ENVIRONMENTAL ASSESSMENT

ANTI-TERRORISM / FORCE PROTECTION
McCONNELL AIR FORCE BASE, KANSAS

DEPARTMENT OF THE AIR FORCE
AIR MOBILITY COMMAND

SEPTEMBER 2003

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14. ABSTRACT

The Air Force has a requirement to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at McConnell AFB. The action is needed to: ensure the protection and security of Department of Defense forces and assets against acts of terrorism; ensure the safety of security forces and motorists; improve the Base entry gate capacity and traffic flow; and, improve the aesthetic quality of entry control facilities on McConnell AFB. To meet these requirements, the Air Force is proposing to implement structural and operational modifications at the McConnell AFB East and West Gates. The Base currently operates three gates: the East (Main) Gate; the West Gate; and the 31st Street Gate. No AT/FP construction activities or operational changes to any of the gates on McConnell AFB would occur under the No Action Alternative. Resources considered in the impact analysis are: air. quality; noise; water resources; biological resources; solid waste; environmental management; soils; and hazardous materials and wastes. No significant impacts would result from implementation of the any of the five alternatives including the Proposed Action Alternative Actions, or the No Action Alternative.

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FINDING OF NO SIGNIFICANT IMPACT

ANTI-TERRORISM / FORCE PROTECTION AT McCONNELL AIR FORCE BASE, KANSAS

AGENCY

Department of the Air Force, Headquarters (HQ), Air Mobility Command (AMC), McConnell Air Force Base (AFB), Kansas.

BACKGROUND

With the increasing concern regarding potential terrorist attacks in the United States, the need for security enhancements at all military installations has become an important consideration. In July 2002, the Department of Defense (DoD) released a Unified Facilities Criteria entitled *DoD Minimum Antiterrorism Standards for Buildings*. These standards were developed to minimize the possibility of mass casualties in buildings or portions of buildings owned, leased, privatized, or otherwise occupied, managed, or controlled by or for the DoD. The standards provide appropriate, practicable, and enforceable measures to establish a level of protection against terrorist attacks for all inhabited DoD buildings where no known threat of terrorist activity currently exists.

ALTERNATIVE 1 - PROPOSED ACTION, IMPROVE EAST AND WEST GATES

The AMC, the command under which McConnell AFB is aligned, has determined that improved force protection and security is needed in conjunction with improved gate capacity and traffic flow at each of its installations. As such, the AMC had the Military Traffic Management Command Transportation Engineering Agency conduct a traffic engineering study of gate security, safety and capacity for McConnell AFB in 2002. The study characterized existing conditions with respect to gate usage, hours of operations, number of lanes, traffic data and manpower. The study also identified short- and long-term recommendations to improve force protection and traffic flow at McConnell AFB. To correct deficiencies, McConnell AFB will construct and operate the improved Anti-Terrorism/Force Protection (AT/FP) measures recommended in the 2002 study at two Entry Control Facilities (ECF), the East Gate and the West Gate.

ALTERNATIVE 2 - NO ACTION ALTERNATIVE

The Air Force EIAP (32 CFR 989.8(d)) states: "...except in those rare instances where excused by law, the Air Force must always consider and assess the environmental impacts of the "no action" alternative. Under this alternative, McConnell AFB will continue to operate its ECFs with existing force protection measures that are inadequate and do not meet established requirements.

ALTERNATIVE 3 - IMPROVE WEST GATE ONLY

McConnell AFB will construct and operate the improved AT/FP measures recommended in the 2002 study at the West Gate. Other access gates to the installation will be closed.

ALTERNATIVE 4 - IMPROVE EAST GATE ONLY

McConnell AFB will construct and operate the improved AT/FP measures recommended in the 2002 study at the East Gate. Other access gates to the installation will be closed.

ALTERNATIVE 5 - INSTALL AUTOMATIC SCANNERS

McConnell AFB will construct and operate the improved AT/FP measures recommended in the 2002 study at the East Gate and the West Gate as well as install a Smart Card automatic scanning system at each of the gates.

SUMMARY OF FINDINGS

Pursuant to NEPA guidance, 32 CFR 989 (*Air Force Environmental Impact Analysis Process*), and other applicable regulations, the Air Force completed an environmental assessment (EA) of the potential environmental consequences of anti-terrorism/force protection at McConnell AFB. The EA, which supports this Finding of No Significant Impact, evaluated five alternatives including the Proposed Action and the No Action Alternative.

The following summarizes the pro and cons of each of the potential alternatives:

- Alternative 1 – Proposed Action, Improve East and West Gates. The Air Force is required to improve AT/FP measures at McConnell AFB, Kansas and ensure personnel safety. By implementing this alternative the Air Force will meet the requirements. Improvements will also alleviate traffic congestion at both gates.
- Alternative 2 – No Action. If improvements are not made the Air Force will not meet the security requirements. Security at McConnell AFB will fail to comply with Air Force standards.
- Alternative 3 – Improve West Gate Only. If improvements are only made at the West Gate and the other access gates to the installation are closed, traffic problems will be exacerbated at the East Gate. Short-term, localized air quality concerns could result from vehicle stack up on and off-base.
- Alternative 4 – Improve East Gate Only. If improvements are only made at the East Gate and the other access gates to the installation are closed, traffic problems will be exacerbated at the West Gate. Short-term, localized air quality concerns could result from vehicle stack up on and off-base.
- Alternative 5 – Install Automatic Sensors. The software used in this alternative is still being developed and field tested. Consequently, full implementation of this alternative is premature.

EVALUATION OF THE PROPOSED ACTION

Air Quality. The greatest increase in emissions at McConnell AFB will be PM_{10} (10.60 tons) from construction activities, equating to 441.8 percent of the PM_{10} emissions within the air quality control region (AQCR). The emissions will be temporary, fall off rapidly with distance from the construction sites, and will last only as long as the construction activities. Although the PM_{10} emissions in the AQCR exceed 10 percent of the baseline for the pollutant, the AQCR is in attainment for PM_{10} and a Conformity Determination is not required.

Noise. Construction noise will be temporary, will occur only during daytime, and will cease when the project is completed.

Water Resources. Use of the erosion control and spill control measures in the storm water pollution prevention plans that will be prepared for construction projects will minimize the potential for surface and ground water quality degradation. An Army Corps of Engineers permit for a stream crossing will be required.

Solid Wastes. Direct impacts to solid waste from the proposed projects include solid waste from waste from reconstruction of roadways, and the demolition of old structures that will be replaced. The solid waste will consist of building debris such as concrete, metals, fiberglass, cardboard, plastics, and lumber. These materials will be placed in an appropriate construction materials landfill. These wastes are in excess of the solid municipal wastes generated by personnel using the facilities.

Environmental Management. All asbestos containing material (ACM) and lead-based paint (LBP) will be removed in accordance with existing guidance. The new facilities will be constructed or renovated without any ACM and LBP.

Soils. Project activity will occur within areas in which the soils were previously disturbed.

Hazardous Materials and Wastes. The contractor will comply with regulatory guidance for the use and disposal of hazardous materials and wastes during construction activities. The volumes of hazardous materials purchased for, and hazardous wastes generated by, operation of the gates will be negligible. It is not anticipated any new hazardous materials will be needed. The existing hazardous materials handling and hazardous waste disposal processes and procedures will accommodate the activities associated with gate operation.

EVALUATION OF THE NO ACTION ALTERNATIVE

No significant impacts occur from the baseline activities.

ENVIRONMENTAL JUSTICE

Based on analysis conducted for the EA, it is determined that activities associated with the Proposed Action and No Action Alternative will not impose adverse environmental effects on adjacent populations. Therefore, no disproportionately high and adverse effects will occur to minority and low-income populations.

DECISION

Based on my review of the facts and analyses contained in the EA, I conclude that implementation of the Proposed Action will not have a significant impact either by itself or when considering cumulative impacts. Accordingly, requirements of the National Environmental Protection Act, regulations promulgated by the Council on Environmental Quality, and 32 CFR 989 are fulfilled and an environmental impact statement is not required.

MICHELLE D. JOHNSON, Colonel, USAF
Commander, 22d Air Refueling Wing (AMC)

12 Sep 2003
Date

COVER SHEET

ENVIRONMENTAL ASSESSMENT
ANTI-TERRORISM / FORCE PROTECTION
McCONNELL AIR FORCE BASE, KANSAS

Responsible Agency: Department of the Air Force, Air Mobility Command, McConnell Air Force Base (AFB), Kansas.

Proposed Action: Construct Anti-Terrorism/Force Protection facilities at the Base entrance/exit gates.

Written comments and inquiries regarding this document should be directed to: Don Campbell, Chief, Environmental Flight, 22nd Civil Engineer Squadron, 22 CES/CEV, 53000 Hutchinson Street, Suite 109, McConnell AFB, Kansas, 67221-3617, email: donald.campbell@mcconnell.af.mil.

Report Designation: Environmental Assessment

Abstract: The Air Force has a requirement to improve gate security, ensure personnel safety and reduce traffic congestion, while maintaining access control at McConnell AFB. The action is needed to: ensure the protection and security of Department of Defense forces and assets against acts of terrorism; ensure the safety of security forces and motorists; improve the Base entry gate capacity and traffic flow; and, improve the aesthetic quality of entry control facilities on McConnell AFB. To meet these requirements, the Air Force is proposing to implement structural and operational modifications at the McConnell AFB East and West Gates. The Base currently operates three gates: the East (Main) Gate; the West Gate; and the 31st Street Gate. No AT/FP construction activities or operational changes to any of the gates on McConnell AFB would occur under the No Action Alternative. Resources considered in the impact analysis are: air quality; noise; water resources; biological resources; solid waste; environmental management; soils; and hazardous materials and wastes. No significant impacts would result from implementation of the any of the five alternatives including the Proposed Action, Alternative Actions, or the No Action Alternative.

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	Micrograms per cubic meter
AASHTO	American Association of State Highway and Transportation Officials
ACM	Asbestos-containing material
AFB	Air Force Base
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
AT/FP	Anti-terrorism / force protection
BMP	Best management practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO_2	Carbon dioxide
dB	Decibel
dBA	A-weighted decibel
DNL	Day-night average noise level
DoD	Department of Defense
DoDD	Department of Defense Directive
EA	Environmental Assessment
ECF	Entry Control Facility
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive order
FHWA	Federal Highway Administration
FY	Fiscal year
gpm	Gallons per minute
HQ	Headquarters
IRP	Installation restoration program
LBP	Lead-based paint
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO	Nitric oxide
NO_2	Nitrogen dioxide
NOx	Nitrous oxides
O_3	Ozone
Pb	Lead
PM_{10}	Particulate matter less than 10 microns
ppm	Parts per million
SIP	State implementation plan
SO_2	Sulphur dioxide
SOx	Sulphur oxides
SWPPP	Storm Water Pollution Prevention Plan
tpy	Tons per year
TSP	Total suspended particulates
USACE	U.S. Army Corps of Engineers
VOC	Volatile organic compounds

CHAPTER 1
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

This chapter has six sections: introduction; need for the action; objectives of the action; scope of the environmental review; applicable regulatory requirements; and organization of the document.

1.1 INTRODUCTION

The Air Force is required to improve anti-terrorism/force protection (AT/FP) measures at McConnell Air Force Base (AFB), Kansas and ensure personnel safety. To meet these requirements, the Air Force is proposing to implement structural and operational modifications along the perimeter and at entry control facilities (ECF) on McConnell AFB. The modifications would include improved gate security and personnel safety, and would also reduce traffic congestion while maintaining access control. It is estimated that activities associated with the proposed action would begin in early 2004.

1.2 NEED FOR THE PROPOSED ACTION

The proposed action is needed to:

- Ensure the protection and security of Department of Defense (DoD) forces and assets against acts of terrorism;
- Ensure the safety of security forces and motorists;
- Improve the Base entry gate capacity and traffic flow; and
- Improve the aesthetic quality of the Base perimeter and ECFs on the Base.

1.3 OBJECTIVE OF THE PROPOSED ACTION

The objective of the proposed action is to improve gate security, ensure personnel safety, and reduce traffic congestion, while maintaining access control at McConnell AFB. The Air Force proposes to construct physical improvements to process visitors and commercial vehicles, as well as implement operational modifications at the perimeter and at McConnell AFB ECFs.

1.4 SCOPE OF THE ENVIRONMENTAL REVIEW

The *National Environmental Policy Act* (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in the decision-making process. The President's Council on Environmental Quality (CEQ) issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental analysis. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of Federal Regulations [CFR] Sections 1500-1508) and 32 CFR 989 (*Air Force Environmental Impact Analysis Process*), 15 July 1999, and amended 28 March 2001. These federal regulations

establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. The CEQ regulations require that an environmental assessment (EA):

- Briefly provide evidence and analysis to determine whether the Proposed Action might have significant effects that would require preparation of an environmental impact statement (EIS). If analysis determines that the environmental effects would not be significant, a finding of no significant impact will be prepared;
- Facilitate the preparation of an EIS, when required; or
- Aid an agency's compliance with NEPA when no environmental impact statement is necessary.

This EA assesses the consequences of proposed construction and operational aspects of the proposed AT/FP measures at McConnell AFB for the Proposed Action as well as the No Action Alternative. This EA identifies, describes, and evaluates the potential environmental impacts that may result from implementation of the Proposed Action as well as possible cumulative impacts from other reasonably foreseeable actions planned for the Base. This EA also identifies the required environmental permits relevant to the Proposed Action. As appropriate, the affected environment and environmental consequences of the Proposed Action and No Action Alternative may be described in terms of site-specific descriptions or a regional overview. Finally, the EA identifies mitigation measures to prevent or minimize environmental impacts, if required.

The following biophysical resources are assessed in the EA: air quality; noise; soil resources; water resources; biological resources; solid waste; environmental management; and hazardous materials and wastes. As discussed in the following paragraphs, the following resources were considered during the initial analysis for the project; however, for the reasons stated below, the resources have been eliminated from detailed consideration in this EA.

