control Tower – FY 03
- 140th COANG Civil Engineer Complex – FY 03
- Outdoor Recreation Equipment Loan – FY 05
- Chapel - FY 05

- Child Development Center – FY 05
- Medical Clinic Addition – FY 05
- Athletic Fields – FY 05
- Leadership Development Center – FY 06
- Consolidated Fuels - FY 06
- Youth Center - FY 06
- Pharmacy - FY 06
- Logistics Complex - FY 06
- Security Forces Operations - FY 06
- Education Center - FY 06
- Vehicle Maintenance - FY 07
- Communications Center Addition - FY 07
- Outdoor Arms Range - FY 07
- Third Dormitory - FY 08
- Fire Training Facility - FY 08
- Consolidated Base Warehouse - FY 08

4.4.4 Cumulative Effects Analysis

Buckley AFB has slightly increased in population in the past and is anticipated to continue to increase in population and services provided to active, reserve, and retired military personnel and their dependants in the future. More housing and community-oriented development that is being developed now and in the future would continue to place more demands on utilities and service providers, including increased use of potable water, discharges of wastewater, and generation of solid waste. However, Buckley AFB currently has adequate thresholds for these services and currently underutilizes most of the allowable limits in place. As more demand is placed on these services, providers should be consulted to confirm their ability to meet these demands.

The continuation of housing and community-oriented development on base would also place heavier demands on transportation systems on-base and off-base. Since these services are available to active, reserve, and retired military personnel and their dependants, more people may travel to Buckley AFB to utilize these services as they become available. The proposed carwash facility would not place more demands than originally addressed in the BX Commissary EA, since potential users of the proposed carwash facility would most likely be already traveling to the BX and Commissary. However, as more housing and community-oriented development is developed on base, demands on the current infrastructure would need to be further analyzed.

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5.0 REFERENCES

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APPENDIX A – TRANSMITTAL LETTERS

APPENDIX B – PUBLIC AND AGENCY COMMENT LETTERS

APPENDIX C – NOTICE OF AVAILABILITY

APPENDIX D – AIR FORCE FORM 813