- The construction projects associated with the Proposed Action are located in portions of the Base that have been disturbed and altered by previous activities. For these reasons, no geologic or physiographic impacts would be anticipated from the proposed activities and are not assessed in this EA.
- McConnell AFB has Installation Restoration Program (IRP) sites associated with contamination, remediation, and investigation of past disposal sites. However, as illustrated on McConnell AFB Geographic Information Systems information that reflects the results of past investigations, none of these IRP sites occur within the proposed project area. Therefore, no IRP impacts would be anticipated and IRP sites are not assessed in this EA.
- There would be no significant increase in the requirement for water, electricity, or gas as a result of the action. Likewise, there would be no significant change in the amount of wastewater generated. The existing infrastructure on McConnell AFB is adequate to support the Proposed Action and No Action. No major modifications to infrastructure would be made during the construction phase. Any structures constructed during the

proposed action would be connected to existing water, electrical, gas, phone, and sewer lines. Therefore, infrastructure is not discussed in this EA.

- The McConnell AFB General Plan details the Base's existing and future land use plans. The 10 land use categories in the plan for both the existing and future conditions are: airfield, aircraft operations and maintenance, industrial, administrative, community, medical, housing (unaccompanied) outdoor recreation, open space, and jurisdiction. The proposed action would not modify land use at the installation. Therefore, land use is not assessed in the EA.

- There would be no change in the number of personnel authorizations at McConnell AFB as a result of the proposed activities. Thus, no long-term changes would be anticipated to area population, housing requirements, school enrollment, or economic factors (*i.e.*, sales volume, income, or employment). It is not anticipated that construction workers would relocate to the Wichita, Kansas area as a result of the proposed activities. Thus, there would be no short-term impacts to area population, housing requirements, or school enrollment. There could be a positive benefit to the economic factors from the proposed construction activities; however, these benefits would end when the projects are completed. For these reasons, socioeconomic resources are not assessed in this EA.

- The Proposed Action activities would occur on areas within developed portions of McConnell AFB. The construction and demolition activities would occur within developed, maintained areas with highly modified and disturbed landscape. Therefore, minimal potential impacts to biological resources are anticipated. There would be no disturbance of high quality and/or native vegetation outside the developed areas within the Base or outside the Base boundary. Prior field studies of the installation have found no endangered, threatened, or special status species on the Base (McConnell 2002a). Thus, no adverse effects would be anticipated to threatened, endangered, or special status species and these elements normally discussed in the biological resources section are not assessed in this EA. Potential construction being considered under the Proposed Action may be located proximate to a wetland on the installation and may affect wildlife, especially bird species. Therefore, the biological resources evaluation in this EA is limited to vegetation, wildlife, and wetlands within the potential development areas.

- The McConnell AFB Integrated Cultural Resources Management Plan (McConnell 2002b) states that the Base has little potential for containing archaeological sites. The report concluded that no further archaeological testing was required on the Base. No significant properties, structures, or sites eligible for the National Register of Historic Places or other formal recognition have been identified in the areas proximate to the potential development sites. Potential development in these areas is not anticipated to adversely affect the viewshed (the area within view from a defined observation point) associated with any potentially eligible facilities at McConnell AFB. The potential project sites are located in areas of the Base that have been disturbed by previous activities. No archaeological or historical resource adverse effects would be anticipated from potential development activities. Therefore, archaeological and historic architectural resources are not addressed in this EA. However, if any suspected

archaeological sites are encountered during a project, the contractor must protect the site and report the discovery to the government.

- On February 11, 1994, the president issued Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. According to the EO, federal institutions are now required to make environmental justice concerns a part of their mission. In addition, they are to identify any disproportionately adverse affects to human health or the environment that their programs, activities, and policies have on minority or low-income populations. The analysis performed for this EA determined that implementation of the Proposed Action or the No Action Alternative would not cause adverse impacts to human health or the environment of neighboring populations. No disproportionately adverse effects to minority and low-income populations are anticipated.

Baseline conditions to be used for environmental evaluation in the EA are assumed to be Fiscal Year (FY) 2003. However, if FY03 data are not available, the most recent information available was used. It is estimated that the proposed action would begin in FY03 and be completed in FY05.

1.5 APPLICABLE REGULATORY REQUIREMENTS

Numerous construction projects would be accomplished under the Proposed Action. The construction contractor for the Proposed Action would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to ensure compliance with Clean Water Act requirements and that water quality is not degraded. A Section 404 steam crossing permit would be required and the Air Force would coordinate a Clean Water Act Section 404/401 permit with the U.S. Army Corps of Engineers (USACE) for the proposed security enhancements under the Proposed Action.

The Proposed Action would construct facility security enhancements at two installation ECFs and modify installation security policies and procedures. Design, construction, and renovation would be conducted in accordance with the McConnell AFB Cultural Resources Management Plan and in consultation with the Kansas State Historic Preservation Office.

1.6 ORGANIZATION OF THE DOCUMENT

This EA is organized into seven chapters.

Chapter 1 Contains an introduction; a statement of the need for the action; objectives for the action; scope of the environmental review; presentation of the applicable regulatory requirements; and the organization of the EA.

Chapter 2 Contains an introduction; lists the selection criteria for alternatives; describes the alternatives considered but eliminated from further consideration; details the proposed alternatives; presents information on past and reasonably foreseeable future actions; identifies the preferred alternative; and summarizes the environmental impacts for all alternatives.

Chapter 3 Contains a general description of the biophysical resources and baseline conditions that potentially could be affected by the Proposed Action, Alternative Action, or No Action Alternative.

Chapter 4 Discusses the environmental consequences.

Chapter 5 Lists preparers of this document.

Chapter 6 Lists the persons and agencies consulted in preparation of this EA.

Chapter 7 Lists the sources of the information used in preparation of this EA.

Appendix A Air Force Form 813

Appendix B Interagency and Intergovernmental Correspondence for Environmental Planning

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CHAPTER 2
DESCRIPTION OF THE ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter has seven sections: introduction; selection criteria used to develop the alternatives; alternatives considered; description of the proposed alternatives; descriptions of past and reasonably foreseeable future actions at McConnell AFB; identification of the preferred alternative; and a comparison of environmental effects.

2.1 INTRODUCTION

The Air Mobility Command (AMC) has responsibility over air mobility capabilities in the United States. The AMC has determined that improved force protection and security is needed in conjunction with improved gate capacity and traffic flow at each of its installations. It is assumed that force protection condition elevated security level Bravo, or higher, is the baseline for sustained operations. Assuming that the primary threat is a vehicle-borne bomb, the first line of defense is the perimeter of the Base, which includes the ECFs.

In 2002, a traffic engineering study of gate security, safety and capacity was conducted for McConnell AFB by the Military Traffic Management Command Transportation Engineering (USAF 2002). The study characterized existing conditions with respect to gate usage, hours of operations, number of lanes, traffic data, and manpower. The study identified short- and long-term recommendations to improve force protection and traffic flow at McConnell AFB. The key design guidance for the proposed improvements was derived from:

- Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices;
- American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets;
- AASHTO Roadside Design Guide;
- AMC Force Protection Sustainment Team Report (March 2002);
- AMC Entry Control Facilities Design Guidelines (February 2002); and
- McConnell AFB Architectural Compatibility Plan.
-
- The 2002 traffic engineering study provided:
- Development plans for each of the ECFs;
- Recommendations for signing, lighting, speed control; and
- Other considerations such as plaza, canopy or tandem processing islands, vehicle arrest systems, architectural considerations, and gate security systems.

2.2 SELECTION CRITERIA FOR ALTERNATIVES

Using the plans and other information from the 2002 traffic engineering study, the Air Force identified selection criteria to develop alternatives to implement the recommendations from the plan. The following summarizes the Air Force selection criteria for improving force protection measures on McConnell AFB:

- Any alternative must meet the requirements identified in FHWA, AASHTO, AMC and McConnell AFB design guidance (see Subchapter 2.1).
- Force protection improvements must result in improved ECF capacity and traffic flows, particularly for visitor and commercial vehicles during morning peak hours.
- Force protection improvements must be designed in consideration of any ongoing or planned transportation projects that may be associated with any of the ECFs.

2.3 ALTERNATIVES CONSIDERED, INCLUDING THE NO ACTION ALTERNATIVE

Using the criteria in Subchapter 2.2, the Air Force developed five potential alternatives, including the No Action Alternative, to provide force protection improvements at McConnell AFB. The following sections summarize the alternatives consideration process.

2.3.1 Alternative 1 – The Proposed Action, East and West Gate Improvements

Under this alternative, the Air Force would construct and operate the improved AT/FP measures recommended in the 2002 traffic engineering study which include security enhancements at the East and West Gates. This would result in physical improvements to each of the ECFs and the perimeter at McConnell AFB.

2.3.2 Alternative 2 – The No Action Alternative

The Air Force EIAP (32 CFR 989.8(d)) states: "...except in those rare instances where excused by law, the Air Force must always consider and assess the environmental impacts of the "no action" alternative. Under the No Action Alternative, AMC would continue to operate its bases with existing force protection measures that are inadequate and do not meet FHWA, AASHTO, AMC and McConnell AFB requirements described in Subchapter 2.1.

2.3.3 Alternative 3 – West Gate Improvements Only

Under this alternative, the Air Force would only make security improvements at the West Gate.

2.3.4 Alternative 4 – East Gate Improvements Only

Under this alternative, the Air Force would only make security improvements at the East Gate.

2.3.5 Alternative 5 – Install Automatic Scanners

Under this alternative, the Air Force would install a Smart Card automatic scanning system at each of the gates in addition to the security improvements to the East and West Gates proposed under Alternative 1, the Proposed Action.

2.4 DESCRIPTION OF PROPOSED ALTERNATIVES

2.4.1 Alternative 1 – Proposed Action, East and West Gate Improvements

Based on the process described in Sections 2.1 through 2.3, the Air Force would construct and operate the improved AT/FP measures identified in the 2002 Traffic Engineering Study for McConnell AFB. The Proposed Action would begin in FY03 with facility construction projects and be complete in FY05.

2.4.1.1 East Gate Improvements

Short-term improvements for the east gate include safety enhancements such as: delineating lateral obstructions located immediately adjacent to the travels lanes with retro-reflective yellow sheeting; installing an impact attenuator for the center island; installing speed reductive signing on the approach; replacing burned out light bulbs; removing serpentine barriers; installing a stop sign at the ID checkpoint; installing a keep right sign on both sides of the center median; and coordinating with the Kansas Department of Transportation to establish a comprehensive signing plan to direct vehicles to the proper gates.

The east gate would continue to be used as the main entrance to McConnell AFB. Construction activities would include: a third uncovered inbound processing lane; a new visitor center; a privately owned vehicle inspection area; a 2-bay canopy; a continuous pedestrian and bicycle facility from the Base perimeter through the ECF; and a vehicle arresting system (*i.e.,* automatic concrete bolsters) and overwatch position. The ID checkpoint islands would be reconstructed to conform to AMC guidelines.

2.4.1.2 West Gate Improvements

Short-term improvements consist of installation of a series of speed reduction signs on the inbound lane to clearly indicate a Base ECP is ahead. A small 3-foot wide raised median would be installed at the inbound checkpoint to establish a 10-foot wide inner lane and 12-foot wide outer lane. The outer lane would be kept closed with the sliding metal gate except when needed to accommodate oversized vehicles and during peak conditions. Short-term recommendations for the west gate consist of using this gate for decal vehicles and directing all commercial vehicles to use 31st Street Gate.

Long-term improvements include placing the vehicle inspection area 425 feet in advance of the gatehouse to the east on the crest of an incline to improve the field of vision of inbound traffic. A new ECP with a canopy would be constructed and a raised island for both inbound lanes would be constructed. Other improvements include construction of a turnaround area, a

small parking lot for escort and Security Force parking, and hydraulic barriers on Salina Street 450 feet east of the new gatehouse.

2.4.1.3 Construction Projects

The Air Force would accomplish seventeen separate construction projects as part of the AT/FP project at McConnell AFB. Table 2-1 lists the size of the project in square feet as well as the estimated project start and completion dates.

Table 2-1 Construction Project Information, Proposed Action

Project	Size (approximate square footage)	Start Date	Completion Date
East gate new visitor center	2,000	Dec-2003	June-2004
East gate roadway improvements	197,200	Dec-2003	June-2004
East gate sidewalk	20,250	Dec-2003	June-2004
East gate gatehouses (2)	20	Dec-2003	June-2004
East gate overwatch booth	10	Dec-2003	June-2004
East gate inspection area	1,200	Dec-2003	June-2004
West gate gatehouses (3)	30	Dec-2003	June-2004
West gate inspection area	1,200	Dec-2003	June-2004
West gate roadway improvements/parking	8,500	Dec-2003	June-2004
West gate sidewalk	500	Dec-2003	June-2004
Total	230,910	NA	NA

Note: Size depicts total surface area for the facility. NA=not applicable.

2.4.2 Alternative 2 – No Action Alternative

McConnell AFB would continue to operate the perimeter and ECFs under existing conditions. The number of active duty military, government civilian, and contractor personnel at the Base would remain at the level anticipated and assessed in prior EAs. No ECF or perimeter security improvements would occur. This alternative provides for a continuation of existing missions at McConnell AFB and provides the environmental baseline upon which potential alternatives may be compared.

2.4.3 Alternative 3 – West Gate Improvements Only

Under this alternative, improvements to the West Gate would be made as described in subsection 2.4.1.2. The four construction projects the Air Force would be accomplishing as a part of Alternative 3 are detailed in Table 2.1 and would total 10,230 square feet.

2.4.4 Alternative 4 – East Gate Improvements Only

Under this alternative, improvements to the East Gate would be made as described in subsection 2.4.1.1. The six construction projects the Air Force would be accomplishing as a part of Alternative 4 are detailed in Table 2.1 and would total 220,680 square feet.

2.4.5 Alternative 5 – Install Automatic Scanners

In addition to the improvements to the East and West Gates as describe for Alternative 1, an automatic scanner system would be installed at each of the gates. Under this system, all personnel would be assigned a Smart Identification Card that could be used for computer-granted access onto the Base. One entry lane at each gate would be designated for Smart Card use and would provide personnel access to a computer that would scan their Smart Card and, if approved, grant them access through the first barrier at the gate. A person would be granted access once the computer compares a facial image of the driver recorded by a camera to a visual image of the face linked to the Smart Card that is stored in the data base. Once clearance is granted through the first barrier, the car proceeds to the second barrier. In between these barriers the facial images of the passengers are recorded and compared to a list of "wanted" facial images in the data base. If no matches are made, clearance through the second barrier would be granted. If a potential match is made, a guard is notified about the situation and must approve access on the vehicle and passengers.

2.5 DESCRIPTION OF PAST AND REASONABLY FORESEEABLE FUTURE ACTIONS

Complete environmental impact analysis must consider cumulative impacts due to other actions. A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

As shown in Table 2-2, McConnell AFB staff identified other year 2003 projects that might be under construction concurrent with the Proposed Action. Additionally, there are two year 2004 projects that could occur during the same time period as the Proposed Action. Table 2-3 lists the two projects.

Table 2-2 Construction Project Information, Year 2003 Cumulative Condition, McConnell AFB

	PROJECT
1.	Repair MSS B/795
2.	Construct Addition, Tower B/70 for Training
3.	Repair Tower B/70, Sprinkler
4.	Install De-Icer Tank, Pumps, and Mixing Valve
5.	Repair Chapel B/510, HVAC-AHU and Fire Deficiencies
6.	Airfield Paint and Rubber Removal
7.	Repair Support B/804, HVAC
8.	Repair Contracting B/732 and HVAC
9.	Repair Law Center, B/810
10.	Repair Trans B/710, Tool Air System
11.	Repair Historical B/1218
12.	Repair Electrical Distribution System – Kansas Street
13.	Repair Historical B/1218 Phase II
14.	Saver Repair SFS B/1115 – Enhanced 911 System
15.	Replace SSMRS B/739 (IDIQ) (S/R)
16.	Replace SSMRS B/1560 (IDIQ) (S/R)
17.	Repair CE B/699,Fire/LifeSafety Deficiencies
18.	Install Pressure Reducing Valves, Multi Fac
19.	Repair VQ 319, Renovate Interior, Roof, and Mech
20.	IDIQ Repair B/750 Pavements
21.	Repair Housing Roads
22.	Repair Privacy Fences – Spicer (47 UN)
23.	Repair Privacy Fences – Spicer (57 UN)
24.	Construct MFH Maint Bldgs and Roads
25.	Improvement MFH Security/East Gate
26.	Repair Chapel B/510, HVAC-AHU and Fire Deficiencies
27.	Repair Elect Distr System Phase 2 Kansas Street
28.	Airfield Paint and Rubber Removal
29.	IDIQ Repair B/750 Pavements
30.	Repair Fuels Maintenance Shop Desc
31.	Replace SSMRS B/739 (IDIQ) (S/R)
32.	Repair Roof B/9 (IDIQ)
33.	Repair Hutchison/Topeka Streets
34.	IDIQ Constr GSE Hardstand and NW B/1110
35.	Repair Roof Deficiencies and Repair Exterior B/250
36.	Repair Clinical Lab Rooms, B/250

	PROJECT
37.	Repair Clinical Lab Rooms, B/250
38.	Repair Pharmacy Flooring, B/250
39.	Replace Flooring, Medical Center
40.	Upgrade Security Lock System
41.	Replace Faucets
42.	IDIQ Constrct GSE Hardstand NW B/1110
43.	Repair Hutchison/Topeka Streets
44.	Remove Halon and Install Fire Supp. B/515
45.	Repair Comm Bldgs. 1501 and 1560
46.	Repair B/1200 Firestation Windows and Walls
47.	Replace AHU, Boiler and Valves, B/1349
48.	Repair Offices B/1111/Boilers
49.	AGE Fuel Island Cover
50.	Repair Roof B/9 (IDIQ)
51.	Repair Chiller,Dorm350
52.	Exterior Electr Distribution Short Circuit Study
53.	Repair Dock Dining Facility
54.	Construction Fire Protection Water Line
55.	Repair Soffits B/1
56.	Constr Sidewalks/Improve Grounds B/1
57.	MEO Classroom B/750

Table 2-3 Construction Project Information, Year 2004 Cumulative Condition, McConnell AFB

Project	Start Date	Duration
Repair Historical B/1218, Exterior	2004	36 months
Repair VQ 319, Renovate Interior, Roof and Mechanical	2004	36 months
Total	NA	NA

Note: Start date reflected as FY. NA=not applicable.

2.6 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The preferred alternative is Alternative 1, the Proposed Action which includes East Gate and West Gate improvements as described above in Section 2.4.1.

2.7 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 2-4 summarizes the impacts of the five alternatives including the Proposed Action and the No Action Alternative.

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Table 2-4 Summary of Environmental Impacts for the Proposed Action and No Action Alternative

Resource (Applicable Sections)	Alternative 1 - Proposed Action, Improve East & West Gates	Alternative 2 - No Action Alternative	Alternative 3 - Improve West Gate Only	Alternative 4 - Improve East Gate Only	Alternative 5 - Install Automatic Scanners
Air Quality	The greatest increase in emissions from demolition, construction, and renovation activities would be PM_{10}, which equates to 441.8 percent of the PM_{10} emissions within the AQCR. The emissions would be temporary, fall off rapidly with distance from the construction sites, and would last only as long as the construction activities. The AQCR is in attainment for all criteria pollutants. For these reasons, the emissions from the construction activities associated with the Proposed Action would not be considered significant and a conformity determination would not be required.	No significant impacts would occur from the baseline activities.	Direct impacts similar to Alternative 1 but somewhat less due to the reduction of demolition and construction activities. Short-term Indirect impacts due to traffic stacking at East Gate.	Direct Impacts similar to Alternative 1 but somewhat less due to the reduction of demolition and construction activities. Short-term Indirect impacts due to traffic stacking at West Gate.	Impacts similar to Alternative 1.
Noise	Construction noise would be temporary, would occur only during the daytime, and would cease when the project is completed. Nearby persons would not experience loss of hearing. Sleep interference is unlikely because the construction activities would occur during the daytime. The new facilities would be designed and constructed to reduce interior noise to meet Air Force noise level reduction standards.	No significant impacts would occur from the baseline activities.	Impacts similar to Alternative 1.	Impacts similar to Alternative 1.	Impacts similar to Alternative 1.
Water Resources	Storm water pollution prevention plans would be prepared for the proposed construction projects to minimize potential surface and ground water quality degradation. The storm water pollution prevention plans would use erosion and spill control measures in order to minimize impacts to water quality.	No significant impacts would occur from the baseline activities.	Impacts similar to Alternative 1 but somewhat less.	Impacts similar to Alternative 1 but somewhat less.	Impacts similar to Alternative 1.

Resource (Applicable Sections)	Alternative 1 - Proposed Action, Improve East & West Gates	Alternative 2 - No Action Alternative	Alternative 3 - Improve West Gate Only	Alternative 4 - Improve East Gate Only	Alternative 5 - Install Automatic Scanners
Biological Resources	Construction activities would occur within developed, maintained areas with extant, highly modified and disturbed landscape, and would not substantially change habitat for plant or animal species. No endangered, threatened, or special status species are documented in the construction areas. No activities would occur within a wetland. Activities associated with the West Gate construction would not occur in a wetland based upon design drawings for the project. Design features used during construction would avoid indirect impacts on the wetland areas.	No significant impacts would occur from the baseline activities.	Impacts similar to Alternative 1.	Impacts similar to Alternative 1.	Impacts similar to Alternative 1.
Solid Waste	Direct impacts to solid waste from the proposed projects would include increased solid waste from waste generated from reconstruction of roadways and the demolishing of old structures to be replaced. These materials would be Type IV solid waste consisting of building debris such as concrete, metals, fiberglass, cardboard, plastics, and lumber. These materials would be placed in the appropriate construction materials landfill. These wastes would be in excess of the solid municipal wastes generated by personnel using the facilities. Indirect impacts to solid waste under the Proposed Action Alternative are expected to be neutral.	No significant impacts would occur from the baseline activities.	Impacts similar to Alternative 1 but somewhat less.	Impacts similar to Alternative 1 but somewhat less.	Impacts similar to Alternative 1.
Environmental Management	All ACM and LBP would be removed in accordance with existing guidelines. The new facilities would be constructed or renovated without any ACM and LBP.	No significant impacts would occur from the baseline activities.	Impacts similar to Alternative 1.	Impacts similar to Alternative 1.	Impacts similar to Alternative 1.
Soils	Project activity would occur within areas in which the soils were previously disturbed.	No significant impacts would occur from the baseline activities.	Impacts similar to Alternative 1 but somewhat less.	Impacts similar to Alternative 1 but somewhat less.	Impacts similar to Alternative 1.

Resource (Applicable Sections)	Alternative 1 - Proposed Action, Improve East & West Gates	Alternative 2 - No Action Alternative	Alternative 3 - Improve West Gate Only	Alternative 4 - Improve East Gate Only	Alternative 5 - Install Automatic Scanners
Hazardous Materials and Wastes	The contractor would comply with all regulatory guidance for the use and disposal of hazardous materials and wastes during construction activities. The volumes of hazardous materials purchased for, and hazardous wastes generated by, operation of the gates would be negligible. It is not anticipated any new hazardous materials would be needed. The existing hazardous materials handling and hazardous waste disposal processes and procedures would accommodate the activities associated with gate operation.	No significant impacts would occur from the baseline activities.	Impacts similar to Alternative 1 but somewhat less.	Impacts similar to Alternative 1 but somewhat less.	Impacts similar to Alternative 1 but somewhat less.

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CHAPTER 3
DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 INTRODUCTION

McConnell AFB is home to the 22nd Air Refueling Wing. The wing is a part of the 15th Air Force headquartered at Travis AFB, California, one of two numbered Air Forces within Air Mobility Command, headquartered at Scott AFB, Illinois. The primary mission of the 22nd Air Refueling Wing is to direct and support refueling operations for aircraft worldwide. The various groups that make up the Air Refueling Wing provide supervision, support, logistics, aircraft maintenance, medical care, and other specialized services. McConnell AFB also supports the Kansas Air National Guard's 184th Refueling Wing, the AF Audit Agency Detachment 246, Detachment 8, the Office of Special Investigation, the USAF Civil Air Patrol Liaison office, and other additional tenant units.

3.2 AIR QUALITY

3.2.1 Air Pollutants and Regulations

Air quality in any given region is measured by the concentration of various pollutants in the atmosphere, typically expressed in units of parts per million (ppm) or in units of micrograms per cubic meter ($\mu g/m^3$). Air quality is not only determined by the types and quantities of atmospheric pollutants, but also by surface topography, size of the air basin, and by prevailing meteorological conditions.

The Clean Air Act (CAA), as amended in 1977 and 1990, provides the basis for regulating air pollution to the atmosphere. Different provisions of the CAA apply depending on where the source is located, which pollutants are being emitted, and in what amounts. The CAA required the USEPA to establish ambient ceilings for certain criteria pollutants. These criteria pollutants are usually referred to as the pollutants for which the USEPA has established National Ambient Air Quality Standards (NAAQS). The ceilings were based on the latest scientific information regarding the effects a pollutant may have on public health or welfare. Subsequently, the USEPA promulgated regulations that set NAAQS. Two classes of standards were established: primary and secondary. Primary standards define levels of air quality necessary, with an adequate margin of safety, to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards define levels of air quality necessary to protect public welfare (*e.g.*, decreased visibility, damage to animals, crops, vegetation, wildlife, and buildings) from any known or anticipated adverse effects of a pollutant.

Air quality standards are currently in place for six pollutants or "criteria" pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur oxides (SO_x, measured as sulfur dioxide [SO_2]), lead (Pb), and particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}). There are many suspended particles in the atmosphere with aerodynamic diameters larger than 10 micrometers. The collective of all particle sizes is

commonly referred to as total suspended particulates (TSP). The TSP is defined as particulate matter as measured by the methods outlined in 40 CFR Part 50, Appendix B. The NAAQS are the cornerstone of the CAA. Although not directly enforceable, they are the benchmark for the establishment of emission limitations by the states for the pollutants USEPA determines may endanger public health or welfare.

Ozone (ground-level ozone), which is a major component of "smog," is a secondary pollutant formed in the atmosphere by photochemical reactions involving previously emitted pollutants or precursors. Ozone precursors are mainly nitrogen oxides (NO_x) and volatile organic compounds (VOC). NO_x is the designation given to the group of all oxygenated nitrogen species, including nitric oxide (NO), NO_2, nitrous oxide (N_2O), and others. However, only NO, NO_2, and N_2O are found in appreciable quantities in the atmosphere. VOCs are organic compounds (containing at least carbon and hydrogen) that participate in photochemical reactions and include carbonaceous compounds except metallic carbonates, metallic carbides, ammonium carbonate, carbon dioxide (CO_2), and carbonic acid. Some VOCs are considered non-reactive under atmospheric conditions and include methane, ethane, and several other organic compounds.

As noted above, ozone is a secondary pollutant and is not directly emitted from common emissions sources. Therefore, to control ozone in the atmosphere, the effort is made to control NO_x and VOC emissions. For this reason, NO_x and VOCs emissions are calculated and reported in emission inventories.

The CAA does not make the NAAQS directly enforceable. However, the Act does require each state to promulgate a State Implementation Plan (SIP) that provides for "implementation, maintenance, and enforcement" of the NAAQS in each AQCR in the state. The CAA also allows states to adopt air quality standards more stringent than the federal standards. The ambient air quality standards for Kansas are established by the Kansas Department of Health and Environment (KDHE) and described in Kansas Article 19. Table 3-1 lists the national and Kansas ambient air quality standards.

Based on the requirements outlined in EPA's general conformity rule published in 58 Federal Register 63214 (November 30, 1993) and codified at 40 CFR part 93, subpart B (for federal agencies), a conformity analysis is required to analyze whether the applicable criteria air pollutant emissions associated with the project equal or exceed the threshold emission limits that trigger the need to conduct a formal conformity determination. The intent of the conformity rule is to encourage long range planning by evaluating the air quality impacts from federal actions before the projects are undertaken. This rule establishes an elaborate process for analyzing and determining whether a proposed project in a nonattainment area conforms to the SIP and federal standards.

Table 3-1 United States and Kansas Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	Primary NAAQS[a,b,c]	Secondary NAAQS[a,b,d]	Kansas Standards[a,b]
Carbon Monoxide	8-hour 1-hour	9 ppm (10,000 µg/m3) 35 ppm (40,000 µg/m3)	No standard No standard	9 ppm (10,000 µg/m3) 35 ppm (40,000 µg/m3)
Lead	Quarterly	1.5 µg/m3	1.5 µg/m3	1.5 µg/m3
Nitrogen Oxides (measured as NO2)	Annual	0.0543 ppm (100 µg/m3)	0.0543 ppm (100 µg/m3)	0.0543 ppm (100 µg/m3)
Ozone[e]	8-hour 1-hour	0.08 ppm (157 µg/m3) 0.12 ppm (235 µg/m3)	0.08 ppm (157 µg/m3) 0.12 ppm (235 µg/m3)	0.08 ppm (157 µg/m3) 0.12 ppm (235 µg/m3)
Particulate Matter (measured as PM10)	Annual 24-hour	50 µg/m3 150 µg/m3	50 µg/m3 150 µg/m3	50 µg/m3 150 µg/m3
Particulate Matter (measured as PM2.5)[e]	Annual 24-hour	15 µg/m3 66 µg/m3	15 µg/m3 66 µg/m3	NA
Sulfur Oxides (measured as SO_2)	Annual 24-hour 3-hour	0.03 ppm (80 µg/m3) 0.14 ppm (365 µg/m3) No standard	No standard No standard 0.50 ppm (1,300 µg/m3)	0.03 ppm (80 µg/m3) 0.14 ppm (365 µg/m3) 0.50 ppm (1,300 µg/m3)

[a] National and state standards, other than those based on an annual or quarterly arithmetic mean, are not to be exceeded more than once per year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is less than or equal to one.

b The NAAQS and Kansas standards are based on standard temperature and pressure of 25 degrees Celsius and 760 millimeters of mercury.

c 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 USEPA.

d 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 USEPA.

e The ozone 8-hour standard and PM2.5 standards are included for information only. A 1999 federal court ruling blocked implementation of these standards, which the USEPA proposed in 1997. The USEPA has asked the U.S. Supreme Court to reconsider that decision.

3.2.2 Regional Air Quality

The fundamental method by which the USEPA tracks compliance with the NAAQS is the designation of a particular region as "attainment" or "nonattainment". Based on the NAAQS, each state is divided into three types of areas for each of the criteria pollutants. The areas are:

- Those areas that are in compliance with the NAAQS (attainment);
- Those areas that don't meet the ambient air quality standards (nonattainment); and
- Those areas where a determination of attainment/nonattainment cannot be made due to a lack of monitoring data (unclassifiable), which are treated as attainment areas until proven otherwise.

Generally, areas in violation of one or more of the NAAQS criteria are designated nonattainment and must comply with stringent restrictions until all of the standards are met. In the case of O_3, CO, and PM_{10}, the USEPA divides nonattainment areas into different categories, depending on the severity of the problem in each area. Each nonattainment category has a separate deadline for attainment and a different set of control requirements under the SIP.

McConnell AFB is located within the National Ambient AQCR 99, which is currently classified as an attainment region according to NAAQS requirements for all criteria pollutants.

3.2.3 Baseline Air Emission

An air emissions inventory is an estimate of total mass emissions of pollutants generated from a source or sources over a period of time, typically a year. Accurate air emissions inventories are needed for estimating the relationship between emissions sources and air quality. Quantities of air pollutants are generally measured in pounds (lbs) per year or tons per year (tpy). All emission sources may be categorized as either mobile or stationary emission sources. Stationary emission sources may include boilers, generators, fueling operations, industrial processes, and burning activities, among others. Mobile emission sources typically include vehicle operations.

The calendar year (CY) 2002 air emissions inventory summary for McConnell AFB, which includes reported permitted stationary, mobile, and grandfathered air emission sources, is presented in Table 3-2.

Table 3-2 Baseline Air Emissions Air Quality Control Region 99

CO	VOC	NOx	SOx	PM10
15.76	14.77	21.59	7.56	2.40

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Data represent tons per year.
Source: AIRData 2002.

3.3 NOISE

3.3.1 Background Information

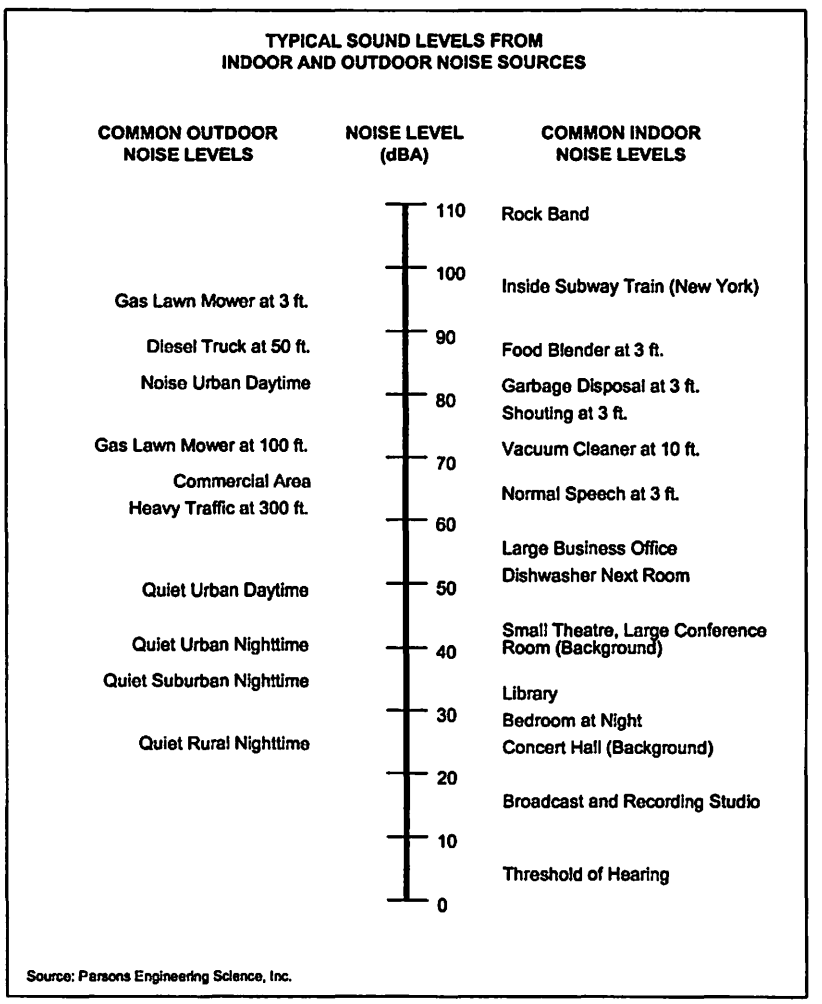
The characteristics of sound include parameters such as amplitude (loudness), frequency (pitch), and duration. Sound varies over an extremely large range of amplitudes. The decibel, a logarithmic unit that accounts for the large variations in amplitude, is the accepted standard unit for describing levels of sound.

Different sounds have different frequency contents. Because the human ear is not equally sensitive to sound at all frequencies, a frequency-dependent adjustment, called A-weighting and expressed as dBA, has been devised to measure sound similar to the way the human hearing system responds. The adjustments in amplitude, established by the American National Standards Institute (ANSI S1.4 1983), are applied to the frequency content of the sound.

Figure 3-1 depicts typical A-weighted sound pressure levels for various sources. For example, 65 dBA is equivalent to normal speech at a distance of 3 feet.

Noise is defined as sound that is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. Noise levels often change with time. To compare sound levels over different time periods, several descriptors have been developed that take into account this time-varying nature. These descriptors are used to assess and correlate the various effects of noise on humans.

Figure 3-1 Typical A-Weighted Noise Levels



The DNL metric is a measure of the total community noise environment. DNL is the average A-weighted sound level over a 24-hour period, with a 10 dBA adjustment added to the nighttime levels (between 10:00 p.m. and 7:00 a.m.). This adjustment is an effort to account for increased human sensitivity to nighttime noise events. DNL was endorsed by the USEPA for use by federal agencies and has been adopted by the Department of Housing and Urban Development, FAA, and DoD. DNL is an accepted unit for quantifying annoyance to humans by general environmental noise, including aircraft noise. The Federal Interagency Committee on Urban Noise developed land use compatibility guidelines for noise (USDOT 1980). Compatible or incompatible land use is determined by comparing the predicted DNL level at a site with the recommended land uses.

Methods used to quantify the effects of noise, such as annoyance, speech interference, and health and hearing loss, have undergone extensive scientific development during the past several decades. The most reliable measures are noise-induced annoyance and hearing loss. The effects of noise exposure are summarized in the following paragraphs.

Annoyance. Noise annoyance is defined by the USEPA as any negative subjective reaction to noise by an individual or group. Table 3-3 presents the results of over a dozen studies of the relationship between noise and annoyance levels. This relationship has been suggested by the National Academy of Sciences (1977) and was reevaluated (Fidell *et al.* 1988) for use in describing people's reaction to semi-continuous (transportation) noise. These data are shown to provide a perspective on the level of annoyance that might be anticipated. For example, 15 to 25 percent of persons exposed on a long-term basis to DNL of 65 to 70 dBA would be expected to be highly annoyed by noise events.

Table 3-3 Percentage of Persons Highly Annoyed by Noise Exposure

Noise Exposure Zone (DNL dBA)	Percentage of Persons Highly Annoyed
<65	<15
65-70	15-25
70-75	25-37
75-80	37-52
>80	61

Note: Noise impacts on individuals vary. The "low" numbers above indicate individuals with higher tolerance of noise while the "high" numbers indicate individuals with higher sensitivity to noise.
Source: Adapted from NAS 1977.

Speech Interference. One of the ways noise affects daily life is by prevention or impairment of speech communication. In a noisy environment, understanding speech is diminished when speech signals are masked by intruding noises. Reduced speech intelligibility also may have other effects. For example, if speech understanding is interrupted, performance may be reduced, annoyance may increase, and learning may be impaired. Elevated noise levels can interfere with speech, causing annoyance or communication difficulties. Based on a variety of studies, DNL 75 dBA indicates a good probability for frequent speech disruption. This level produces ratings of "barely acceptable" for intelligibility of spoken material. Increasing the level of noise to 80 dB reduces the intelligibility to zero, even if people speak in loud voices.

Hearing Loss. Hearing loss is measured in decibels and refers to a permanent auditory threshold shift of an individual's hearing. The USEPA (USEPA 1974) recommended a limiting daily equivalent energy value or equivalent sound level of 70 dBA to protect against hearing impairment over a period of 40 years. This daily energy average would translate into a DNL value of approximately 75 dBA or greater. Based on a USEPA study, hearing loss is not expected in people exposed to a DNL of 75 dBA or less (USEPA 1974). The potential for hearing loss involves direct exposure to DNL levels above 75 dBA on a regular, continuing, long-term basis. FICON states that hearing loss due to noise: 1) may begin to occur in people exposed to long-term noise at or above a DNL of 75 dBA; 2) will not likely occur in people exposed to noise between a DNL of 70 and 75 dBA; and 3) will not occur in people exposed to noise less than a DNL of 70 dBA (USDOT 1980).

An outdoor DNL of 75 dBA is considered the threshold above which the risk of hearing loss is evaluated. Following guidelines recommended by the Committee on Hearing, Bioacoustics, and Biomechanics, the average change in the threshold of hearing for people exposed to DNL equal to or greater than 75 dBA was evaluated. Results indicated that an average of 1 dBA hearing loss could be expected for people exposed to DNL equal to or greater than 75 dBA. For the most sensitive 10 percent of the exposed population, the maximum anticipated hearing loss would be 4 dBA. These hearing loss projections must be considered conservative as calculations are based on an average daily outdoor exposure of 16 hours (7:00 a.m. to 10:00 p.m.) over a 40-year period. It is doubtful any individual would spend this amount of time outdoors within the DNL equal to or greater than 75 dBA noise exposure area.

3.3.2 Existing Noise Levels

Aircraft operations are the primary source of noise at McConnell AFB. Aircraft activities include aircraft and aircraft maintenance operations. During periods of no flying activity, noise results primarily from aircraft maintenance and shop operations, ground traffic movement, occasional construction, and similar sources. This noise is almost entirely restricted to the Base itself and is comparable to sounds that occur in typical communities. It is during periods of aircraft ground or flight activity that the noise environment changes.

Based on the examples in Figure 3-1, ambient noise at the gate areas would range from approximately 50 dBA (quiet urban daytime) to about 80 dBA (noisy urban daytime) when aircraft operations are not being accomplished. All three gates being discussed in this EA are in the DNL 70-75 dBA noise zone resulting from aircraft operations.

FICON developed land use compatibility guidelines for noise in terms of DNL (USDOT 1980). DNL is the metric used by the Air Force in determining noise impacts of military airfield operations for land use planning. Air Force land use compatibility guidelines (relative to DNL values) are documented in the Air Installation Compatible Use Zone (AICUZ) *Program Manager's Handbook* (USAF 1999). Four noise zones are used in AICUZ studies to identify noise impacts from aircraft operations. These noise zones range from DNL of 65 dBA to DNL of 80 dBA. For example, it is recommended that no residential uses, such as homes, multifamily dwellings, dormitories, hotels, and mobile home parks be located where the noise is expected to exceed a DNL of 65 dBA. If noise sensitive structures are located in areas within a DNL range of 65 to 75 dBA, the structures should be designed to achieve a 25 to 30 dBA interior

noise reduction. For outdoor activities, the USEPA recommends DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population will be at risk from any noise effects (USEPA 1974).

Air Force policy for many years has been to implement, where feasible, NLR measures in on-Base residential and public use buildings. NLR measures are intended to reduce indoor noise levels to DNL 45 dBA or less. Recommended NLR for housing is 25 dBA for units in the DNL 65 to 70 dBA noise zone and 30 dBA for those in the DNL 70 to 75 dBA zone. Buildings constructed prior to implementation of the Noise Reduction Policy were not necessarily built to NLR standards. Since implementation of the NLR standards, all new buildings are designed and constructed to comply with the appropriate NLR standards (USAF 1978).

3.4 WATER RESOURCES

Water resources at McConnell AFB encompass surface water and groundwater. McConnell AFB is drained by small, nameless, intermittent tributaries of the Arkansas River.

3.4.1 Surface Water

Surface water features within the McConnell AFB region include small intermittent tributaries of the Arkansas River including a main stream that flows northeast to southwest across the installation and receives the majority of the Base's drainage (McConnell 2003a). Two "blueline" tributaries (USGS 7.5' quadrangle map) flow into the main stream from the eastern portion of the installation. One tributary is located near the medical treatment facility while the other is near the golf course. The southwestern section of the airfield is drained by a third "blueline" tributary which then flows into the main stream. Several other tributaries feed into the main stream, but they are unmapped drainages. The main stream enters the Arkansas River approximately three miles southwest of the Base. The northwest corner of the installation has approximately 40 acres which drains into Gypsum Creek to the north, which is also an Arkansas River tributary (McConnell 2003a).

3.4.2 Groundwater

Sedgwick County's primary source of groundwater is found in unconsolidated deposits underlying the Arkansas Valley. Wells in these deposits can yield amounts from several gallons per minute (gpm) to over 2,000 gpm. Groundwater quality can vary from extreme to moderate levels of hardness. Groundwater in the Arkansas Valley is more typically moderate in hardness; however locally it can contain undesirably high levels of salt and iron. Permian strata typically is extremely hard and contains high levels of sulfate and chloride making it of limited use (McConnell 2002a).

3.5 BIOLOGICAL RESOURCES

3.5.1 Vegetation and Wildlife

The effected areas for the proposed construction sites consist of vegetation that can be classified as landscaped areas. These areas contain cool-season grasses such as tall fescue,

Kentucky bluegrass, and smooth brome. These areas are poor quality habitats of little ecological importance (McConnell 2002a).

There are a limited number of both aquatic and terrestrial habitats at McConnell AFB due to the degree of disturbance and development present. Game species that are observed include eastern cottontail, wild turkey, white-tail deer, ring-neck pheasant, and bobwhite quail. A controlled eradication program helps manage white-tail deer populations (McConnell 2002a).

Small impoundments can be found at McConnell AFB, but there are only two notable fisheries, the KANG fishing pond and a pond on the golf course. These ponds contain channel catfish, bluegill, large-mouth bass, black crappie, and white crappie. Snakes have been found at Base residential areas which are captured and then released near the southern portion of the installation by Pest Management. These snakes include the black rat snake, prairie king snake, and bull snakes (McConnell 2002a).

3.5.2 Wetlands

In April 2000, McConnell AFB completed an on-site investigation to determine the presence of jurisdictional wetlands on the installation (McConnell 2002a). They delineated a total of 14.8 acres, of this total 11.76 acres are palustrine emergent wetlands and 3.04 acres are forested wetlands. Although some ditches displayed some wetland characteristics, conversations with the Kansas City USACE determined that the majority of the ditches are not jurisdictional wetlands (McConnell 2002a). The USACE has determined the drainage feature near the East Gate fails to meet the requirements of a jurisdictional wetland. The drainage feature (ditch and pond) located proximate to the West Gate has been determined to be a jurisdictional wetland.

3.6 SOLID WASTE

Municipal solid waste at McConnell AFB is managed in accordance with the guidelines specified in Air Force Instruction (AFI) 32-7042, *Solid and Hazardous Waste Compliance.* The instruction incorporates by reference the requirements of Subtitle D, 40 CFR Parts 240 through 244, 257, and 258, and other applicable federal regulations, AFIs and Department of Defense Directives (DoDD). In general, AFI 32-7042 establishes the requirement for installations to have a solid waste management program to incorporate the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; record-keeping and reporting; and pollution prevention.

McConnell AFB has a Solid Waste Management Plan. Solid waste generated at the potential project site includes small amounts of paper waste and municipal wastes.

3.7 ENVIRONMENTAL MANAGEMENT

3.7.1 Asbestos

Since the 1950s, asbestos was commonly added to a variety of building materials, including cement to enhance strength. Asbestos containing cement products generally contain Portland cement, aggregate, and asbestos fibers. Asbestos cement products have many uses,

including use as pipes for water and wastewater utilities. Serious health effects associated with exposure to airborne asbestos fibers include asbestosis, lung cancer, and mesothelioma. Although the USEPA promulgated a ban on asbestos and phased out its use in 1989, many materials were still being manufactured at that time. Therefore, without a specific cut-off date, the only way to determine the presence or absence of asbestos is through proper sampling and analysis.

Asbestos management at Air Force installations is established in AFI 32-1052, *Facility Asbestos Management.* AFI 32-1052 incorporates by reference applicable requirements of 29 CFR 669 *et seq.,* 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.140, Section 112 of the CAA, and other applicable AFIs and DoDDs. AFI 32-1052 requires installations to develop an asbestos management plan for the purpose of maintaining a permanent record of the current status and condition of all ACM in the installation's facility inventory and documenting all asbestos management efforts. In addition, the instruction requires installations to develop an asbestos-operating plan that details how the installation would conduct asbestos-related projects. Asbestos is regulated by the USEPA with the authority promulgated under the Occupational Safety and Health Act, 29 United States Code § 669 *et seq.* Emissions of asbestos fibers to ambient air are regulated under Section 112 of the CAA.

McConnell AFB prepared an Asbestos Management Plan (McConnell 2000a) and an Asbestos Operating Plan (McConnell 2000b) that outline the strategy for managing asbestos at McConnell AFB including the responsibilities of key organizations, operational processes, management controls to prevent personnel exposure, and procedures and specifications to capture asbestos data. Asbestos surveys at McConnell AFB have been performed in the past; however, the sampling was random or project-specific, as required. Asbestos identification in buildings or structures on the installation is an on-going process. The Air Force conducts asbestos inspections and surveillance for buildings that have not yet been surveyed, have been partially surveyed, or are not included in a planned renovation or demolition project (*i.e.*, comprehensive asbestos inspections are not conducted at McConnell AFB). Inspections for asbestos are conducted for planned construction projects to detect, identify, locate, and quantify all exposed and concealed ACM.

3.7.2 Lead-Based Paint

The Residential Lead-Based Paint (LBP) Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), was passed by Congress on October 28, 1992, and regulates the use and disposal of LBP at federal facilities. Federal agencies are required to comply with all applicable Federal, State, interstate, and local laws relating to LBP activities and hazards.

LBP management at Air Force installations is established in the Air Force policy and guidance on LBP in facilities. The policy incorporates by reference the requirements of 29 CFR 1910.1025, 29 CFR 1926, 40 CFR 50.12, 40 CFR 240 through 280, the CAA, Public Law 102-550, and other applicable federal regulations. This policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. McConnell AFB has prepared a Lead-Based Paint Management Plan. Lead-based paint identification in buildings or structures on McConnell AFB is an on-going process.

3.8 SOILS

McConnell AFB soils can be generally classified as the Irwin-Goessel-Rosehill association or the Blanket-Farnum-Vanoss association (McConnell 2002a). The Irwin-Goessel-Rosehill association is found mainly in the northern and eastern areas of the installation, while the Blanket-Farnum-Vanoss association is located mainly in the southern and western areas. The soils range from moderately well-drained to well-drained soils with a loamy or clayey subsoil. The soils present under most of the installation have been highly disturbed by development from the 1920's to present. It is very difficult to try and differentiate the native soils from the urbanized areas due to the degree of mixing and disturbance that has taken place (McConnell 2002a).

3.9 HAZARDOUS MATERIALS AND WASTE

3.9.1 Hazardous Materials

Hazardous materials are those substances defined by CERCLA (42 USC Section 9601, *et seq.*), as amended by the Superfund Amendments and Reauthorization Act (40 CFR 300-372), and the Toxic Substances Control Act (15 USC Section 2601, *et seq.*). The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) (42 USC 6901, *et seq.*), that was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. In general, both hazardous materials and wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or to the environment when released or otherwise improperly managed.

Hazardous materials management at Air Force installations is established primarily by Air Force Instruction (AFI) 32-7086, *Hazardous Materials Management.* The AFI incorporates the requirements of all federal regulations, other AFIs, and DoD Directives (DoDD), for reduction of hazardous material uses and purchases.

The purchase and use of hazardous materials on McConnell AFB must be authorized by the base's Hazardous Materials Management Plan (HMMP) established by AFI 32-7086, *Hazardous Materials Management.* As part of this program, the base operates a hazardous materials pharmacy. All hazardous materials enter the base through the pharmacy. Base functions request the hazardous material and quantity from the base pharmacy and the material is delivered to or picked up by the requesting function. No hazardous material may be used until it is entered into the Environmental Management Information System and approved for use. Under this system, the hazardous material pharmacy personnel maintain positive records for the location of the containers, from issue to return and ultimate disposal. The HMMP applies to all activities, including contractors.

3.9.2 Hazardous Waste

Unless otherwise exempted by Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) regulations, Resource Conservation and Recovery Act (RCRA), Subtitle C (40 CFR Parts 260 through 279) regulations are administered by the USEPA and are

applicable to the management of hazardous wastes. Hazardous waste must be handled, stored, transported, disposed, or recycled in accordance with these regulations. The potential for hazardous waste generation from gate operations is negligible.

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

The analysis of potential environmental consequences or impacts associated with each course of action has been divided into direct and indirect impacts.

- **Direct Impacts.** A direct impact is caused by the Proposed Action and occurs at the same time and place.
- **Indirect Impacts.** An indirect impact is caused by the Proposed Action and occurs later in time or is farther removed in distance, but is still reasonably foreseeable.
- **Application of Direct versus Indirect Impacts.** For direct impacts to occur, a resource must be present in a particular area. For example, if highly erodible soils were disturbed due to construction, there would be a direct impact to soils from erosion at the construction site. Sediment laden runoff might indirectly affect water quality in adjacent areas downstream from the construction site.

4.2 AIR QUALITY

Impacts to air quality would be considered significant if federal actions resulted in violation of a NAAQS, resulted in annual emissions from a major stationary source greater than 100 tons per year (definition of a "major stationary source" in an attainment area as defined in 40 CFR 52.21(b)(1)), resulted in annual emissions greater than 25 tons per year for total hazardous air pollutants, or exceeded any significance criteria established by the State of Kansas.

4.2.1 Alternative 1 – Proposed Action, East and West Gate Improvements

- **Direct Impacts.** Minor short–term adverse direct impacts to air quality would be anticipated from construction activities. Particulate matter would be emitted as a result of construction activities. Both the dust emissions and exhaust emissions associated with construction would be minor, temporary, and confined primarily to the immediate project areas. Best Management Practices (BMP) would be employed to minimize fugitive dust emissions. For example, dust suppression would be applied at construction sites in order to reduce emissions.
- **Indirect Impacts.** Short–term, minor indirect impacts would be anticipated when dust and engine emissions created by construction activity are blown off of the construction sites into proximate areas. Future maintenance efforts to control vegetation and brush in the inspection/clear zone would require the use of lawnmowers, trimmers, chainsaws, and/or brush hogs. Since most of the gate structures under this alternative would be located in areas currently being maintained on a regular basis and there is no significant change in the overall area associated with the ECFs, it is likely there would be no change in the emissions from maintenance activities.

The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. The USEPA has estimated that uncontrolled fugitive dust emissions from ground-disturbing activities would be emitted at a rate of 80 lbs of TSP per acre per day of disturbance (USEPA 1995). In a USEPA study of air sampling data at a distance of 50 meters downwind from construction activities, PM_{10} emissions from various open dust sources were determined based on the ratio of PM_{10} to TSP sampling data. The average PM_{10} to TSP ratios for top soil removal, aggregate hauling, and cut and fill operations is reported as 0.27, 0.23, and 0.22, respectively (USEPA 1988). Using 0.24 as the average ratio for purposes of analysis, the emission factor for PM_{10} dust emissions becomes 19.2 lbs per acre per day of disturbance. Fugitive dust emissions from demolition activities would be generated primarily from building dismemberment, debris loading, and debris hauling. The USEPA has established a recommended emission factor of 0.011 lbs of PM_{10} per square foot of demolished floor area. This emission factor is based on air sampling data taken from the demolition of a mix of commercial brick, concrete, and steel buildings (USEPA 1988).

The USEPA also assumes that 230 working days are available per year for construction (accounting for weekends, weather, and holidays), and that only half of these working days would result in uncontrolled fugitive dust emissions at the emitted rate described above (USEPA 1995). The construction emissions presented in Table 4-1 include the estimated annual PM_{10} and $PM_{2.5}$ emissions associated with the Proposed Action at Shaw AFB. These emissions would produce slightly elevated short-term PM_{10} and $PM_{2.5}$ ambient air concentrations. The USEPA estimates that the effects of fugitive dust from construction activities would be reduced significantly with an effective watering program. Watering the disturbed area of the construction site twice per day with approximately 3,500 gallons per acre per day would reduce TSP emissions as much as 50 percent (USEPA 1995).

Specific information describing the types of construction equipment required for a specific task, the hours the equipment is operated, and the operating conditions vary widely from project to project. For purposes of analysis, these parameters were estimated using established cost estimating methodologies for construction and experience with similar types of construction projects (Means 1996). Combustive emissions from construction equipment exhausts were estimated by using USEPA approved emissions factors for heavy-duty diesel-powered construction equipment (USEPA 1985). The construction emissions presented in Table 4-1 include the estimated annual emissions from construction equipment exhaust associated with the Proposed Action at McConnell AFB. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. Table 4-1 lists the annual emissions and the annual percent of change when compared to the baseline for the Proposed Action.

Table 4-1 Proposed Action Emissions

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NOx (tpy)	SOx (tpy)	PM_{10} (tpy)
AQCR CY02Totals[a]	15.76	14.77	21.59	7.56	2.40
Proposed Action Annual emissions[b]	2.78	0.21	1.40	0.16	10.60
Project Emissions as Percent of AQCR Emissions	17.6%	1.4%	6.5%	2.1%	441.8%

a AIRData 2002.
b Estimated emissions from Proposed Action activities. It is anticipated the project would begin in 2003 and end in 2006, for a total duration of 18 months
tpy tons per year.
Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

Emissions would also be expected from asphalt paving operations. The primary pollutant from asphalt paving is CO; however, minor emissions of other criteria pollutants can be expected. To determine potential emissions from asphalt paving operations, it was assumed that the unit weight of asphalt concrete is 149 pounds per cubic foot. The quantity of asphalt concrete required for each construction project is based on an assumed pavement depth of 12 inches. The USEPA has established emission factors for CO, VOCs, SOx, NOx, and PM_{10} of 0.340, 0.017, 0.005, 0.025, 0.020 lbs of pollutant per ton of asphalt concrete, respectively. Expected emissions from asphalt paving are included under the annual project emissions in the Table 4-1 data. Emissions from paving would last only as long as the duration of construction activity, fall off rapidly with distance from the construction site, and would not result in long-term impacts.

Review of data in Table 4-1 indicates that the greatest increase in emissions from demolition, construction, and renovation activities would be PM_{10}, which equates to 441.8 percent of the PM_{10} emissions within the region. The emissions would be temporary, fall off rapidly with distance from the construction sites, and would last only as long as the construction activities. Based upon anticipated emissions from this action, the attainment status of the region and installation would not be modified. For these reasons, the emissions from the construction activities associated with the Proposed Action would not be considered significant.

Based on the requirements outlined in the USEPA's general conformity rule published in 58 Federal Register 63214 (November 30, 1993) and codified at 40 CFR part 93, subpart B (for federal agencies), a conformity analysis is required to analyze whether the applicable criteria air pollutant emissions associated with the project equal or exceed the threshold emission limits that trigger the need to conduct a formal conformity determination. The intent of the conformity rule is to encourage long range planning by evaluating air quality impacts from federal actions before the projects are undertaken. This rule establishes an elaborate process for analyzing and determining whether a proposed project in a nonattainment area conforms to the SIP and federal standards.

4.2.2 Alternative 2 – No Action Alternative

- **Direct Impacts.** Direct impacts to air quality are expected to be neutral for the No Action Alternative. On-going missions at the installation would continue with little change resulting in minimal change in air quality.
- **Indirect Impacts.** Indirect impacts to air quality are expected to be neutral for the No Action Alternative.

4.2.3 Alternative 3 – West Gate Improvements Only

- **Direct Impacts.** Direct impacts to air quality are expected to be similar to those described for Alternative 1 in subsection 4.2.1 but somewhat less due to the fact that only 10,230 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Short-term, indirect impacts would be anticipated from the implementation of Alternative 3 due to the fact that improvements at the West Gate only would result in operational issues. Vehicles would stack up at the West Gate, both on- and off-base, creating localized emissions.

4.2.4 Alternative 4 – East Gate Improvements Only

- **Direct Impacts.** Direct impacts to air quality are expected to be similar to those described for Alternative 1 in subsection 4.2.1 but slightly less due to the fact that only 220,680 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Short-term, indirect impacts would be anticipated from the implementation of Alternative 4 due to the fact that improvements at the East Gate only would result in operational issues. Vehicles would stack up at the East Gate, both on- and off-base, creating localized emissions.

4.2.5 Alternative 5 – Install Automatic Scanners

- **Direct Impacts.** Direct impacts to air quality are expected to be similar to those described for Alternative 1 in subsection 4.2.1.
- **Indirect Impacts.** Indirect impacts to air quality are expected to be similar to those described for Alternative 1 in subsection 4.2.1. There might be a slight reduction in delays entering the installation as the land could remain open 24 hours a day, 7 days a week with minimal staffing impacts.

4.2.6 Mitigation

Potential criteria pollutant emissions associated with the proposed alternatives would not exceed significance criteria requirements. Therefore, no mitigative actions would be required.

4.2.7 Cumulative Impacts

The Air Force proposes to accomplish numerous other construction projects in three separate years during the same period as the proposed demolition and construction. The cumulative condition emissions would be temporary, fall off rapidly with distance from the proposed construction site, and would last only as long as the construction activities. It is not anticipated that together these projects would result in significant impacts.

4.3 NOISE

An environmental impact analysis related to noise includes the potential impacts on the local population. In considering the basis for evaluating significance of noise impacts, several items were examined, including: 1) the degree to which noise levels generated by construction activities would be higher than the ambient noise levels; 2) the degree to which there would be annoyance and/or activity interference; and 3) the exposure of noise-sensitive receptors to noise levels above 65 dBA.

4.3.1 Alternative 1 – Proposed Action, East and West Gate Improvements

- **Direct Impacts.** The proposed construction activities would produce a temporary increase in noise from equipment operation and the building demolition. Assuming that noise from the construction and demolition equipment radiates equally in all directions, the sound intensity would diminish inversely as the square of the distance from the source increases. The additional noise would be generated only during times of construction activity and would end when construction is completed. Table 4-2 shows the anticipated sound pressure levels at a distance of 50 feet for miscellaneous heavy equipment. This level of noise could annoy nearby persons (refer to Section 3.3.1 and Table 3-3) and cause disruption of speech during the noise event.
- The potential for hearing loss involves direct exposure on a regular, continuing, long-term basis to noise levels above 75 dBA. As stated in Section 3.3.1, hearing loss projections are based on an average daily outdoor exposure of 16 hours over a 40-year period. It is anticipated the construction activities would occur between 7:30 a.m. and 4:00 p.m., five days per week for the duration of the project. Individuals would not be outdoors for the entire noise producing period. Under this condition, persons would not be exposed to long-term and regular noise above 75 dB. Therefore, nearby persons would not experience loss of hearing. Sleep interference is unlikely because the construction activities would occur during the daytime.
- The number and type of aircraft operations would not change under the Proposed Action. Therefore, the primary source of noise at McConnell AFB would continue to be from aircraft operations and the noise exposure from aircraft operations would remain the same as the baseline condition. It should be noted that noise from flying activities would tend to mask the noise generated by construction projects for the same exposure area. The perception would be that construction noise likely would not be discernible during periods of aircraft operations. However, there could be periods of time during which construction noise could be discerned and provide minor annoyance.

This condition would occur when construction activity is underway and flying activity is low.

- The new facilities would continue to be in the DNL 70-75 dBA noise zone. As stated in Section 3.3.2, the Air Force NLR policy is to reduce interior noise levels in residential and public use buildings to DNL 45 dBA or less. Therefore, these new facilities would be designed and constructed to reduce interior noise by 25 to 30 dBA from the exterior noise levels.
- **Indirect Impacts.** Indirect impacts to noise would be positive. The new buildings would be constructed of a higher grade of materials resulting in a quieter environment for staff working inside and people in the visitor's center.

Table 4-2 Heavy Equipment Noise Levels at 50 Feet

Equipment Type	Number Used[1]	Generated Noise Levels, L_p (dB)[2]
Bulldozer	1	88
Backhoe (rubber tire)	1	80
Front Loader (rubber tire)	1	80
Concrete Truck	1	75
Concrete Finisher	1	80
Crane	1	75
Asphalt Spreader	1	80
Roller	1	80
Flat Bed Truck (18 wheel)	1	75
Scraper	1	89
Trenching Machine	1	85

[1] Estimated number in use at any time.
[2] Lp = sound pressure level
Source: CERL, 1978.

4.3.2 Alternative 2 – No Action Alternative

- **Direct Impacts.** Direct noise impacts under the No Action Alternative would be neutral.
- **Indirect Impacts.** Indirect noise impacts under the No Action Alternative would be neutral.

4.3.3 Alternative 3 – West Gate Improvements Only

- **Direct Impacts.** The type of activity associated with the alternative is identical to the Proposed Action. Therefore, direct noise impacts are expected to be similar to those described for Alternative 1.
- **Indirect Impacts.** The type of activity associated with the alternative is identical to the Proposed Action. Therefore, direct noise impacts are expected to be similar to those described for Alternative 1.

4.3.4 Alternative 4 – East Gate Improvements Only

- **Direct Impacts.** The type of activity associated with the alternative is identical to the Proposed Action. Therefore, direct noise impacts are expected to be similar to those described for Alternative 1.
- **Indirect Impacts.** The type of activity associated with the alternative is identical to the Proposed Action. Therefore, direct noise impacts are expected to be similar to those described for Alternative 1.

4.3.5 Alternative 5 – Install Automatic Scanners

- **Direct Impacts.** Direct noise impacts are expected to be similar to those described for Alternative 1 in subsection 4.3.1.
- **Indirect Impacts.** Indirect noise impacts are expected to be similar to those described for Alternative 1 in subsection 4.3.1.

4.3.6 Mitigation

No significant noise impacts would be anticipated for any of the proposed alternatives; therefore, mitigation measures would not be required.

4.3.7 Cumulative Impacts

The distance between the project sites of the proposed alternatives and other project sites is great enough in both distance and time that there would be no combination of construction noise from the project sites. No cumulative noise impacts would be anticipated.

4.4 WATER RESOURCES

The significance of water quality impacts is based on the applicable regulations, codes, and plans for the resources affected. Impacts would be considered significant if any of the following conditions would occur as a result of the project: (1) a discharge that creates a chronic and/or critical condition, damage to the ecosystem, or pollution as defined in federal, state, or local regulations; (2) a discharge, as a result of construction or operation of the proposed project, that impairs the beneficial uses of surface and groundwater beneath or adjacent to the proposed project as set forth in Federal, State, or local regulations; and (3) release of contaminants to the groundwater in such concentrations that they would exceed maximum contaminant levels specified in the Safe Drinking Water Act (40 CFR 141) for drinking water in monitoring wells in the immediate area.

4.4.1 Alternative 1 – Proposed Action, East and West Gate Improvements

- **Direct Impacts.** Construction activities can affect water resources by contributing suspended particulates from eroded soil to surface waters such as streams, lakes, ponds, and wetlands. Direct impacts to water resources, such as the degradation of water quality from nonpoint source pollution (*e.g.*, uncontrolled stormwater runoff and soil erosion), would be minimal as a result of BMPs designed to reduce impacts. Examples

of BMPs include: use of silt fences to minimize erosion and siltation in aquatic habitats; the siting of new facilities away from surface water bodies; the establishment of streamside management zones; the control and collection of stormwater runoff from impervious surfaces (*i.e.*, roads, parking lots); and the creation of natural resource management plans and other management efforts to protect water quality and aquatic habitat. A stream crossing permit may be required for the Main (East) Gate area.

- **Indirect Impacts.** Indirect impacts to water quality could occur from construction activities due to sediment entering receiving streams. For instance, land–clearing activities would expose bare soil, making it vulnerable to erosion. This clearing activity could lead to the deposition of eroded soils in surface waters in the cantonment. This impact would be minimized with the incorporation of the BMPs.

4.4.2 Alternative 2 – No Action Alternative

- **Direct Impacts.** Direct impacts to water resources would be expected to remain neutral under the No Action Alternative. Implementation of this alternative would result in the continuation of existing mission activities. These activities define the baseline environmental conditions with respect to surface water, storm water drainage, lakes, and impoundments.
- **Indirect Impacts.** Indirect impacts to water resources would be expected to remain neutral under the No Action Alternative.

4.4.3 Alternative 3 – West Gate Improvements Only

- **Direct Impacts.** Direct impacts to water resources are expected to be similar to those described for Alternative 1 in subsection 4.4.1 but somewhat less due to the fact that only 10,230 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Indirect impacts to water resources are expected to be similar to those described for Alternative 1 in subsection 4.4.1 but, again, somewhat less due to the fact that only 10,230 square feet of construction would occur as opposed to the 230,910 under Alternative 1.

4.4.4 Alternative 4 – East Gate Improvements Only

- **Direct Impacts.** Direct impacts to water resources are expected to be similar to those described for Alternative 1 in subsection 4.4.1 but slightly less due to the fact that only 220,680 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Indirect impacts to water resources are expected to be similar to those described for Alternative 1 in subsection 4.4.1 but, again, slightly less due to the fact that only 220,680 square feet of construction would occur as opposed to the 230,910 under Alternative 1.

4.4.5 Alternative 5 – Install Automatic Scanners

- **Direct Impacts.** Direct impacts to water resources are expected to be similar to those described for Alternative 1 in subsection 4.4.1.
- **Indirect Impacts.** Indirect impacts to water resources are expected to be similar to those described for Alternative 1 in subsection 4.4.1.

4.4.6 Mitigation

No significant surface and groundwater impacts would be anticipated. Therefore, no mitigation would be required.

4.4.7 Cumulative Impacts

As with the proposed alternatives, the construction contractor for the other projects would be required to comply with applicable regulatory requirements which would mitigate potentially significant impacts to water resources. When completed, activities at the other facilities would be managed in accordance with SWPPP. No cumulative impacts to surface water or groundwater resources would be anticipated.

4.5 BIOLOGICAL RESOURCES

An impact to biological resources would be considered significant if the action would impact a threatened or endangered species, substantially diminish habitat for a plant or animal species, substantially diminish a regionally or locally important plant or animal species, interfere substantially with wildlife movement or reproductive behavior, and/or result in a substantial infusion of exotic plants or animal species.

4.5.1 Alternative 1 – Proposed Action, East and West Gate Improvements

4.5.1.1 Vegetation and Wildlife

- **Direct Impacts.** Construction activities associated with the Proposed Action would occur within developed, maintained areas with extant, highly modified and disturbed landscape. The activities would not substantially change habitat for plant or animal species, nor would they diminish an important plant or animal species. Use of BMPs, silt fences, and reestablishment of ground cover during construction would minimize the potential for adverse effects to vegetation at and near the construction sites. Therefore, no significant adverse effects would be anticipated to wildlife and vegetation.
- **Indirect Impacts.** Indirect impacts to vegetation and wildlife are expected to be neutral under the Proposed Action Alternative.

4.5.1.2 Wetlands

- **Direct Impacts.** The drainage feature near the East Gate does not meet the requirements of a wetland, although the pond and areas proximate to the West Gate do qualify as a wetland. Activities associated with the West Gate would not occur in the

wetland based upon current concept drawings for the project. A permit would be required and obtained if, during construction, the wetland areas would be impacted.

- **Indirect Impacts.** The drainage features that include a ditch and a pond near the West Gate are jurisdictional wetlands. Activities associated with the West Gate would not occur in the wetland based upon current concept drawings for the project. Use of BMPs during construction would minimize the potential for impacts to the jurisdictional wetland proximate to the West Gate. Indirect impacts on the wetlands could, however, occur if ineffective erosion control BMP methods are used, or the erosion control BMP methods that are selected for implementation fail.

4.5.2 Alternative 2 – No Action Alternative

- **Direct Impacts.** Direct impacts to biological resources under the No Action Alternative would be expected to remain neutral. Existing species are expected to remain unchanged, and as this alternative would not change existing ongoing activities at the installation, no significant changes in impacts on species are anticipated.
- **Indirect Impacts.** Indirect impacts to biological resources under the No Action Alternative would be expected to remain neutral.

4.5.3 Alternative 3 – West Gate Improvements Only

4.5.3.1 Vegetation and Wildlife

- **Direct Impacts.** Direct impacts to vegetation and wildlife are expected to be similar to those described for Alternative 1 in subsection 4.5.1.1.
- **Indirect Impacts.** Indirect impacts to vegetation and wildlife are expected to be similar to those described for Alternative 1 in subsection 4.5.1.1.

4.5.3.2 Wetlands

- **Direct Impacts.** Direct impacts to wetlands are expected to be neutral.
- **Indirect Impacts.** Indirect impacts to wetlands are expected to be similar to those describe for Alternative 1 in subsection 4.5.1.2.

4.5.4 Alternative 4 – East Gate Improvements Only

4.5.4.1 Vegetation and Wildlife

- **Direct Impacts.** Direct impacts to vegetation and wildlife are expected to be similar to those described for Alternative 1 in subsection 4.5.1.1.
- **Indirect Impacts.** Indirect impacts to vegetation and wildlife are expected to be similar to those described for Alternative 1 in subsection 4.5.1.1.

4.5.4.2 Wetlands

- **Direct Impacts.** Direct impacts to wetlands are expected to be similar to those describe for Alternative 1 in subsection 4.5.1.2.
- **Indirect Impacts.** Indirect impacts to wetlands are expected to be neutral.

4.5.5 Alternative 5 – Install Automatic Scanners

4.5.5.1 Vegetation and Wildlife

- **Direct Impacts.** Direct impacts to vegetation and wildlife are expected to be similar to those described for Alternative 1 in subsection 4.5.1.1.
- **Indirect Impacts.** Indirect impacts to vegetation and wildlife are expected to be similar to those described for Alternative 1 in subsection 4.5.1.1.

4.5.5.2 Wetlands

- **Direct Impacts.** Direct impacts to wetlands are expected to be similar to those described for Alternative 1 in subsection 4.5.1.2.
- **Indirect Impacts.** Indirect impacts to wetlands are expected to be similar to those described for Alternative 1 in subsection 4.5.1.2.

4.5.6 Mitigation

No adverse effects were identified for biological resources. Therefore, no mitigation measures would be required.

4.5.7 Cumulative Impacts

As with the proposed alternatives, the other projects would occur within the developed portion of the Base. The proposed alternatives would not result in any cumulative impacts that are considered significant.

4.6 SOLID WASTE

In considering the basis for evaluating the significance of impacts on solid waste, several items were considered. These items include evaluating the degree to which the Proposed Action waste generation could affect the existing solid waste management program and the capacity of the area landfill. Analysis of the impacts associated with the proposed demolition and construction activities is based on the following assumptions:

- The weight of concrete debris is 150 lb/ft^3 (Merritt 1976);
- The weight of asphaltic concrete roadways is 130 lb/ft^3 (AI 1983);
- Approximately 4 pounds of construction debris is generated for each square foot of floor area for new structures (Davis 1995);

- Approximately 92 pounds of demolition debris is generated for each square foot of floor area of demolished structures (USACE 1976);
- Approximately 96 pounds of demolition and construction debris are generated for each square foot of floor area of renovated structures; and
- Approximately 1 pound of construction debris is generated for each square foot of new asphaltic concrete pavement.

4.6.1 Alternative 1 – Proposed Action, East and West Gate Improvements

- **Direct Impacts.** Direct impacts to solid waste would include solid waste from reconstruction of roadways and the demolition of old structures. These materials would be Type IV solid waste consisting of building debris such as concrete, metals, fiberglass, cardboard, plastics, and lumber. These materials would be placed in the appropriate construction materials landfill or recycled when possible. These wastes would be in excess of the solid municipal wastes generated by personnel using the facilities.
- **Indirect Impacts.** Indirect impacts to solid waste under the Proposed Action Alternative are expected to be neutral.

4.6.2 Alternative 2 – No Action Alternative

- **Direct Impacts.** Direct impacts to solid waste are expected to be neutral under the No Action Alternative. Implementation of this alternative would result in the continuation of existing mission activities. These activities define the baseline environmental conditions with respect to solid waste.
- **Indirect Impacts.** Indirect impacts to solid waste are expected to be neutral under the No Action Alternative.

4.6.3 Alternative 3 – West Gate Improvements Only

- **Direct Impacts.** Direct impacts to solid waste are expected to be similar to those described for Alternative 1 in subsection 4.6.1 but somewhat less due to the fact that only 10,230 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Indirect impacts to solid waste are expected to neutral.

4.6.4 Alternative 4 – East Gate Improvements Only

- **Direct Impacts.** Direct impacts to solid waste are expected to be similar to those described for Alternative 1 in subsection 4.6.1 but slightly less due to the fact that only 220,680 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Indirect impacts to solid waste are expected to neutral.

4.6.5 Alternative 5 – Install Automatic Scanners

- **Direct Impacts.** Direct impacts to solid waste are expected to be similar to those described for Alternative 1 in subsection 4.6.1.
- **Indirect Impacts.** Indirect impacts to solid waste are expected to neutral.

4.6.6 Mitigation

No significant impacts would be anticipated. Therefore, no mitigation would be required.

4.6.7 Cumulative Impacts

Based upon the cumulative impacts of proposed construction, significant impacts on available landfills are not anticipated.

4.7 ENVIRONMENTAL MANAGEMENT

Environmental management impacts would be considered significant if the federal action resulted in the uncontrolled release of friable asbestos or LBP into the environment.

4.7.1 Alternative 1 – Proposed Action, East and West Gate Improvements

4.7.1.1 Asbestos

- **Direct Impacts.** The buildings that would be demolished in the Proposed Action were built between 1989 and 1992. Therefore they are believed to not contain any asbestos materials. However, appropriate measures would be taken to determine for certain that no asbestos materials are present. The protocols described in the Asbestos Management Plan (McConnell 2000a) and the Asbestos Operating Plan (McConnell 2000b) would be followed prior to any demolition activities.
- **Indirect Impacts.** Indirect impacts to environmental management under the Proposed Action would be expected to remain neutral.

4.7.1.2 Lead-Based Paint

- **Direct Impacts.** McConnell AFB has a LBP Management Plan for the installation. The protocols contained in this document would be followed during any demolition activities. No known LBP materials exist in the buildings being proposed to be demolished.
- **Indirect Impacts.** Indirect impacts to environmental management under the Proposed Action would be expected to remain neutral.

4.7.2 Alternative 2 – No Action Alternative

- **Direct Impacts.** Direct impacts to environmental management under the No Action would be expected to remain neutral.

- **Indirect Impacts.** Indirect impacts to environmental management under the No Action would be expected to remain neutral.

4.7.3 Alternative 3 – West Gate Improvements Only

- **Direct Impacts.** Direct impacts to environmental management are expected to be similar to those described for Alternative 1 in subsection 4.7.1.
- **Indirect Impacts.** Indirect impacts to environmental management are expected to be neutral.

4.7.4 Alternative 4 – East Gate Improvements Only

- **Direct Impacts.** Direct impacts to environmental management are expected to be similar to those described for Alternative 1 in subsection 4.7.1.
- **Indirect Impacts.** Indirect impacts to environmental management are expected to be neutral.

4.7.5 Alternative 5 – Install Automatic Scanners

- **Direct Impacts.** Direct impacts to environmental management are expected to be similar to those described for Alternative 1 in subsection 4.7.1.
- **Indirect Impacts.** Indirect impacts to environmental management are expected to be neutral.

4.7.6 Mitigation

No significant asbestos or LBP impacts are anticipated. Areas to be demolished would be checked for asbestos and LBP materials prior to demolition. Should asbestos or LBP materials be identified, they would be removed in accordance with installation management plans. Therefore, no mitigation would be required.

4.7.7 Cumulative Impacts

It is possible that asbestos and LBP could be encountered in older buildings that would be demolished. The demolition contractor would be responsible for all ACM and LBP removal. Friable ACM would be removed by a licensed asbestos abatement contractor using glove-bag techniques just prior to actual demolition of the building. If this procedure is used, asbestos-containing areas would not require polyethylene containment and negative pressure. Non-friable ACM could be disposed as solid waste along with other construction debris as long as the landfill is permitted to accept non-friable ACM. Non-friable asbestos would be moistened just prior to removal to minimize airborne fibers. Debris mixed with ACM debris must be kept wet and must be sent to an asbestos-approved landfill. Removal of LBP would comply with 29 CFR 1910. The proposed facilities would be constructed or renovated without any ACM and LBP. Buildings or structures proposed for demolition would be evaluated by the Bioenvironmental Engineering to determine if an asbestos survey would be required. In addition, the installation's Base Environmental Flight would coordinate any LBP investigation and actions.

4.8 SOILS

An impact to soils would be considered significant if one or more of the following occurs as a result of the Proposed Action: (1) degradation of surface and ground water quality through soil erosion, (2) soil erosion resulting in scouring of the project area.

4.8.1 Alternative 1 – Proposed Action, East and West Gate Improvements

- **Direct Impacts.** Construction activity under the Proposed Action would occur within an area in which the soils have been disturbed and modified by prior construction. The contractor would ensure a storm water pollution prevention plan is completed and approved before initiating activities. The plan would include erosion control techniques that would be used during demolition and construction to minimize erosion. Earthwork would be planned and conducted in such a manner to minimize the duration of exposure of unprotected soils. Side slopes and back slopes would be protected immediately upon completion of rough grading. Protection would be provided through permanent vegetation, temporary vegetation, mulching, or netting. Use of BMPs such as silt fences and single point construction entries would minimize erosion during demolition and construction. Grass and other landscaping would be reestablished in the disturbed areas immediately after completion of construction, thereby reducing the potential for erosion. For these reasons, no significant soils impacts would be expected.
- **Indirect Impacts.** Indirect impacts to soils under the Proposed Action would be expected to remain neutral.

4.8.2 Alternative 2 – No Action Alternative

- **Direct Impacts.** Direct impacts to soils under the No Action Alternative are expected to be neutral.
- **Indirect Impacts.** Indirect impacts to soils under the No Action Alternative would be expected to remain neutral.

4.8.3 Alternative 3 – West Gate Improvements Only

- **Direct Impacts.** Direct impacts to soils are expected to be similar to those described for Alternative 1 in subsection 4.8.1 but somewhat less due to the fact that only 10,230 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Indirect impacts to soils are expected to be neutral.

4.8.4 Alternative 4 – East Gate Improvements Only

- **Direct Impacts.** Direct impacts to soils are expected to be similar to those described for Alternative 1 in subsection 4.8.1 but slightly less due to the fact that only 220,680 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Indirect impacts to soils are expected to be neutral.

4.8.5 Alternative 5 – Install Automatic Scanners

- **Direct Impacts.** Direct impacts to soils are expected to be similar to those described for Alternative 1 in subsection 4.8.1.
- **Indirect Impacts.** Indirect impacts to soils are expected to be neutral.

4.8.6 Mitigation

No significant geology or soils impacts would be anticipated. For this reason, no mitigation measures would be required.

4.8.7 Cumulative Impacts

The construction contractors for the projects would be required to comply with the regulatory requirements and BMPs identified for the proposed alternatives. Although some of the other actions are adjacent to proposed alternative's project sites, use of the regulatory requirements and BMPs identified for the proposed alternatives would minimize the potential for cumulative impacts. When completed, activities at the other facilities would be managed in accordance with applicable environmental plans and policies. No cumulative geology or soils impacts would be anticipated.

4.9 HAZARDOUS MATERIALS AND WASTES

Impacts to hazardous materials and waste management would be considered significant if the federal action resulted in noncompliance with applicable federal and Washington environmental quality regulations or caused waste generation that could not be accommodated by current McConnell AFB waste management capacities.

4.9.1 Alternative 1 – Proposed Action, East and West Gate Improvements

- **Direct Impacts.** Products containing hazardous materials would be procured and used during construction activities as well as operation of the facility. Construction contractors would be required to use and store hazardous materials in accordance with all federal, state, and local regulations. It is not anticipated that any hazardous materials not currently used for gate operation would be needed for operation of the new gates. The existing hazardous materials handling processes and procedures could accommodate the hazardous materials associated with operations at the new gates.

Hazardous wastes could be generated during the construction activities. It is anticipated that the quantity of hazardous wastes generated during the construction period would be negligible. The construction contractor would maintain records of all waste determinations, including appropriate results of analysis performed, substances and sample locations, date and time of collection, and other pertinent data as required by 40 CFR Part 280, Section 74 and 40 CFR, Part 262, Subpart D.

In the event of a spill of any amount or type of hazardous material or waste (petroleum products included), the construction contractor would take immediate action to contain and clean up the spill. Contractor spill clean up personnel would be trained and certified to

perform spill clean up. The contractor would be responsible for proper characterization and disposal of any waste and clean up materials generated. All waste and associated clean up material would be removed from the project site and transported and/or stored in accordance with regulations until final disposal.

The potential for hazardous waste generation from gate activity would continue to be negligible. Any hazardous waste generated would be handled in accordance with federal, state, and local laws and regulations, including RCRA requirements for waste management and Department of Transportation requirements for waste transport.

- **Indirect Impacts.** Indirect impacts to soils under the Proposed Action would be expected to remain neutral.

4.9.2 Alternative 2 – No Action Alternative

- **Direct Impacts.** Direct impacts to hazardous materials and wastes under the No Action Alternative are expected to be neutral.
- **Indirect Impacts.** Indirect impacts to hazardous materials and wastes under the No Action Alternative would be expected to remain neutral.

4.9.3 Alternative 3 – West Gate Improvements Only

- **Direct Impacts.** Direct impacts to hazardous materials and wastes are expected to be similar to those described for Alternative 1 in subsection 4.9.1 but somewhat less due to the fact that only 10,230 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Indirect impacts to soils are expected to be neutral.

4.9.4 Alternative 4 – East Gate Improvements Only

- **Direct Impacts.** Direct impacts to hazardous materials and wastes are expected to be similar to those described for Alternative 1 in subsection 4.9.1 but slightly less due to the fact that only 220,680 square feet of construction would occur as opposed to the 230,910 under Alternative 1.
- **Indirect Impacts.** Indirect impacts to soils are expected to be neutral.

4.9.5 Alternative 5 – Install Automatic Scanners

- **Direct Impacts.** Direct impacts to hazardous materials and wastes are expected to be similar to those described for Alternative 1 in subsection 4.9.1.
- **Indirect Impacts.** Indirect impacts to soils are expected to be neutral.

4.9.6 Mitigation

No significant impacts would be anticipated. Therefore, no mitigation would be required.

4.9.7 Cumulative Impacts

The discussion and analyses for the Proposed Action apply to the other projects and no cumulative significant hazardous materials and wastes impacts would be anticipated.

4.10 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts would result from implementation of the Proposed Action.

- Air Quality. The emission of air pollutants associated with facilities construction is an unavoidable condition, but is not considered significant and a Clean Air Act General Conformity Determination would not be required.
- Noise. Noise resulting from proposed construction operations is an unavoidable condition. However, the potential that construction impacts would result in sleep disturbance, annoyance, or speech interference is considered minor.
- Environmental Management. Due to the potential for reuse of this material on site, the relatively small portion of the resource area affected and the low economic value of aggregate in the areas, this condition would not be considered significant. Earthquake-related hazards, including ground shaking and high ground accelerations that may cause damage to new facilities would be an unavoidable condition.
- Biological Resources. Site grading associated with construction projects would remove minimal vegetation and associated small animal life now occupying or utilizing the few acres affected. All of the affected sites are in the areas of the bases that were previously disturbed and would not presently provide significant habitat for many species. Plants and wildlife would be extirpated from the site, decreasing site floral and faunal diversity. Although unavoidable, this adverse condition would not be considered significant.
- Infrastructure and Utilities. The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action.

4.11 RELATIONSHIP BETWEEN SHORT-TERM USES AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

None of the five proposed alternatives would represent a significant loss of open space. Therefore, it is not anticipated that any of the five proposed alternatives would result in any cumulative land use or aesthetic impacts. Long-term productivity of the sites would be increased by development of the Proposed.

- Irreversible and Irretrievable Commitment of Resources. The irreversible environmental changes that would result from implementation of any of the five proposed alternatives would involve consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

- Material Resources. Building materials (for construction of facilities), concrete and asphalt (for facilities, runways, and roads), and various material supplies (for infrastructure) would be used for Alternatives 1, 3, 4 and 5. Most of these materials are not in short supply, and are readily available from suppliers in the region. Use of these materials for the Proposed Action would not limit other unrelated construction activities.
- Energy Resources. Energy resources such as petroleum-based products (such as gasoline and diesel), natural gas, and electricity would be used for Alternatives 1, 3, 4, and 5 and would be irretrievably lost. Gasoline and diesel would be used for operation of construction vehicles. Natural gas and electricity would be used to operate facilities. Consumption of these energy resources would not place a significant demand on their supply systems or within the region.
- Land. Implementation of the Alternatives 1, 3, 4, and 5 would result in construction of new facilities on-Base. This land would be lost to other uses during the operational life of the action. The loss of open space is not considered irreversible.
- Biological Habitat. Alternatives 1, 3, 4, and 5 would result in the irreversible destruction or loss of the vegetation and low quality wildlife habitat on proposed construction sites. Neither action would remove a significant amount of open space or undeveloped land currently functioning as biological habitat.
- Human Resources. The use of human resources for construction and operation is considered an irretrievable loss only in that it would preclude the affected personnel from engaging in other work activities. However, the use of human resources for either Alternatives 1, 3, 4, and 5 represents employment opportunities, and is considered beneficial.

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CHAPTER 5
LIST OF PREPARERS

Personnel involved in the development of this EA include the following:

Name	Education and Experience	Primary Responsibilities
Darrel B. Sisk, Jr.	B.E.D. Environmental Design; M.S. Architectural Engineering; 18 years experience in Base civil engineering, military planning and environmental planning and impact assessment.	Project Manager/Senior Project Planner; data collection and key participant in description of Proposed Action, alternatives formulation, land use, noise, cultural resources, environmental justice, infrastructure, munitions and related environmental analyses.
Donald E. Beisel	B.S. Geography; M.A. Geography; 26 years of experience in community/urban planning, environmental planning, and socioeconomic studies.	Senior Project Planner; data collection and preparation of socioeconomic analysis and related text sections.
Joel Budnik	B.S., Fish and Wildlife Sciences/Biology; M.S., Fish and Wildlife Sciences; 6 years experience in fish and wildlife biology and management; ornithology; environmental impact assessment; preparation of environmental documents.	Environmental Scientist; data collection, analysis and key participant in preparation of environmental assessment text and supporting sections.
Luke F. Eggering	B.S., Fish and Wildlife Management; M.S., Biology; 12 years experience in wetland management; wildlife, fisheries and endangered species management; preparation of environmental documents.	Environmental Scientist; data collection, analysis and key participant in preparation of EA text and supporting sections relating to wetlands.
Richard E. Hall	B.S. Environmental Biology, M.S. Zoology, 25 years of experience in EA and impact studies, biological community investigations and ecosystem restoration.	Principal Environmental Scientist, technical review, editing, and quality assurance of EA.
Enid McNutt	B.S. Biology; Master of Environmental Management; 2 years of experience in environmental management and planning.	Environmental Scientist; data collection, analysis and key participant in preparation of environmental assessment text and supporting sections.
Hilary Murphy	B.A. Environmental Conservation; M.S. Urban & Regional Planning; 6 years experience in environmental planning and impact assessment; environmental justice/ socioeconomic analysis; comprehensive land use plans; public outreach programs.	Project Planner; key participant in preparation of environmental assessment text and supporting sections.

Name	Education and Experience	Primary Responsibilities
Virginia Skeel	B.S. Horticulture; M.S. Botany; 7 years experience in biological surveys, natural resource management, ecological restoration, and environmental impact assessment.	Environmental Scientist; data collection; key participant in preparation of affected environment section and impacts.

CHAPTER 6
PERSONS AND AGENCIES CONSULTED

The following persons and agencies consulted during preparation of this EA.

U.S. Senator Sam Brownback
303 Hart Senate O.B.
Washington, D.C. 20510

U.S. Senator Pat Roberts
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Washington, D.C. 20510

U.S. Representative Jim Ryun
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CHAPTER 7
REFERENCES

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APPENDIX A
AIR FORCE FORM 813

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

RCS: *Report Control Symbol*

INSTRUCTIONS *Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO *(Environmental Planning Function)*	2. FROM *(Proponent organization and functional address symbol)*	2a. TELEPHONE NO.
22 CES/CEV	22 CES/CECP	6873

3. TITLE OF PROPOSED ACTION
Anti-Terrorism/Force Protection Activities at McConnell AFB, Kansas

4. PURPOSE AND NEED FOR ACTION *(Identify decision to be made and need date)*
The proposed action is needed to improve gate security, personnel safety and reduce traffic congestion while maintaining access control requirements in support of force protection and security at McConnell AFB.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES *(DOPAA) (Provide sufficient details for evaluation of the total action.)*
The Proposed Action would modify base perimeter and entry control facilities to meet force protection requirements for visitor control, vehicle inspection, security/overwatch provisions. The Proposed Action would include traffic flow improvements at each gate (roadway improvements, signing, lighting and speed control), operational modifications and associated upgrades (gate security, vehicle processing and vehicle arrest systems).

6. PROPONENT APPROVAL *(Name & Grade)*	6a. SIGNATURE	6b. DATE
Lt Kimberly Hubbard		

SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY *(Check appropriate box and describe potential environmental effects including cumulative effect.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)*				
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE *(Noise, accident potential, encroachment, etc.)*				
8. AIR QUALITY *(Emissions, attainment status, state implementation plan, etc.)*				X
9. WATER RESOURCES *(Quality, quantity, source, etc.)*				
10. SAFETY AND OCCUPATIONAL HEALTH *(Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)*				
11. HAZARDOUS MATERIALS/WASTE *(Use/storage/generation, solid waste, etc.)*				
12. BIOLOGICAL RESOURCES *(Wetlands/floodplains, flora, fauna, etc.)*				
13. CULTURAL RESOURCES *(Native American burial sites, archaeological, historical, etc.)*				
14. GEOLOGY AND SOILS *(Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*				
15. SOCIOECONOMIC *(Employment/population projections, school and local fiscal impacts, etc.)*				
16. OTHER *(Potential impacts not addressed above.)*				

SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION

7. ☐ PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____; OR

☐ PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS
7. Action would not result in changes to land use or aircraft operations on the base. Construction-related noise will be evaluated.
10. Action would not have potential for chemical exposure, explosives safety quantity-distance issues.
11. Action would not result in any change in the use, storage or generation of hazardous materials or hazardous waste.
15. Action would not result in any changes to employment, population and school, nor would it result in any fiscal impacts.
16. Action would not have potential impacts on environmental justice, utilities/infrastructure, or public services. Transportation and aesthetics will be evaluated.
17. An environmental assessment (EA) is being prepared to evaluate the impacts of this action on the McConnell AFB area.

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION *(Name & Grade)*	19a. SIGNATURE	19b. DATE
Don Campbell, GS-13, Chief, Environmental Flight		

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APPENDIX B
INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING

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APPENDIX B
INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING

A copy of the interagency letter forwarded to key agencies is provided below. Chapter 6 includes a list of the agencies that were sent the letter.

8 July 2003

DRAFT

U.S. Senator Sam Brownback
303 Hart Senate O.B.
Washington, D.C. 20510

Dear Senator Brownback:

The U.S. Air Force has prepared an Environmental Assessment (EA) to assess the potential environmental impacts of a proposed action by McConnell Air Force Base (AFB), Wichita, Kansas. The action includes correcting current deficiencies by upgrading entry control facilities, thereby providing the required force protection and anti terrorism measures needed to protect Air Force personnel and civilians. In addition, secured vehicle inspection facilities, additional visitor parking spaces, and permanent physical means to detain rogue vehicles will be built. The EA provides details of the action, explains the purpose and need for the action, and assesses the potential impacts of the Proposed Action, Alternative Action, and the No Action Alternative.

According to the National Environmental Policy Act (NEPA), the Air Force must assess the potential environmental impacts of the proposed and alternative actions. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, the Air Force is requesting input from other federal, state, and local agencies on the Draft EA, which is attached along with a Draft Finding of No Significant Impact.

Privacy Advisory: Your comments on this Draft EA are requested. Letters or other written comments provided may be published in the Final EA. Comments will normally 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 phone numbers will not be published in the Final EA.

Please provide any comments or information by August XX, 2003. Responses should be sent directly to:

Mr. Don Campbell
22 CES/CEVA
McConnell AFB KS, 67221-3617
Email: Donald.campbell@mcconnell.af.mil

Your assistance in providing information is greatly appreciated. Mr. Campbell can be reached at 316-759-3885.

Sincerely,

Name and signature block

Attachment:

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